

**REPORT OF THE IUCN/UNESCO WORLD HERITAGE MONITORING
MISSION TO DJOUDJ NATIONAL BIRD SANCTUARY (SENEGAL)
FROM 14 - 18 MAY, 2005**

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EXECUTIVE SUMMARY AND LIST OF RECOMMENDATIONS

A joint IUCN/UNESCO mission to Djoudj National Bird Sanctuary was undertaken from the 14th to the 18th May 2005 in order to:

- Assess the state of conservation of Djoudj National Bird Sanctuary, as requested by the 28th session of the World Heritage Committee and in advance of the 29th session of the Committee.
- Evaluate the relevance of the international assistance request of the Director of National Parks about the organization of a seminar on the management of Djoudj National Bird Sanctuary in order to design an action plan for the site to maintain its integrity and rich biodiversity

Djoudj National Bird Sanctuary was inscribed on the World Heritage List in 1981 under natural criteria iii and iv. In 2000, the property was included on the List of World Heritage in Danger; following the results of the expert mission by IUCN, the Ramsar Bureau and UNESCO, undertaken from 14 - 22 September 2000. The report of the mission called for urgent financial assistance to deal with the introduced species *Salvinia molesta*. In view of the imminent danger facing the site, the Director of Senegal's National Parks requested that the property be enlisted on the List of World Heritage in Danger. IUCN highlighted the seriousness of the threat to both the environment and the economy of the region, and the difficulty of controlling the introduced species.

The 2005 mission team was comprised of Dr. Patrick Triplet (IUCN) and Mr. Noëline Rakotoarisoa (UNESCO) who reviewed the current state of conservation of the property and met with the different stakeholders and partners. It was noted that the property remains an important ecologically site with an important role in maintaining the biological functions of the Senegal River delta. Despite progress achieved in conserving the property, management capacity remains a challenge. There are, for example an insufficient number of wardens and they lack the capacity to fulfill the conservation agenda of the property (lack of vehicles and communication equipment, confusion between their role and that of the ecoguides). The mission team also observed an insufficient budget for accomplishing some key management activities and a lack of management plan that could encourage stakeholder involvement. The Biological Station for example does not carry out its function appropriately due to a lack of funding and no permanent scientific manager to guide the work. The Pelican breeding site is currently the main focus of management, whilst funding constraints limit activities to the maintenance of the property's biodiversity. Invasive species (*Pistia*, *Typha*) are still a threat and it is suggested that in order to control them, water levels and water quality need to be managed efficiently. It is proposed that a good water input calendar be adopted. Cattle grazing in the sanctuary continues to constitute a real threat, prompting an urgent need to organize a new partnership with local farmers. Hunting around the sanctuary also needs to be better organized so that the buffer zone could be more efficient in enhancing the conservation status of the property.

The mission team developed a list of actions that could form the basis of a future management plan. These actions deal with habitat and visitor management, management of the tracks, role of the head warden at the Sanctuary, and the role of the Biological Station. The mission team considered that there was an urgent need to organize a seminar with scientists, stakeholders and former head wardens of the property so that all the above points could be discussed and, if accepted, actions considered as part of the management plan. It is proposed that a seminar could be held in September 2005 if funds are available. Finally, the mission team recommends that the Djoudj National Bird Sanctuary be retained on the List of World Heritage in Danger until the following benchmarks are fulfilled:

- Drafting and approval of a new management plan
- Functional reorganisation of the National Park Authority

1.0 BACKGROUND TO THE MISSION

The Djoudj National Bird Sanctuary was created in 1971 (presidential decree 71-411, 14th April 1971) and extended in 1975 (presidential decree 75-1222, 10th December 1975). Its objective was and still is to safeguard a significant part of the natural flooding plains of the Senegal River delta. It was designated as a Ramsar Site in 1977 and inscribed on the World Heritage List in 1981. It was twinned with the Camargue in 1978 and with the Diawling National Park in 2000.

Due to the problems posed by the Diama Dam and its subsequent impacts on the property, it has been registered on the Montreux Register of the Ramsar Convention and on the List of World Heritage in Danger in 2000 following a proposal of the Director of National Parks and a joint mission by Ramsar, IUCN and BirdLife International in September 2000 when the invasive species *Salvinia molesta* was considered a major threat to the sanctuary.

1.1 Criteria for World Heritage Listing

The Djoudj National Bird Sanctuary was inscribed as a Natural World Heritage Site on the basis of Criteria iii, iv:

- It contains superlative natural phenomena or areas of exceptional natural beauty and aesthetic importance
- It contains the most important and significant natural habitats for in-situ conservation of biological diversity, including those containing threatened species of outstanding universal value from the point of view of science and conservation

1.2 Integrity issues raised in the IUCN evaluation report at time of inscription

The property was first proposed to the World Heritage Committee in 1978. It was not accepted at this time because there was no definitive understanding of the potential impacts of the Diama Dam on the property. The IUCN recommendation in April 1979 was: "*Because of the intensive development taking place in the region, it is recommended that any decision on the area be deferred indefinitely*". Despite consideration of the potential impact of the Diama Dam the WH Committee decided to inscribe the site in 1981 noting that on the basis of the UNESCO Consultants' report the Government of Senegal would take the protective measures necessary to maintain the integrity of this World Heritage property in spite of the construction of a series of dams.

1.3 Examination of the State of Conservation by the World Heritage Committee and its Bureau

The case of the Djoudj National Bird Sanctuary was examined during different sessions of the World Heritage Committee and Bureau

5th Session (1982): "*The Committee expressed the hope that on the basis of the UNESCO Consultants' Report (1981) the Government of Senegal would take the protective measures necessary to maintain the integrity of this World Heritage site in spite of the construction of a series of dams by the O.M.V.S.*"

24th Session (2001): "*The Committee decided to include the site in the List of World Heritage in Danger, in accordance with the expressed wishes of the State Party. The Committee furthermore called on international donor support*".

27th Session (2003): *The Committee recommended that the State Party, the World Heritage Centre, IUCN, and the Ramsar Convention Secretariat provide advice for examination by the World Heritage Committee at its 28th session in 2004 on possible benchmarks and timeframes that could facilitate the Committee deliberations on the possible removal of the Djoudj National Bird Sanctuary from the List of World Heritage in Danger.*

28th Session (2004): *The Committee decided to retain Djoudj Bird Sanctuary on the List of World Heritage in Danger, mainly on the basis of threats posed by the proliferation of *Typha australis* and other invasive aquatic species, the growing salinity of the soils and the silting up of the rivers. The Committee also requested IUCN and UNESCO to advise on required actions and possible benchmarks and timeframes for removal of the property from the List of World Heritage in Danger*

and submit recommendations for examination by the World Heritage Committee at its 29th session in 2005.

1.4 Justification of the mission (terms of reference, programme and composition of mission team provided in Annex)

This mission, requested by the World Heritage Committee and invited by the State Party, was undertaken jointly on behalf of IUCN (Patrick Triplet) and UNESCO/WHC (Noëline Rakotoarisoa). It responds to two main objectives:

- Give a new insight on the prevailing situation within the Djoudj National Bird Sanctuary, following the recommendation of the 28th session and in preparation of the 29th Session
- Evaluate the relevance of the request of the Director of National Parks about the organization of a seminar on the Djoudj management in order to design an action plan for the site to maintain its integrity.

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

2.1 Protected area legislation

The property is a National Park where regulation is applied according to the *Code de la Chasse, de la Protection de la Faune et de l'Environnement*. All of the protected areas in Senegal are under the responsibility of *Direction des Parcs Nationaux* (DPN), within the Ministry for Environment and Nature Conservation. DPN was created in 1973 with the objective to initiate a national network of protected areas. According to the 1971 decree, it is forbidden (art. L.4), to hunt or to trap animals, to sell animals, dead or alive, or their skins or their trophies, or to collect nests and eggs within the National Parks. Article L.5 of this decree indicates that pastoral activities and harvesting of any material is also forbidden.

2.2 Institutional framework

The Park and its administrative authority are completely under the responsibility of the Senegalese Government. The DPN nominates a Head warden for Djoudj National Bird Sanctuary, an assistant, and wardens. The two components under the administration of the Park are the National Park itself and the Biological Station.

2.3 Key Management issues

2.3.1 Park Staffing and Capacity

The Park is managed by a head warden, with an assistant who is at present the director of the Biological Station. An accountant and a secretary complete the team at the headquarters. In the field, two wardens are assigned to the Crocodile post, two at the Flamingo post (including a volunteer referred herein as “*ecogarde*”), one at Gainth post and one at the landing stage. The only way to communicate between wardens and their officers is by individual cell phones.

The mission of the wardens is to watch over the Park and to collaborate on scientific monitoring. At the Flamingo post, wardens live close to the local population. Three wardens regularly count birds (daily at the landing place where the water level is measured daily as well).

The lack of resources and capacity has visible consequences:

- General lack of motivation amongst the wardens
- Lack of communication between the wardens and the headquarters
- Lack of access to the documentation dealing with the Park
- Lack of participation in discussions dealing with the site management and with the annual work plan.
- Confusion on the role and duties of the *ecoguides*
- Poor management of conservation issues

During the raining season (from July to October), the most isolated posts are closed. Although these posts were built recently to replace old constructions, they do not seem to be considered as functional by the wardens. The obligatory off duty periods of the wardens implies that some posts can be closed for extended periods.

A major problem in the management of the site is the constant change in staff especially at management level. Management staff who previously worked with IUCN in the preparation of the management plan and who benefited from training workshops, no longer work for the park.

2.3.2 Budget and management planning

The annual budget of the Park is about 15 000 000 million FCFA (around US\$ 28,800), although in 2004, the 13 862 visitors allowed the park to earn an additional 33 million FCFA (around US\$ 63,300). Visitor tickets are considered as taxes and go to the National budget. It is estimated that renting pirogues provides earnings of about 1.5 times this amount, that is to say 40 million FCFA for the Hôtellerie and between 9 and 10 million FCFA for the villages. There is a special foundation for activities and promotion which is provided by Hôtellerie and village communities on the basis of 8% of income from canoe rental.

The Park used to receive funding through a number of projects which have been completed. No new project is currently in preparation and there is no document establishing the priorities of the Park. There is a management plan dating from October 2002, but not yet approved or being implemented.

Various financial or institutional partners intervene at different levels in the Park. However, few of them are invited to participate at meetings of the management committees.

The management of the Park and its buffer zone are not part of the development plan of the rural community that they belong to (i.e. Ross Bethio - according to the decentralisation scheme), thus the Park and its buffer zone fall within "no man's land", entirely supported by the DPN.

2.3.3 The Biological Station

The idea to create a Biological Station was the initiative of the warden Indega Bindia, who has been working for 32 years at the site. This idea was born during a training session in Germany. The objective was to provide the Park with a research team that could identify the problems and help the head warden to address them by proposing the best technical solutions. The Station opened officially in 1993 and had sufficient funds to operate, thanks to Rhenania Land (Germany) and to the Frederic Ebert's Foundation. The laboratory contained good equipment (for water analysis for example) which allowed students or scientists to do their research. The end of funding to the station has increased the necessity to receive visitors other than researchers, resulting in the Station now being in competition with the Djoudj Hôtellerie.

The director of the Station and his accountant manage civil staff: a cook and her assistant, a man for maintenance of the buildings, a person working in the laundering room and a night watchman. Due to the low salaries and the lack of financing, a decrease in the staff number is likely in the near future.

The main weakness of the Station comes from the fact that it has no clear scientific mandate and adequate support. In addition, key reports and documents produced by experts and researchers are not maintained by the library and are not easily accessible to management. The Station cannot play its central scientific role without a permanent scientific coordinator and a very strong partnership with national and international research institutions.

2.3.4 Management Plan

A first management plan was developed in 1994, "*plan quinquennal d'aménagement intégré*", which was followed by a 3 year period plan. These two plans allowed for a modern approach to park management including collaboration between villages and the Park. However, according to a

number of stakeholders and to some previous head wardens of the Park, these management plans did not deal adequately with the conservation and core management issues of the Park. For example, there were not enough management operations for bird protection. A new management plan was written in 2002 but this plan has never been validated or implemented. During the meeting with DPN, the mission team highlighted the fact that it included many long term objectives and medium term sub-objectives but did not give guidance on detailed operations. The mission team considered that this plan is not an effective tool for addressing the different problems of the Park.

In April 2004, Senegal and Mauritania introduced a proposal for the transboundary Biosphere Reserve of the Senegal River delta. The management plan will therefore have to consider the implications of transboundary management of natural resources.

3.0 IDENTIFICATION OF KEY MANAGEMENT ISSUES / THREATS

3.1 Water input calendar

Before the construction of the Diama Dam, water flows were based on natural river flooding. Gates with coffer-dams were closed once the required level was reached. They were only opened at the end of the season (April) to evacuate, if necessary, the overflow, so as to allow an almost complete drainage where possible of the backwaters. The Diama dam has radically changed this process. It is now possible to get water inflows at any time. On the other hand, water levels outside the park are always higher than inside and it is not possible to evacuate water if necessary. The determining factor in the effective management of the park now relates to the system of water flow, the correct timing for the release of water and the level of water required. Various scenarios have been tested for determining these factors in relation to the needs of the flora and fauna of the park. This work was carried out by the Universities of Dakar and St. Louis with the support of IUCN Senegal. The results were presented to and validated by the scientific and management committees. Equipment to monitor the hydrology was put in place, and computers provided to the biological station to store and analyse data. Management staff were trained to use the equipment. As a result the flow of water to the park was well controlled following the results of the hydrological monitoring. However due to constant changes in management and technical staff previously trained in the use of equipment and even though the equipment is in place, systematic hydrological monitoring and the system to open and close the sluice gates to allow the correct flow of water are no longer carried out. This is ultimately having a detrimental effect on the park, notably with the spread of invasive species.

3.2 The Pelican breeding site

This constitutes the main attraction of the park for visitors thus representing the main management concern of the Park, although it is not possible to ascertain if over the years these efforts were justified by a real necessity to contribute to the protection of the species or to support the development of ecotourism activities.

It was noted that visitors come and view the Pelican breeding site and then set off to Saint Louis. Other circuits could be proposed. In this case, it would be important to evaluate possible disturbances for wildlife and birds. Special attention must be paid to the last remaining heron breeding colony in the park, located in the Crocodile backwater, which could be under threat if hunters from the closed campsite continue to visit it regularly without proper regulation and control of the level of visitation.

3.3 Wildlife hides in the field

Five hides for bird spotting are easy to reach by the public. The most emblematic one, President Mirador, has no track to reach it. The other hides are not functional. Their access is not hidden, thus creating a lot of disturbance to waterbirds which tend to congregate in the middle of the lake.

3.4 Road signs in the Park

There is a major problem in maintaining road signs in the Park. Boards at the entrance are old and suffer a lack of maintenance. In the Park, road signs had fallen and during the mission, the Hôtellerie decided to reinstall them because of a lack of capacity at the Park Headquarters to undertake this work.

3.5 Public information, education and communication (IEC)

This is one of the functions of the warden and of the ecoguides. However, there is no real strategy in place for adequate IEC activities. The production of leaflets on the site and its values is a priority and regular sessions on IEC for all stakeholders, including wardens and ecoguides is necessary.

3.6 Walking tracks

The track on the dyke, which allows people to reach the Crocodile post is kept by O.M.V.S. The maintenance of the other tracks is the responsibility of the Park authorities. The track towards the Lake hides is very low, thus it could be flooded very frequently making it impossible to use.

4.0 FACTORS AFFECTING THE PROPERTY / CONDITIONS OF INTEGRITY

4.1 *Salvinia molesta*

This is the main invasive species which has threatened the integrity of the Sanctuary. It was first observed by IUCN experts in September 1999 after a human error upstream and spread in all the freshwaters of the delta in a matter of months. The main consequence was a reduction in the open surfaces of water for birds, and negative effects on wildlife including fishes. The joint IUCN, Ramsar, BirdLife International and UNESCO mission of September 2000 recommended the urgent need for coordinated action not only within the Sanctuary, but the adjoining areas as well. IUCN with the kind financial support of the Netherlands provided technical support to both Mauritania and Senegal to facilitate the organization of information meetings with both local authorities and decision makers at the national and regional level. The 2000 mission highlighted the importance of intensifying biological control and IUCN facilitated finding an international expert to advise on this matter. A second IUCN - UNESCO mission in April 2001 gave further guidance on how to address the *Salvinia* problem. In October 2001, the invasion was controlled and it was possible to re orientate funds for other actions. In April 2002, there was ample evidence to suggest that *Salvinia* control was definitively effective (IUCN 2002).

4.2 *Pistia*

Pistia (Water Lettuce) appeared in the Djoudj backwaters in 1989. Until 1993, it constituted a threat to the site because of its expansive coverage of the water's surface. The introduction of specialized insects for biological control helped to reduce its invasive potential.

Despite these good results, a change in the period of water flow occurred in 2004 with a lot of positive consequences for some plants (water-lilies for example) but it led to an increase in water lettuce production in the vicinity of the pelican breeding site. As of the 20th April 2005, Senegalese soldiers and volunteers had collected by hand no less than 39 tones of Water Lettuce.

4.3 *Cattail (Typha)*

This is a real problem for Djoudj National Bird Sanctuary because cattail is growing in the backwaters and prevents water from circulating towards lakes. Its spread has been allowed by the decline in the salinity of the water and the sedimentation in the backwaters.

Waters entering Djoudj and Crocodile backwaters are loaded with mineral material and sediments, decreasing progressively the depth of backwaters and the surface of lakes, which substantially increases the area covered by cattails, in particular in the Lamantin Lake. In

addition, wind seems to bring a high volume of sand every year into the lakes. Lamantin Lake is no longer suitable for ducks, although it used to be one of the main roosting sites for them (fig. 1).

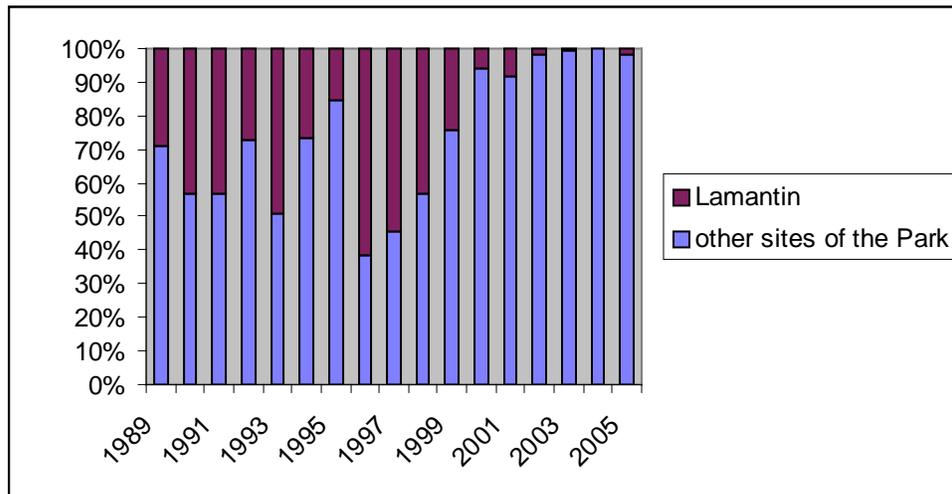


Fig. 1: the decreasing importance of Lamantin Lake for ducks during a 16 year period (V. Schricke and P. Triplet, unpublished data). During the last five years, no ducks have come to the Lake in January.

4.4 Terrestrial habitat modifications

Along the main track towards the landing site, a part of potential flood areas with previously abundant vegetation, is now extremely saline due to the hydrostatic pressure caused by the river overflowing. The only solution is to drain the soils so that there could be a decrease in salinity in the soil and an increase in the nearest backwater (Khar), which could also be useful for controlling *Pistia*.

4.5 Cattle raising

A negative aspect linked to the partnership between the Park and the local communities is related to cattle raising. Cattle movement within the Park (more than 500 individual cattle counted in April 2005) has become so rampant that negative impacts on wildlife and habitat are suspected in the short term. Overgrazing is also occurring in the park around the « Grand Lac » which could result in the Arabian Bustard deserting the site. Movements of shepherds increase this risk and the risk of disturbing wildlife in general, with very negative consequences for ground nesting birds.

4.6 Hunting around the Park

Hunting is permitted around the Park with an abundance of ducks at dusk when they fly towards their night feeding places. Whilst organized hunting activities could bring financial benefits to the Park, this is not the case at present.

Two hunting zones (Caïman and Débi) seem to encroach upon the borders of the buffer zone, or even directly in the Park. There is an urgent need to clarify the legal status of the buffer zone around the park so as to organize this activity in a sustainable way with hunting organizations.

5.0 ASSESSMENT OF THE STATE OF CONSERVATION OF THE SITE

The integrity of the site has been affected since 1986 due to impacts associated with the Diama Dam. There are two opposite trends: an increase in aquatic vegetation including invasive species due to impacts associated with water flow and a decrease in terrestrial vegetation due to the salinization of soils. However, the site still maintains its aesthetic values which justified its World Heritage inscription.

To estimate if the site continues to fulfil a function in the conservation of biodiversity, it is possible to examine the changes in numbers of different waterbirds since 1989 when a team started to count birds every year in January according to the same methods (V. Schricke & P. Triplet, unpublished results). Of the thirty two waterbird species occurring at the site two species are showing a significant decline in their numbers: Lesser Flamingo and Black Crowned Crane. At the same time, six species are increasing: Fulvous Whistling Duck, White-faced Whistling Duck, Knob-billed Duck, Great Cormorant, African Darter, Night Heron. Unfortunately there is a lack of data to assess trends for other species. The regular presence of Arabian Bustard indicates the importance of the site for this rare and endangered species. However, rapid decline could occur, mainly in terrestrial bird species if human pressure (cattle raising) increases.

6.0 CONCLUSIONS

Maintaining the long term integrity of the site requires that the following threats be addressed urgently:

- desertification due to the increasing salinization of soils and
- the reduction of the lake's surface area due to increased sedimentation and the impact of a number of invasive species

The constant change in management staff in the Park has greatly disrupted the effective management of the site and resulted in a loss of capacity despite the support of NGO's and donors. It is essential to put in place a strong and stable management authority to ensure the long term conservation of the Park.

Finally, the mission team would like to propose the following recommendations oriented towards the enhancement of the management of the site. These recommendations could be used to improve and update the management plan prepared in 2002,

6.1 Habitat management

- Refocus management activities to better address biodiversity conservation.
- Establish and implement, through the relevant water management authorities, a calendar of water inflow so that it could be possible to dry up the backwaters as much as possible (not enough water for canoes after the 30th April).
- Use the results of the topographic study provided for in the three-year integrated management plan for creating a drainage system of saline soils towards the backwaters and bodies of water.
- Identify the different problems dealing with water flows (backwaters saturated with dead vegetation or sediments in some bottlenecks...) and to clear all the backwaters and canals making it possible to allow circulation of the water in all of the lowest parts of the park.
- Remove silt from the areas surrounding the Pelican breeding site, and progressively the different backwaters and channel, with a dredger
- Control the vegetation in the Lamantin Lake (Cattail and other species) so as to ensure better water flow, paying special attention to the Crocodile channel. A partial cleaning of the lake is an objective in a long term.
- Clear out the vegetation on the Eastern part of the Grand Lac, in front of the President hide and if possible, after a study during the dry season, restore some zones liable to flood

6.2 Visitor Management

- Organize the training of ecoguides and pirogue pilots and draw up a visitor charter for enhancing the quality of visitor experience to the Park
- Modify the hides so that they become more comfortable and more integrated in the landscape

- Change the road signs so that the visitors can get information in all the strategic places in the Park. It would be important to examine a ban on off-road driving
- Increase and improve the quality and quantity of offers to tourists

6.3 Management of the tracks

- Raise the level of the Gorom track and restore the gates allowing inflow in controlled quantities to the Park
- Improve the tracks going to the hides
- Study the possibility of creating new observation tracks
- Define authorized tracks and take measures against off road vehicles

6.4 Administrative management

- Restore and enhance the authority of the National Park Direction
- Reorganise the local institutional hierarchy in considering that the Sanctuary is one entity, including the biological Station
- Reactivate the work of different management committees
- Offer all the NGO's the opportunity to actively participate in a committee
- Redefine the Park boundaries, in accordance with the decree that created the Park, and take the necessary measures to achieve suitable management of the buffer zone
- Examine the reallocation of the hunting permits in accordance with the park's boundaries and its zoning.

6.5 Scientific research

- Redefine the scientific function of the Biological Station and provide it with the financial support required to fulfil a program validated by the scientific committee.
- Promote scientific partnership with national and international research institutions.
- Nominate a scientist responsible for the Biological Station under the direction of the head warden of the Djoudj National Bird Sanctuary
- Encourage monitoring and research programs to support management decisions
- Establish a centre of documentation at the Station, accessible to researchers, students and Park wardens
- Organize the training of wardens and volunteers on invasive species control
- Organize the training of volunteers so that they become professional agents of nature conservation and management

7.0 RECOMMENDATIONS

1) The mission team considers that there is an urgent need to organize a seminar with Park Authorities, scientists, stakeholders and former head wardens of the Sanctuary, so that all the above points could be discussed and, if accepted, considered as part of the management plan. This seminar could be held in September if funds are available.

2) That the Djoudj National Bird Sanctuary be retained on the List of World Heritage in Danger. It was placed on this list because the property was threatened by serious and specific dangers. Now, major operations are still necessary in relation to the conservation of the property. It can be added that the management authority and management plan are inadequate. The property should be retained on the List until the following conditions are fulfilled:

- Drafting and approval of a new management plan that considers the above management recommendations
- Reorganisation of the entire way the National Park authority operates
- Implementation of an effective programme to control invasive species
- Establishment and implementation of a schedule of water inflows that fully responds to the ecological needs of the park

ANNEXES

Annex 1: Terms of reference

The IUCN consultant will travel to Senegal for a 5 day mission, with the following objectives:

- Undertake on behalf of IUCN the IUCN-UNESCO World Heritage monitoring mission to Djoudj National Bird Sanctuary World Heritage Site, Senegal, to monitor the state of conservation of the site;
- Liaise with the relevant authorities in Senegal (as advised by IUCN) in relation to the organisation of the mission;
- While on mission, make contact with relevant stakeholders to discuss the state of conservation of the site, and provide IUCN with the contact details of the most relevant and reliable sources of information for future reactive monitoring of the site;
- While on mission, take photographs according to the guidelines provided which reflect the key threats to the conservation of the site using 35mm slide film and/or digital camera and deliver a selection of slides/JPEG files with a short text describing the contents of each slide/file to IUCN;
- Update the WCMC datasheet for Djoudj National Bird Sanctuary;
- Submit a Monitoring Mission Report according to the format provided and ensure that the report includes:
 1. An evaluation of the nature and extent of threats to the site, specific issues outlined by the World Heritage Committee at its 27th and 28th session (June - July 2003 and 2004);
 2. An account of measures which the State Party plans to take to protect the outstanding World Heritage values of the site;
 3. Recommendations for any additional action to be taken by the State Party, including draft recommendations to the World Heritage Committee.

The mission report should include the following minimum elements:

- The follow-up of the state of conservation of the site in relation to the issues contained in the nomination file through the produced reports and the discussions with the authorities in Senegal;
- A detailed analysis of the conservation activities, and other actions, carried out on the site since its inscription on the World Heritage List;
- A detailed analysis of the management activities of the site and its value;
- Precise recommendations for a short term plan of action destined to improve the management of the site as well as its conservation state.

Annex 2: Itinerary and programme

Saturday 14th May: arrival in Dakar, welcome from Fatou Samb, discussion and preparation of the trip towards Djoudj PN

Sunday 15th May: Dakar – PN Djoudj in the morning with Fatou Samb. Connexion with Noëline Rakotoarisoa at the Djoudj NP.

14h30 - 15h30: discussion with M. Didi, manager Djoudj Hôtel

16h00 - 18h00: discussion at the Biological Station with its directeur Assane Ndoye, NP Djoudj wardens, volunteers and Village committees representatives

Monday 16th May: PNOD

09h00 – 14h00: visit of the site with Commandant Abdoulaye Diop, Head warden of PNOD: Grand Marigot, Miradors : de Khar, Grand Lac, petit mirador et grand mirador,.

14h00 – 15h00: lunch into the village camp site Ndamlabhar

15h00 – 17h00: visit of the different posts: Ndout, Crocodile, Flamant with the Head warden of the Djoudj NP

17h00 – 19h00: discussions with wardens at the Biological Station

Tuesday 17th May: SAINT LOUIS :

10h00 – 12h00: Discussion with Commandant Ibrahima Diop et Captain Issa Sidibe au Bureau d'Information, former head wardens of Djoudj NP

Return to Dakar in the afternoon

Wednesday 18th May

10h00 – 12h30: presentation of the different results of the mission at the National Park Direction

14h00 – 16h00: discussion with Abdouleye Ndiaye (former head warden of the Djoudj NP) and with Issa Sylla (former directeur of the National Parks)

20h00: diner with Colonel Mame Balla Nguéye and Mr Didi, owner of the Djoudj Hotel

Composition of mission team

Dr Patrick Triplet, IUCN consultant
Noëline Rakotoarisoa, UNESCO/WHC

Annex 3: List and contact details of people met

- Mame Balla Gueye, directeur des Parcs Nationaux du Sénégal (DPN)
- Moustapha M'Baye, directeur adjoint DPN, dpn@sentoo.sn
- Fatou Samb, point focal Patrimoine Mondial, DPN, dpn@sentoo.sn
- Ndiye Sene Thiam, DPN, dpn@sentoo.sn
- Abdoulaye Ndiaye, DPN, sous lieutenant stagiaire
- Mandiaye Ndiaye, DPN, n.mandiaye@caramail.com

- Abdouleye Diop, Conservateur du PNOD
- Insa N'Gom, agent du PNOD
- Assane Ndoye, Directeur Station Biologique
- Indega Bindia, chef de poste de Gainth - Khaedy Sarr, doctorante sur l'évolution du Parc du Djoudj au cours des vingt dernières années.
- Idrissa Mbaye, écoguide du PNOD
- Bressy Fall, écogarde PNOD
- Magatte Seck, écogarde PNOD
- Djiby Seye, secrétaire général du comité intervillageois, Diadième III

- Ibrahima Diop, responsable du bureau d'information des parcs à St Louis, ancien conservateur du Parc
- Issa Sidibé, cellule de suivi des plantes invasives, ancien conservateur du Parc
- Ousmane Seck, comptable Iles de la Madeleine, ancien garde du PN Djoudj

- Issa Sylla, délégué régional Wetlands International, ancien conservateur du Parc, ancien directeur des Parcs Nationaux
- Abdoulaye Ndiaye, Wetlands International, ablaywet@sentoo.sn
- Cheikh Diagana, chargé de mission Wetlands International, ancien conservateur du PN Diawling
- ?DiDi, propriétaire de l'Hôtellerie du Djoudj
- Abdel-Aziz DiDi, gérant de l'Hôtellerie du Djoudj
- Amadou Matar Diouf, coordinateur des programmes UICN-Sénégal, matar.diouf@iucn.org
- Stéphane Guzylack, expert sectoriel biodiversité
- Pascal Vardon, conseiller technique, chef de projet « Appui institutionnel au secteur de l'Environnement au Sénégal »
- Vincent Schricke, Office National de la Chasse et de la Faune Sauvage

Annex 4: References

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- Triplet P., Yésou P. (2000) Controlling the flood in the Senegal delta : do waterfowl populations adapt to their new environment ? *Ostrich* 71 : 106 –111.
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