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Group of specialists – European Diploma for Protected Areas

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**DOÑANA NATIONAL PARK
(Spain)**

RENEWAL

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1. TERMS OF REFERENCE AND REPORT STRUCTURE

In 1985 the Council of Europe recognised the importance of the natural heritage of the Doñana National Park by the award of its European Diploma of Protected Areas. During the intervening 19 years, the European Diploma has been periodically reviewed and renewed. The validity of this Diploma is due to expire in 2005, and, in accordance with the regulations in force for the award of these Diplomas, an on-the-spot appraisal has to be carried out prior to the 2005 review. I was asked to carry out this on-the-spot appraisal.

Appendix 3 of Resolution (98) 29 provides the terms of reference of experts carrying out on-the-spot appraisals. The report falls into four parts.

1. There is a review of previous appraisals of the Doñana National Park. It is important to ascertain whether conditions previously attached have been fulfilled, and the extent to which recommendations have been implemented. This is outwith the immediate terms of reference, but it is an essential first step in considering which conditions and recommendations need to be re-iterated, and what new conditions and recommendations might be made.
2. The terms of reference ask that the European interest in the protected area be confirmed. This can be done partially by what was actually seen during the on-the-spot appraisal, but importantly from the wealth of published material that was made available during the visit (see Appendix II).
3. The terms of reference ask that the merits of the protection system be considered, and it provides 11 possible headings for this consideration. The programme of meetings outlined in Appendix I provided much of the material for this part of the appraisal, but also the published reports (such as the National Park's management plan and a grazing mammals plan – Appendix II) were important in gaining a perspective on these issues.
4. Finally, a set of conditions and recommendations is proposed. These are based on the discussions with the many people listed in Appendix I, as well as on detailed talks with staff of the National Park, especially Alberto Ruiz de Larramendi (Director/Conservador) and Blanca Ramos (Jefe del Area de Conservacion), both of whom led the field visit to the National Park. The set of three conditions and seven recommendations is brought together, for ease of reference.

2 REVIEW OF PREVIOUS CONDITIONS AND RECOMMENDATIONS

2.1 Resolution (85) 13

This 1985 resolution concerned the first award of the European Diploma to the Doñana National Park. It contained two conditions, namely

“1. The financial resources needed for the implementation of the Master Plan adopted in December 1984 should be provided;

2. The buffer zone should be extended to include further areas, in particular along the left bank of the Guadalquivir up-stream from Sanlúcar de Barrameda”.

During the 19 years since these two conditions were made, it is apparent that financial resources have been made available, and that not only a master plan but also a number of subsidiary plans (such as those for grazing animals and for the management of pine trees and the harvest of their seeds) are being implemented. Although the financial resources available to the Doñana National Park are not lavish, they would appear to be sufficient for a minimal level of management, but they would need supplementation for particular projects. It was also apparent that extensions have been made both to the Doñana National Park (the extent of the National Park has been increased by about 13,500 ha since

its first declaration) and to the surrounding land (in 1989 the Doñana Natural Park was established adjacent to many of the National Park's boundaries, and this covers a total extent of c. 53,000 ha). **It can therefore be confirmed that these two conditions have been fulfilled.**

2.2 Resolution (90) 12

The 1990 resolution on the first renewal of the European Diploma made no further conditions, but made 5 recommendations. These are

“1. a buffer zone should be created around the park in order to give the area maximum protection;

2. the pressure of intensive farming around the park should be lessened, so that the park's ecological working is not disturbed by excessive water pumping or by the infiltration of undesirable substances (biocides, chemical fertilisers, etc.);

3. a permanent system of consultation with the bodies responsible for managing the surrounding areas should be set up in order to reinforce quantitative and qualitative monitoring of water use;

4. a research programme should be developed on the effects of agricultural products inside and outside the park;

5. the policy of purchasing land and of restoring its ecological balance (felling eucalyptuses, planting cork oaks, etc.) should be continued”.

Considerable progress has been made on recommendations 1 and 5, with the establishment of the Doñana Natural Park surrounding much of the boundary of the Doñana National Park, and with the continuing programme of extending the Doñana National Park (for example, the extension by about 3,500 ha, published in the official bulletin of the state (BOE) on 24 February 2004). **These two recommendations have therefore been acted upon.**

In relation to recommendation 4, again there has been considerable progress, with research being undertaken by the Estación Biológica de Doñana (although its research remit is much wider than this specific recommendation). In the early 1990s, Emilio Custodio (currently the Director of the Geological Institute of Spain) developed research on pesticide infiltration into the aquifer. Monitoring of agrochemical products has been undertaken since the Aznalcóllar incident, and the National Park has itself undertaken some monitoring of the agrochemicals in the water entering the park. **This recommendation has therefore been partially acted upon.** Monitoring of the quality of the surface and ground waters is a strategic issue that will be further addressed in Recommendation 2 (section 5.5).

As will become apparent throughout this appraisal report, the problems that the Doñana National Park faces come almost entirely from outside the park, and hence recommendations 2 and 3 are critical. Although there are systems of consultation, and it was apparent that the Director of the Doñana National Park had extremely good relations with people influential in the surrounding communities, there are still concerns about intensive farming and the amount of water being extracted from the aquifer that naturally underlies the marshes (marismas). The relocation of crops began in 1984 and continued in the 1990s, removing crops from areas surrounding La Rocina and El Rocío and relocating them in areas further to the east. The 1989 report by Ted Hollis (supported by WWF/Adena) established a maximum annual abstraction from the aquifer, but this report is not an agreement about the consumption of groundwater. **Recommendations 2 and 3 have therefore only been partially acted upon,** and are the subject of a further recommendation, Recommendation 1 (section 5.4).

2.3 Resolution (95) 13

On the renewal of the European Diploma in 1995, the resolution made no conditions but made three recommendations, namely

- “1. the original hydrographic system by which the Guadiamar river supplied water to the marismas should be re-established and efforts made to restore the water itself to its original quality;*
- 2. the nature park should be extended north-westwards following the relocation of intensive cultivation, in order to close the protective belt around the national park;*
- 3. work on the Guadalquivir river bank bordering the park should be continued and indeed stepped up, to prevent the bank from being eroded within a relatively short space of time”.*

Work in relation to the first recommendation is in progress with the Doñana 2005 project. The main goal of that project is to recover both the quantity and quality of the water entering the marismas. Doñana 2005 was established in 1998 after the Aznalcóllar incident, and has built upon pre-existing projects. Although still in progress at the time of the visit, **it is anticipated that this recommendation will have been completely acted upon by 2005.**

In relation to the second recommendation, the Doñana Natural Park was enlarged in 1997 by enclosing the Pilas Stream and the Entremuros area, both decreasing agricultural pressure on the National Park. In 2004, new legislation gives the same level of protection to forests as to protected areas. As forests more or less encircle the Natural Park to the north-west, **it can be stated that recommendation 2 has been satisfactorily acted upon.**

Recommendation 3 poses many problems. At the instigation of the National Park, a study of the river bank protection was made in 1999. This was sent to the Ministry of Environment in order to obtain an Environmental Impact Assessment (EIA). However, in 2002 the Seville Port Authority launched a new project to alter the flow of the Guadalquivir and enlarge the Port of Seville. Although the EIA has apparently not been published, it is nevertheless useful in relation to the necessity of dredging the Guadalquivir should the Port be expanded for larger vessels. It is understood that the National Park has both financed and installed some river bank protection, but that this has not solved important problems. **This recommendation has therefore hardly been acted upon,** and it will be further addressed in Condition 2 (section 5.2).

2.4 Resolution Dip (2000) 2 (relating to the Aznalcóllar incident)

Many aspects of the Doñana National Park changed following the incident that took place at the pyrite mine in Aznalcóllar in 1998. Following the incident, an extraordinary appraisal was carried out by the Council of Europe. This 2000 resolution was clearly affected by the restoration work that had been initiated. In relation to the incident at the Aznalcóllar mine, there was one condition, namely

“In accordance with the conclusions of the meeting at Huelva in October 1999, the pursuit and completion of the two programmes - Doñana 2005 and Corredor Verde – with the permanent support of the international scientific community for their implementation and their continuous monitoring, is an indispensable precondition for the Spanish authorities for the renewal of the European Diploma”.

As will become apparent from this report, the Doñana 2005 programme has more or less been completed, achieving its aims, and some very satisfactory outcomes were noted. However, the programme focussed on surface waters, but there is now a tremendous need to address ground waters (further addressed in Recommendation 1, section 5.4). The work on establishing the Green Corridor

(Corredor Verde) is impressive. It is estimated that the aims have been about 80% achieved, and hence this part of the condition is also on course for fulfilment. **Work to fulfil this condition is therefore in progress, according to plan, and should be completed in 2005.**

The 2000 resolution also made a series of six recommendations in relation to the incident at Aznalcóllar. These are

“1. The programmes for treating the effluent of urban and industrial origin throughout the catchment area of the river – and not merely along the Corredor Verde – should be extended.

2. A study should be made with a view to removing the dyke constructed on the right bank of the Guadiamar, in the Entremuros sector, which prevents the National Park from being naturally flooded, as soon as the chemical situation allows.

3. A master plan should be prepared for the rehabilitation and management of the water regime of the three main catchment basins supplying the marismas, namely Guadiamar, la Rocina and la Cañada mayor, within a period of five years corresponding to the renewal period of the European Diploma.

4. Continuous and intensified monitoring should be carried out on the system of exploitation of the Aznalcóllar mine, including regular physical and chemical effects on the part now used as a storage pool for sludge; the results of these inspections should be regularly communicated to the different governmental and non-governmental partners.

5. All the recognised scientific potential in Europe should be harnessed for this work, using the most up-to-date skills and procedures.

6. The joint management board (or any other body designated for this purpose comprising representatives of the National Park and the most reliable scientific authorities) should ensure the co-ordination of the Doñana 2005 and Corredor Verde projects and be empowered to take action outside the limits of the National Park, throughout the areas having an impact on the marismas, namely the three principal catchment basins mentioned above”.

Some of the work relating to these recommendations remains in progress, whereas other work has been completed. Work in progress relates to Recommendations 1, 2 and 3. In relation to Recommendation 1, nine water treatment works are planned; at the time of the visit seven were in operation and the remaining two should be functional by 2007. In relation to Recommendation 2, with the extension of the National Park (Montaña del Rio), there have been good (even optimal) levels of inundation and hence good marsh regeneration. Scientific opinion is divided about the wisdom of removing the dyke along the right bank of the Guadiamar. The recent development of a digital topographic model should allow various options to be evaluated, and a decision taken. The Doñana 2005 project will, by 2005, have dealt with the water management of the Guadiamar and La Cañada Mayor catchments, but there remain problems with the La Rocina catchment, especially in relation to the cultivation of strawberries and the reduced water flow in the Arroyo de la Rocina. **Work is therefore in progress in relation to these three recommendations, but the problems associated with the La Rocina catchment remain to be addressed, and a decision needs to be taken about whether or not to remove the dyke on the right bank of the Guadiamar.**

I saw evidence of the international scientific input, as well as international political interest in the restoration process following the Aznalcóllar incident. The Doñana 2005 and Corredor Verde projects have Co-ordination Committees, and there is also a Scientific Committee. **Recommendations 5 and 6 have therefore been fulfilled.**

In relation to Recommendation 4, I was unable to discover the extent of any monitoring that was being undertaken. I believe that there has been some work related to the sealing of the actual pond where the pollution incident took place, and that data exist on the quality of groundwater. Such monitoring has

been undertaken by the Confederación Hidrográfica del Guadalquivir. The data do not, however, appear to have been widely distributed either by the Confederación or by the Comisaría de Aguas. **It therefore appears that at least the second part of Recommendation 4 has not been acted upon,** and this is further addressed in Recommendation 2 (section 5.5).

2.5 Resolution Dip (2000) 2 (relating to the Diploma Area)

The 2000 resolution made one condition in relation to the diploma-holding area. This was

“Acquire an undertaking by the authorities responsible to produce within one year, starting on 21 September 2000, a management plan for the National Park covering the aspects covered in the on-the-spot appraisal, namely:

- an intensified action plan to protect the most endangered species, the Iberian lynx *Felis pardina* and the imperial eagle, entailing the reinforcement of the ecological restoration work undertaken in recent years with a view to improving the most appropriate natural habitats of these species;*
- the reduction of the indirect impact of the pilgrimages on the biodiversity of the area, in particular by increasing awareness among the pilgrims themselves;*
- a management plan for the grazing of livestock designed to reduce as far as possible the negative effects of this activity on the ecosystems of the park”.*

Although the drawing up and official approval of the management plan was delayed, the tasks have now been completed (approved by Decree 48/2004, dated 10 February 2004). The grazing management plan has also been prepared and was approved in 2001. This has been helpful in dealing with issues such as limiting the number of cattle and horses, establishing the legality of cattle grazing, and reducing the movement of owners' cattle. **These two parts of the condition have therefore been fully fulfilled.**

The imperial eagle has been the subject of a management plan, which is now due for review. As seen during the field visit, actions have aimed at (1) habitat improvement (though perversely the birds often tend to prefer *Eucalyptus* groves), (2) reducing mortality, and (3) improving the monitoring of the population. Regional and national authorities reached an agreement in 2003 about the conservation and management of the Iberian lynx population. **This part of the condition is therefore in progress,** and is further addressed in Recommendation 3 (section 5.6).

A reduction in the impacts of the El Rocío pilgrimage poses a considerable number of practical problems. Efforts have been made to reduce the numbers of both vehicles and people taking part in the pilgrimage. The Management Plan for the National Park establishes the need for a specific plan, but this has not yet been prepared. **This part of the condition has therefore only been very marginally fulfilled, and is referred to again in Condition 3 (section 5.3).**

The 2000 resolution also made one recommendation, which was

“Land purchases made with a view to extending the National Park should be continued and speeded up, above all in the agricultural land situated to the north of the present limits”.

The work of the Doñana 2005 project has made the enlargement of the National Park possible. **This recommendation has therefore been fulfilled.**

3 THE EUROPEAN INTEREST OF DOÑANA NATIONAL PARK

This topic hardly needs to be addressed because there is so much of the natural heritage of the National Park that is outstanding in Spanish, European and Global contexts!

There are two series of ecosystems that merit particular attention because of their extent and variety, and because of the plants and animals that they support. One is the marshes (marismas), which are thought formerly to have occupied about 150,000 ha, but which now occupy only about 35,000 ha (i.e. about 23% of their former extent). They provide a habitat for many species of waterfowl. The other is the range of dune systems that occur within Doñana, from those that are mobile with a large percentage cover of bare sand to those that are stabilised, being covered with a forest of umbrella or stone pines (*Pinus pinea*).

The bird life in the marshes contains a considerable diversity of species, some of which are rare in a European context. Such species include marbled teal (*Marmaronetta angustirostris*), crested coot (*Fulica cristata*) and greater flamingo (*Phoenicopterus ruber*). The presence of such species in Doñana makes the avifauna akin in some respects biogeographically with that of North Africa rather than with that of Western Europe. Several of the rare species were seen during the on-the-spot visit, including many flocks of greater flamingos, possibly numbering more than 20,000 birds. The area is also important during the winter for wildfowl, at which time some extremely large numbers of birds have been counted. For example, the bird report for the two years from September 1999 to August 2001 (*Anuario Ornitológico de Doñana, No. 1*) records 15,000 mallard (*Anas platyrhynchos*) in September 1999, 15,000 pintail (*Anas acuta*) in October 1999, 25,000 black-tailed godwit (*Limosa limosa*) in January 2001, and 23,000 dunlin (*Calidris alpina*) in March 2000, as well as a maximum estimate of 53,000 greylag geese (*Anser anser*) during the 2000/2001 winter. In any year, up to five million birds using the Western Europe to Africa flyway (migration route) may spend time in Doñana, again underlining the biodiversity importance of the marshes and dune systems. Although not a nesting species, the white-headed duck (*Oxyura leucocephala*) occurs in the winter and occasionally at other times of the year.

It is perhaps the plants and invertebrates of the dune systems that make them outstanding. The scrub of junipers (*Juniperus phoenicea* and *J. oxycedrus*), which at times act to stabilise the dunes, is a particularly notable feature. A number of the species and subspecies of plants endemic to this part of Spain grow on these drier soils. These include subspecies such as *Cytisus grandiflorus cabezudo* (a Spanish broom), *Stipa gigantea donyanae* (giant feather grass), and *Thymus mastichina donyanae* (a thyme). An introduction to the diversity of the wildlife is given in *Parque Nacional de Doñana*, published in 2002 by Canseco Editores, though more popular accounts are contained in much of the National Park's promotional literature (see Appendix II).

The two flagship species of the National Park are not confined to either the marshes or the dune systems. These two species are the imperial eagle (*Aquila adalberti*) and the Iberian (or pardel) lynx (*Lynx pardinus*). Both are predators and range over large areas both inside the National Park and beyond its boundaries.

Given the comparative European scarcity of both wetlands and dune systems, the extent of each in Doñana certainly qualifies the area of being of outstanding natural heritage value and hence worthy of protection. Further, the diversity of species of plants, invertebrate animals, reptiles, birds and mammals, and the presence of many rare and/or endemic taxa, adds to the importance of the area. Hence in relation item (I) referred to in the terms of reference, **the continuing European interest of the Doñana National Park can be confirmed.**

4 THE PROTECTION SYSTEM FOR DOÑANA NATIONAL PARK

This is considered in relation to the 11 headings listed in item (II) of the terms of reference.

4.1 The responsible organisation

The responsible organisation is the Patronato, a committee including national (Spanish) representation, regional (Andalucian) representation, private land owners, and the Director of the National Park. It is advised by a Council of about 40 members, who include political, academic and non-governmental representation. Although at times this might seem cumbersome, no problems were apparent between the staff and the responsible organisation.

4.2 The effectiveness of protection

In general the protection afforded to the Doñana National Park seemed appropriate, though there were potential problems.

- 1. The development of the Port of Seville appeared to have largely ignored the presence of the National Park downstream from Seville. This is addressed in Condition 2 (section 5.2).
- 2. Agriculture has been the focus of previous on-the-spot appraisals, and it still presents considerable difficulties largely by the amount of water that is extracted from the aquifer and by the potential for agrochemicals to pollute the surface- and ground-waters. These issues are addressed in Recommendations 1 and 2 (sections 5.4 and 5.5).
- Tourism may be having an effect, as for example the improvement of the roads and hence the possible fragmentation of habitats. Such concepts require scientific research, and solutions must be based on scientific evidence. Tourism also relates to the very large pilgrimage to El Rocío, and this is the subject of Condition 3 (section 5.3).

Given the expansion of the National Park, the clear successes of the Doñana 2005 project, and the development of the Corredor Verde del Guadiamar to restore the damage caused by the Aznalcóllar incident, the protection appears to be as effective as for the majority of protected areas in Europe.

4.3 Zoning

Much of the National Park is surrounded by the Natural Park and, with the Corredor Verde to the north, there is a form of zoning around the area covered by the Diploma. This is satisfactory.

4.4 Ownership

This appears to be satisfactory, with the majority of the National Park in public (state) ownership, and a part also in the ownership of the Council for Scientific Research. No problems were evident.

4.5 Land-use plans

This aspect of the National Park is satisfactory. Albeit late, the management plan for the whole park was published early in 2004. The plan for the grazing animals, a contentious issue at the time of the last renewal of the Diploma, appears to be working well and to have either reduced or eliminated the problems of illegal grazing and over-grazing.

4.6 Development work

Within the National Park itself, there has been little developmental work since the last review for renewal of the Diploma. However, outside the boundaries of the original National Park the major developments have been the considerable enlargement of the National Park itself, environmental protection through the Doñana 2005 and Corredor Verde projects, and the opening of visitor facilities on the periphery of the National Park.

4.7 The management plan

This has been written, agreed officially and published. Because this had not been achieved until February 2004, it is still too early to be able to comment on its implementation and its value to the National Park's staff members who are endeavouring to implement it.

4.8 Public access and reception

Public access is essentially in the vicinity of visitor centres, or by organised tours that are carefully controlled by the National Park authorities. Because of the scale of the park, few people are likely to enter far into it, and indeed my own observations (when I walked unaccompanied into the park) were that there was very little pressure, even on the edge of the massive tourist development at Matalascañas. The problems associated with access at the times of pilgrimages are addressed in Condition 3 (section 5.3).

4.9 Scientific studies and research

The support from the Estación Biológica de Doñana is excellent, and the breadth of the scientific studies is wide (as demonstrated by its annual reports). Many external groups use the National Park for teaching or research. A register of scientific studies is maintained by the office of the Scientific Working Group of the Patronato (which is chaired by the Director of the Doñana Biological Station, where the office is located). This register is available to anybody on request.

4.10 Membership of international networks

I have no information on this topic. Given the importance of international networks of monitoring the climate, and its effects on biodiversity, it might be useful if the National Park joined the pan-European network for recording and measuring environmental change. This would, however, require additional financial resources.

4.11 The socio-economic setting

In the discussions with the mayors of the surrounding villages, it was apparent that Agenda 21 was being taken seriously, and that aspects of tourism and local produce ('Hecho en Doñana') were appreciated as being important from a local socio-economic perspective, and especially the stringent regulations surrounding the Doñana 21 label (given by Fundación Doñana 21). The positive approach to both the Corredor Verde and Doñana 2005 projects was also taken as evidence that the value of the National Park was appreciated in the local community.

5 PROPOSED CONDITIONS AND RECOMMENDATIONS

This report suggests to the Council of Europe that the European Diploma should be renewed for a further period of five years, but that this should be subject to three conditions and a series of seven recommendations.

5.1 Assessment of risks

After the Aznalcóllar incident, it has become apparent that there is no systematic risk assessment for the various incidents that could affect the integrity and ecology of the National Park. The possibility of a breach in the dam at Aznalcóllar was known about before the discharge of so much polluted sludge, but the risk assessment had not been undertaken. As was stated by a number of people who were interviewed during the on-the-spot assessment, most of the risks faced by the National Park come from outside its boundaries rather than from within the National Park itself. Hence it is important that all such risks be considered jointly with the appropriate and responsible authorities, be they in the governmental, private or voluntary sectors.

A risk assessment needs to combine at least two elements once the risk itself has been identified. First, there needs to be an assessment of how likely it is that the event will happen. This can be a difficult task, but there have been many studies that outline approaches to this subject (e.g. *Risk Assessment in Conservation Biology*, by M.A. Burgman, S. Ferson and H.R. Akçakaya, 1993, Chapman & Hall, London). Second, the assessment needs to determine the magnitude of the effect if the incident does actually happen. As an example, it would have been predicted in a risk assessment that the Aznalcóllar incident had only a small probability of actually happening, but that the magnitude of the effects would have been great (as indeed they were).

Condition 1: a condition for the renewal of the Diploma is that the National Park Authorities should ensure that a register of risks, including estimates of their likelihood and of the magnitude of their effects, is drawn up within one year.

5.2 Developing the Port of Seville

During the on-the-spot visit it became apparent that there is considerable local concern about the development of new port facilities at Seville. The Port Authority gave a high quality presentation about its plans for the enlargement of the port facilities, for the creation of a new lock so as to manage river levels in Seville, and for the deepening of the navigable channel in the Guadalquivir from the sea upstream to the new Seville lock. It was apparent that a tremendous amount of planning work had already been accomplished, and data on the rates of flow in the river for the past 20 years had been used as a basis for calculations about the quantity of water and its salinity, not only in the estuary of the Guadalquivir but also along much of the length of the navigable river. What apparently was lacking was any forecast of the future. With climate change, it is likely that Andalusia will experience hotter and drier summers, and hence the probability is that the rate of flow of water in the river will be reduced. Such a scenario needs to be modelled, and its effect both on the port development and on the salinity of the river system established.

In terms of climate change, both the Port of Seville Authority and the Doñana National Park might find it useful to consult *Climate Adaptation: Risk, Uncertainty and Decision-making* (edited by Robert Willows and Richenda Connell, published as a UKCIP Technical Report in May 2003). Clearly the effects of climate change are one of the risks to be incorporated into the register of risks described in Condition 1 (section 5.1).

Many other organisations were extremely concerned about the proposed port developments. This was the major issue raised by the voluntary (non-governmental) organisations (NGOs). Without going into excessive detail, the NGOs claim that

- there are serious defects in the Environmental Impact Assessment;
- the impacts will reduce the natural heritage value of the European Union's Natura 2000 sites, both in relation to the Birds Directive and the Habitats Directive, and also the internationally designated Ramsar (wetland) site;
- there will be degradation of the estuarine habitat due to sediment dumping;
- the deepening of the navigational channel will increase salinity levels, with the resultant risk of salinization of the marshes;
- there is a risk of accelerated river bank erosion;
- there is an increased chance of the introduction of non-native, invasive species with the ballast water of shipping;
- the increased risk of pollution, especially from anti-fouling paints, is unacceptable in an area of extremely high nature conservation value; and
- there are less environmentally damaging alternatives based on development of the harbours at Malaga, Huelva, Bahia de Cadiz or Bahia de Algeciras.

These are eight concerns amongst a considerable number of objections raised by the NGOs. Indeed, ADENA/WWF felt so strongly about the situation that, just before the on-the-spot visit, it publicly called for the European Diploma not to be renewed.

It is not the role of the on-the-spot assessment to adjudicate between these opposing views. However, it is apparent that there are very considerable differences of opinion, and that these need to be debated thoroughly before any conclusion about the magnitude of the environmental effects of the development of the Port of Seville can be reached. In the meantime, prior to a resolution of this matter, there is merit in invoking the 'precautionary principle', whereby no action, that could be detrimental to the environment of the Doñana National Park, is undertaken.

This then leads to the proposal of a second condition. Although the Environmental Impact Assessment (EIA) is extremely thorough, it is apparently based on river flows measured in previous years, and does not take into consideration future river flows as the climate of Andalucía changes over the next decades (say 50 years). The EIA needs to be re-considered, with participation by all parties with an interest in the region, including those with an interest in the Doñana National Park. It is likely that a consensus will be difficult to achieve, and hence the authorities, either national or regional, will need to establish a mechanism for considering and determining the revised EIA.

Condition 2: a condition for the renewal of the Diploma is that the Port of Seville Authority should re-open the Environmental Impact Assessment (EIA), and include within the revised EIA the results of models predicting climate change during the course of the 21st century. The EIA should be subject to consultation by all interested parties in the area of Seville, and especially those with legitimate interests in the Doñana National Park. A final decision of the acceptability or otherwise of the environmental effects of the Port of Seville development should be made by an independent body appointed by national or regional government.

5.3 Management of the El Rocío Pilgrimage

One of the conditions at the time of the European Diploma renewal in 2000 was to reduce the impact of the El Rocío pilgrimages, and this was referred to in section 2.5 as having only been very marginally fulfilled. This is partially a religious and social issue, being part of the tradition of the people in the geographical area in which the Doñana National Park is located, and hence it needs to be approached with extreme care. It is also an environmental issue, because the increasingly large number of people taking part in the pilgrimage has a considerable impact on the natural heritage value of those parts of the protected area adjacent to El Rocío and along the access routes. The issue does need to be resolved sooner rather than later, and indeed its resolution is included within the National Park's Management Plan as a specific issue to be addressed. A solution will need to balance the requirements of the protected area and its biodiversity with the traditions of the people, and the traditional organisation of the pilgrimage, in the region. Therefore, the previous condition (in Resolution Dip (2000) 2) for the renewal of the European Diploma is re-iterated, thus

Condition 3: a condition for the renewal of the Diploma is that there should be a reduction of both the direct and the indirect impacts of the pilgrimages on the biodiversity of the area, in particular by increasing awareness among the pilgrims themselves.

5.4 The Problems of Ground-water Extraction

Practically everyone whom I met during this appraisal referred to the ground-water extraction. Opinion was again divided over whether or not the aquifer was being over-exploited, and whether or not the water quality in the aquifer was becoming poorer. At the time of the 1990 renewal, the issue of the amount of water being extracted from the aquifer was the subject of a recommendation that has only been partially acted upon (section 2.2).

Despite the very impressive results being obtained by the Doñana 2005 project, that project is concerned with the surface-water entering the National Park and not with the ground-water. It is now 15 years since the sustainable capacity of the aquifer was estimated, during which time there have been increased demands for agriculture (most notably the growing of soft fruits). Opinion was also divided about the extent of extraction, depending upon the amount that is 'legal' (i.e. licensed wells where a tax is paid on each cubic metre extracted, and where a much higher rate of tax is charged if

the agreed extraction limit is exceeded) and the amount that is ‘illegal’ (i.e. the well is unlicensed and unknown to the tax collecting authorities).

Clearly it is now time to re-assess the aquifer, both in terms of its sustainable yield and in terms of its water quality. This becomes important during the next few years with the implementation of the European Union’s Water Framework Directive. It might be a useful way forward if the Doñana 2005 project could be extended so that all issues surrounding the ground-water could be dealt with in the way that the project has dealt with issues relating to the surface-water. Full restoration of the marshes requires attention to both the surface- and ground-waters. This therefore leads to a recommendation, thus.

Recommendation 1: the status of the aquifer underlying the National Park and the surrounding lands needs to be re-assessed in terms of both its sustainable yield for agriculture and in terms of the quality of its water, with the aim of restoring the marshes with an adequate supply of water of high quality.

5.5 Monitoring Water Quality

The need for monitoring the quality of water entering the National Park has been recognised in two previous recommendations, in 1990 and very specifically after the Aznalcóllar in 2000. As noted in section 2.4, there is some uncertainty about the monitoring of water quality that is actually being carried out. One possible problem is that the 2000 recommendation referred to “the system of exploitation of the Aznalcóllar mine”, but since 2000 the mine has actually closed. Closure does not, however, affect the need for monitoring since there are residual aspects of the mine’s past activities that could still cause serious pollution.

Water quality not only affects the National Park, but also the surrounding agricultural land, the quality of the surrounding Natural Park, and hence the livelihoods of many people in the region. It therefore seems essential for the Departments of the National and Andalucian Governments to consider this issue and to instruct an appropriate governmental agency (or perhaps more than one agency) both to devise and to execute a water monitoring scheme. Such a monitoring scheme should be devised with the input of the major interests in the Doñana area (e.g. agriculture and horticulture, the communities, and both the National and Natural Parks), and hence be broadly acceptable to them.

The data derived from such monitoring need to be shared by all parties with an interest in the wider Doñana area. They also need to be used to correct any problems that might be detected, either by controlling diffuse pollution or by rectifying point sources of pollution (with appropriate legal action if regulations are being breached). The previous recommendations about monitoring are therefore included within a new recommendation, i.e.

Recommendation 2: the National and Andalucian Governments should instruct an appropriate agency (or agencies) to devise and implement a broadly-agreed and accepted scheme for monitoring the water quality in the Doñana National Park and its surrounding areas. The data derived from monitoring should be regularly communicated to all governmental and non-governmental partners and used to rectify any defects in the control of pollution.

5.6 Flagship Species

At the present time two species are essentially ‘flagships’ of the National Park – the Iberian (or pardel) lynx and the imperial eagle.

At the time of the visit, the management plan for the imperial eagle was due for reconsideration and renewal. Given the fact that the population has declined, this is now urgently needed. All scientific evidence available needs to be focussed on determining why the eagle population has declined and what might be done both to halt and reverse the decline.

Some progress is being made with the conservation of the Iberian lynx, with estimates of the numbers of wild-living animals being either more or less static or slightly decreasing. Ecological investigations are occurring, with some lynx being radio-tagged so that their population dynamics can be better understood. The captive programme is maintaining animals in good condition, but has not yet succeeded in raising animals that can be released into the wild. The reasons for the apparent lack of success need to be investigated, and targets set for the captive programme to start contributing to the *in situ* conservation of this species.

It is understandable why two carnivores are used as ‘flagship’ species for the National Park, and both link the countryside around the Park with the Park itself. However, given the extremely small numbers of these two species, and the fact that very few visitors to the National Park will see either, it might be useful to select some other ‘flagship’ species that could be used both to interest and educate the public. There are many other potential candidates amongst the reptiles, amphibians, invertebrate animals and flowering plants. A suite of species could be used to gain more attention for the range of conservation activities that takes place on one of Europe’s most important protected areas, as well as for the education of children who visit the National Park to find out about both its cultural and natural heritage.

Recommendation 3: plans for the protection of the Iberian lynx and the imperial eagle need to be revised and implemented. Plans for a small range of other ‘flagship’ species need to be drawn up, implemented, and used for increasing public awareness of the conservation issues within and around the National Park.

5.7 Non-native Species

It became apparent during the visit that there are some localised problems due to non-native species becoming invasive. I saw the small water fern, *Azolla filiculoides*, which has the potential to cover considerable areas of water, but at the time of the visit it was restricted. This species has been successfully controlled in South Africa by the weevil, *Stenopelmus rufinasus* (<http://www.rothamsted.bbsrc.ac.uk/pie/JonathanGrp/Azolla%20poster.pdf>). When I spoke to the NGOs, they were concerned about the introduction of non-native species to the Guadalquivir in ballast water if larger ships are going to use the river (already that are some invasive, non-native species in the estuary).

This topic is something that has recently concerned the Council of Europe (see Council of Europe paper number T-PVS (2002) 8, entitled *European Strategy on Invasive Alien Species*). A useful approach is to attempt to undertake an audit of non-native species – this essentially need give no more information than how many non-native species there are within the National Park, and where they are located. It could, however, also include other information such as the abundance of each species and its mode of introduction into the Doñana area. The audit will then need to be considered in terms of the risks associated with each of these species, and the possibilities of undertaking appropriate control activities. The staff in the National Park would then be prepared for any problems that might arise.

Recommendation 4: the National Park authorities, with the assistance of external partners, should undertake an audit of the non-native species that occur within and adjacent to the Doñana National Park.

5.8 Independent Scientific Advice: Port of Seville

It became apparent from discussions with the staff in the Port of Seville Authority that they were excellent in terms of their engineering abilities. The standard of work that had been undertaken on planning the development of the new port facilities was very high. However, what they appeared to lack was any independent scientific advice about the effects of their engineering works on the environment or on the biodiversity of the Doñana National Park. There was also the apparent lack of lateral thinking, incorporating concepts of the changing climate of Andalusia.

Although this recommendation might be beyond the scope of the on-the-spot appraisal, it became apparent that a mechanism for the Port of Seville Authority to use the best international scientific advice might be useful to them. It might also be useful in helping to resolve some of the differences of opinion that were noted in the formulation of Condition 2 above.

Recommendation 5: the Port of Seville Authority should explore mechanisms for harnessing the best international scientific advice in relation to the effects of its activities on the environment generally and on biodiversity in particular.

5.9 Independent Scientific Advice: Doñana National Park

The management of the Doñana National Park is assisted by an excellent group of staff in the Estación Biológica de Doñana, and by the large number of visitors (often from universities) who come to work within the park. However, it became apparent that the senior management of the National Park do not have a more formal system for gaining scientific advice. It might be to be benefit of the natural heritage if an system was thought about and actioned.

Three possible approaches might be tried, either individually or in any combination. One would be to recruit an international set of voluntary ‘consultants’. Their contact details and specialised interests could be recorded, and particular individuals approached when advice was needed. A second would be to form a scientific advisory committee. The members would meet to consider broader issues, and they would act individually if approached for advice in relation to their specialist knowledge. Third, it might be useful to have a periodic international peer review of the scientific work that has been done and might be needed in the future. An international group would be recruited, and during a visit of a few days would explore all aspects of science, and consider what advice to give to the National Park’s Director. Although three possible approaches have been mentioned, ranging from the less formal to the more formal, there are other possible mechanisms for the National Park’s senior management to gain scientific advice, and hence the recommendation is

Recommendation 6: the National Park Authority should explore mechanisms for harnessing the best international scientific advice in relation to the research and management activities within the Doñana National Park.

5.10 Communications

The previous two sections have made recommendations about improving the quality of scientific advice both for the National Park and for other organisations that influence the Doñana area. It should, however, be remembered that there are important sources of advice within Spain itself, such as amongst the staff of the Estación Biológica de Doñana and in the Universities of Seville and Huelva.

However, a perception during the visit was that communication between such scientific establishments and government departments and institutions, such as the Confederación Hidrográfica del Guadalquivir, could be improved. The case of the apparent lack of monitoring information also suggested that communications between the various parties with interests in Doñana might be better. As this is only a perception gained during a short visit, it is not possible to formulate this as a definitive recommendation. However, this issue could potentially cause problems, and if it is a real issue it needs to be addressed, especially through work to implement conditions 2 and 3, as well as recommendations 1, 2, 5, 6 and 7.

5.11 A long-term vision for the National Park

On a number of occasions there was a discussion about the management plan for the National Park, with the emphasis on what is relatively short-term. Although such issues are important, it is also important to consider the vision of those with an interest in the National Park (i.e. what would they wish the National Park be like in 50, or even 100, years time?). Obviously, this has to some extent

been considered in the various discussions, recommendations and conditions outlined above. There are many aspects to the vision, some of which can be listed as a series of questions.

- How large should the National and Natural Parks be?
- Can they approximate more closely to the pre-development area of the marshes?
- How should the National Park adjust to the changing climate?
- Is the biodiversity of the National Park optimal?
- Are there other types of habitats that would have occurred traditionally and which should be restored?
- Should the National Park support tourism in Spain by allowing the number of visitors to increase?
- Can the tourist infrastructure be changed to benefit both the tourists and the National Park?
- Should the National Park have a greater influence on the land use of the neighbouring areas, including topics such as Agenda 21 in the surrounding villages?
- What is the socio-economic role of the National Park in Andalucía, can this be increased, and how might it relate to the 'Doñana 21' and 'Hecho en Doñana: Perfecto' labels?
- Can management of the National Park be improved by changing structures, e.g. by having an independent chair of the Patronato, or by including a more streamlined approach to decision-making?

These are just 10 possible thoughts on what might be included in a vision. A vision should of course encapsulate both the aspirations of the staff of the National Park and the ideas of the people who live in or near the National Park and whose socio-economic wellbeing is dependent upon the Park.

Another aspect of the vision may well relate to the setting of the National Park within the wider area of Andalucía. The links need to be made between the National Park, the Natural Park, the various river corridors, the agricultural land, and the more distant countryside. One aspect of this that I saw was the concern for continuity of lynx habitat. Where roads crossed the 'Corredor Verde' there were signs requesting that motorists were careful of any lynx crossing the road. Elsewhere, I saw an underpass being constructed so that lynx could safely move from one side of the road to the other. These are, however, examples in relation to only one species, the Iberian lynx. If the National Park is to protect its biodiversity in perpetuity, then the linkages with the surrounding countryside need to be worked out and agreed with the surrounding land- and water-managers.

The recommendation is therefore

Recommendation 7: by the time of the next review of the European Diploma, expected to be in 2010, the National Park should have a vision for how it will develop over the forthcoming decades and of its linkages with the surrounding countryside. This will help in the long-term planning of activities both within and outside the National Park.

6 LIST OF PROPOSED CONDITIONS AND RECOMMENDATIONS

Condition 1: Risk Assessment

A condition for the renewal of the Diploma is that the National Park Authorities should ensure that a register of risks, including estimates of their likelihood and of the magnitude of their effects, is drawn up within one year.

Condition 2: Development of the Port of Seville

A condition for the renewal of the Diploma is that the Port of Seville Authority should re-open the Environmental Impact Assessment (EIA), including the results of models predicting climate change during the course of the 21st century. The EIA should be subject to consultation by all interested parties, especially those with legitimate interests in the Doñana National Park. A final decision of the

acceptability or otherwise of the environmental effects of the Port of Seville development should be made by an independent body appointed by national or regional government.

Condition 3: Managing the pilgrimages

A condition for the renewal of the Diploma is that there should be a reduction of both the direct and the indirect impacts of the pilgrimages on the biodiversity of the area, in particular by increasing awareness among the pilgrims themselves.

Recommendation 1: Ground-water extraction

The status of the aquifer underlying the National Park and the surrounding lands needs to be re-assessed in terms of both its sustainable yield for agriculture and in terms of the quality of its water, with the aim of restoring the marshes with an adequate supply of water of high quality.

Recommendation 2: Water quality monitoring

The National and Andalusian Governments should instruct an appropriate agency (or agencies) to devise and implement a broadly-agreed and accepted scheme for monitoring the water quality in the Doñana National Park and its surrounding areas. The data derived from monitoring should be regularly communicated to all governmental and non-governmental partners and used to rectify any defects in the control of pollution.

Recommendation 3: ‘Flagship’ species

Plans for the protection of the Iberian lynx and the imperial eagle need to be revised and implemented. Plans for a small range of other ‘flagship’ species need to be drawn up, implemented, and used for increasing public awareness of the conservation issues within and around the National Park.

Recommendation 4: Non-native species

The National Park authorities, with the assistance of external partners, should undertake an audit of the non-native species that occur within and adjacent to the Doñana National Park.

Recommendation 5: Scientific advice (Port of Seville Authority)

The Port of Seville Authority should explore mechanisms for harnessing the best international scientific advice in relation to the effects of its activities on the environment generally and on biodiversity in particular.

Recommendation 6: Scientific advice (Doñana National Park)

The National Park Authority should explore mechanisms for harnessing the best international scientific advice in relation to the research and management activities within the Doñana National Park.

Recommendation 7: A long-term vision

By the time of the next review of the European Diploma, expected to be in 2010, the National Park should have a vision for how it will develop over the forthcoming decades and of its linkages with the surrounding countryside. This will help in the long-term planning of activities both within and outside the National Park.

7 ACKNOWLEDGMENTS

I should particularly like to thank Mrs Françoise Bauer, from the Council of Europe, who accompanied me throughout the visit and provided much guidance. I owe great thanks to Alberto Ruiz de Larramendi (Director/Conservador) and Blanca Ramos (Jefe del Area de Conservación), from the Doñana National Park who guided us throughout the visit, and unfailingly assisted with the translations between the Spanish and English languages. I also thank the many other people who we met, for spending time to tell us about Doñana and its surrounds, and who often provided their own interpreters to assist in the discussions. Finally, I am extremely grateful for the opportunity to ride out into the marshes, one of those experiences in life that I shall never forget!

APPENDIX I

THE PROGRAMME OF THE ON-THE-SPOT APPRAISAL (with a note of officials, etc., who provided information)

Throughout the on-the-spot appraisal, I was accompanied by Mrs Françoise Bauer of the Secretariat, Directorate General IV: Education, Culture and Heritage, Youth and Sport, Direction of Culture and Cultural and Natural Heritage, Council of Europe.

Wednesday, 21 April 2004 (night spent in Seville)

1. Travel to Sevilla, Spain, from Edinburgh, U.K.

Thursday, 22 April 2004 (night spent in Seville)

1. Meeting at hotel with senior Doñana National Park staff (Parque Nacional de Doñana: Alberto Ruiz de Larramendi (Director/Conservador) and Blanca Ramos (Jefe del Area de Conservación)).
2. Meeting with staff of the Regional Ministry of the Environment (Ministerio de Medio Ambiente: Francisco Quiró Herruzo, Fernando Molina Vázquez and Chary García Mora).
3. Meeting with staff of the Regional Ministry of Agriculture (Consejería de Agricultura y Pesca: Joaquín Regidor Moreno).
4. Meeting with the staff of the Hydrological Confederation of the Guadalquivir (Confederación Hidrográfica del Guadalquivir: Agustín Argüelles Martin and Benigno José Bayán Jardín).
5. Meeting with staff of the Biological Station of Doñana (Estación Biológica de Doñana: Fernando Hiraldo Cano, Miguel Delibes de Castro, José Juan Chans Pousada and Andy J Green).
6. Meeting with non-governmental organisations (ADENA/WWF – Eva Hernández Herrero and Guido Schmidt, SEO/Birdlife – Jorge Garzón Gutiérrez, and Ecologistas en Acción – Juan Romero).

Friday, 23 April 2004 (night spent at Matalascañas)

1. Meeting with staff of the Seville Port Authority (Autoridad Portuaria de Sevilla: José Luis Fernandez and Angel Pulido Hernández).
2. Meeting with staff of the Doñana 2005 Project (Félix Manuel Perez Miyares and Benigno José Bayán Jardín).
3. Drive from Seville to Almonte for meeting with local mayors (Almonte, Hinojos and Aznalcázar) and staff of the Doñana XXI Foundation.
4. Field visit in north of the Doñana National Park, viewing the current state of the mine spill accident of 1998, the development of The Guadiamar Green Corridor, some of the work of the Doñana 2005 project, and visitor facilities in the north of the National Park.

Saturday, 24 April 2004 (night spent at Matalascañas)

1. Visit to the captive lynx facility (Programa de Cria para la Conservación del Lince Ibérico: Astrid Vargas)
2. Visit to the coastal and riverside sections of the National Park.

3. Lunch at Palacio de Marismillas, with discussions of the preliminary findings of the visit with National Park staff (Alberto Ruiz de Larramendi and Blanca Ramos).
4. Visit to the central section of the National Park and horse ride into the marshes.

Sunday, 25 April 2004

There was no official programme for this day.

1. During the morning I visited the sand dune area of the National Park immediately adjacent to Matalascañas.
2. Travel from Matalascañas to Sevilla, and hence onward to Edinburgh, U.K.

APPENDIX II

LIST OF WRITTEN MATERIAL PROVIDED DURING AND AFTER THE VISIT TO DOÑANA

Ayuntamiento de Almonte

1. Almonte, Hacia el Desarrollo Sostenible: la Agenda Local 21.
2. Anuario Ornitológico de Doñana, N. 1 (Septiembre 1999 – Agosto 2001).
3. Carte sobre la Sostenibilidad.
4. Desarrollo de la Agricultura Ecológica en el Municipio de Almonte.
5. Revisión del Plan General de Ordenación Urbana por el Foro de la Agenda Local 21 de Almonte.
6. Revisión del Plan General de Ordenación Urbanística, Documento de Aprobación Inicial – El Modelo Territorial & Justificación de la Coherencia Ambiental del Plan.

Council of Europe

7. Doñana National Park (Spain): on-the-spot appraisals (7-9 June 1983, 3-5 May 1994, 17-19 September 1998 and 11-13 October 1999).
8. European Diploma of Protected Areas. Resolution (98) 29 on the regulations for the European Diploma of Protected Areas and list of diploma-holding areas.
9. European Diploma of Protected Areas of the Council of Europe.
10. European Diploma for Protected Areas: Questions and Answers.
11. Report of the visit of the International Committee for the Follow-up of Iberian Lynx Conservation Actions to Spain (17-19 March 2003).
12. Report of the 2nd visit of the International Committee for the Follow-up of Iberian Lynx Conservation Actions to Spain (27-28 October 2003).
13. Resolution (85) 13 on the Award of the European Diploma to the Doñana National Park (Spain).
14. Resolution (90) 12 on the renewal of the European Diploma awarded to the Doñana National Park (Spain).
15. Resolution (95) 13 on the renewal of the European Diploma awarded to the Doñana National Park (Spain).
16. Resolution Dip (2000) 2 on the renewal of the European Diploma awarded to the Doñana National Park (Spain).

Doñana National Park (Parque Nacional de Doñana)

17. Comments on the Completion Level of the Resolutions for the Renewal of the European Diploma of the Council of Europe (written submission).
18. Doñana National Park Management Plan (summary of 3rd plan in English).
19. Enlargement: letter from Alberto Ruiz de Larramendi dated 26 February 2004.
20. Láminas y Apuntes por Jacobo Pérez-Encisco.
21. Parque Nacional de Doñana, published by Canseco Editores in 2002.
22. Plan Annual de Trabajos, Parque Nacional de Doñana. Año 2004. Gestión e Investigación.
23. Plan de Aprovechamiento Ganadero del Parque Nacional de Doñana, Julio de 2000.
24. Plan Quinquenal para el Aprovechamiento de Piña en el P. N. de Doñana (2000 – 2004).
25. Plan Rector de Uso y Gestión del Parque Nacional de Doñana. Decreto 48/2004, de 10 de Febrero, de la Consejería de Medio Ambiente de la Junta de Andalucía.
26. Rapport Annuel du Parc National de Doñana 2003.
27. Visit Doñana National Park and Surroundings, by A. Castaño Corral, J. Mateos Mateos & L. Rivera Silva.

Doñana 2005

28. A Project for the Regeneration of Doñana.
29. Doñana 2005: consigue la ampliación del Parque Nacional de Doñana.
30. El Agua de El Rocío: Depuración de las aguas residuales de El Rocío.
31. Estrategia de divulgación y participación pública del proyecto “Doñana 2005”.
32. II International Meeting of Experts on the Hydrological Regeneration of Doñana: Conclusions (Huelva, 26th – 28th of November 2001).

33. La Diálisis de los Arroyos: Restauración de los arroyos de Soto Chico, Soto Grande y el arroyo de la Laguna de Los Reyes.
34. La marisma al natural: Restauración de la Marisma Gallega.
35. La Regeneración.
36. Vuelta a la Normalidad: Control y permeabilización de la marisma frente al río, al Brazo de la Torre y a Entremuros.

Estación Biológica de Doñana

37. Estación Biológica de Doñana (Introduction in English).
38. 1997 Annual Report.
39. Impacto de la Salinización sobre Aves y Ecosistemas Acuáticos, by A.J. Green & J. Figuerola.
40. Memoria 1998.
41. Memoria 1999.
42. Memoria 2000.
43. Memoria 2001.
44. Memoria 2002.

Fundación Doñana 21

45. Desarrollo sostenible.
46. Label Regulation.
47. Live the Nature: Doñana

Junta de Andalucía

48. Guía Turística de los Pueblos Ribereños del Río Guadamar.
49. Letter of 10 March 2000 to the Council of Europe outlining (in English) the actions to remedy the contamination.
50. Proyecto de Orden por la Que se Establece una Reserva de Pesca en La Desembocadura del Río Guadalquivir.
51. Sumario, 3 de Febrero de 2004, Número 22 (2 de 3) (pages 2866-3022).
52. The Guadamar Green Corridor: from an Ecological Disaster to a Newly Designated Natural Protected Area.
53. The RENPA's Master Plan: Connecting Nature, Culture and Society.
54. The Strategy for the Green Corridor of the Guadamar River: Fundamentals of the Strategy. Conclusions of the International Seminar on Ecological Corridors and Restoration of Rivers and Riparian Zone.

Miscellaneous

55. ADENA/WWF – WWF update report on the Doñana National Park.
56. ADENA/WWF – Extract of the complaint reported from WWF/ADENA to the DG Environment, regarding the impacts of the project for enlarging the Harbour of Seville.
57. Confederación Hidrográfica del Guadalquivir: Memoria 1996 – 1999.
58. Confederación Hidrográfica del Guadalquivir: Memoria 2000 – 2003.
59. Ecologistas en Acción – letter dated 17 January 2004 entitled “Re: Bern Convention infringement in Doñana National Park”.
60. Effects of localised intensive aquifer exploitation on the Doñana wetlands (S W Spain), by M. Manzano, E. Custodio, C. Media Villa & C. Montes.
61. EtiQueta Doñana 21 (Calidad Natural). Hecho en Doñana – Perfecto. Catalogo 2003, 2a Edición.
62. Informe sobre el Impacto Previsible de las Actuaciones de Mejora en Accesos al Puerto de Sevilla sobre el Parque Nacional de Doñana
63. Legislación sobre Doñana, by Jesús Vozmediano.
64. Mucho Más: Municipios y Parques Nacionales.
65. Programa de Conservación ex situ del Lince Ibérico. Boletines Informativos.
66. Sociedad Española de Ornitología (SEO/Birdlife) – briefing notes.
67. 11 assorted CDs, maps and videos.
68. Numerous sheets of notes, information sheets, copies of letters, photocopies of short articles, etc.

APPENDIX III

Draft resolution on the renewal of the European Diploma of Protected Areas to the Doñana national park (Spain)

The Committee of Ministers, under the terms of Article 15.a of the Statute of the Council of Europe,

Having regard to Resolution (65) 6 instituting the European Diploma, as amended by Resolution (98) 29 on the regulations for the European Diploma of Protected Areas;

Having regard to Resolution (95) 13 concerning the award of the European Diploma to Doñana national park in Category A;

Taking into account the report by the experts submitted at the meeting of the Group of Specialists for the European Diploma of Protected Areas on 28 February and 1 March 2005;

Having regard to the proposals of the committee responsible for the activities of the Council of Europe in the field of biological and landscape diversity (CO-DBP);

Renews until 21 September 2010 the European Diploma of Protected Areas awarded to Doñana national park;

Attaches the following conditions and recommendations to the renewal:

Conditions

1. The national park authorities should ensure that a register of risks, including estimates of their likelihood and of the magnitude of their effects, is drawn up within one year.
2. The port of Seville authority should re-open the Environmental Impact Assessment (EIA), including the results of models predicting climate change during the course of the 21st century. The EIA should be subject to consultation by all interested parties, especially those with legitimate interests in the Doñana national park. A final decision of the acceptability or otherwise of the environmental effects of the Port of Seville development should be made by an independent body appointed by national or regional government.
3. There should be a reduction of both the direct and the indirect impacts of the pilgrimages on the biodiversity of the area, in particular by increasing awareness among the pilgrims themselves.

Recommendations

1. The status of the aquifer underlying the national park and the surrounding lands needs to be re-assessed in terms of both its sustainable yield for agriculture and in terms of the quality of its water, with the aim of restoring the marshes with an adequate supply of water of high quality.
2. The national and Andalusian Governments should instruct an appropriate agency (or agencies) to devise and implement a broadly-agreed and accepted scheme for monitoring the water quality in the Doñana national park and its surrounding areas. The data derived from monitoring should be regularly communicated to all governmental and non-governmental partners and used to rectify any defects in the control of pollution.

3. Plans for the protection of the Iberian lynx and the imperial eagle need to be revised and implemented. Plans for a small range of other 'flagship' species need to be drawn up, implemented, and used for increasing public awareness of the conservation issues within and around the national park.
4. The national park authorities, with the assistance of external partners, should undertake an audit of the non-native species that occur within and adjacent to the Doñana national park.
5. The port of Seville authority should explore mechanisms for harnessing the best international scientific advice in relation to the effects of its activities on the environment generally and on biodiversity in particular.
6. The national park authority should explore mechanisms for harnessing the best international scientific advice in relation to the research and management activities within the Doñana national park.
7. By the time of the next review of the European Diploma, expected to be in 2010, the national park should have a vision for how it will develop over the forthcoming decades and of its linkages with the surrounding countryside. This will help in the long-term planning of activities both within and outside the national park.