

**Report of the joint World Heritage Centre/IUCN/Ramsar Convention mission to the
World Heritage property of Doñana National Park, Spain**

19-22 January 2011

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1 EXECUTIVE SUMMARY

From 19 to 22 January 2011, a joint World Heritage Centre/IUCN reactive monitoring mission and Ramsar Advisory Mission visited the Doñana Natural Space (Espacio Natural Doñana)¹ in Andalusia, Spain, which includes the Doñana National Park World Heritage property under the World Heritage Convention and Doñana Wetland of International Importance under the Convention on Wetlands, of 1971, in accordance with **Decision 34 COM 7B.26** adopted by the World Heritage Committee at its 34th session in Brasilia in 2010 and Ramsar's own procedures for an Advisory Mission.

While the mission was originally designed as a joint World Heritage Centre-IUCN mission, the involvement of the Ramsar Convention was welcomed by all stakeholders, including the State Party authorities due to the designations status of the property, the coincidence of the complaints received by the World Heritage Centre and Ramsar, and the longstanding cooperation between the two Conventions.

The mission team visited the World Heritage property and Ramsar site and key surrounding areas. The team was accompanied by State Party representatives from the Ministry of Environment and Rural and Marine Affairs and the Ministry of Culture as well as the Autonomous Community's Government (Junta de Andalucía) and staff of the Espacio Natural Doñana throughout the mission, and heard presentations or held discussions with representatives of the END management ; central, autonomous community and local authorities; conservation and agriculture organisations; UNESCO Biosphere Reserve; scientific institutions; and mining and energy production companies.

In accordance with its Terms of Reference (included in Annex II), the mission team assessed the state of conservation of the property and factors affecting its Outstanding Universal Value and changes or possible changes in the ecological character of the Ramsar site. It considered, in particular, the potential external threats to the property, including from mining and energy developments, as well as other development proposals located outside of the protected areas.

Some NGOs in Spain and Andalusia had requested that the World Heritage Committee inscribes the property on the List of World Heritage in Danger, and in the case of Ramsar that the site be removed from the List of Wetlands of International Importance. The mission team reviewed all requests taking into account the information available and the relevant provisions of the Operational Guidelines and Ramsar procedures.

¹ The END includes within its boundaries: a) the Doñana National Park declared by the Government of Spain in 1969 y enlarged since then in several occasions, covering at present 50.720 ha, which was included by Spain in the List of Wetlands of International Importance (Ramsar) in 1982 and inscribed in the World Heritage List in 1994 (with an extension approved in 2005); and b) The Doñana Natural Park, declared by the Autonomous Community of Andalusia in 1989 and enlarged in 1997, covering at present 60.925 ha. The Ramsar site was enlarged in 2005 to cover also the Natural Park. While the National Park and the Natural Park are subject to a different kind of legislation (from the central government and the autonomous government respectively) and requires a different management approach, the END is managed since 1999 as a single protected space on the basis of Law 8/1999 of 27 October of the Autonomous Community of Andalusia. This is as a result of the fact that the Constitutional Court of Spain ruled that the National Park of Doñana should be managed by the Autonomous Government of Andalusia, even though the Autonomous Organ of National Parks (OAPN) under the central Ministry of Environment, and Rural and Marine Affairs stills maintains a supervisory function and establishes the standards for the management of all National Parks in Spain.

The mission came to the following overall conclusions and detailed recommendation which are outlined in section 5 of this report. All recommendations are grouped in section 7 of this report:

Overall conclusions

Following the analysis of all material provided and the field visits and meetings with a wide range of stakeholders, the mission concludes that the state of conservation of the World Heritage property is satisfactory. The values for which the site has been inscribed under the World Heritage and Wetlands Conventions are still present; however a number of issues related to the conditions of integrity have been noted by the mission. The different designations of the National Park and Natural Park and the different international designations as Ramsar site, UNESCO Biosphere Reserve and World Heritage site are mutually beneficial. In 2010 Doñana received the renewal of the European Diploma granted by the Council of Europe, another indicator of the effective management of the property.

The mission concludes that currently the Universal Value of this World Heritage property is not in danger as to recommend that the property should not be inscribed on the List of World Heritage in Danger, nor that Spain should be requested to remove the site from the List of Wetlands of International Importance. However, the mission notes a number of issues, including the proposed additional dredging of the Lower Guadalquivir river, the situation of the Doñana Aquifer, the proposed Balboa oil pipeline from Huelva to Extremadura, and the cumulative effects of infrastructure projects outside the World Heritage property and Ramsar site which could impact on the values and integrity of the site. The mission concludes that the World Heritage Committee needs to examine by 2013 whether inscription of Doñana on the List of World Heritage in Danger would be warranted, and in the case of Ramsar if the site should be maintained in the Montreux Record of the Convention,² in relation to the following issues:

- the risks imposed by the proposed Balboa pipeline from Huelva to Extremadura, if the project is not cancelled or at least change substantially in its design;
- the effects of the proposed additional dredging of the Lower Guadalquivir river, if finally approved without an integrated management plan for this area to enhance the environmental quality of the river; and
- the effective implementation of the plan to control water extractions from the Doñana Aquifer (Plan de la Corona Forestal).

The mission, taking into account the provision of the Operational Guidelines, urges the State Party to address these issues in priority and to ensure that the integrity and outstanding universal value of the World Heritage property and Ramsar site is maintained.

² Record of Ramsar sites where their ecological character has changed, is changing or could change as a result of human actions.

2 ACKNOWLEDGMENTS

The mission was very well organised and conducted. The mission team thanks in particular the staff of Doñana National Park and its Director, Juan Carlos Rubio (Director del Espacio Natural del Doñana), the Junta de Andalusia and its staff, especially Juan Pedro Castellano Dominguez (Coordinador General de Espacios Naturales y Participacion Ciudadana), Mr Juan Garay Zabala and Ms Magdalena Bernue Sanz, Spanish Ministry of Environment and Ms Laura de Miguel, Ministry of Culture.

The mission would also like to acknowledge all the representatives of local, regional and national associations, international NGOs as well as staff from public institutions and private companies for the time they spent with the mission team to share valuable information.

3 BACKGROUND TO THE MISSION

3.1 Inscription history

The World Heritage property of “Doñana National Park” (Spain) was inscribed on the World Heritage List as a natural site under natural criteria (vii), (ix), and (x) by the 18th session of the World Heritage Committee (Phuket, 1994). In 2005, the extension of the property was approved by the Committee at its 29th session (Durban 2005) to bring the boundaries of the World Heritage property in line with the extended National Park as proposed by the State Party of Spain.

3.2 Inscription criteria and World Heritage values, and integrity issues at the time of the inscription

The Committee inscribed this site as an exceptional example of a large Mediterranean wetland with diverse habitats such as marshes, forests, pristine beaches, dunes and lagoons, which supports high faunal diversity, particularly large numbers of migratory birds of the pale arctic region.

Criterion (vii): 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.

Criterion (ix): The marshes of the Guadalquivir River constitute an example of geological processes during the Pleistocene. Doñana contains the last marshes of the Guadalquivir unaltered by agriculture or development. The marshes result from a subsidence of the continental plate in the Upper Miocene and Lower Pliocene, which caused a depression later filled by fluvial and aeolic deposits. Deposition of a coastal sand bar and mobile dunes continue today. These dunes, among the largest in continental Europe, advance at speeds of 4-6m per year. Primary and secondary successional stages are evident in the vegetation of the area.

Criterion (x): The park has high fauna diversity, notably an avifauna consisting of 360 species of breeding and migratory birds. It contains breeding populations of several globally-threatened animal (marbled teal, white-headed duck, Adalbert's eagle, Spanish lynx) and plant species. It is an important wintering site for wildfowl, receiving hundreds of thousands of migratory duck and geese every year. Doñana includes one of the last large stretches of undeveloped pristine coastline in Spain, and its largest wetland.

The Committee complemented the Spanish authorities on measures taken to improve protection of the site during the past two years and their efforts to maintain the integrity of the site. The Committee, however, alerted the Spanish authorities to continuing threats to the integrity of the site arising from hydrological projects and encouraged them in their ongoing efforts to restore disturbed parts of the Park. The Committee requested that the Spanish authorities submit a report on the site, particularly highlighting the results of the project to regulate water supply by 1998.

IUCN in its evaluation indicated that the conditions of integrity for all three of these criteria are met although the prospect of adding appropriate additional areas of natural parks in future years would further improve the property. The main concern would be the maintenance of long-term hydrological integrity which, hopefully, will be assured if the regional sustainable development project is effectively implemented.

3.4 Examination of the state of conservation by the World Heritage Committee

Doñana National Park (Spain) was subject to numerous state of conservation reports and in the following the key issues identified by the World Heritage Committee are highlighted:

22nd session of the World Heritage and its Bureau (Kyoto, 1998)

At its twenty-second session, the Bureau was informed that a giant holding pool of the Aznalcollar mine owned by the Canadian-Swedish Boliden-Apirsa Company burst resulting in an ecological disaster. Although the main toxic flow had been diverted away from the National Park, the adjoining areas have been badly damaged. The Bureau was informed that at the invitation of the Spanish Government, the Centre carried out a mission from 10 to 13 November 1998 reviewing the situation at the site and the area affected by the toxic spill. The Centre received a number of documents presented by the Spanish authorities on the actions undertaken since the last session of the Bureau, including the Doñana 2005 project. The project "Doñana 2005 - hydrological regeneration of the watersheds and river channels flowing towards Doñana National Park", has been prepared by the Ministry for the Environment. It mainly proposes: (a) to avoid the influx of contaminated water into the Doñana marshes; (b) to restore the flow of waters towards Doñana in the long term (drinking water; original hydrological dynamics); and (c) to maintain the hydrological system of the connection between Doñana and the Guadalquivir Estuary. The Bureau noted that the World Heritage site and the Biosphere Reserve are currently little affected, whereas the Natural Park around the site has been impacted by the toxic spill. The actions taken by the Spanish authorities have been substantial. The Bureau suggested that great caution should be taken in re-starting mining activities and requested that EIAs be carried out for each step.

The Committee reiterated the Bureau's request that the State Party collaborates with UNESCO, IUCN and the Ramsar Convention to organize an international expert conference and to present its results to the twenty-third session of the Bureau. The Committee also invited the State Party to submit, in time for the next Bureau session, details concerning the financing plan and a time table for the implementation of the project "Doñana 2005" to be carried out in the framework of the Man and the Biosphere Reserve Programme (MAB). The Committee commended the State Party for the actions taken to prevent impacts to the World Heritage site by the toxic spill. It requested the State Party to proceed with great caution with regard to re-opening the mine and to monitor long-term impacts for both the World Heritage site and the UNESCO Biosphere Reserve.

23rd session of the World Heritage Committee (Marrakesh, 1999)

The Committee recalled the reports from the twenty-third ordinary and the twenty-third extraordinary session of the Bureau on the state of conservation of this property and adopted the following decision:

"The Committee noted that during 1998 and 1999 a number of actions were undertaken to mitigate the impacts of the ecological disaster following the spill in April 1998, in particular the results of the International Expert Meeting on the Regeneration of the Doñana Watershed in October 1999 with the participation of the World Heritage Centre, IUCN, the Secretary-General of the Ramsar Convention, WWF and other organizations.

The Committee commended the Spanish authorities for the continued clean up effort of the Guadiamar Basin and affected areas. However, the Committee expressed its concerns for the re-opening of the mine without taking into account the points raised by the twenty-second session of the Committee and the twenty-third session of the Bureau. The Committee suggested that a review meeting be held during the year 2000/2001 to review progress of the implementation of the Doñana 2005 project, taking into account the points raised by IUCN and involving all concerned parties and institutions including the international collaborators from the meeting on Doñana 2005 held in October 1999. The State Party is encouraged to take into account the WCPA Position Statement on mining activities and protected areas, which was reviewed by this Committee."

26th session of the World Heritage Committee (Budapest, 2002, 26 COM 21B.21)

The World Heritage Committee, commended the State Party for its continued efforts towards the conservation of the site, and in particular the initiatives for the Iberian Lynx population; it urged the State Party to give priority to promoting integrated regional land-use planning in order to minimise impacts related to irrigation and road design, construction and management around the site.

28th session of the World Heritage Committee (Suzhou 2004, 28 COM 15B.29)

The World Heritage Committee welcomed the enlargement of the National Park which enhances also the protection of the World Heritage area, and requested the State Party to review in detail the implementation of the Doñana 2005 project, to provide a report on its implementation and on the state of conservation of the property by 1 February 2005 for examination by the Committee at its 29th session in 2005.

29th session of the World Heritage Committee (Durban, 2005, 29 COM 7B.25)

The World Heritage Committee noted the submission of the extension of the boundaries; and commended the State Party for the continued restoration efforts made in the framework of "Doñana 2005"; it requested the State Party to keep the Committee informed on a bi-annual basis on the state of conservation of the property, including the progress made in the restoration work.

34th session of the World Heritage Committee (Brazil, 2010, 34 COM 7B.26)

At its 34th session in 2010, the Committee considered a state of conservation report for the property (WHC-10/34.COM/7B) presented by the UNESCO World Heritage Centre and IUCN following receipt of correspondence from a number of concerned stakeholders relating to the impact of different developments including mining and energy issues.

Having considered the state of conservation report the Committee's decision noted with concern the potential threat to the Outstanding Universal Value of the property, especially

the high risk of accidental oil spills resulting from the increase in maritime traffic to and from the Straits of Gibraltar due to the proposed expansion of the La Rábida oil refinery and the proposed Balboa pipeline, which may potentially affect the Outstanding Universal Value, including the conditions of integrity, of the property. The Committee requested that a reactive monitoring mission to the property be carried out to assess its state of conservation (Decision 34 COM 7B.26 enclosed as Annex I).

3.5 Justification of the mission

The Committee at its 34th session (Brasilia 2010) requested with Decision 34 COM 7B.26 that a joint World Heritage Centre/IUCN reactive monitoring mission to the property be carried out to assess its state of conservation. Subsequently the States Party sent an invitation letter and the Terms of Reference for the mission were adopted (enclosed as Annex II). Due to the excellent cooperation with the 1971 Ramsar Convention on Wetlands of International Importance in the case of the Doñana National Park, it was decided with the State Party to carry out the mission jointly with the representative of the Ramsar Convention and to benefit from the expertise on water issues. The composition of the mission team is included as Annex III and the programme and itinerary as Annex IV. While the processes of both Conventions in terms of reporting are different, the recommendations of this report have been prepared jointly.

4 NATIONAL POLICY FOR THE PRESERVATION AND MANAGEMENT OF THE WORLD HERITAGE PROPERTY

4.1 Protected area/national legislation

The key legislation for Doñana is 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;

In addition, the natural property is protected by the following laws and legal provisions:

- Costal zone law 22/1988;
- Law 42/2007 (No 299, of 14 December 2007) on Natural Heritage and Biodiversity;
- Law 5/2007 (No 81, of 4 April 2007) on the Network of National Parks;
- Law 1803/1999 (No 209, of 1 September 1999) on the Plan Director;
- Habitat Directive (92/43/CEE) of 1992;
- Declaration of Zone of Special Protection of Birds (ZEPA);
- Agreement of the Council of Ministers of 1982, which authorizes the inclusion of the site into the list of wetlands of international importance of the Ramsar Convention (1971) - Boletín Oficial del Estado (BOE) nº 199, de 20 de agosto de 1982;
- Law 5/2005 of 26 May 2005 concerning the Conservation of spaces of environmental relevance (LECO);

4.2 Institutional framework and management structure

The responsible body for the implementation of the 1972 World Heritage Convention in Spain is the Spanish Ministry of Culture. For the 1971 Ramsar Convention it is the Ministry for the Environment.

The management of the World Heritage property is under the “Patronato” which consists of different stakeholders and representatives of the Central Government (Ministry of the Environment), the government of Andalusia and the park authorities (see structure below).

4.3 Response to the recognition of values under international treaties and programmes

Doñana National Park was declared by the Decree 2412 of 1969 and was inscribed in the World Heritage List in 1995. The World Heritage property was extended in 2005. The National Park was established in 1980 as a Biosphere Reserve under the UNESCO MAB Programme. In 1982 the National Park was included in the List of Wetlands of International Importance under the Ramsar Convention and in 2005 the Ramsar site was extended to include the Natural Park. In addition on September 1985 the Council of Europe granted to the National Park the European Diploma for Protected Area Management that has been renewed in 1990, 1995, 2000 and 2010. Furthermore, in 1988, the National Park was declared a “Special Zone for the Protection of Birds” under the EC Habitat Directive 79/409, which implies that it is also part of the Natura 2000 Network established by the EC Habitat Directive 92/43.

5 IDENTIFICATION AND ASSESSMENT OF THREATS

5.1 Infrastructure projects

In 2009 and 2010, the World Heritage Centre and IUCN received reports from a number of NGOs concerning the development of infrastructure projects in the vicinity of the World Heritage site or while in a distance from the site as having a potential impact on the outstanding universal value and integrity. In the following each of these proposed projects is being analyzed on the basis of extensive documentation by stakeholders and from the authorities as verified during the mission:

La Rábida refinery and expansion

Several oil refinery projects are located near the property, namely the expansion of the existing La Rábida refinery located to the west of the Doñana Natural Park at the Huelva industrial area. Two minor oil spills linked to La Rábida refinery were already reported by the State Party and included in the working document to the 34th session of the World Heritage Committee. They occurred on 30 July and 15 September 2009 and reached the property’s coastline. The mission notes that the La Rábida refinery is located outside the property’s boundaries and was built before the inclusion of Doñana National Park in the World Heritage List in 1994. The expansion project to increase the refinery’s production capacity has undergone an Environmental Impact Assessment (EIA), which was approved by the Spanish authorities in March 2009. The mission team met with a representative of the La Rábida refinery and CEPSA company and was briefed on the process of expansion and potential impacts. While direct impacts on the World Heritage values of Doñana and its integrity are unlikely, there is an increase of risks related to accidental oil spills. This was already shown by the accidental spills in 2009 indicated above.

The mission therefore discussed with the authorities and site management to regularly update risk preparedness plans and direct communication lines to be ready to address any potential pollution and threats to Doñana National Park and its surrounding areas impacting on flora and fauna of the site.

Recommendation 1:

The mission strongly recommends updating all risk preparedness and management plans in view of the expansion project and establishing direct communication lines in case of emergencies with the La Rabida refinery.

Pipeline construction project for the Balboa refinery in Extremadura

As noted by the World Heritage Committee at its 34th session a pipeline project for the Balboa refinery located in the Extremadura north of Andalusia, which is undergoing EIA processes. The Balboa pipeline could potentially affect the property in its section traversing the province of Huelva to the crude-oil and oil product storage terminal in the port of Palos de la Frontera. Originally the developer (Refinería Balboa-Grupo Alfonso Gallardo), suggested seven alternative routes for this crude-oil pipeline of which one could affect the World Heritage site. The final alternative pipeline routes will be analysed in more detail during the preparation of the EIA in order to identify the least environmentally damaging option. The mission did not receive any final EIA nor a conclusion by the authorities on the exact status of the project.

Recommendation 2:

The mission strongly recommends that the State Party refrains from choosing any alternative route which impacts on the World Heritage property or its surrounding designated areas. The Balboa pipeline could have both direct and indirect impacts on the property's values and integrity, and could constitute a direct and potential danger in accordance with the Operational Guidelines.

Road construction and future traffic projects

The mission was made aware by stakeholder presentations and submissions about road construction projects which may have impacts on traffic flows, noise and emission pollutions on the Doñana National Park. One project which is already under way concerns the bypass at El Rocio at the north-western boundary of the World Heritage site. The bypass is under construction and consists of a two lane road which for parts is a low "bridge" construction to allow for water and drainage into the park. The project is based on congestion situations especially during vacation time and summer weekends with high traffic density from Seville or Almonte to the Doñana Coast and the touristic zone of Mascalcanas. The small bypass will avoid the village of El Rocio.

Recommendation 3:

The mission noted the road construction underway for the El Rocio bypass and does not see major impacts on the World Heritage site. However the mission strongly recommends that the State Party does not encourage any enlargement of the road El Rocio – Coto Doñana/Matalascanas as this would create further disruption in ecosystem connectivity. The mission welcomed the wildlife bridge (especially created for the Lince which do not use tunnels) across the El Rocio-Matalascanas road close to the visitor centre El Acebuche.

Proposed mining projects

The mission was informed by a number of NGOs of mining projects further away from the World Heritage property (allegedly in the North East of Andalusia) and potential impacts on the values and integrity of both the natural and national parks of Doñana. The mission did not receive any documentation and confirmation from the State Party concerning this matter and was unable to verify such proposals. The mission recalls the 1998 mining disaster of the Aznalcollar mining pond and its impacts on the site despite the distance of 40km north of the property. The mission further notes the subsequent policy development including the 2003 Statement on World Heritage as no-go areas for mining presented by the International Council for Minerals and Metals (ICMM) and the WCPA statement on mining and protected areas welcomed by the World Heritage Committee.

Recommendation 4:

The mission recalled the 1998 mining accident, and the subsequent development of policies concerning mining and protected areas, especially of high value such as World Heritage. It further recalls the Decision of the 22nd session of the World Heritage Committee (Kyoto 1998), which stated that "the State Party is encouraged to take into account the WCPA Position Statement on mining activities and protected areas, which was reviewed by this Committee." The mission concluded that any mining activities with potential impacts on the World Heritage property, and the Guadalquivir River - constituting the eastern boundary - or its tributaries has to be avoided. The Committee should request the State Party to strictly adhere to best practice policies and to confirm that no mining projects with impacts on the World Heritage area are currently being considered.

5.2 Water issues and water quality

Since Doñana is basically a marsh, water has been and continues to be, despite important advances in its management, the most problematic topic in the management of the Doñana protected space. The management of water requires a holistic approach at the level of the entire watershed in order to ensure the good state of this protected space. This is easily said but is difficult to apply since to do so requires the harmonization of the ecological, social, agricultural, tourism, cultural and even religious aspects of an entire region which encompasses spaces with different types of protection, from the most restrictive to areas without legal protection. The hydrological system is highly complex since it combines superficial water and groundwater in a coastal region subject to particular biophysical characteristics and a precipitation regime that fluctuates within the year as well as years of changing hydrological cycles. On the other hand, the hydrological complexity of Doñana was ignored or underestimated in the agricultural and territorial development plans of the region, which caused significant and negative changes in the functioning of the marsh. It was only beginning in the 1980s that this issue was seriously addressed and only after the disaster of the Aznarcollar mine, in April 1998, that a serious hydrological restoration project, known as Project Doñana 2005, was launched, which is referred to in a section below.

5.2.1 Groundwater and irrigation

It must be highlighted that superficial water withdrawals in the Doñana area are of little relevance. However the use of groundwater is very significant.

The Doñana Aquifer, or Almonte-Marismas Aquifer or Unity (formerly known as Aquifer 27 and now designated as Aquifer 0551 in the section that corresponds to the Demarcation of the Guadalquivir River, which is the largest section, and to aquifer 0414 in the section that corresponds to the Tinto-Odiel-Piedras District in the continental section), is one of the more

significant, if not the largest coastal aquifer in Spain. This implies a high degree of complexity with regards to its functioning as well as its management.

Said management is further complicated if one takes into account that only part of the Doñana Aquifer is under protection. Furthermore, part of the areas of greatest recharge and best hydro geological conditions are outside the protected area. This means that activities that take place in the areas that are not protected and that can cause deterioration in the quantity and/or quality of the groundwater, will sooner or later negatively impact the areas that are protected (Custudio et al, 2009).

The almost total elimination of eucalyptus – some species of which behave as phreatophytes that is with roots that extract water directly from the water table – within the protected space of Doñana between 1995 and 2000 was a very positive measure to foster the recovery of the lagoons fed by the aquifer. However, eucalyptus plantations still exist outside the protected area.

The intensive extraction of groundwater for irrigation, tied to the fact that its practice is concentrated in certain sites, has caused important lowering of the groundwater table; the reduction of natural recharge and the substitution by artificial recharge; and locally, the inversion of the hydraulic gradient and of the direction of groundwater flow which fosters salt intrusion (Custido et al, 2009).

Furthermore, the intensive exploitation of groundwater has impacted ecosystems, very significantly in some places. Among these one can mention the reduction of water available for indigenous phreatophytes and for freshwater channels; the modification of the temporality of natural flood in many small wetlands; and changes in the salt balance in some of these wetlands.

The extraction of water to supply human settlements and tourism developments and for some conservation uses also has a negative effect on the depth of the water table.

The impact on groundwater quality resulting from anthropogenic activities (primarily due to the use of fertilizers and pesticides) is not yet well known. Nor do we have a good understanding of the changes in groundwater temperature due to changes in the temperature of the soil due to land use change.

It is estimated that there are approximately 2,000 ha of public land occupied by farmers. Of these more than 100 ha are in protected spaces and another 100 ha are in riparian areas.

It is important to also highlight that almost two thirds of the irrigation around Doñana does not possess water rights.

We must also remember that aquifers cannot be treated in a homogenous manner; to do so would mean that the Doñana aquifer would still permit the allocation of water concessions. This means that Doñana requires a *sui generis* process that does not focus on the purchase of water rights since this has proven to be a deceitful process.

Said process must be built on a realistic evaluation of the surface area under irrigation, based on cartography from the years 2004 and 2008, and on the basis that a hectare under irrigation requires 4,000 m³ of water per year for an acceptable yield.

For the control of water use for irrigation to be effective, the concessions must not be individual but rather on the basis of auto-regulating irrigation communities with a “global oversight irrigation board” for the whole aquifer.

The procedure for the use of groundwater must be equivalent to the use of surface water, depending on each hydrological year and ensuring that people adapt to the amount of water available.

It must also be taken into account that as long illegal extraction exists, which is due to a complex and historical situation; no one will help to control the emergence of other illegal extractions. It is therefore important to legalize all that can be legalized and that wells that cannot be brought into norm be closed.

Some sources indicate that there are currently about 1,300 ha of crops with illegal irrigation. On this topic, agricultural organizations consider that the illegal wells have been condoned, and even encouraged, by the administration. According to these organizations, these wells could be seen as “alegal” rather than “illegal” and that wells that cannot be legalized should be definitively ended.

The agricultural organizations also consider that the diversion of superficial water for irrigation could significantly reduce the pressure on the aquifer, but they are aware of the costs this implies and of the environmental impacts that should be taken into account.

In addition, the serious deterioration of the hydrological network resulting from agricultural colonization must be addressed and repaired (see the section on the Project Doñana 2005 below).

These and other longstanding problems surrounding the use of water around Doñana are being addressed in the *Plan Especial de Ordenación de las Zonas de Regadío, ubicadas al Norte de la Corona Forestal de Doñana* (Special Management Plan of the Irrigation Zones Located to the North of the Forest Crown of Doñana) know as the “Plan de la Corona Forestal” which was presented for public consultation on 21 January 2011.

The Plan is based on article 72 of the *Plan de Ordenación del Territorio del Ámbito de Doñana* (Doñana Territorial Management Plan, POTAD) of December 2003 which establishes: “the formulation of a Special Management Plan for the irrigated cropland zones with legal water rights in the area north of the forest crown is recommended...” However, the Government Council of the Junta de Andalucía did not approve the elaboration of the plan for the area north of the forest crown of Doñana, within the municipalities of Almonte, Bonares, Lucena del Puerto, Moguer and Rociana del Condado, until December 2007.

The drafting of the Plan was assigned to the *Consejería de Vivienda y Ordenación del Territorio* (Housing and Land Use Planning Department of the Junta de Andalucía) and a Follow-up Commission composed of another five branches of the Andalusian government with authority in the topic was established.

The Plan’s overarching goal is to “harmonize the development opportunities in this territory, in particular regarding agriculture and tourism, with the protection of the exceptional natural values of Doñana and the rational use of water”.

The map below shows the area covered by the Plan:

The Plan also contemplates an important component of habitat consolidation based on the land uses and forest cover that existed when the POTAD entered into force in 2004. To do so, it proposes to:

- a) Identify areas of land use and forest cover immersed in the territorial matrix that do not have a protection status and that should be conserved in the future, guaranteeing landscape and ecological diversity; and
- b) Identify areas of adequate habitat that could and should be integrated in the ecological connectivity system, consolidating the system and providing important support to dispersal movements.

With regards to water use and distribution, the Plan contemplates the following:

- a) The establishment of the available water volume based on: the availability of surface water, the allotment of the necessary environmental flows and the availability of groundwater;
- b) The determination of the flows necessary for crops with the application of the most rigorous criteria of efficiency and savings in consumption;
- c) The distribution of resources, according to availability, to farmers' groups. For this it will be necessary to strengthen existing irrigation community and create new ones where they don't exist; and
- d) The closure of wells that cannot be legalized or included in the reallocation and planning of extractions.

It is important to highlight that on the one hand the Plan seeks to act, in the short and medium term, in aspects such as the classification of soils; the constitution and strengthening of irrigation communities; actions regarding the system of ecological corridors; and well closures. In addition, it will establish the foundations that allow for medium and long term adjustments in elements such as land use planning, including the desirable relocation of some legal croplands that would foster improvements in the corridor system or a reduction in habitat fragmentation.

At the time of the joint UNESCO/Ramsar Mission, the Plan had finalized its Phase 2, of Environmental Sustainability Report, and was under public consultation (45 days starting on the 21st of January 2011). Still underway were Phase 3, which consists of the proposal of a Provisional Plan, which will include the report of the Council for Participation of the Doñana Natural Space and the report of the Follow-up Commission; and Phase 4 of final approval by the Government Council of the Junta de Andalucía, which should take place at the end of 2011.

Recommendation 5:

Regarding the *Plan Especial de Ordenación de las Zonas de Regadío, ubicadas al Norte de la Corona Forestal de Doñana* (Special Management Plan of the Irrigation Zones Located to the North of the Forest Crown of Doñana), the mission recommends:

- a) That every effort is made to produce the most consensus-based Plan possible, with the full participation of all the stakeholders, but without diluting the essential objectives of said Plan regarding the "protection of the exceptional natural values of Doñana and the rational use of water";
- b) That the Government Council of the Junta de Andalucía approve the Plan before 31 December 2011 so that its implementation would commence by 1 January 2012 at the latest; and
- c) That in the final version of the Plan and in its implementation the following aspects be given a high priority:

- The definitive definition of a maximum surface for irrigation within the Doñana region on the basis of the maximum recommendable extractions according to the current state of knowledge of the aquifer, taking into account the 'precautionary principle' and respecting the environmental flows of the entire watershed;
- The definition of an annual plan for groundwater extraction that includes the effective control of legal extraction and the elimination of illegal extraction;
- Restoration activities, in the framework of an extension of the Project Doñana 2005, that enable the recovery of surface water recharge of the aquifer;
- The relocation of agricultural properties located in areas of high value for ecosystems to less sensitive areas to enable the improved functioning of ecological corridors, the elimination of wells close to rivers and the elimination of isolated properties; and the creation, where necessary of new, functional ecological corridors.

The mission also met with representatives of local agricultural organizations and was informed by reports from NGOs that there are impacts from intense agriculture. A 2009 study by the Department of Biochemistry and Molecular Biology at the University of Cordoba noted contamination, which is difficult to evaluate. Agro-chemical contaminants affect, above all, areas situated between the Guadiamar Stream and the Guadalquivir River, sites of important rice cultivation.

Recommendation 6:

The mission, having considered impacts of intense agriculture in the region recommended to examine how such impacts can be mitigated and reduced in the future, including through the increase of organic agriculture in the surrounding areas of the World Heritage property.

5.2.2 State of the Guadalquivir River and dredging project

Some authors speak authoritatively of the Great Riverine-Coastal Ecosystem of Doñana (*Gran Ecosistema Fluvio-litoral de Doñana*, GED) as one of the complexes of greatest importance and ecological value of the European Union. The latter is located in the Lower Guadalquivir and is associated to, on the one hand the coastal plains and the dynamics of the Atlantic coastline and on the other to the mouth of the Guadalquivir River. Doñana is the best representative of the beach-dune-wetland-estuary system that characterized the entire Iberian Atlantic coastline (Montes et al, 1998).

Therefore, the Doñana system is intimately associated to the watercourses of the Lower Guadalquivir and the Brazo de la Torre. The action of the tides, in synergy with the flow regime of the Guadalquivir River, determine the ecological integrity of this unique ecosystem (Custodio et al, 2009).

It is thus obvious that the Doñana ecosystem is not at all disconnected from what occurs in the Guadalquivir River and its watershed, and even less so with regards to what takes place in the district of the Lower Guadalquivir.

The Mission took note that there exist a series of projects that could seriously impact the ecosystem of the Lower Guadalquivir. Among these is the project of the Port Authority of Seville of "Actions to improve the maritime access to the Port of Seville", which includes, among other, the dredging of the river to eight meters of depth, with the aim of enabling access to the port of Seville of ships with a freeboard length of up to 300 meters and a beam of 40 meters.

The Mission also noted that in June 2005 the Scientific Commission that was created to advise the implementation of the Doñana 2005 Project (see section below) was constituted as, per request of the then Board of Trustees of the Doñana National Park, in the “Scientific Commission for the Study of the Impacts of the Dredging of the Guadalquivir River”.

Said Commission and the Port Authority of Seville decided to request the preparation of a scientific study entitled: “Methodological Proposal to Diagnose and Forecast the Consequences of the Human Activities in the Estuary of the Guadalquivir”. The study would be carried out by the Superior Council of Scientific Research (*Consejo Superior de Investigaciones Científicas*, CSIC) which depends of the Ministry of Science and Innovation of Spain, and the Universities of Córdoba and Granada.

Said Study was public on 18 February 2011 and, regarding the general state of the River's last 110 kilometers, it reaches a series of alarming conclusions, including the following:

- a) The current flow of freshwater is at a minimum: about 60% less than 70 years ago and five times less than necessary;
- b) 85% of the spaces that were flooded by alternating tide cycles, the intertidal marshes, have disappeared;
- c) The salinity contributed by sea water is apparent up to 40 km upstream;
- d) The turbidity impedes the penetration of light necessary for the growth of phytoplankton (up to a depth between 20 and 40 times less than similar estuaries);
- e) Agricultural pollution is important;
- f) Carbon dioxide levels are very high and mean that the river is contributing CO₂ to the atmosphere; and
- g) High levels of toxins (Microcystis), which can cause fish die offs were detected.

The Report identifies the causes that have resulted in this situation, in particular the lack of fresh water, but also the agricultural occupation of the tidal plains and the increase in sediment load. It recommends that the integrated management of the river be urgently undertaken.

The report concludes that the consequences of the current management are “social tension, turbidity, toxicity, erosion, sand intrusion, reduction of the navigable channel, overexploitation of aquifers and chronic reduction of biological diversity and of fishery potential”.

On 12 November 2010, after analyzing the results and conclusions of the aforementioned scientific study, the Scientific Commission presented an Opinion to the Ministry of the Environment and Rural and Marine Affairs “with the aim that it consider it in the authorization procedure of the dredging and deepening of the Guadalquivir navigation channel and all the other matters it consider pertinent”.

In its Opinion, the Commission concludes that “the current situation requires a swift and coordinated intervention of the implicated administrations in the planning and management of the estuary, of the Guadalquivir estuary and of the coast, so as to revert the current tendency that leads to the collapse of the estuary and of the coast which depends on it, and therefore of the Doñana National Park, whose marshes form part of the estuary”; and that “the current knowledge of the estuary confirms that the deepening by dredging of the Guadalquivir is not the only project of concern of the future of the estuary, given that the modernization of rice fields, the urbanization and the construction of golf courses in the tidal plain or the embankments in Bonanza, would also have negative impacts and no positive effect for the estuary, Doñana and the Coast”.

Regarding the dredging, the Commission recommends that:

“1. The current maintenance dredging of the Guadalquivir navigational channel should be maintained, but at the same time its conditions of time, location and magnitude should be modified, advised by scientific knowledge, to avoid that the consequences of the dredging be masked by other factors in the estuary and to minimize its negative impacts.

2. The deepening dredging proposed in the project “Actions to improve the maritime access to the Port of Seville” is not recommendable in the current situation because of its negative repercussions on the dynamic, morphology and biodiversity of the estuary and therefore on Doñana, and because it does not ameliorate the situation in the face of external processes (turbidity and salinity) and because it severely limits the capacity of minimizing its duration and impacts.”

The Commission also recommended to the Ministry that if Port Authority of Seville maintains its will to carry out said dredging, a new environmental impact assessment be initiated³.

Recommendation 7:

With regards to the project for dredging the Guadalquivir River, the Mission recommends that:

a) The Ministry of the Environment and Rural and Marine Affairs paralyze the proceeding related to the project “Actions to improve the maritime access to the Port of Seville” of 1999, and therefore any work related to the latter, and that it definitively deny the authorization of the dredging of the Guadalquivir River contemplated in said project; and

b) That in case that the authorization is not denied, the aforementioned project be submitted to a new, rigorous and complete Environmental Impact Assessment, that takes into account the agreements and decisions of the former Board of Trustees of the Doñana National Park and the results of recent studies, including the scientific report entitled “Methodological Proposal to Diagnose and Forecast the Consequences of the Human Activities in the Estuary of the Guadalquivir” carried out by the Superior Council of Scientific Research (*Consejo Superior de Investigaciones Científicas*, CSIC) and the Universities of Córdoba and Granada.

Regarding the state of conservation and management of the Guadalquivir River, the Mission recommends that:

a) The management of the Guadalquivir River watershed be undertaken with an integrated approach, using the “ecosystem approach” promoted by the Convention on Biological Diversity;

b) That as part of this integrated approach a high priority be placed on the restoration of the river estuary; and

c) That for this, in line with the Framework Directive for Water of the European Union, a body be created to guarantee, in coordination with the management of the Doñana Natural Space, the preservation, maintenance and integrated management of the Guadalquivir River and its estuary, given the singularity of its geomorphology and landscape; its indisputable value for

³ In 2003 a positive Environmental Impact Assessment (EIA) was emitted for the project “Actions to improve the maritime access to the Port of Seville” (Resolution of the 26th of September, 2003 of the General Secretariat of Environment; BOE no 236, of the 2nd of October of 2003). However, the same Ministry has recognized that the information on the project was insufficient since the EIA lacks the necessary rigor. Furthermore, said EIA did not include nor consider the report emitted by the Board of Trustees of the Doñana National Park against the project, which, while not binding, should have been considered.

the conservation of biodiversity; its interest for fishery resources of the entire Andaluz Atlantic coastline; and its high agricultural productivity.

5.3 The Doñana 2005 Project⁴

Water management inside the Doñana National Park has been traditionally directed to the maintenance of a surface of water in the marsh. Other aquatic ecosystems such as wetlands of the MELAD marshland complex, the coastline, the estuary or the aquifer itself have always been secondary. For this, numerous actions that have modified the hydrographical network of the marsh and its hydrological regime have been carried out.

According to Bayán (2005), the first interventions date back to the XVIIIth century, followed by the straightening of several meanders throughout the XIXth century with the objective of shortening the time to navigate to the port of Seville by the ships that travelled the river.

These actions led to the loss of function of the *Brazo de la Torre* that was disconnected from the Guadalquivir River. However, it was not until the second half of the XXth century when important transformations in the hydrological functioning of the marsh are carried out with the channeling of the Guadiamar River and the Cigüeña Creek through the construction of multiple embankment walls, behind which significant areas of the marsh were converted to rice cultivation, especially along the left bank.

After this, in the 1980s, a new project is initiated with the objective of returning the marsh's original hydrological functionality. A series of actions are carried out such as that known as the *Montaña del Río* (mountain of the river) and those known as the Center-North Solution, the Center-South Solution and the South Solution⁵. These turned out to be a failure due basically to the lack of scientific knowledge of the marsh at the time they were designed.

Following the incident of April 1998 of the barge containing pyritic tailings from the Aznalcóllar mine and the environmental disaster caused by the flood of toxic sediment, the Doñana National Park Board meets in an extraordinary emergency session and decides to take to several petitions to the Council of Ministers. Among these are the need to evaluate the situation resulting from the disaster and the perspectives for the establishment of a hydrological regeneration plan for the Doñana marsh.

The response from the Minister of Environment is immediate and establishes a series of urgent measures related to the mining accident. Among these was the development of a "Hydrological regeneration plan of the watersheds and waterways feeding into the marshes of the Doñana National Park" which will come to be known as the **Doñana 2005 Project**.

Initially, the project worked with various provisional documents which, after the 1st *International Meeting on the Hydrological Regeneration of Wetlands* which took place in Huelva in 1999, ended up being specified and defined in the *Framework Document for the*

⁴ Some parts of this section have been taken from the document entitled: *Los resultados del Proyecto Doñana 2005 a la luz de los acuerdos multilaterales sobre el medio ambiente (AMMA) (The results of the Doñana 2005 Project in light of the multilateral environmental agreements (MEAs))*. Delmar Blasco, con la colaboración de César Borja Barrera y Guido Schmidt, noviembre de 2007, since the Mission agrees with the analysis made in most parts of that document.

⁵ See García Novo y Marín (2005). *Agua y Biosfera*, page 291 and MMA (2001): *Documento marco para el desarrollo del Proyecto Doñana 2005*, page 15.

Development of the Doñana 2005 Project, published in 2001. The subtitle of the document reads *Hidrolological Regeneration of the Watersheds and Waterways Feeding the Marshes of the Doñana national Park*.

The goals specified in this Framework Document consist of:

- Attaining the restoration of the water flows to the marsh with the quantity and quality to reestablish the traditional function of the marsh, while at the same time recovering the function of the rivers, streams and creeks that flow into the marsh.
- Maintain the permeability between the marsh and Guadalquivir River estuary.
- Establish a follow-up and control plan as well as implement a research plan and a line for outreach and communications.
- Temporarily avoid the entry of contaminated waters from the Guadimar River into the marsh.
- Integration with the Junta de Andalucía's Green Corridor project and other projects and development activities.

The implementation of the Project falls on the figure of General Coordinator designated by the Minister of Environment, who will later be advised by a Scientific Committee composed of a number of professionals of recognized prestige.

The project is executed through the implementation of eleven actions that are organized as individual worksheets for which a project of works and an initial execution calendar is designed, initially for the eight first.

The actions initially designed experienced a different evolution. Most of them were completed as planned; others incurred important modifications resulting from new studies and data, and others are pending execution.

With regards to research, the Project organizational chart treats it as an additional action (no. 10) whose overarching goal is to "allow the actions of the Doñana 2005 Project to contribute to a better scientific understanding of the National Park and to make possible a scientific evaluation of the entire Plan".

This consists therefore, of research that is carried out after the execution of the works corresponding to the actions and not, as would have been desirable, of a priori research which provides scientific coverage to the design of the works.

In any case, the Research Program corresponding to Action 10 includes a total of 17 primary lines of work which can be grouped into four broad thematic areas: pollution (3); environmental and functional characterization (3); water (5); flora and fauna (6).

Of the five research lines directly related to water, four are centered on the analysis of superficial waters (3 in the *arroyo del Partido* and one in the marsh) and one on groundwater.

The Doñana 2005 Project has entailed an important effort on the part of the competent authorities to revert the long process of the denaturalization of the function of the marsh. With its successes and errors, it can be stated that, more than a decade after the beginning of the works, the Doñana marsh has recovered part of its natural dynamic.

The very title of the project, *Hydrological regeneration plan of the watersheds and waterways feeding into the marshes of the Doñana National Park*, is evidence of a contradiction between the goal stated in the latter (take action in the tributary watersheds) and the ensuing actions planned which only proposed interventions in two of them (Sotos and Partido), ignoring the rest.

On the other hand, it was a “hydrocentric” Project, exclusively oriented to the restoration of hydrological functions without addressing the ecological functions of the wetland as a whole or its relationship with the rest of the ecosystems and sociosystems with which it is interrelated.

The Doñana 2005 Project began steeped in a strong *engineering* character that considered each of the actions defined as an engineering work independent from the rest in which the construction aspects overrode the ecological. In the initial moments there was no global vision or a defined philosophy unifying the actions.

However, with the passage of time and thanks to the observations received and the evaluation of the results, the Project was considerably transformed. It came to be a much more integral project in which the actions have been redesigned and reoriented based on the definition of ecological criteria, within the limits imposed by administrative procedures. The role of the Scientific Commission in this process has been decisive. The recommendations of the Commission have molded and adapted the different actions, especially in the last phases of the Project.

The actions of the Project were concentrated on the marsh. Other important ecosystems in Doñana such as the bog complex, the estuary, the coastline and the aquifer were completely ignored. In the beginning there was also a complete disconnect between the Doñana 2005 Project and the other large restoration project that emerged as consequence of the Aznalcóllar disaster: the Guadiamar Green Corridor promoted by the *Junta de Andalucía*.

The Coordination of the 2005 Doñana Project and the administrations involved in the latter draw a positive balance which includes the following highlights:

- a) **310 ha** in los Sotos area have been recovered and integrated into the National Park by restoring the hydrological regime (Action no. 1);
- b) The hamlet of El Rocío has been equipped with a Residual Water Treatment Plan which provides treatment in line with the conservation of Doñana, even during periods of maximum flow in the Romería (Action no. 2);
- c) Contributions to stabilizing the processes of erosion and sediment deposition of the Arroyo del Partido have been made, establishing the framework for actions in the rest of the watershed;
- d) **1,800 ha** of the Gallega Marsh located in the National Park have been regenerated and recovered (Action no. 4).
- e) **2,890 ha** of marsh under agricultural use (Caracoles) has been acquired and incorporated into the National Park. Agricultural uses in this area have been eliminated and a large environmental regeneration project has been developed which will be completed with the arrival of water from Entremuros (Action no 6).
- f) The level of understanding of the entire territory of the project has considerably improved (Actions no. 9 and 10) and contributed in a relevant manner to a better naturalization of the wet areas of Doñana; and
- g) The knowledge necessary to address the actions derived from Action no. 7 and proposed other complementary actions are now available.

Other analysis, almost all of whom also recognize the positive results of the Doñana 2005 Project, consider that the actions carried out have had diverse results, from those that have fully achieved the goals for which they were designed to those that have not produced the expected results.

With regards to Action no. 1 (Restoration of the streams Soto Chicho and Soto Grande and the stream of Laguna de los Reyes), some consider that the design and execution was not based on prior studies that support the solution adopted. The latter has not proved to be useful since the existing relationships between the streams and the watershed, their primary source, was not considered.

The implementation of the project has not yet concluded. In the long execution process, actions have been dismissed, such as no. 5 (recovery of the Caño Guadiamar). Other actions have been reoriented and combined (actions no. 6 and 7); others will be implemented once the relevant research projects which gives them scientific coverage have been developed, such as action no. 3 (Arroyo del Partido watershed upstream of the Casa de la Matanza).

External analysts recognize that despite these problems another important achievement of the Doñana 2005 Project was the physical and ecological connection, once the political disputes between the different administrations were overcome, of the Doñana National Park and the Guadiamar Green Corridor promoted by the Junta de Andalucía.

Scientific research (Action 10 of the Projects) consists of research projects which, in addition to its *a posteriori* nature, as mentioned above, are coordinated by members of the Scientific Commission. The researchers thus become both "judge and jury", since the results of the research are supervised by the selfsame Commission.

There is agreement that the Project Scientific Commission has carried out an important role. The recommendations made by this consultative body have modulated the different actions, smoothing over their engineering character and giving them a general conceptual framework whose overriding aspiration is to supply the marsh with the maximum level of naturalness in its function.

As is the case of many other works executed in Doñana, the works of the Doñana 2005 Project may be arriving late in the context of the evolution of ideas. The conceptual and methodological framework under which the Doñana 2005 Project was designed is dated since it does not respond to orientations and lines of thought currently agreed upon regarding conservation, restoration and environmental management.

Upon reviewing the actions of the Doñana 2005 Project one can detect the presence of some aspects that have not received the due attention or that have simply been ignored.

It would appear to be very important that the authority (the Department of Environment of the Junta de Andalucía) with competence over areas of the "Doñana protected space" seriously consider the possibility of developing a project for the restoration and integrated management of this space for another fifteen years.

This time, a project of this nature should take into account the concepts and approaches that have received the support of the international community in recent years, such as, among others:

- a) The requirements of the Framework Directed on Water and the Habitats Directive of the EU; the guidelines of the Convention on Biological Diversity (CBD) on biological diversity of continental waters; and the guidelines of the Ramsar Convention on the allocation of hydrological resources and water management in wetlands.
- b) The implementation of the ecosystem approach promoted by the CBD and the actions established in the CBD's Programme of work on protected areas (POWPA);
- c) The guidelines of the Ramsar Convention and the CBD on integrated management, participation of interested groups and equitable participation in the benefits;

- d) The guidelines of the different international instruments on risk prevention and management (including aspects related to mitigation and adaptation to climate change);
- e) The conclusions of the Millennium Ecosystem Assessment; and
- f) At the national level, the National Plan for Restoration of Rivers and Banks.

In the first place, and taking into account the recommendations of international agreements related to the restoration of ecosystems, it is worth taking into account the guidelines related to the definition of goals:

a) analyze the repercussions of the conservation goals adopted on the different ecosystems and environmental services of the space, including their repercussions on all those directly interested in the protected space and its surroundings; and

b) develop different “**future scenarios**” for Doñana that project the repercussion of the decisions that are currently being taken on the conservation goals and environmental services in the medium and long term (50 years, for example).

To summarize, the establishment of goals at short, medium and long term should be an obligatory prior step to the development of new restoration projects.

With regards to water management, if the aquifer’s levels are not recovered in quantity and quality in the short term the ecological characteristics present only a few decades ago will not be recovered. The rate of extractions taking place today are totally unsustainable and do not permit the maintenance of the traditional ecosystems of Doñana. At the same time the extractions seriously compromise the levels of development and economic growth of the local population. The *Corona Forestal* Plan could have a significant impact on this, as long as the latter is implemented in an effective and rapid manner.

It is also necessary to carry out the necessary research to characterize the quality of ground water and establish the mechanisms for the control and monitoring of these characteristics that enable the definition of appropriate early alert mechanisms.

For this it will be necessary to implant a management model of the aquifer that allows to predict its evolution and whose conclusions will determine the collection of actions to realize. These could include water transfers, new focus in the treatment and use of residual waters and, in particular, a modernization of the agricultural sector that will inevitably have to opt for a limit to growth and introduction, increasingly, of new technologies in their productive systems.

The use of water cannot take place in isolation from territorial processes. The management of land use and water in the watershed that feed into Doñana becomes one of the fundamental issues. The hydrological watershed and the aquifer integrate the hidrosystem of reference, that is, the basic framework of the management of the socio-ecosystem.

The “Doñana protected space” complex urgently requires an integral risk evaluation that identifies the types of current and potential changes that the space is subject to and the causes of these changes. Special emphasis should be placed on early alert systems, as pointed out in 2005 by the Council of Europe. In this sense a “registry of risk” for Doñana should be established, including probability and magnitude of its effects.

It would be highly recommendable that the risk analysis be extended to the environmental services that the ecosystems of Doñana are providing to the directly interested parties and to society in general, with proposals for establishing alliances for risk prevention.

With regards to climate change, given its importance, Doñana should develop and apply as soon as possible, strategies to mitigate its effects and to favor the adaptation of the natural, socioeconomic and cultural systems to the change. The adaptation strategies should include the corresponding strategies, taking into account some of the basic measures that have been put in place, such as the restoration of ecosystems and corridors as promoted by the Doñana 2005 Project.

Faced with the medium and long term perspective of a climate change scenario, it is necessary to plan actions to reduce the vulnerability of a highly exposed resource such as water. It is necessary that the actions that are designed take into account the changes in environmental conditions foreseen for the coming decades.

Despite the path opened with the reports on climate change in Doñana, the importance of the new scenario that looms in the short and medium term in its territory requires that this research line be strengthened with the human and material resources necessary to minimize the possible impacts of this threat. The final goal of this research should be the reduction of the territorial vulnerability and the strengthening of Doñana's adaptation capacities.

For this, in addition to research, it is necessary to strengthen education and training for change, as a strategy that allows for greater adaptability in the face of this new scenario.

Climate change should be approached as a crosscutting action line (interdisciplinary) within the process of territorial planning, such that all the action lines that are implemented take into account the new conditions that will be imposed in the short and medium term by climatic conditions different to those currently occurring.

The establishment of mitigation and adaptation/minimization measures specific to Doñana should also be envisioned. Regarding the first, a specific recommendation can be made for the conservation and restoration, as much as possible, of the existing peat bog environments in the Doñana area (such as Laguna de las Madres and Ribatehilos). Peat bog ecosystems sequester carbon, and in this manner, reduce the concentrations of this element in the atmosphere.

Regarding the implementation of adaptation/minimization measures in the face of climate change it is worth citing the work of WWF/Adena (Fernández and Borja, 2006) until other studies are available. Especially taking into account that when this report was presented to the Environmental Councilor (Minister) of the Junta de Andalucía in 2006, the Councilor expressed her "total agreement" with the measures proposed in said report (Correo de Andalucía, 03.02.06, p. 33).

It is very important that any continuation of the Doñana 2005 Project identify and monitor the environmental services of the ecosystems that have been or will be impacted and that communication and transparent awareness building be carried out with those directly interested and with society in general.

A new restoration timeframe based on an ecosystem approach and the principles of the National Plan for the Restoration of Rivers and Banks should establish the basis for future projects to be true "participatory initiatives" or co-management initiatives with the capacity to unite different parties around them.

A practical translation of the guiding principles of the ecosystem approach fostered by international agreements recommends the application of participation in different steps, many of which would also be useful for a better management of Doñana and an improvement in the restoration projects.

Recommendation 8:

The Mission recommends that the Doñana 2005 Project be completed as soon as possible, with the reactivation and input of the Scientific Commission, based on the following actions recommended by the Coordination of the Doñana 2005 Project and the administrations involved:

1. Execution of the second phase of the restoration of the Arroyo del Partido (from the Matanza northward);
2. Recovery and restoration of the Rocío marsh;
3. Restoration of the vegetation of the streams and banks of the Comarca de Doñana;
4. Restoration of the northern stretch of the Caño Guadiamar (from the Caño del Pescador to Veta Hornito);
5. Study of the situation of the streams and banks that feed into the marsh and demarcation of the public domains, ecological state of the banks, restoration proposals and actions to avoid erosion;
6. Expropriation of private properties of the Caño Guadiamar; and
7. Acquisition of the properties Garrido and Cerrado Garrido (1,400 ha) and restoration of the expanse with the aim of connecting the Caño Guadiamar with the El Lobo and Caracoles zone.

The Mission recommends that to give continuity and complete the positive results of the Doñana 2005 Project, a *Doñana 2013-2027 Project for the Integral Restoration of the Hydrosystem within the Context of its Socio-Ecosystem* be developed starting immediately and be approved before the 31st of December 2012. The project should be based on an ecosystem approach and on the state-of-the-art scientific knowledge and ecosystem restoration practices, including the application of the precautionary principle⁶.

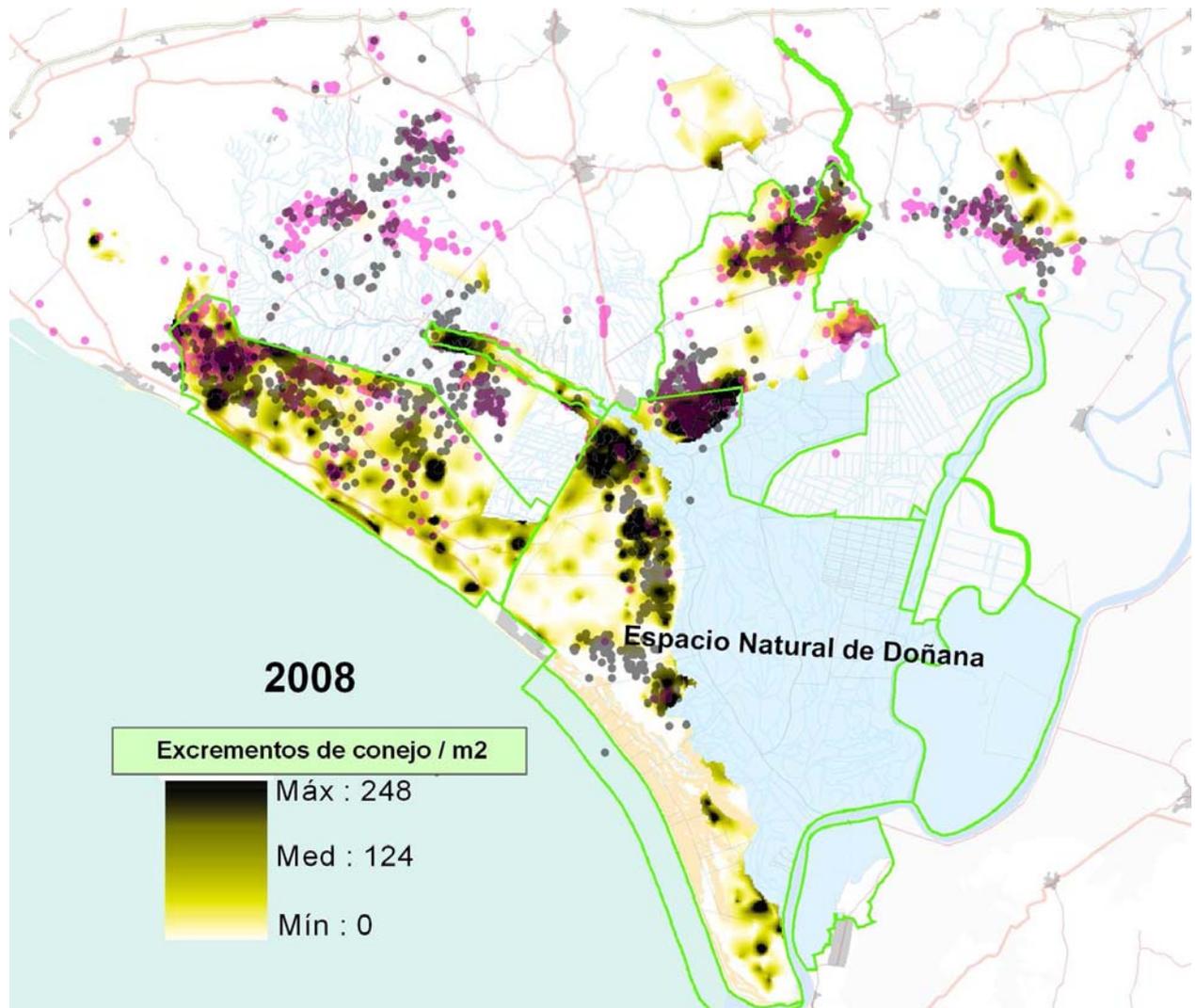
5.4 Conservation of the habitat and ecosystems of Doñana

5.4.1 Conservation of the Iberian Lynx: development of population and threats

Since the time of the inscription of this property in the World Heritage List a recurrent issue of concern is the conservation of the Iberian Lynx, Europe's most threatened cat species. There is a comprehensive conservation programme in place that not only cover the conservation of the Lynx population within the World Heritage property but in other key populations across the Andalucía region. As part of this programme there has been considerable progress in the implementation of a captive breeding programme, financially supported by the regional government and an EC/LIFE project that has been extremely successful. The efforts of the State Party towards the conservation of this specie have been recognized by the World Heritage Committee at its 26th session (Budapest, Hungary, 2002) and lately (2010) by the Council of Europe through the renewal of the European Diploma for Doñana National Park. However a number of NGOs have reported that wild lynxes are experiencing high mortality rates due to road kill, which has caused 24 of the 57 lynx deaths in Doñana in the last 10 years.

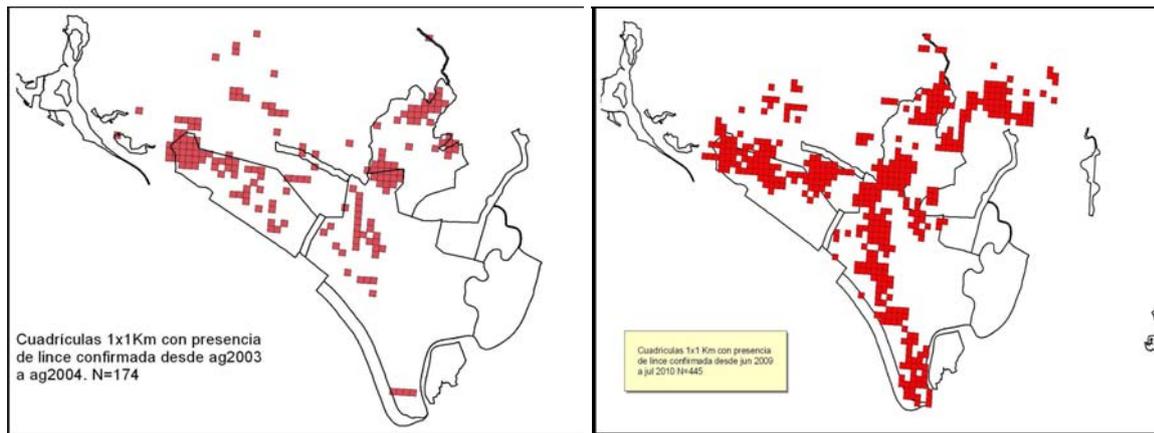
⁶ Rio Declaration, United Nations Summit on Environment and Development (Earth Summit, Río de Janeiro, 1992): PRINCIPLE 15 - In order to protect the environment, the precautionary approach shall be widely applied by States according to their capabilities. Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation

To fully understand this situation it is important to consider that the reduction in the population of the lynx has been mainly motivated by the decrease in its main source of food; the wild rabbit which constitute 90% of its diet, affected since 1959 by a number of diseases that reduced over the years the population of rabbits by 90%. Therefore Doñana National Park has given high priority to implement a series of projects aiming mainly to restore the habitats used by the rabbit as well as reintroducing this specie to increase its population. As a result the rabbit's population have been steadily increasing within and outside the National Park (see Map 2 below). The lynxes have therefore exploring other areas outside the park for feeding and it is in such cases that accidental road kills have occurred. In other words this can be seen as the result of the success of the conservation programme of this specie.



Map 2 – Presence of lynx associated to the density of population of rabbit.

On the other hand the population of lynx is not only limited to a single population but it is a meta-population with several nucleuses with locations that are not confined to the National Park and with movements of individuals occurring between them. The conservation programme implemented by the National Park includes all the areas, within the park and its surroundings including under private ownership, with reported presence of lynx. Ongoing monitoring on the presence of lynx shows that the areas occupied by them has increased by 156%, from 174km² in 2004 to 445 km² in 2010.



Map 3 – Comparison of grids (1x1 km) with presence of lynx between 2004 and 2010

The monitoring reports also show an increment of 66% in the overall population of this specie, from a total of 44 individuals in 2004 to 73 individuals reported in 2010; this increment has been maintained at 46% in the last 3 years (2008-2010) which could be interpreted as a net recovery from the critical situation facing this specie in the past.

Notwithstanding the excellent progress and success of the conservation programme for the lynx a number of NGOs noted serious concerns on the fact that accidental road killings of this specie continues to occur which is linked to the extensive network of roads that exist in the surroundings of the park and its increasing use mainly by the agricultural sector and by people that use these roads to get into urban areas of second residency. In this regard the park has started a plan for reassessing and reorganizing the existing access and roads. This plan forms part of the implementation of the Plan for Territorial Planning and Management of Doñana (POTAD in Spanish) and it will propose a number of options to avoid or minimize accidental road killings. In the meantime the regional government working with the park authority have taken a number of technical measures to reduce the speed of vehicles in certain sections of roads and is building passages and corridors over some of the existing roads to facilitate movement of lynxes.

Recommendation 9:

The mission acknowledges the excellent progress achieved in the programme for the conservation of the Iberian Lynx.

The mission recommends requesting the National Park authority and the Regional Government to give high priority to develop and effectively implement the proposed plan for reassessing and reorganizing the existing access routes and roads in Doñana and its area of influence.

5.4.2 Landscape connectivity and ecological corridors

First of all it is important to note that Doñana National Park and World Heritage property, which covers an area of 54,251.7ha, is not an isolated territory. Over the years important efforts have been implemented to expand conservation and management activities to a wider area around the property. In 1989 the Natural Park of Doñana was established by the Law 2/1989 and it was further expanded in 2004 and 2005 to reach an extension of 56,000ha that integrates four territories, not connected among them, located around the national park. The creation of the Natural Park was a major step in enhancing the integrity of

the World Heritage property; however these areas were not yet managed in an integrated way. The Royal Decree 712/2006, by which the Central Administration transferred the competence for managing Doñana National Park to the Autonomous Community of Andalucía, provided the legal framework to integrate the conservation and management of both the National Park and the Natural Park as a single territorial unit.

Moreover the areas under different socio-economic uses outside both the National and the Natural Park are subject of planning and management regulations, as defined by the Plan for Territorial Planning and Management of the Space of Doñana, to ensure that their use do not impact on the natural values and ecosystems. These regulations are related to agricultural and forestry practices, tourism urban development and roads. Remnant forest areas associated to rivers and streams are also protected and managed as biological corridors. In addition the hydrological restoration activities implemented under the Doñana 2005 project have restored natural linkages across the landscape. Overall there is a comprehensive system to maintain ecological connectivity.

In spite of the existing comprehensive territorial planning the key concerns from NGOs relate to uses outside the key conservation areas (the National and Natural Park) and in particular the problems associated to water uses as discussed above. There is general concern that the park authority does not have enough mandate and capacity to deal with agricultural and forestry issues and that greater control and enforcement is needed from the local and regional governments to ensure the effective implementation of the territorial planning and management plan.

Recommendation 10:

The mission strongly recommends the local and regional government to define ways and means to ensure the effective implementation of the territorial planning and management plan and to use it as the basis for enhancing and developing ecosystem connectivity through biological corridors and other effective means.

5.4.3 Linkages between the different designations natural and national park: World Heritage property, Ramsar site and UNESCO Biosphere Reserve

Doñana National Park was declared by the Decree 2412 of 1969 and it was the area inscribed under the World Heritage List in 1995; the World Heritage property was extended in 2005 to include the areas of West Triangle, the Flood the Partido and the Caracoles Land totalling 3.641,7 ha. The National Park was established in 1980 as a Biosphere Reserve under the UNESCO/MAB Programme; the boundaries of the Biosphere Reserve are in the process to be reviewed and will be expanded to include not only areas dedicated to conservation but also those under different socio-economic activities. In 1982 the National Park was included in the List of Wetlands of International Importance under the Ramsar Convention and in 2005 the Ramsar site was extended to include the Natural Park. In addition on September 1985 the Council of Europe granted to the National Park the European Diploma for Protected Area Management that has been renewed in 1990, 1995, 2000 and 2010. Further, in 1988, the National Park is declared a “Special Zone for the Protection of Birds” under the EC Habitat Directive 79/409, which implies that it is also part of the Natura 2000 Network established by the EC Habitat Directive 92/43.

The management plan for Doñana National Park was approved in 2004 and it will be updated in 2011 whilst the management plan for Doñana Natural Park was approved in 2005. In practical terms both management plans are implemented in a complementary way by the National Park technical team which also contribute to integrate these management activities in the context of the Territorial Management Plan.

Whilst the superposition of different designations and management regimes is an advantage for maintaining the integrity of the National Park and World Heritage property it has been perceived in a negative way by some NGOs that argue that the National Park does not receive enough attention. This is accentuated by the fact that most communications on this area refers to the “Space Doñana” used to encapsulate all these areas.

Recommendation 11:

The mission recommends that the revision of the management plan for Doñana National Park should carefully consider and include the key conservation, management and integrity requirements to maintain the Outstanding Universal Value (OUV) for which the park was inscribed in the World Heritage List and should explore: (a) options for expanding the property to other areas of potential OUV including marine areas and (b) a communication strategy that highlight and clearly communicate the OUV of this property.

5.4.4 Scientific programmes

The Doñana Biological Station (DBS) is the key institution implementing scientific programmes in the national park and its surroundings. The history of DBS is closely linked to that of the National Park as in 1963 the government of Spain and WWF bought part of this territory to create the first reserve in Doñana and soon after, in 1964, the DBS was created. Decree 2412 of 1969 by which the National Park was created established in its article 7 a clear link between DBS and the park whilst maintaining the independent character of the DBS. This is an important figure of DBS as it allows looking at the park and its resources in an objective way.

DBS is a public Research Institute belonging to the Spanish Council for Scientific Research CSIC in the area of Natural Resources. Its mission is *to carry out multidisciplinary research of the highest standard directed to understanding, from an evolutionary viewpoint, the way in which biodiversity is generated, maintained and how it deteriorates, as well as the consequences of its loss and the possibilities of its conservation and restoration.* It is also a key objective of DBS to promote the transfer of this knowledge to society. Currently DBS implement the following research programmes:

Plant-animal interactions

Evolutionary and Molecular Ecology

- Evolutionary Biology
- Molecular Ecology and Evolutionary Genetics

Conservation Biology and Global Change

- Conservation Biology and Global Change
- Biological Invasions

Ecological Synthesis and Wetland Ecology

In recent years the existing research programme has changed its priorities from species issues to ecosystems conservation and management. The implementation of research programmes fully considers the data and information needed to enhance the management of the park and it is considered that the application of results from research to management has improved substantially. DBS receives an annual funding of EURO 8M from different sources to support implementation of its research programmes.

During the monitoring mission the mission team met with the Director and a number of experts from the DBS. During this meeting it was noted, that according to the results of scientific research conducted in the National Park, the status of the conservation of natural resources in the park is probably one of the best in many years whilst noting that most threats are coming from outside and are mainly associated to the use of water for

agriculture. It was also noted that the capacity of the wetlands to support resident and migratory species of birds has significantly increased as a result of the hydrological restoration projects that are under implementation. Also on the positive side it was noted that invasive alien species affecting areas outside the park have not been able to colonize areas within the park; however DBS and the National Park have a joint programme in place to monitor and control invasive species.

DBS is also conducting studies on climate change and whilst there are no significant variation in the temperature and precipitation regimes the main threat is associated to the risk of increased salinization of the wetlands due to the predicted sea level raise and the impacts resulting from the proposed dredging of the Guadalquivir River. If increased salinization changes the freshwater character of Doñana's wetlands, this will negatively affect the capacity of these ecosystems for maintaining important populations of migratory and resident bird species that depends on these ecosystems for their survival. DBS is also involved in developing local climate change models and there is a comprehensive monitoring programme in place to inform the development of such models as well as to monitor the status of species and ecosystems.

5.5. Coastal and marine areas

5.5.1 Pollution risks, increase of maritime traffic and risk preparedness:

The national park, with its 32 kilometres of beaches, is highly exposed to be impacted by pollution and oil spills from La Rábida refinery and from accidental oil spills from tankers or other vessels crossing the marine areas associated to the park. In the summer of 2009 the vessel "SFC Caucasus" that was operating in the waters associated to la Rábida refinery produced an oil spill that reached the beaches of Doñana. However the rapid intervention of the park's staff controlled the spill and cleaned-up the areas affected.

The risk of oil spills is significant when considering that, according to data from the Ministry of the Environment, Rural and Marine affairs, Andalucía is the autonomous community with higher number of oil spills due to its proximity to the Strait of Gibraltar. This risk would significantly increase with the forthcoming operations of a second mono-buoy for the discharge of hydrocarbons from tankers to feed the expanded capacity of La Rábida refinery. Risks will further increase in the case of an eventual approval of the proposed Balboa pipeline linked to the refinery of Extremadura with a discharge area also associated to the marine areas surrounding the park. Apart from the risks of oil spills from the operations associated to La Rábida refinery there is also the risk of accidents from increased maritime traffic particularly of tankers. The mission team was informed that an study is under implementation to objectively assess the risk of maritime traffic.

Based on this experience as well as on the positive results of the park's fire control and management plan an emergency plan –the so-called *Auto-protection Plan for Doñana and other areas of the Natura 2000 Network*- was prepared in 2010 to deal with oil spills. This plan includes a risk assessment and a mapping of areas where oil spills may be reaching the coast as to facilitate rapid interventions. All staff of the park will be trained to ensure the effective implementation of this plan. It is expected that in 2011 the regional government will allocate the financial resources required to acquire the specialized equipment necessary to act in the case of oil spills.

Recommendation 12:

The mission strongly recommends updating all risk preparedness and management plans in view of the expansion project and having direct communication lines in case of emergencies with the La Rabida refinery.

The mission strongly recommends that the State Party refrains from choosing any alternative route which impacts on the World Heritage property or its surrounding designated areas. The Balboa pipeline could have both direct and indirect impacts on the property's values and integrity, and could constitute a direct and potential danger in accordance with the Operational Guidelines.

The mission recommends that the resources required for the effective implementation of the *Auto-protection Plan for Doñana and other areas of the Natura 2000 Network*, including for training and acquiring the specialized equipment required, are granted as a matter of urgency and, if feasible, in 2011.

5.5.2 Status of the Estuary of the Guadalquivir

In addition to the risks associated to oil spills the marine areas of the park and the wetlands associated to it could be heavily impacted in the event of approving the project for the dredging of the Guadalquivir River. A recent study conducted by the post authority and the Higher Council for Scientific Research on the proposed dredging of the river noted that the environmental quality of the Guadalquivir estuary is already of concern as it have been affected over time by the activities (agriculture, fisheries, traffic of vessels and pollution from land-based sources). This study noted that most of the activities proposed by the dredging project will directly or indirectly negatively affect the estuary dynamic, morphology and biodiversity. It is thus proposed that the estuary requires an integrated management of its natural resources and its areas of influence as to increase its environmental quality before proceeding to implement any project that could further impact on it.

5.5.3 Potential marine extension (national and international level)

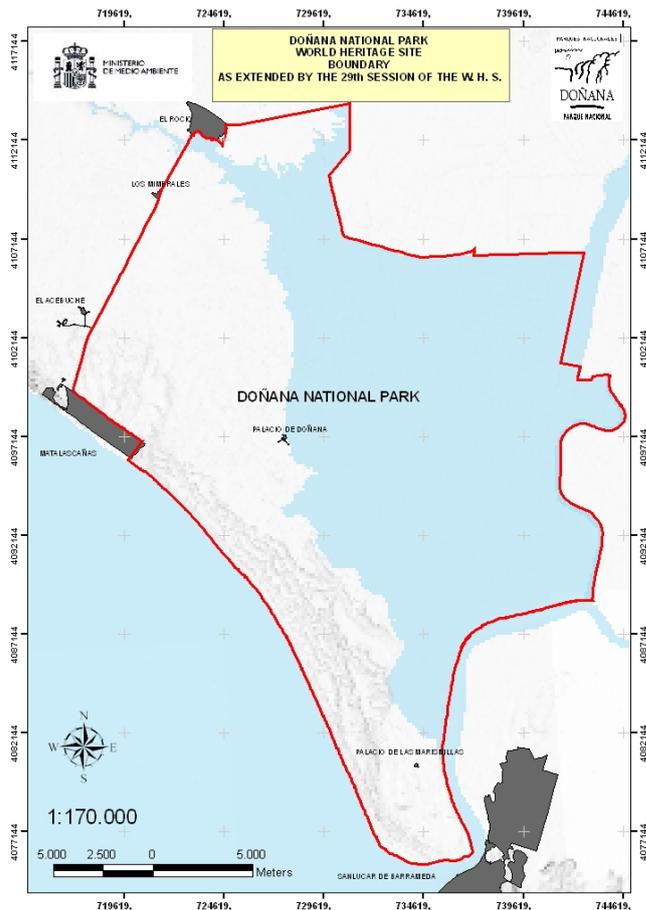
The National Park is closely linked to the marine environment of the Gulf of Cadiz and in particular with the estuary of the Guadalquivir River. Due to its geographical location the Gulf of Cadiz is influenced by Atlantic and Mediterranean currents and a wind system that generates an area of upwelling which determine the high primary productivity and biodiversity of the Gulf. This high marine productivity, with have been the base over many years of the fisheries taking place in the area, is also essential for the survival of a number of migratory and birds species. Considering the importance of protecting the marine environment associated to the park a number of institutions, mainly OCEANA and WWF, have proposed the need to establish a large marine area to extend the boundaries of the park into the marine environment. The park authority has also noted to the mission team its interest in expanding the marine protection of the park which could also lead to better enforcement of illegal fishing and maritime traffic regulations. However the proposals from OCEANA and WWF on the proposed Marine Protected Area differs greatly in scope including on the proposed boundaries thus requiring joint work to prepare a consolidated proposal.

Recommendation 13:

The mission recommends that the different institutions involved in the initiative for establishing and managing a large Marine Protected Area (MPA) associated to the park prepare a consolidated proposal and further propose it for approval by the Ministry of Environment, Rural and Marine Affairs. Once this MPA is established the State Party may wish to consider the possibility, to expand the World Heritage property to include this MPA.

5.6. Boundaries and buffer zones

The World Heritage property as inscribed by the 18th session of the World Heritage Committee in 1994 covered an area of 507 200 ha. No buffer zone was indicated; however the surrounding natural park fulfilled this function. IUCN noted that “the prospect of adding appropriate additional areas of natural parks in the future years would improve the property.” In 2005 the World Heritage Committee at its 29th session approved an extension of 3541.7 ha an increase of 6.95 % to a total of 54251.7 ha for the World Heritage property.



Map 4: The boundaries of the World Heritage property following the extension approved in 2005

It should be noted that the boundaries of the National Park and of the World Heritage site are not exactly the same and that not all staff of the National Park is aware of the different boundaries and designations (see also section on Governance and management and section on Linkages between the different designations).

Recommendation 14:

The mission welcomes the 2005 extension of the World Heritage property which made the boundaries more consistent. Concerning future extensions the authorities need to carefully evaluate the values of these areas and whether they are of outstanding universal value and

integrity as required under the World Heritage Convention. Concerning the marine area, the mission noted that the coastal zone of Doñana has a very high number of marine species and valuable ecosystem and a marine extension could be beneficial for the site and enhance its protection.

5.7 Governance and management

Until 2006 the administration and management of the National Park and the Natural Park were done by different entities; the National Park was mainly administered by the Autonomous Organization for National Parks (OAPN in Spanish) and the Natural Park by the regional government of Junta de Andalucía. Whilst coordination of activities were pursued in a number of practical ways including through a joint consultative and participatory body, this was not always successful as to fully integrate and coordinate actions.

In 2006, through the Royal Decree 712 the competences for managing the National Park were transferred to the Autonomous Community and since then the administration and management of both the National and the Natural Park is implemented by a single management authority within the framework of the Network of Natural Protected Areas of Andalucía (RENPA in Spanish) and in the context of the Plan for Territorial Planning and Management of the Space of Doñana.

Whilst having a single administrative and management structure is indeed a positive step for enhancing coordination this has been perceived by a number of NGOs as a decrease in the capacity and relevance of the park authority. In practical terms this is not the case as both the budget and the number of staff working in the National and Natural Park has steadily increased since 2006 as Doñana is considered the flagship of the Network of Natural Protected Areas of Andalucía. It is also not the case that the management of the park is completely independent from the Ministry of the Environment, Rural and marine Affairs as its management needs to fully consider the standards and normative for National Parks as defined by the Ministry and OAPN. In fact during the monitoring mission the mission team was able to appreciate the positive relationship and dialogue that exists between the Ministry of the Environment and the regional government.

The existing management plan for the National Park, approved in 2004 by Junta de Andalucía, defines a clear structure and administrative provisions to ensure the effective management of National Park; including:

- Overall coordination of management and administrative practices for conserving and managing the National park and the Natural Park.
- Establishment of coordination and cooperation activities with key institutions of the Central Administration of the State including: (a) the Ministry of the Environment; (b) the Hydrological Confederation for the Guadalquivir River; (c) the port and coastal authorities; (d) the Higher Council for Scientific Research, (d) the Ministry of the Interior (in fact there is a dedicated police division just dealing with the park); and (e) the Geological and Mining Institute.
- Establishment of coordination and cooperation activities with key institutions of the Autonomous Community including: the Council for Agriculture and Fisheries; (b) the Council for Education and Science; (c) the Council for Culture; (d) the Council for Labour and Technological Development; (d) the Council for Public Works and Transport, and; (e) the different Universities of Andalucía.

In addition to the above the civil society is involved in the Participatory Council of Doñana where projects and actions are discussed and assessed by key local stakeholders.

Figure 1 -administrative chart of the park.



Figure 2- institutions involved in the Participatory Council

Based on article 15 of the Law No 8 of 1999

- Administration of Junta de Andalucía
- National Administration
- Local Administration
- Social, economic and scientific organizations and agents

Artículo 15. Composición y funcionamiento.

1. El Consejo de Participación estará compuesto por el Presidente, Vicepresidente, Secretario y los Vocales representantes de la Administración de la Junta de Andalucía, de la Administración del Estado y de la Administración Local, de las organizaciones y agentes sociales y económicos y de la comunidad científica. La forma de designación de los miembros y el número de los Vocales se determinará reglamentariamente.

Whilst the administrative and participatory procedures in place seems to be working well and provides guidance on decisions and actions two key concerns have been noted during the mission by the NGOs and some stakeholders:

- That the Participatory Council of Doñana is dominated by public authorities in disadvantage of NGOs and technical experts and therefore key decisions are biased towards public interest projects.

- That there is risk of “regionalizing” decisions on Doñana in favour of local social and development projects that are not fully considering the international relevance of this area which counts with the most important international designations (World Heritage property, Ramsar site, Natura 2000, European Diploma, etc) that any protected area could receive.

The mission team believes that in the process to update the management plan these concerns should be considered and adequately addressed as to ensure an adequate balance between local social and economic interests and the requirements for conservation and management defined by the different international designations that have been granted given to Doñana.

Recommendation 15:

The mission recommends that State Party ensures, working with relevant regional and national authorities, that the new management plan be prepared in 2011 guaranteeing an adequate balance between local social and economic interests and the requirements for conservation and management defined by the different international designations that have been granted to Doñana.

5.8 Sustainable development

The territory of Doñana includes the municipal boundaries of 14 towns (300 km² and 180,000 inhabitants) which are making attempts to combine sustainable development with the conservation of important protected spaces.

In the early 1990s the I Plan for Sustainable Development (*I Plan de Desarrollo Sostenible*, PDS) of Doñana was developed for the period 1993-2002. In 1997 the Doñana 21 Foundation was created under the oversight of the Junta de Andalucía to promote its application. The Foundation has a Board of Trustees which includes representatives of the local administrations and the autonomous administration, the business sector, financial institutions and environmental organizations.

According to the Doñana Foundation, the I PDS “has entailed the modernization of various infrastructures, the attenuation of the problem of water quantity and quality, environmental regeneration, the territorial reorganization of agricultural land, the modernization of the economic structures, and, in summary, viewing Doñana as the principal asset of this region.”⁷

However, the NGOs that closely follow the situation in Doñana and other observers consider that the I PDS has had little impact on the situation of the region. In fact, it there does not appear to be have been an independent evaluation of the results of the I PDS.

In September 2005, the Junta de Andalucía decided to launch the II Plan for Sustainable Development of Doñana (II PDS) for the period 2009-2015. Its general aim is to “strengthen a social and productive culture of local development based on the values of sustainability, innovation and differentiation, with the integration and participation of local agents as its backbone”.

⁷ Fundación Doñana 21 . Website <http://www.donana.es/>

The new strategic lines of the II PDS “are based to a lesser extent on the development of material infrastructures, and to a greater extent on social capacities, with an elevated degree of social participation and innovation”.⁸

The II PDS fully assumes the framework of the land use plan adopted en 2003 (*Plan de Ordenación del Territorio del Ámbito de Doñana*, POTAD) and the Land-Use Plan of the Territory of the Urban Agglomeration of Seville of 2009.

Unlike the I PDS, the new plan places emphasis on participation, especially on the participation of local authorities.

It is also envisaged that the Plan have a “strong instrument for the evaluation of the actions that provide feedback to orient the plan”.

With regards to the contents, the Plan places emphasis on the social and territorial cohesion “that integrates the productive processes in the territory and its natural processes, incrementing its competitiveness for quality, ecoefficiency, innovation and differentiation”.

Among its specific objectives, the II PDS includes, among others:

- a) Maintain and recover the biodiversity of Doñana and the natural processes that sustain it;
- b) Improve the social wellbeing and quality of life of the resident populations of Doñana;
- c) Carry out a solid integration between the management of the natural systems and the opportunities they offer for sustainable productive activities;
- d) Foster the identification of the population with the historical cultural and affective values of Doñana through interrelationships, mutual understanding and awareness building;
- e) Develop and strengthen existing initiatives related to sustainable tourism and agriculture;
- f) Establish an overarching agreement on sustainable water use among all the sectors of the Doñana space;
- g) Develop an auto evaluation program based on the follow-up of ecological and socioeconomic variables that function as sustainability indicators; and
- h) Develop a model for effective participation in the planning and execution of the actions related to the management.

The Plan places emphasis on the need to “achieve an effective integration between planning and management” through the preparation of triennial operational programs that are reviewed annually.

A so-called Bank of Projects has been developed in the framework of the Plan in which a total of approximately 530 projects are organized according to the different lines of work established by the Plan.

The First Operational Program of the II PDS (2009-2011) considers an investment of 145,385,385.78 Euros, of which 38,253,289.40 have been carried out in 2009, leaving the rest for the operations in 2010 and 2011.

⁸ II Plande Desarrollo Sostenible, Memoria Económica, Junta de Andalucía, Mayo de 2010

Within the Junta de Andalucía, this budget is assigned as follows:

Agriculture and Fisheries Department	8,653,695.33
Employment Department	11,226,000.00
Economy, Innovation and Science Department	235,300.00
Environment Department	77,344,126.67
Public Works and Housing Department	46,000,441.78
Tourism, Commerce and Sports Department I	1,925,822.00
Total I Operational Program	145,385,385.78

16. The sources of funding are as follows:

Self financed	75,258,259.09
European funds	60,371,726.69
Services	9,755,400.00
Total	145,385,385.78

Recommendation 16:

The Mission welcomes the launch of the II Plan for Sustainable Development of Doñana while expressing its concern regarding the complexity of the document and the real possibilities of its application as an instrument that could lead to a real change in the development model for Doñana. Therefore, the Mission recommends that:

a) The II Plan for Sustainable Development of Doñana be submitted to an integral independent evaluation of its objectives and *modus operandi* by a group of impartial and prestigious experts designated by the Board of Trustees of the Doñana 21 Foundation in consultation with the Council for Participation of the Doñana Natural Space and the Department of Environment of the Junta de Andalucía. The evaluation should, among other, ensure that the II PDS can be the instrument that leads to a real change of model in so far as the social, economic and environmental development of Doñana (the three pillars of sustainability) are concerned, especially with regards to key issues such as the use and management of water, the permeability of the natural spaces; and the sustainability of transportation, tourism and agriculture. The terms of reference and a budget for the group's work should be agreed upon by the experts and the Board of Trustees of the Doñana 21 Foundation in consultation with the Council for Participation of the Doñana Natural Space and the Department of Environment of the Junta de Andalucía; and

b) The results of the application of each triennial Operational Program of the II PDS be submitted also to the evaluation of the group of independent experts mentioned above.

5.8.1 Public Use

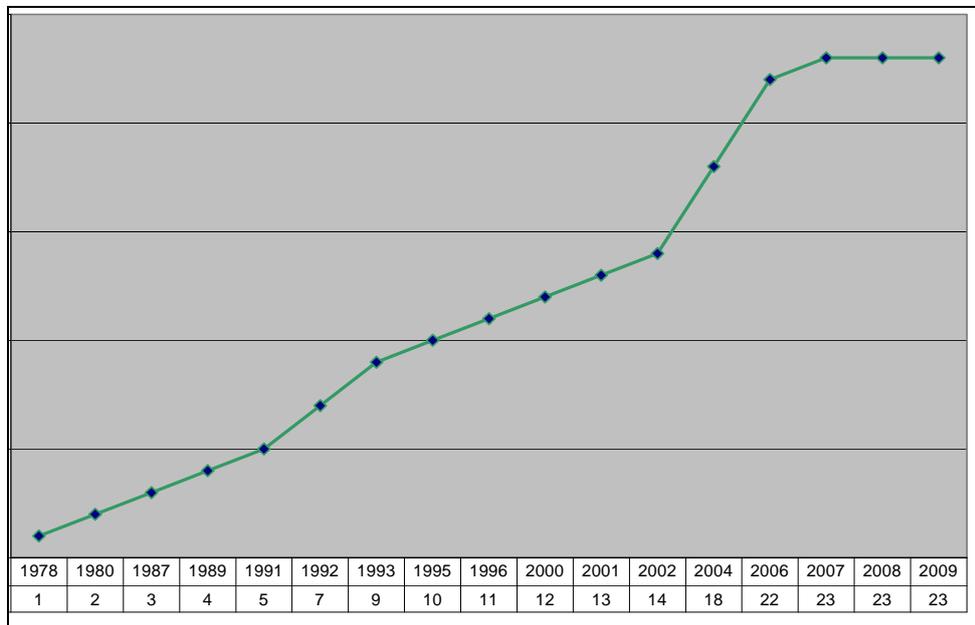
The Doñana Natural Space (Espacio Natural de Doñana, END) has carried out for over 20 years an Environmental Education programme aimed at students and adults. The 14 towns of the region participate in the program. Approximately 25,000 people have participated in the latest edition: 17,000 students and 7,500 adults.

In the last 10 years the total number of visits to the visitor centers and the itineraries of the Doñana Natural Space is steady at about 400,000 users annually.

The END's public use system is currently composed of:

- 8 visitor centers
- 1 information point
- 9 walking paths
- 4 bicycle paths
- 11 wildlife observatories
- 4 bicycle lanes
- 1 nature classroom
- 4 recreational areas
- And numerous guided routes developed by active tourism and nature tourism companies

Figure 3: Evolution of the number of nature tourism, environmental education and active tourism companies in the END (1978-2009)



Additionally, the END hosts traditional uses of natural resources that are regulated and managed by the Department of Environment of the Junta de Andalucía in collaboration with the towns and local associations. Sectoral Plans and Management Plans are developed for some of these. These uses include:

- Shellfish Use Plan
- Apicultural Use Plan
- Pine Cone Use Plan
- Livestock Use Plan
- Technical Hunting Plans
- Forest Management Plans

Recommendation 17:

While the Mission recognizes and commends the quality of the public use being carried out in Doñana, it considers advisable to carry out an exhaustive independent technical evaluation of said public use, including of the sectoral and management plans for traditional uses. The evaluation should:

- a) Establish the adjustment of the public and current uses with regards to the conservation objectives and potential risks these may imply; and
- b) Make recommendations for possible changes in the public and traditional uses with the goal of ensuring that these can better meet the objectives for which they were established.

5.9 Climate change impacts

The mission was briefed by the presentations of the site management and the Doñana Biological Station of potential global change and climate change impacts. The station is the hub of an extensive research network which monitors a huge amount of indicators both through traditional data collection as well as through new remote data collection according to latest technology (web cams, remote data stations, independent soil and air temperature collectors etc.). The current status of predictions has a potential to indicate that the freshwater flows into the freshwater marshes in the coastal zones could turn into saltwater infiltrations which would totally change the current ecosystem. Such a change could occur through increase of aridity through lack of precipitation and higher temperatures.

The Park is also part of the “monitoring global change in National Parks (PPNN) Network programme”, which main objective is to create an infrastructure for the reception, storage and processing of data *“in situ”*, and exchange with the scientific community. This allows the development of a system for the assessment and monitoring of the impacts that might be generated in National Parks Spanish Network as a consequence of the global change.

The programme is based on a collaboration agreement between the Autonomous Organization of National Parks (Organismo Autónomo Parques Nacionales - OAPN), the Spanish Climate Change Office (Oficina Española de Cambio Climático - OECC), the State Meteorological Agency (Agencia Estatal de Meteorología - AEMET) and Biodiversity Foundation (Fundación Biodiversidad).

Recommendation 18:

The mission recalls the report on "Predicting and managing the impacts of Climate Change on World Heritage" and the "Strategy to assist States Parties to implement management responses", endorsed by the World Heritage Committee in 2006 as well as the Policy Statement on World Heritage and Climate Change adopted by the 16th General Assembly of States Parties. The mission welcomes the research network established to monitor climate change impacts. The mission encourages the authorities to share this research with other States Parties and relevant World Heritage sites along the flyways. As Doñana constitutes a key site in Europe and along the western flyway routes early alert systems could assist other site managers in better addressing adaptation and climate change impacts on the values and integrity of World Heritage properties.

6 CONCLUSIONS AND RECOMMENDATIONS

6.1 Overall conclusions

Following the analysis of all material provided and the field visits and meetings with a wide range of stakeholders, the mission concludes that the state of conservation of the World Heritage property is satisfactory. The values for which the site has been inscribed under the World Heritage and Wetlands Conventions are still present; however a number of issues related to the conditions of integrity have been noted by the mission. The different designations of the National Park and Natural Park and the different international designations as Ramsar site, UNESCO Biosphere Reserve and World Heritage site are mutually beneficial. In 2010 Doñana received the renewal of the European Diploma granted by the Council of Europe, another indicator of the effective management of the property.

The mission concludes that currently the Universal Value of this World Heritage property is not in danger as to recommend that the property should not be inscribed on the List of World Heritage in Danger, nor that Spain should be requested to remove the site from the List of Wetlands of International Importance. However, the mission notes a number of issues, including the proposed additional dredging of the Lower Guadalquivir river, the situation of the Doñana Aquifer, the proposed Balboa oil pipeline from Huelva to Extremadura, and the cumulative effects of infrastructure projects outside the World Heritage property and Ramsar site which could impact on the values and integrity of the site. The mission concludes that the World Heritage Committee needs to examine by 2013 whether inscription of Doñana on the List of World Heritage in Danger would be warranted, and in the case of Ramsar if the site should be maintained in the Montreux Record of the Convention,⁹ in relation to the following issues:

- the risks imposed by the proposed Balboa pipeline from Huelva to Extremadura, if the project is not cancelled or at least change substantially in its design;
- the effects of the proposed additional dredging of the Lower Guadalquivir river, if finally approved without an integrated management plan for this area to enhance the environmental quality of the river; and
- the effective implementation of the plan to control water extractions from the Doñana Aquifer (Plan de la Corona Forestal).

Specific recommendations

Recommendation 1:

The mission strongly recommends updating all risk preparedness and management plans in view of the expansion project and establishing direct communication lines in case of emergencies with the La Rabida refinery.

Recommendation 2:

The mission strongly recommends that the State Party refrains from choosing any alternative route which impacts on the World Heritage property or its surrounding designated areas. The Balboa pipeline could have both direct and indirect impacts on the property's values and integrity, and could constitute a direct and potential danger in accordance with the Operational Guidelines.

Recommendation 3:

⁹ Record of Ramsar sites where their ecological character has changed, is changing or could change as a result of human actions.

The mission noted the road construction underway for the El Rocío bypass and does not see major impacts on the World Heritage site. However the mission strongly recommends that the State Party does not encourage any enlargement of the road El Rocío – Coto Doñana/Matalascañas as this would create further disruption in ecosystem connectivity. The mission welcomed the wildlife bridge (especially created for the Linces which do not use tunnels) across the El Rocío-Matalascañas road close to the visitor centre El Acebuche.

Recommendation 4:

The mission strongly recommends that the State Party refrains from choosing any alternative route which impacts on the World Heritage property or its surrounding designated areas. The Balboa pipeline could have both direct and indirect impacts on the property's values and integrity, and could constitute a direct and potential danger in accordance with the Operational Guidelines.

Recommendation 5:

Regarding the *Plan Especial de Ordenación de las Zonas de Regadío, ubicadas al Norte de la Corona Forestal de Doñana* (Special Management Plan of the Irrigation Zones Located to the North of the Forest Crown of Doñana), the mission recommends:

- d) That every effort is made to produce the most consensus-based Plan possible, with the full participation of all the stakeholders, but without diluting the essential objectives of said Plan regarding the “protection of the exceptional natural values of Doñana and the rational use of water”;
- e) That the Government Council of the Junta de Andalucía approve the Plan before 31 December 2011 so that its implementation would commence by 1 January 2012 at the latest; and
- f) That in the final version of the Plan and in its implementation the following aspects be given a high priority:
 - The definitive definition of a maximum surface for irrigation within the Doñana region on the basis of the maximum recommendable extractions according to the current state of knowledge of the aquifer, taking into account the ‘precautionary principle’ and respecting the environmental flows of the entire watershed;
 - The definition of an annual plan for groundwater extraction that includes the effective control of legal extraction and the elimination of illegal extraction;
 - Restoration activities, in the framework of an extension of the Project Doñana 2005, that enable the recovery of surface water recharge of the aquifer;
 - The relocation of agricultural properties located in areas of high value for ecosystems to less sensitive areas to enable the improved functioning of ecological corridors, the elimination of wells close to rivers and the elimination of isolated properties; and the creation, where necessary of new, functional ecological corridors.

Recommendation 6:

The mission, having considered impacts of intense agriculture in the region recommended to examine how such impacts can be mitigated and reduced in the future, including through the increase of organic agriculture in the surrounding areas of the World Heritage property.

Recommendation 7:

With regards to the project for dredging the Guadalquivir River, the Mission recommends that:

- a) The Ministry of the Environment and Rural and Marine Affairs paralyze the proceeding related to the project “Actions to improve the maritime access to the Port of Seville” of 1999,

and therefore any work related to the latter, and that it definitively deny the authorization of the dredging of the Guadalquivir River contemplated in said project; and

b) That in case that the authorization is not denied, the aforementioned project be submitted to a new, rigorous and complete Environmental Impact Assessment, that takes into account the agreements and decisions of the former Board of Trustees of the Doñana National Park and the results of recent studies, including the scientific report entitled "Methodological Proposal to Diagnose and Forecast the Consequences of the Human Activities in the Estuary of the Guadalquivir" carried out by the Superior Council of Scientific Research (*Consejo Superior de Investigaciones Científicas*, CSIC) and the Universities of Córdoba and Granada.

Regarding the state of conservation and management of the Guadalquivir River, the Mission recommends that:

a) The management of the Guadalquivir River watershed be undertaken with an integrated approach, using the "ecosystem approach" promoted by the Convention on Biological Diversity;

b) That as part of this integrated approach a high priority be placed on the restoration of the river estuary; and

c) That for this, in line with the Framework Directive for Water of the European Union, a body be created to guarantee, in coordination with the management of the Doñana Natural Space, the preservation, maintenance and integrated management of the Guadalquivir River and its estuary, given the singularity of its geomorphology and landscape; its indisputable value for the conservation of biodiversity; its interest for fishery resources of the entire Andalus Atlantic coastline; and its high agricultural productivity.

Recommendation 8:

The Mission recommends that the Doñana 2005 Project be completed as soon as possible, with the reactivation and input of the Scientific Commission, based on the following actions recommended by the Coordination of the Doñana 2005 Project and the administrations involved:

1. Execution of the second phase of the restoration of the Arroyo del Partido (from the Matanza northward);
2. Recovery and restoration of the Rocío marsh;
3. Restoration of the vegetation of the streams and banks of the Comarca de Doñana;
4. Restoration of the northern stretch of the Caño Guadiamar (from the Caño del Pescador to Veta Hornito);
5. Study of the situation of the streams and banks that feed into the marsh and demarcation of the public domains, ecological state of the banks, restoration proposals and actions to avoid erosion;
6. Expropriation of private properties of the Caño Guadiamar; and
7. Acquisition of the properties Garrido and Cerrado Garrido (1,400 ha) and restoration of the expanse with the aim of connecting the Caño Guadiamar with the El Lobo and Caracoles zone.

The Mission recommends that to give continuity and complete the positive results of the Doñana 2005 Project, a *Doñana 2013-2027 Project for the Integral Restoration of the Hydrosystem within the Context of its Socio-Ecosystem* be developed starting immediately and be approved before the 31st of December 2012. The project should be based on an ecosystem approach and on the state-of-the-art scientific knowledge and ecosystem restoration practices, including the application of the precautionary principle¹⁰.

¹⁰ Rio Declaration, United Nations Summit on Environment and Development (Earth Summit, Río de Janeiro, 1992): PRINCIPLE 15 - In order to protect the environment, the precautionary approach shall be widely applied by States according to their capabilities. Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation

Recommendation 9:

The mission acknowledges the excellent progress achieved in the programme for the conservation of the Iberian Lynx.

The mission recommends requesting the National Park authority and the Regional Government to give high priority to develop and effectively implement the proposed plan for reassessing and reorganizing the existing access routes and roads in Doñana and its area of influence.

Recommendation 10:

The mission strongly recommends the local and regional government to define ways and means to ensure the effective implementation of the territorial planning and management plan and to use it as the basis for enhancing and developing ecosystem connectivity through biological corridors and other effective means.

Recommendation 11:

The mission recommends that the revision of the management plan for Doñana National Park should carefully consider and include the key conservation, management and integrity requirements to maintain the Outstanding Universal Value (OUV) for which the park was inscribed in the World Heritage List and should explore: (a) options for expanding the property to other areas of potential OUV including marine areas and (b) a communication strategy that highlight and clearly communicate the OUV of this property.

Recommendation 12:

The mission strongly recommends updating all risk preparedness and management plans in view of the expansion project and having direct communication lines in case of emergencies with the La Rabida refinery.

The mission strongly recommends that the State Party refrains from choosing any alternative route which impacts on the World Heritage property or its surrounding designated areas. The Balboa pipeline could have both direct and indirect impacts on the property's values and integrity, and could constitute a direct and potential danger in accordance with the Operational Guidelines.

The mission recommends that the resources required for the effective implementation of the *Auto-protection Plan for Doñana and other areas of the Natura 2000 Network*, including for training and acquiring the specialized equipment required, are granted as a matter of urgency and, if feasible, in 2011.

Recommendation 13:

The mission recommends that the different institutions involved in the initiative for establishing and managing a large Marine Protected Area (MPA) associated to the park prepare a consolidated proposal and further propose it for approval by the Ministry of Environment, Rural and Marine Affairs. Once this MPA is established the State Party may wish to consider the possibility, to expand the World Heritage property to include this MPA.

Recommendation 14:

The mission welcomes the 2005 extension of the World Heritage property which made the boundaries more consistent. Concerning future extensions the authorities need to carefully evaluate the values of these areas and whether they are of outstanding universal value and

integrity as required under the World Heritage Convention. Concerning the marine area, the mission noted that the coastal zone of Doñana has a very high number of marine species and valuable ecosystem and a marine extension could be beneficial for the site and enhance its protection.

Recommendation 15:

The mission recommends that State Party ensures, working with relevant regional and national authorities, that the new management plan be prepared in 2011 guaranteeing an adequate balance between local social and economic interests and the requirements for conservation and management defined by the different international designations that have been granted to Doñana.

Recommendation 16:

The Mission welcomes the launch of the II Plan for Sustainable Development of Doñana while expressing its concern regarding the complexity of the document and the real possibilities of its application as an instrument that could lead to a real change in the development model for Doñana. Therefore, the Mission recommends that:

- a) The II Plan for Sustainable Development of Doñana be submitted to an integral independent evaluation of its objectives and *modus operandi* by a group of impartial and prestigious experts designated by the Board of Trustees of the Doñana 21 Foundation in consultation with the Council for Participation of the Doñana Natural Space and the Department of Environment of the Junta de Andalucía. The evaluation should, among other, ensure that the II PDS can be the instrument that leads to a real change of model in so far as the social, economic and environmental development of Doñana (the three pillars of sustainability) are concerned, especially with regards to key issues such as the use and management of water, the permeability of the natural spaces; and the sustainability of transportation, tourism and agriculture. The terms of reference and a budget for the group's work should be agreed upon by the experts and the Board of Trustees of the Doñana 21 Foundation in consultation with the Council for Participation of the Doñana Natural Space and the Department of Environment of the Junta de Andalucía; and
- b) The results of the application of each triennial Operational Program of the II PDS be submitted also to the evaluation of the group of independent experts mentioned above.

Recommendation 17:

While the Mission recognizes and commends the quality of the public use being carried out in Doñana, it considers advisable to carry out an exhaustive independent technical evaluation of said public use, including of the sectoral and management plans for traditional uses. The evaluation should:

- a) Establish the adjustment of the public and current uses with regards to the conservation objectives and potential risks these may imply; and
- b) Make recommendations for possible changes in the public and traditional uses with the goal of ensuring that these can better meet the objectives for which they were established.

Recommendation 18:

The mission recalls the report on "Predicting and managing the impacts of Climate Change on World Heritage" and the "Strategy to assist States Parties to implement management responses", endorsed by the World Heritage Committee in 2006 as well as the Policy Statement on World Heritage and Climate Change adopted by the 16th General Assembly of States Parties. The mission welcomes the research network established to monitor climate change impacts. The mission encourages the authorities to share this research with other States Parties and relevant World Heritage sites along the flyways. As Doñana constitutes a key site in Europe and along the western flyway routes early alert systems could assist other

site managers in better addressing adaptation and climate change impacts on the values and integrity of World Heritage properties.

The mission, taking into account the provisions of the Operational Guidelines, urges the State Party to address these specific recommendations and issues in priority and to ensure that the integrity and outstanding universal value of the World Heritage property and Ramsar site is maintained.

Decision: 34 COM 7B.26

The World Heritage Committee;

1. Having examined Document WHC-10/34.COM/7B,
2. Recalling Decision 29 COM 7B.25 adopted at its 29th session (Durban, 2005);
3. Calls upon the State Party to complete and sustain the results of the “Doñana 2005” restoration project, and to maintain and improve the management of the property, and encourages both the establishment of an ongoing system of management effectiveness assessment to assist this process, and an assessment and revision of all adjacent land use plans by the relevant local authorities to ensure that they consider the Outstanding Universal Value of the property, and do not permit developments which could impact upon it;
4. Notes with concern the high risk of accidental oil spills resulting from the increase in maritime traffic to and from the Straits of Gibraltar due to the proposed expansion of the La Rábida oil refinery and the proposed Balboa pipeline, which may potentially affect the Outstanding Universal Value, including the conditions of integrity, of the property;
5. Requests the State Party to submit a copy of the La Rábida oil refinery expansion Environmental Impact Assessment (EIA), the Balboa pipelines EIA, the maritime traffic EIA, the coastal wind farm EIA and the Doñana Natural Area Self-Protection Plan to the World Heritage Centre as soon as these become available;
6. Also requests the State Party to invite a joint World Heritage Centre/IUCN reactive monitoring mission to the property to assess its state of conservation;
7. Further requests the State Party to submit to the World Heritage Centre a report, by **1 February 2011**, on the status of the La Rábida and Balboa oil refinery projects and all other developments that may affect the Outstanding Universal Value of the property, the continued implementation of the restoration scheme, results of monitoring and management effectiveness assessments, and the regulation and impacts of land-uses adjacent to the property on its state of conservation, for examination by the World Heritage Committee at its 35th session in 2011.

Terms of Reference

In accordance with Decision 34 COM 7B.26 of the World Heritage Committee, the World Heritage Centre and IUCN will undertake the joint Reactive Monitoring Mission to the World Heritage property “Doñana National Park” (Spain).

The joint mission will:

1. Assess the state of conservation of this property and the factors affecting its Outstanding Universal Value, including in relation to the threats identified in the state of conservation report and related decision of the World Heritage Committee. The mission should consider the results of the “Doñana 2005” restoration project and all adjacent land use plans to ensure that they respect the Outstanding Universal Value and integrity of the property, and do not permit developments which could impact upon it.
2. Hold consultations with the authorities and relevant stakeholders in order to jointly improve the management effectiveness of the property. The State Party is requested to make appropriate arrangements for these consultations to take place.
3. Develop recommendations on actions to be undertaken by the State Party to address existing and potential threats, especially with regard to the high risk of accidental oil spills resulting from the increase in maritime traffic to and from the Straits of Gibraltar due to the proposed expansion of the La Rábida oil refinery and the proposed Balboa pipeline and, and to improve the long-term conservation and management of the property.
4. On the basis of the findings, the joint mission team should prepare a joint report by **28 February 2011**.

Composition of the mission team

The team of the Reactive Monitoring Mission consisted of:

Dr Mechtild Rossler (Senior Programme Specialist, Chief Policy Section, UNESCO World Heritage Centre)

Dr Pedro Rosabal (Senior Programme Officer, Global Protected Areas Programme, International Union for the Conservation of Nature)

Dr Delmar Blasco (former Secretary General, Ramsar Convention)

Programme and itinerary of the Mission
DOÑANA NATIONAL PARK
JOINT REACTIVE MONITORING MISSION WHC/IUCN – Ramsar
Wednesday, 19/01/2011 (afternoon)

Arrival to the airport and Santa Junta railway station and transfer to El Rocío (Almonte)

Thursday 20th of January

9:00 Transfer to Centro de El Acebuche

9:30 Welcome and starting meeting with persons in charge of the Environment Council of the Junta de Andalucía. General Director of Natural Areas and Civic Participation. D^a Rocío Espinosa de la Torre.

11:00 First working session with the management Team of the Natural Area of Doñana and the General Coordinator of the General Directorate of Natural Areas and Civic Participation of the Environment Council of the Junta de Andalucía.

Subjects:

- Territorial framework of the site, location, time and space scale of risks and threats
- Legal framework, jurisdiction and its effects
- Doñana management
- Doñana 2005. Evaluation of the initiatives. Complementary initiatives and future planning
- Control of the Local planning. Territory planning
- Agriculture in the Doñana surrounding. Control on the water underground supply. Replacement of water raising and Special Plan of the Forest Surrounding Area.

14:00 Lunch

16:00 Meetings with the associations that addressed their opinions to UNESCO and/or Ramsar

- Club Doñana and Hispania Nostra
- OCEANA
- Mesa de la Ría de Huelva
- Plataforma contra la contaminación de Almendralejo

18:30 Meetings with other associations

- Adena/WWF–Spain
- Ecologistas en Acción
- Greenpeace
- Farmers organizations

21:30 Transfer to the hotel

21:30 Dinner

Friday 21 January

8:30 Visit to the National Park of Doñana and surroundings, taking into special account the areas related to important matters of the joint mission.

14:00 Lunch in El Rocío

17:00 Second working session with the management Team of the Natural Area of Doñana and the General Coordinator of the General Directorate of Natural Areas and Civic Participation of the Environment Council of the Junta de Andalucía.

Subjects: Oil spills risk and wind farms. Location and state of the projects stated in the Plan of Emergency Decision on the risk of the coast pollution in Andalucía. Self- Protection Plans for the natural areas in Andalucía. The situation in Doñana. La Rábida oil refinery. Projects of wind farms.

19:30 Meeting with D. Francisco Bella Galán, Member of the Working Commission for the Sustainable Development of the Participation Council of the Natural Area of Doñana and Almonte Mayor (the aim is to provide the point of view of the local authorities and local communities about the situation of Doñana and other subjects approached)

20:30 Transfer to the hotel

21:30 Dinner

Saturday 22 January

9:00 Working session with the researchers from the Doñana Biological Station of the National Council of Scientific Research (CSIC).

- The Doñana Biological station and the research in Doñana
- Follow-up of the Natural Processes in Doñana
- Investigation results and follow-up of Natural Processes
- Doñana's future in a global climate change framework
- Most relevant conclusions about the situation in the World Heritage Site and the Ramsar wetland from a scientific point of view.

11:30 Third working session with the management Team of the Natural Area of Doñana and the General Coordinator of the General Directorate of Natural Areas and Civic Participation of the Environment Council of the Junta de Andalucía.

- Follow up and evaluation of the situation in Doñana. Special attention to the subjects approached by the mission and the values that justified the inclusion of the site in the World Heritage list and the Ramsar List.
- Interchange of opinions about the basic contents of the report of the joint mission.

13:00 Working lunch of the members of the joint mission

14.30 Transfer to the Sevilla Airport.

PARTICIPANTS

Mission team: Mechtild Rossler (World Heritage Centre), Pedro Rosabal (UICN), Delmar Blasco (Ramsar Convention)

General State Administration:

Laura de Miguel Riera. World Heritage Area. Section of Protection of the Historical Heritage. Ministry of Culture.

Juan Garay Zabala. Autonomous Agency National Parks. Ministry of Natural Environment, Rural and Sea Environment.

Magdalena Bernués Sanz. Directorate General for Environment and Forest Policy. Ministry of Natural Environment, Rural and Sea Environment.

Junta de Andalucía, Environment Council:

Juan Pedro Castellano Domínguez. General Directorate of Natural Areas and Civic Participation of the Environment Council

Juan Carlos Rubio García. Director of the Natural Area of Doñana (National Park of Doñana and Natural Park of Doñana)

Francisco Quirós Herruzo. Curator of the Natural Area of Doñana

José Juan Chans Pousada. Manager of the Natural Area of Doñana

Biological Station of Doñana:

Fernando Hiraldo Cano. General Director of the Biological Station of Doñana

Guyonne Janss. Coordinating Department of research

Juan Miguel González Aranda. Responsible Coordinator Doñana ICTS.

Working Session for the Special Plan for the Forest Surrounding Area:

Javier Serrano Aguilar. General Director of Water Public Domain. Water Agency of Andalucía

Associations/NGOs:

- OCEANA: Silvia García and María José Cornax
- Club Doñana: Jesús Vozmediano (invitation declined)
- Hispania Nostra: Carlos Morenés
- Mesa de la Ría de Huelva: José Pablo Vázquez
- Plataforma contra la contaminación de Almendralejo: Félix Lorenzo
- Plataforma Refinería No
- AdenaWWF-España: Eva Hernández
- Ecologistas en Acción: Juan Romero
- Greenpeace: Aurelio González
- Farmers organizations: Francisco Javier Martín, Small Farmers Union (UPA); Emilio Vieira Jiménez-Ontiveros and Juan Manuel Díaz-Montero, Young Farmers Association of Sevilla (ASAJA- Sevilla)