



**PERIODIC REPORTING EXERCISE  
ON THE APPLICATION OF THE WORLD HERITAGE  
CONVENTION**

**SECTION II**

**State of Conservation of specific World Heritage properties**

**State Party: INDIA**

**Property Name: KEOLADEO NATIONAL PARK**

## II.1. Introduction

a.	Country (and State Party if different): <b>India</b>	001
b.	Name of World Heritage property: <b>Keoladeo National Park</b>	002
c.	<p>In order to locate the property precisely, please attach a topographic map showing scale, orientation, projection, datum, site name, date and graticule. The map should be an original print and not be trimmed. The site boundaries should be shown on the map. In addition they can be submitted in a detailed description, indicating topographic and other legally defined national, regional, or international boundaries followed by the site boundaries.</p> <p>The State Parties are encouraged to submit the geographic information in digital form so that it can be integrated into a Geographic Information System (GIS).</p> <p>On this questionnaire indicate the geographical co-ordinates to the nearest second (in the case of large sites, towns, areas etc., give at least 3 sets of geographical co-ordinates):</p> <p><b>27 7'6"N - 27 12'2"N and 77 29' 5"E - 77 33' 9"E</b></p>	003
d.	<p>Give the date of inscription on the World Heritage List and subsequent extension (if applicable):</p> <p><b>6/12/1985</b></p>	004
e.	<p>Organisation(s) or entity(ies) responsible for the preparation of this report.</p> <p>Organisation(s) / entity(ies): <b>Department of Forests &amp; Wildlife, Rajasthan</b></p> <p>Person(s) responsible: <b>Deputy Conservator of Forests (Wildlife)&amp; Director</b></p> <p>Address: <b>Director, Keoladeo National Park</b></p> <p>City and post code: <b>Bharatpur, 321001</b></p> <p>Telephone: <b>05644-222777</b></p> <p>Fax: <b>05644-232402, 222555</b></p> <p>E-mail:</p>	005
f.	<p>Date of preparation of the report:</p> <p><b>11/1/2003</b></p>	006
g.	<p>Signature on behalf of the State Party</p> <p>Signature: .....</p> <p>Name: <b>B.Praveen</b></p> <p>Function: <b>Deputy Conservator of Forests (Wildlife) &amp; Director, Keoladeo National Park</b></p>	007

## II.2. Statement of significance

<p>At the time of inscribing a property on the World Heritage List, the World Heritage Committee indicates its outstanding universal value(s), or World Heritage value(s), by deciding on the criteria for which the property deserved to be included on the World Heritage List. Circle the criteria retained for the inscription:</p> <p>Cultural criteria: i – ii – iii – iv – v – vi</p> <p>Natural criteria: i – ii – iii – <b>iv</b></p>	008
<p>Were new criteria added by re-nominating and/or extending the property after the original inscription?</p> <p><b>NO</b></p> <p>If YES, please explain:</p> <p><b>NOT APPLICABLE</b></p>	009 010
<p>Please quote observations concerning the property made by the Advisory Body(ies) during the evaluation of the nomination:</p> <ul style="list-style-type: none"> <li>• <b>Concern on the dependence of the park's water system on monsoon.</b></li> <li>• <b>Need to address visitor impacts</b></li> <li>• <b>Overgrazing by feral cattle</b></li> </ul>	011
<p>Quote the decisions and observations / recommendations, if appropriate, made by the World Heritage Committee at the time of inscription and extension (if applicable):</p> <p><b>Not Applicable</b></p>	012
<p>Identify the actions taken as follow-up to these observations and/or decisions:</p> <p><b>With increasing demand for water for irrigation and human consumption the Government of Rajasthan has ordered the release of water on priority the park. Alternate sources of water supply are being explored so that there is an ensured supply of water to the park.</b></p> <p><b>At present visitor education is done through leaflets and an Orientation Centre. The Government of Rajasthan and WWF with the help of finances from Swarovski &amp; Co have initiated the Dr.Salim Ali Visitor Interpretation Centre and Programme which will address the aspects of visitor education and try to make the villagers around the park understand the values of the park.</b></p> <p><b>Feral cattle compete with the herbivores for the fodder. The population of the cattle is kept under control by translocating them to other areas so that the population is kept under control.</b></p>	013

*II.2. continued*

	<p>Please propose a statement of significance by providing a description of the World Heritage value(s) for which the property was inscribed on the World Heritage List. This description should reflect the criterion (criteria) on the basis of which the Committee inscribed the property on the World Heritage List and it should also detail what the property represents, what makes it outstanding, what the specific values are that distinguish the property as well as what its relationship with its setting is, etc.:</p> <p><b>Keoladeo National Park was included on the World Heritage list under Natural criteria (iv).</b></p> <p><b><i>Ornithologically</i>, the park assumes significance in two respects – One, because of its strategic location it is a staging ground for Palaearctic migratory waterfowl arriving in the Indian subcontinent before dispersing to various regions. It is also a site where waterfowl converge before departing to breeding grounds in the western Palaearctic region. In addition, the wetland is a wintering area for massive congregations of a large diversity of waterfowl (about 120 species). Two, it has been the only regular wintering area in India for the central population of the rare and endangered Siberian crane. The park is the only site in the region where storks, cranes, cormorants, herons and other resident birds breed in such numbers and in such density (15 species with above 5000 nests in a good monsoon year). The park now is home to another key species – the tiger (one since 2000)</b></p> <p><b><i>Culturally</i>, the park has a history of over 100 years and is named after Keoladeo (Shiva) temple located in the centre of the park. Other places of historical and cultural importance are Duck Shooting Inscriptions, Kadam Kunj Shikargah and Shanti Kutir Shikargah (now a forest rest house).</b></p>	014
	<p>For the extension of a property or the inclusion of additional criteria a re-submission of the property may be considered. This might be regarded as necessary in order to recognize cultural values of a natural World Heritage property, or vice-versa, become desirable following the substantive revision of the criteria by the World Heritage Committee or due to better identification or knowledge of specific outstanding universal values of the property. Should a re-nomination of the property be considered? YES / NO</p> <p><b>NO</b></p> <p>If YES, please explain:</p> <p><b>NOT APPLICABLE</b></p>	015  016
	<p>Are the borders of the World Heritage property and its buffer zone (still) adequate to ensure the protection and conservation of the property's World Heritage values: YES / NO</p> <p><b>YES</b></p> <p>If NO, please explain why not, and indicate what changes should be made to the boundaries of the property and / or its buffer zone (please indicate these changes also on a map to be attached to this report):</p> <p><b>NOT APPLICABLE</b></p>	017  018

*II.2. continued*

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	Is the State Party actively considering a revision of the property boundaries or the buffer zone? YES / NO	019
	<b>NO</b> If YES, indicate what is being done to that end: <b>NOT APPLICABLE</b>	020

### II.3. Statement of authenticity / integrity

<p>Have the World Heritage values identified above been maintained since the property's inscription? YES / NO</p>	021
<p><b>YES</b></p> <p>If NO, please describe the changes and name the causes:</p> <p><b>NOT APPLICABLE</b></p>	022
<p>What was the evaluation of the authenticity / integrity of the property at the time of inscription? (Please quote from the ICOMOS / IUCN evaluation):</p> <p><b>Keoladeo National Park is internationally famous wetland for Palaearctic migratory waterfowl and its large congregation of non-migratory resident breeding birds. The existence of the resource system on which this spectacle is based is dependent on the hand of man and demonstrates what can be accomplished for conservation through his judicious intervention. The park receives much publicity and is a focal point for visitors who are attracted for bird life. Keoladeo is one of the most important bird habitats in the Indo Malayan Realm.</b></p>	023
<p>Have there been changes in the authenticity / integrity since inscription? YES / NO</p>	024
<p><b>NO</b></p> <p>If YES, please describe the changes to the authenticity / integrity and name the main causes?</p> <p><b>NOT APPLICABLE</b></p>	025
<p>Are there (further) changes foreseeable to the authenticity / integrity of the property in the near future? YES / NO</p>	026
<p><b>NO</b></p> <p>If YES, please explain and indicate how these changes might affect the World Heritage values of the property:</p> <p><b>NOT APPLICABLE</b></p>	027

### II.4. Management

	<p>How could the arrangements for the protection and the management of the property best be defined (more than one indication possible)?</p> <p style="text-align: center;">Legal ( ✓ ) Contractual ( ) Traditional ( )</p>	028
	<p>Please describe and assess the implementation and effectiveness of these arrangements for the preservation of the values described under item II.2 at the national, provincial and/or municipal level:</p> <p><b>The legal provisions under the existing framework</b></p> <ul style="list-style-type: none"> <li>• <b>at the national level ensures the correct formulation of policies and laws besides providing a sanction of the activities undertaken at the Provincial and local level.</b></li> <li>• <b>At the provincial level ensures the execution of the existing laws of the time by providing protection to the habitat and improving the conservation values. The financial and infrastructural support to the local level is provided by the provincial level.</b></li> <li>• <b>At the local level the conservation efforts are converted to activities and executed under the supervision of the provincial administration.</b></li> </ul> <p>In general terms, can this legislative, contractual and/or traditional protection be considered sufficient? YES / NO</p> <p><b>YES</b></p> <p>Please explain:</p> <p><b>The protection accorded to the habitat is of the highest order available to a natural area under the existing legal framework.</b></p>	029
	<p>Provide a list and summaries of laws and regulations concerning cultural and natural properties protection and management (including extracts of relevant articles from the Constitution, Criminal Law, Law/Regulations on Land-use, Environment Law and Forestry Law, amongst others). Please also attach any documentation available concerning these points:</p> <p><b>CONSERVATION LAWS</b></p> <p><b>CONSTITUTIONAL SAFEGUARDS</b></p> <p><b>Art 48-A The state shall endeavour to protect and improve the environment and to safeguard the forests and wildlife of the country.</b></p> <p><b>Art 51-A(g) It shall be the duty of every citizen of India to protect and improve the natural environment including the forests, lakes, rivers, wildlife and to have a compassion for living creatures.</b></p>	030 031 032

	<p><b>INDIAN FOREST ACT 1927</b> An Act to consolidate the law relating to the forests, the transit of forest produce and the duty leviable on timber and other forest produce.</p> <p><b>WILDLIFE PROTECTION ACT 1972</b> An Act to provide for the protection of wild animals, birds, plants and for that matters connected therewith or ancillary or incidental thereto.</p> <p><b>CRIMINAL PROCEDURE CODE 1973</b> A code to consolidate and amend the law related to Criminal Procedure.</p> <p><b>INDIAN PENAL CODE 1860</b> A code relating to all crimes and their remedial penal measures.</p> <p><b>CUSTOM ACT 1962</b> All offences against CITES and the Export-Import Policy are punishable under the Act.</p> <p><b>FOREST CONSERVATION ACT 1980</b> An Act that restricts the conversion of forest land for non- forestry use.</p> <p><b>WATER ACT 1977</b> An Act to provide for the prevention and control of water pollution and maintaining or restoring the wholesomeness of water.</p> <p><b>AIR ACT 1981</b> An Act to provide for the prevention, control and abatement of air pollution.</p> <p><b>ENVIRONMENT POLLUTION ACT 1986</b> An Act to provide for the protection and improvement of environment and for matters connected therewith.</p> <p><b>BIODIVERSITY CONSERVATION ACT 2002</b> An Act to provide for the conservation of biodiversity, sustainable use of its components and equitable sharing of benefits arising out of the use of biological resources and for matters concerned therewith.</p>	
	<p>Describe the administrative and management arrangements that are in place for the property concerned, making special mention of the institutions and organisations that have management authority over the property as well as of the arrangements that are in place for the coordination of their actions:</p> <p><b>The Department of Forests and Wildlife, Government of Rajasthan is responsible for the management of the forests in the State. The Chief Wildlife Warden of the State looks after the network of protected areas ( National Parks and Sanctuaries). The park is managed by the Deputy Conservator of Forests(Wildlife) under the aegis of the Chief Wildlife Warden of the state.</b></p>	033



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<p>Please indicate under which level of authority the property is managed:</p> <p>Property ( ) <b>Deputy Conservator of Forests(Wildlife) and Director</b> Regional ( ) <b>Chief Wildlife Warden, Rajasthan</b> National ( ) <b>Ministry of Environment and Forests, GOI</b> Other (please describe):</p>	034
<p>Please provide the full name, address and phone/fax/e-mail of the entity(ies) directly responsible for the management (conservation, preservation, visitor management) of the property:</p> <p><b>Director Keoladeo National Park Bharatpur, Rajasthan India PIN : 321001 Ph : 05644-22777 Fax 05644-22864,32402</b></p>	035
<p>Is it necessary to revise the administrative and management arrangements for the property? YES / NO</p> <p><b>NO</b></p> <p>If YES, explain why this is the case:</p>	036
<p>Is there a management plan for the property? YES / NO</p> <p><b>YES</b></p> <p>If YES, please summarise, indicating if the plan is being implemented and since when:</p> <p><b>The current management plan is for the period 2002-2006. Keoladeo National Park with its mosaic of habitats is rich in biological diversity. It is one of the most enchanting waterfowl refuges of the world. Since the formation of the protected area, it has undergone tremendous transformation due natural and anthropogenic factors. The park has gained significance by being part of the World Heritage and a Ramsar site.</b></p> <p><b>The present focus is on the conservation of the wetland in its pristine form as a refuge for waterfowl and as a center of nature education. The active cooperation of the various stakeholders is to be sought by learning from them and educating them about the activities of the park. The stakeholders will be helped in various forms based on the category they belong to. Emphasis has been laid on research and monitoring so that continuity of information is maintained and management interventions are better targeted</b></p>	037 038 039
<p>Please report on legal and administrative actions that are foreseen for the future, to preserve the values described under item II.2 (e.g. passing of legislation, adjusting administrative and</p>	040

*II.4. continued*

	<p>management arrangements, implementing or drawing up of a (new) management plan, etc.):</p> <p><b>The present management plan for the period 2002-2006 is to be implemented in order to preserve the values of the habitat. ( Copy enclosed)</b></p>	
	<p>Please provide detailed information, particularly in cases where changes have occurred since the inscription of the property, on the following matters:</p>	
	<ul style="list-style-type: none"> <li>• <b><u>Conservation</u></b>                  Make reference to all major interventions at the property and describe its present state of conservation:</li> </ul> <p><b>Water is the essence of life to the park. The park management has constantly pursued the issue to ensure a sustained supply of water to the park. The water source to the park is used by the locals also. Administrative orders to ensure supply of water to the park on a priority basis has been issued by the Government.</b></p> <p><b>Emergent vegetation, mainly <i>Paspalum distichum</i>, which used to be consumed by grazing buffaloes, began to grow to a greater extent following the ban on entry of water buffaloes in 1982. To check <i>Paspalum</i> the park management has attempted fast flooding of the wetland and controlled water levels which proved successful. Secondly for the benefit of the park (vegetation control) and people (fodder needs) a decision was made to issue permits that allowed villagers to remove grasses for four months in a year. The permit system also applies to grasses for thatch, specifically <i>Veteveria</i> which, when allowed to accumulate, became a fire hazard.</b></p> <p><b>Water hyacinth (<i>Eichhornia crassipes</i>), drifts into the park along with the water released to the park. It is a very fast growing weed and grows in geometrical proportions. The weed had choked up the water body during 1999-2000 but it was removed with the help of the locals, students, eco groups etc. This had resulted in tremendous improvement in aquatic habitat. The removal of the weed is ensured at appropriate times.</b></p> <p><b>Uprooting of <i>Prosopis juliflora</i> is taken up but is not commensurate with its pace of regeneration by way of seeds dispersal and seeds in animal dung piles. During a drought year, a lot of young seedlings of <i>Acacia nilotica</i>, <i>Prosopis juliflora</i> and other woodland species invade the wetland.</b></p> <p><b>Naturalists and rickshaw pullers have been trained in wild life interpretation to facilitate a unique and satisfying experience to the tourist. A film titled, "Birds of Indian Monsoon," is screened at the audio-visual room for the benefit of those interested. The tourists are educated by means of material distributed with the purchase of entry ticket and an Orientation Centre. Signboards and signages along the trails add to the effort.</b></p> <p><b>Every entry to the park has an eco-development surcharge. This money is to be used in carrying out of eco-development works in the surrounding villages and the development of the park.</b></p>	041



	<p><b>YES</b></p> <p>If YES, what are the training needs for your staff?</p> <p><b>Themes identified for training are</b></p> <ul style="list-style-type: none"> <li>• <b>Wildlife Techniques (King census, water hole census, road side monitoring, habitation impact studies etc).</b></li> <li>• <b>Wildlife Health Indicators (Riney's Concept - Pelvic girdle, Ribs, Colour of skin, patches on the body etc)</b></li> <li>• <b>How to do a post mortem ? How to open a carcass?</b></li> <li>• <b>How to use preservatives?</b></li> <li>• <b>Weapon training -Handling and caring of Rifles, Revolvers and tranquilising guns.</b></li> <li>• <b>Wireless equipment handling and care.</b></li> <li>• <b>Legal aspects</b></li> <li>• <b>Detection and framing of offences.</b></li> <li>• <b>Fire Drills - especially before the fire season for better fire fighting.</b></li> <li>• <b>Identification of pugmarks, tracts, dung pellets, burrows, snags and den trees.</b></li> <li>• <b>Identification of birds.</b></li> <li>• <b>Training in Interpretation (communication Skills) and understanding the language of the jungle (Tracts and signs).</b></li> <li>• <b>Monitoring Methodology.</b></li> <li>• <b>Census Operations.</b></li> <li>• <b>Filling up of Data Sheets.</b></li> <li>• <b>Ecorestoration works - Why, Where and How?</b></li> <li>• <b>Training in First Aid Administration to man as well as animals.</b></li> <li>• <b>Training in use of audiovisual equipment.</b></li> <li>• <b>Computer Application</b></li> </ul> <p>Describe the funding and financial situation of the property, indication sources, level and regularity of financing:</p> <p><b>The main sources of funding are the budgets from the Central and State governments under the Plan and Non-Plan budgets.</b></p> <p><b>Central sponsored schemes</b></p> <ul style="list-style-type: none"> <li>• <b>Development of National Parks and Sanctuaries 100%</b></li> <li>• <b>Eco-development schemes 100%</b></li> </ul> <p><b>State budget</b></p> <ul style="list-style-type: none"> <li>• <b>Development of Keoladeo National Park</b></li> <li>• <b>Maintenance of forest areas.</b></li> </ul> <p><b>Details of the funding in the last five years is enclosed.</b></p>	<p>047</p> <p>048</p>
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*II.4. continued*

	<p>Is the available funding sufficient for adequate management of the property?</p>	<p>YES / NO</p> <p>049</p>
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	<p><b>NO</b></p> <p>If NOT, describe the financial resources that would be required for the management of the property:</p> <p><b>The available funding is not adequate considering the conservation needs for the future. In addition to the funding from the Central and State Government international assistance would be required specially from WHF,GEF, WB, UNDP etc.</b></p> <p><b>The recycling of funds that was envisaged by the imposition of a surcharge on the entry ticket is yet to be implemented which will cater to the development of the park and all the eco-development activities.</b></p> <p><b>For the purposes of research and long term solutions to ensure availability of water require funding from the national and international agencies.</b></p>	050
	<p>Indicate International Assistance from which the property has benefited:</p> <ul style="list-style-type: none"> <li>• World Heritage Fund: <b>NIL</b></li> <li>• UNESCO International Campaign: <b>NIL</b></li> <li>• National and/or regional projects of UNDP, the World Bank or other agencies: <b>NIL</b></li> <li>• Bilateral co-operation: <b>NIL</b></li> <li>• Other assistance: <b>WWF-India      Rs 40000/-      Fire fighting kits</b></li> </ul>	051 052 053 054 055
	<p>Describe the IT (computer) equipment of the site and/or management office and assess its effectiveness:</p> <p>A computer is available with the office but has limited application due to the lack of knowledge by the subordinate staff. Old versions have to be replaced with new versions and the staff well trained.</p>	056
	<p>Are you using (multiple indications are possible):</p> <p style="text-align: center;">PC ( <input checked="" type="checkbox"/> ) Apple ( <input type="checkbox"/> ) Mainframe ( <input type="checkbox"/> )</p>	057
	<p>Please, give the number of available computers:</p> <p><b>ONE</b></p>	058
	<p>Does an operational access to the Internet exist? <span style="float: right;">YES / NO</span></p> <p><b>YES</b></p>	059

*II.4. continued*

	<p>Is e-mail used for daily correspondence? <span style="float: right;">YES / NO</span></p> <p><b>NO</b></p>	060
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Is there a Geographical Information System (GIS) for the site?	YES / NO	061
<b>NO</b>		
If YES, what software do you have and how is the GIS used?		062
<b>NOT APPLICABLE</b>		
List scientific studies and research programmes that have been conducted concerning the site:		063
<b>One of the pioneering studies in the field of wetland ecology (in effect an ecosystem study ) was conducted by the Bombay Natural History Society (BNHS) for a period of ten years ,with financial assistance from US fish and wildlife service , through the Ministry and Environment &amp; Forests, India.</b>		
<b>A two year study conducted by a team from the Botany Department of the Iowa State University ( Davis et al 1988 ) brought out the seed bank potential , autecology of a few species of macrophytes , <i>Paspalum distichum</i>, <i>Nymphoides cristata</i> and <i>N. Indica</i>, the effect of herbivory on some of the emergent species and decomposition rates of a few major species. Very few detailed studies have been conducted prior to the 1980s, except that of Ron Sauey (1985) on the Siberian crane and Mahajan's study(1980) concentrating on plankton and fish .</b>		
<b>List of scientific literature published on the park is enclosed</b>		
Describe financial and human resource inputs for the research programmes and or facilities:		064
<b>The park does not fund any long term research projects from its existing funds. The Park has a Research Officer who collects data on important parameters like the heronry count, water fowl count, python holes and python count, meteorological data, animal census etc. that assist in taking management decisions by way of habitat management and tourism management.</b>		
<b>Research activities are undertaken by various Universities and organisations like the Wildlife Institute of India, Bombay Natural Historical Society, Salim Ali Centre for Ornithology and Nature.</b>		
Describe how the information / results are disseminated?		065
<b>The result of the research are at present being provided to the park authorities.</b>		
Are there any visitor statistics for the site?	YES / NO	066
<b>YES</b>		

*II.4. continued*

If YES, please summarise the statistics and attach to this report:	067
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**More than 1 lakh tourists visit the park annually. It is a very popular destination for people interested in birdlife. The diversity of species and their visibility at close ranges attract all types of people. There has been a continuous increase in the tourist inflow with 60% domestic tourists and the rest foreigners.**

<b>TOURISM TRENDS IN THE PARK</b>						
<b>S.No</b>	<b>Year</b>	<b>Indian</b>	<b>Foreigner</b>	<b>Students</b>	<b>Total</b>	<b>Revenue in INR</b>
1.	1988-89	51,232	22,884	25,336	99,452	6,00,000
2.	1989-90	59,561	31,501	14,417	1,05,479	7,56,022
3.	1990-91	41,120	30,948	10,098	82,126	10,97,836
4.	1991-92	49,111	27,483	17,787	94,381	17,37,712
5.	1992-93	48,496	31,704	18,396	98,596	18,63,630
6.	1993-94	50,471	29,747	18,827	98,045	20,27,825
7.	1994-95	52,326	25,466	19,210	97,002	19,76,480
8.	1995-96	62,357	38,026	24,739	1,25,292	24,52,000
9.	1996-97	60,932	40,894	24,733	1,26,559	24,89,399
10.	1997-98	47,205	42,532	23,267	1,13,004	61,43,282
11.	1998-99	46,764	39,739	24,076	1,10,579	65,35,128
12.	1999-2000	51,138	37,663	25,905	1,14,706	62,76,349
13.	2000-2001	55,749	38,982	29,736	1,24,467	83,63,095
14.	2001-2002	49,999	27,385	30,356	1,07,920	76,85,915

What visitor facilities do you have at the property?

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**Vehicles are permitted upto Shantikutir barrier. Departmental electric vans could be engaged for going upto Keoladeo temple and back till recently. The vans are presently out of order. Bicycles and cycle rickshaws are also available at Shanti kutir Forest Lodge as well as main gate. Boating facilities are available at the Shantikutir barrier. Naturalists and rickshaw pullers have been trained in wildlife interpretation to facilitate a unique and satisfying experience to the tourist. The park has adequate benches at various points for the visitor to rest. Water and toilets are available at vantage points. A film titled, "Birds of Indian Monsoon," is screened at the audio-visual room for the benefit of those interested.**

**Considering the fact that Keoladeo National park is one of the top bird areas in Asia the existing Interpretation facilities are rudimentary and outdated. WWF-India and Keoladeo National Park have developed an Interpretation programme with Swarovski as the funding agency for this programme for a period of 3 years. The Interpretation Centre and Programme is dedicated to the late Dr Salim Ali.**

**The park has a rest house run by the Forest Department of Rajasthan with 10 beds.**

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What visitor facilities are you in need of?

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**The centre is to be operated by a full fledged interpretation Officer who will cater to the various target group of tourists.**

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<p><b>Electric vans are required to provide the tourists a much varied experience of the park at a cheaper price.</b></p> <p><b>The roads in the park are to be maintained so that cycling and walking is more comfortable and relaxing.</b></p> <p><b>Other details of the management of the tourists are detailed in the management plan.</b></p>	
<p>Is a public use plan (tourism / visitor management plan) in existence for the property? YES / NO</p>	070
<p><b>YES</b></p>	
<p>If YES, please summarise, if NO explain if one is needed:</p>	071
<p><b>The public use plan to manage tourists is a part of the management plan.</b></p>	
<p>Indicate how the property's World Heritage values are communicated to residents, visitors and the public (please attach examples of leaflets, videos, posters etc. and print-outs and/or the address of a web-page):</p>	072
<p><b>Each entry ticket is given a leaflet detailing the history and values of the park ( Leaflet enclosed) free of cost. A brochure of the park is also available on sale. A film titled, "Birds of Indian Monsoon," is screened at the audio-visual room for the benefit of those interested. A website of the park is under development.</b></p>	
<p>Are there educational programmes concerning the property aimed at schools? YES / NO</p>	073
<p><b>YES</b></p>	
<p>If yes, please describe:</p>	074
<p><b>Nature education is one path to the goal of conservation. Educational programmes targeting the school children are</b></p> <ul style="list-style-type: none"> <li>• <b>Concessional entry to the students</b></li> <li>• <b>Celebrating the wildlife week in schools and colleges involving the children</b></li> <li>• <b>Nature education and adventure camps</b></li> <li>• <b>Celebration of the various days as the Wetland Day, Earth Day etc</b></li> <li>• <b>Bird watching fairs</b></li> </ul>	

*II.4. continued*

<p>What role does World Heritage inscription play for the site concerning the visitor number, the research programmes and/or the awareness building activities?</p>	075
<p><b>The inscription highlights the importance of the park on the national and</b></p>	



<b>international level.</b>	
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## II.5. Factors affecting the property

<p>Please comment on the degree to which the property is threatened by particular problems and risks, such as development pressure, environmental pressure, natural disasters and preparedness, visitor / tourism pressure, number of inhabitants. Also mention all other issues that you see as problematic.</p> <p><b>Development pressure</b></p> <p>The source of water, its <i>quantity and quality</i> are major factors affecting the Keoladeo wetland. The main source of water to the park is a temporary reservoir, namely Ajanbandh , situated 500 m sothwest of the present border of the park. Ajanbandh receives water from the Gambhir and Banganga river systems, at the confluence of which the National Park is located.</p> <p>The catchment areas of the rivers have undergone tremendous changes with the increased human pressure to cultivate land. Cultivation of land involves use of fertilizers and insecticides. Water from the catchment area brings in a very high level of toxic chemicals that are responsible for slow chemical poisoning. Apart from that the park is surrounded by agricultural fields It is believed that pesticide poisoning also affect breeding levels of the bird population.</p> <p><b>Increased Tourist Pressure</b></p> <p>About 1 lakh tourists visit the park annually. Some of the visible impacts of tourism are <i>littering, overcrowding</i> on holidays, <i>excessive disturbance</i> etc. The park has a high visitation rate and hence the problems are to be minimised with the increase in tourist numbers.</p> <p>WWF-India and Keoladeo National Park have developed an Interpretation programme. Swarovski &amp; Co has agreed to fund this programme for a period of 3 years. The Visitor Interpretation Centre and Programme is dedicated to the late Dr Salim Ali and would be called Dr Salim Ali Visitor Interpretation Centre. The main purpose of the project is to increase awareness and appreciation of KNP among key stakeholders leading to long term conservation of the park.</p> <p>In order to reduce vandalism volunteers have to be trained, who can educate the tourists. The rickshaw pullers and guides can prove the best means of educating tourists apart from signboards being erected at vantage points. Nature awareness camps have to be conducted for young people who can prove a great force for the cause of conservation of our natural heritage.</p>	076
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	<p><b>Another issue of concern is the protection awarded to the birds on their flight here. As the migratory birds do not breed here it is very essential to protect the breeding sites and the flyway of the birds. Though the matter is part of the international concern already strong measures have to be adopted.</b></p>	
	<p>Is there an emergency plan and / or risk preparedness plan for the property in existence? YES / NO</p> <p><b>NO</b></p> <p>If YES, please summarise the plan and provide a copy:</p> <p>If NO, describe what is being done – and by whom – to counteract the dangers that threaten or may threaten the property:</p> <p><b>Though there is no emergency plan in existence the dangers that threaten or may threaten the property have been discussed in the management plan.</b></p> <p>Indicate areas where improvement would be desirable and/or towards which the State Party is working:</p> <p><b>None</b></p>	<p>077</p> <p>078</p> <p>079</p> <p>080</p>
	<p>Give an indication if the impact of the factors affecting the property is increasing or decreasing:</p> <p><b>The impact of tourist pressure and the demand for water outside the park is increasing.</b></p>	<p>081</p>
	<p>What actions have been effectively taken, or are planned for the future, to address the factors affecting the property?</p> <p><b>To cope up with the water situation, a meeting was held under the chairmanship of the Chief Secretary on 21.6.1991 and it was decided that the water from Panchna would be released to Ajan bandh so that water could be made available for the park well in time so that the breeding of birds is not affected. In 2001 a meeting under the Principal Secretary, Irrigation resulted in the lowering of the reserve level of Pachna dam, with the excess water being diverted to the park. Proposals for bringing the water of the Chambal river to the park are being explored into.</b></p> <p><b>The impacts of tourism are being countered by continuing education.</b></p> <p><b>Plans to encounter the threats have been suggested in the Management Plan.</b></p>	<p>082</p>

## II.6. Monitoring

	<p>If applicable, give details (e.g. dates, results, indicators chosen) of any previous periodic or reactive monitoring exercises of the property:</p> <p><b>NOT APPLICABLE</b></p>	<p>083</p>
	<p>Is there a formal monitoring system established for the site? YES / NO</p>	<p>084</p>

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<p><b>YES</b></p> <p>If YES, please give details of its organisation:</p> <p><b>Monitoring of the birds like the heronry count and water fowl count, monitoring of python holes and python counts, meteorological data, animal census is done regularly.</b></p> <p><b>The key indicators used to assess the health of the ecosystem are the amount of water, the various census counts, the vegetation survey and the overall health of the wild animals.</b></p>	085
<p>If not already in place, is the establishment of a formal monitoring system planned? YES / NO</p> <p><b>NOT APPLICABLE</b></p> <p>If YES, please outline the functioning of that system, taking into consideration the key indicators you will be asked to define below (see 089 / 090):</p>	086  087
<p>Are there any indicators established for monitoring the state of conservation of the property? YES / NO</p> <p><b>YES</b></p> <p>If YES, please provide up-to-date information with respect to each of the key indicators established and/or used. Care should be taken to ensure that this information is as accurate and reliable as possible, for example by carrying out observations in the same way, using similar equipment and methods at the same time of the year and day. Name and describe the key indicators for measuring the state of conservation of this property:</p> <p><b>The amount of water received by the park is the key indicator on which others are dependent.</b></p> <p><b>The periodic census operations carried out for the nesting birds i.e the heronry count and the number of migratory water fowl serve as indicators of the health of the ecosystem. The species of birds also indicates the nature of the habitat. This is to be supported by vegetation surveys to indicate the flora and fauna.</b></p> <p><b>The influx of the tourists is also an indicator of what the tourist is interested in and the facilities available.</b></p>	088  089

*II.6. continued*

<p>If NO indicators have been identified and / or used so far, please define key indicators for future use in monitoring:</p>	090
<p>Indicate which partners, if any, are involved or will be involved in the regular monitoring exercise:</p> <ul style="list-style-type: none"> <li>• <b>Research institutions</b></li> <li>• <b>Universities and colleges</b></li> <li>• <b>Non-governmental Organisations</b></li> </ul>	091

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<p>Identify the administrative provisions for organizing the regular monitoring of the property:</p> <p><b>The park will be monitored at the local level with the partner organisations for infrastructural and academic facilities.</b></p>	092
<p>Describe what improvement the State Party foresees or would consider desirable in improving the monitoring system:</p> <p><b>The monitoring system is to be backed by a strong database and an analysis of the data for future use at the field level. Data collection and monitoring should be rigorous and utilised properly.</b></p>	093
<p>In specific cases, the World Heritage Committee and/or its Bureau may have already examined the state of conservation of the property and made recommendations to the State Party, either at the time of inscription or afterwards. In such cases the State Party is requested to report on the actions that have been taken in response to the observations or decisions made by the Bureau or Committee. Give details, if applicable:</p> <p><b>NOT APPLICABLE</b></p>	094

## II.7. Conclusions and recommended actions

<p>Please summarise the main conclusions regarding the state of the World Heritage values of the property (see items II.2. and II.3. above):</p> <p><b>Keoladeo National Park is internationally famous wetland for Palearctic migratory waterfowl and its large congregation of non-migratory resident breeding birds. The existence of the resource system on which this spectacle is based is dependent on the hand of man and demonstrates what can be accomplished for conservation through his judicious intervention.</b></p> <p><b>The values of the park have not changed since its inscription.</b></p>	095
<p>Please summarise the main conclusions regarding the management and factors affecting the property (see items II.4. and II.5. above):</p> <p><b>Regular supply of water to the park in adequate quantity is essential. It is equally important to ensure that the water does not get polluted due to the use of chemicals and pesticides by the villages in the catchment area . Education of the tourists is an important activity for the park.</b></p>	096
<p>Give an overview over proposed future action / actions:</p>	097

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<p><b>Alternative sources of water supply to augment the water available are being considered. Habitat management is part of the activities to be undertaken. Effective tourism and eco-development activities are to be undertaken.</b></p> <p><b>An integrated pest management programme has to be envisaged and put in place</b></p> <p><b>In order to ensure safe passage for migratory birds it is important to establish the flyway zone for each species and to conserve their habitats through establishment of a flyway protected area network.</b></p>	
<p>Name the agency responsible for implementation of these actions (if different from 005):</p> <p><b>All the administration at the local , provincial and state level will be responsible.</b></p>	098
<p>Give a timeframe for the implementation of the actions described above:</p> <p><b>Conservation and protection of the site is an ongoing process. Actions are to be taken as per the management plan.</b></p>	099
<p>Indicate for which of the planned activities International Assistance from the World Heritage Fund may be needed (if any):</p> <p><b>Ensuring a sustained supply of water to the park may require International Assistance from the WHF or other international donor agencies. The development of research infrastructure, information systems based on GIS will be welcome.</b></p>	100
<p>Are there any contacts with management units of other properties within or outside your country?</p> <p style="text-align: right;">YES / NO</p> <p><b>NO</b></p>	101
<p>If YES, please explain:</p>	102

**II.7. Conclusions and recommended actions continued**

<p>Please indicate which experience made during the periodic reporting exercise and/or during the on-going conservation / protection efforts of the property could be shared with other States Parties dealing with similar problems or issues:</p> <p><b>Habitat management aspects, tourism related issues can be shared with. Research methodology can be discussed and simple field solutions sought.</b></p>	103
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	<p>Provide the name(s) and address(es) of organization(s) or specialist(s) who could be contacted for this purpose:</p> <p>Agency / Organisation:</p> <ul style="list-style-type: none"> <li>• <b>Indian Council of Forestry Research and Education, Dehradun</b></li> <li>• <b>Wildlife Institute of India, Dehradun</b></li> <li>• <b>Indian Institute of Forest Management, Bhopal</b></li> <li>• <b>Indian Institute of Remote Sensing , Dehradun.</b></li> <li>• <b>Bombay Natural Historical Society, Bombay.</b></li> <li>• <b>Salim Ali Centre for Ornithology and Nature, Coimbatore.</b></li> </ul>	104
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**II.8. Assessment of the Periodic Reporting exercise for Section II**

	<p>Was sufficient and adequate information made available to the responsible authorities and individuals during the preparation phase of the Periodic Reporting exercise (information given, meetings etc.)?</p> <p><b>YES</b></p>	105
	<p>Was the questionnaire clear and did it help to comply with the reporting requirements of the State Party?</p> <p><b>YES</b></p>	106
	<p>What are the perceived benefits and lessons learnt of the exercise?</p> <p><b>Multifarious activities to be undertaken at the site came to the fore. The establishment of a baseline of information has been made possible.</b></p>	107
	<p>Please describe the expected outcome of the Periodic Reporting exercise and the desired follow-up by the World Heritage Committee:</p> <p><b>It is expected that the periodic reporting exercise will reinstate and strengthen the faith of the WHC in the State Party and its effectiveness in safeguarding the values of any World Heritage site.</b></p>	108

## II.9. Documentation attached

The State Party is invited to supply the materials listed below. Please check those items that were attached.

1. (√) Maps and plans showing the general location of the property, its boundary and buffer zone as well as the necessary detail of the property itself (see question 003 for specifications) **Map Section after Page 182 of Management Plan**
2. ( ) Photo of general view (aerial view) of the property
3. ( ) Illustrations of the state of conservation of the site (photographs, slides and, if available, film/videos)
4. ( ) Details of the important aspects of the property (landscapes, animal and vegetable species, monuments etc.)
5. ( ) Photos illustrating the main threats to the site and its surroundings
6. ( ) Extracts of relevant laws and regulations concerning the protection of cultural and natural heritage at national, provincial and municipal levels
7. (√) Copies of the management plan of the site as well as extracts and/or copies of other plans relating to the site (e.g. emergency plan, use plan, etc.)
8. (√) Indicative bibliography **Bibliography of Management Plan**

**The budget pattern is enclosed as part of the Management Plan on Page 168**

**STATE OF CONSERVATION REPORT OF  
KEOLADEO NATIONAL PARK, BHARATPUR  
A WORLD HERITAGE PROPERTY**



## **II.1 Introduction**

a. State Party

India

b. Name of world heritage property

Keoladeo National Park, Bharatpur

c. Geographical coordinates to the nearest second

27° 7' 6" N - 27° 12' 2" N and 77° 29' 5" E - 77° 33' 9" E

d. Date of inscription on the World Heritage List

6/12/1985

e. Organization(s) or entity(ies) responsible for the preparation of the report

Department of Forests & Wildlife

f. Date of the report

11/1/2003

g. Signature on behalf of State Party

## **II.2 Statement of Significance**

Keoladeo National Park was included on the World Heritage list under Natural criteria (iv).

**Ornithologically**, the park assumes significance in two respects – One, because of its strategic location it is a staging ground for Palaearctic migratory waterfowl arriving in the Indian subcontinent before dispersing to various regions. It is also a site where waterfowl converge before departing to breeding grounds in the western Palaearctic region. In addition, the wetland is a wintering area for massive congregations of a large diversity of waterfowl (*about 120 species*). Two, it has been the only regular wintering area in India for the central population of the rare and endangered Siberian crane.

The park is the only site in the region where storks, cranes, cormorants, herons and other resident birds breed in such numbers and in such density (*15 species with above 5000 nests in a good monsoon year*). The park now is home to another key species – *the tiger (one since 2000)*

**Culturally**, the park has a history of over 100 years and is named after Keoladeo (Shiva) temple located in the centre of the park. Other places of historical and cultural importance are Duck Shooting Inscriptions, Kadam Kunj Shikargah and Shanti Kutir Shikargah (now a forest rest house).

There is no buffer zone outside the park.

## **II.3 Statement of Authenticity/integrity**

The site is covered under the Ramsar Convention which endeavours to protect the wetlands, breeding and nesting sites of the migratory birds and the flyways of these birds for safe conduct.

The management plan of the park for the period 2002-2006 has been prepared.

The integrity of the World Heritage site has been maintained since inscription of the site. The park is the staging ground for migratory waterfowl arriving in the Indian subcontinent before dispersing to various regions and the only wetland in India to winter the Siberian cranes.

The park's water supply is dependent on monsoon. The vagaries of monsoon has an impact on the density of breeding birds and the number of wintering migratory waterfowl. Water is sometimes pumped from within the park in times of drought. The water supply to the park is through two rivers Banganga and Gambhir. The changes in the catchment area of the rivers, the increased pressure on water resources for human consumption and irrigation has put a stress on the supply of water to the park in times of bad rainfall. Currently in times of weak monsoon the total requirement of water is not fulfilled. Efforts are being made to ensure the required supply of water to the park.

Air and water pollution are negligible in the park Mathura Oil refinery has set up a monitoring station to assess the levels of  $\text{SO}_2$  in the air and were found negligible. All other polluting industries have been shifted far from the park, as the park also falls within the trapezium zone demarcated to protect the Taj Mahal.

Feral cattle compete with the herbivores for the fodder. The population of the cattle is kept under control by translocating them to other areas so that the population is kept under control. Research is to be conducted on the effects of the presence of the cattle in the wetland ecosystem.

The visitor and the locals form the focus of the education programmes of the park. The park has an orientation centre to help understand the park. Leaflets, check lists and brochures are published to educate the people. Looking in to the need to educate the people the park has an ongoing Interpretation Centre and Visitor's programme.

## II.4 Management

The ownership vests with the Government and is looked after by the Chief Wildlife Warden, Rajasthan

The site is also listed in the Ramsar Convention. For the effective management and protection the property covered under the Indian Forest Act, 1927 and the Indian Wild Life Protection Act, 1972. Other criminal laws are also resorted to if necessary.

The management plan of the site has been prepared.

The park is managed by the Deputy Conservator of Forests (Wildlife) under the aegis of the Chief Wildlife Warden of the state. The address for communication is

Director  
Keoladeo National Park  
Bharatpur, Rajasthan  
India  
PIN : 321001  
Ph : 05644-22777  
Fax 05644-22864,32402

The park has a Junior Research Officer, three ranges headed by Range Forest Officers and other additional support staff numbering 80 to assist them in the performance of their duties. The cooperation of the villagers surrounding the park is enlisted through the Village Ecodevelopment committees. Local non-governmental organisations help the park in creating awareness amongst the school and college children.

### Efforts undertaken to maintain the site values

## **Habitat Management**

Water is the essence of life to the park. The park management has constantly pursued the issue to ensure a sustained supply of water to the park. The water source to the park is used by the locals also. The increased human demand for water has put pressure on the resources. The strain is evident in times of weak monsoon when there is little rainfall but demand for water is high. Administrative orders to ensure supply of water to the park on a priority basis has been issued by the Government.

Emergent vegetation, mainly *Paspalum distichum*, which used to be consumed by grazing buffaloes, began to grow to a greater extent following the ban on entry of water buffaloes in 1982. This reduced the open water expanses, with or without sparse vegetation, which is the preferred habitat of waterfowl. All possible management techniques such as cutting, scraping, bulldozing, burning are used to check the growth of grasses inside the wetland. To check *Paspalum* the park management has attempted fast flooding of the wetland and controlled water levels which proved successful. Secondly for the benefit of the park (vegetation control) and people (fodder needs) a decision was made to issue permits that allowed villagers to remove grasses for four months in a year. The permit system also applies to grasses for thatch, specifically *Vetiveria* which, when allowed to accumulate, became a fire hazard.

Water hyacinth (*Eichhornia crassipes*), drifts into the park along with the water released to the park. It is a very fast growing weed and grows in geometrical proportions. The weed had choked up the water body during 1999-2000 but it was removed with the help of the locals, students, eco groups etc. This had resulted in tremendous improvement in aquatic habitat. The removal of the weed is ensured at appropriate times.

Uprooting of *Prosopis juliflora* is taken up but is not commensurate with its pace of regeneration by way of seeds dispersal and seeds in animal dung piles. During a drought year, a lot of young seedlings of *Acacia nilotica*, *Prosopis juliflora* and other woodland species invade the wetland.

## **Tourism**

More than 1 lakh tourists visit the park annually. Some of the visible impacts of tourism are littering, overcrowding on holidays. Proper education and awareness combined with the vigil of staff and punitive measures are taken to reduce these impacts.

Vehicles are permitted upto Shantikutir barrier (Map enclosed). Departmental electric vans could be engaged for going upto Keoladeo temple and back till recently. The vans are presently out of order. Bicycles and cycle rickshaws are also available at Shanti kutir as well as main gate. Boating facilities are available at the Shantikutir barrier. Naturalists and rickshaw pullers have been trained in wild life interpretation to facilitate a unique and satisfying experience to the tourist. A film titled, "Birds of Indian Monsoon," is screened at the audio-visual room for the benefit of those interested.

The tourists are educated by means of material distributed with the purchase of entry ticket and an Orientation Centre. Signboards and signages along the trails add to the effort.

## Eco development

Keoladeo National Park has no buffer zone. A masonry wall demarcates the surrounding villages from the park. The park is surrounded on all sides by agricultural fields. About 21 villages and hamlets are located around *Keoladeo National Park* with an approximate population of 20000 people (Govt. Of India census 1991). Bharatpur city, with a total population of about 3 lakhs is also on the periphery of the Park..

The entire economy of the villages outside the park is based on agriculture and dairying. The basic needs of local communities residing in the villages adjoining the park are fodder, fuelwood, and small timber, thatching material, minor forest produce, raising of the boundary wall by two feet (to reduce crop damage), employment opportunity for unemployed youth etc.

At present some village youth are working in the park as guides and rickshaw pullers. Villagers are issued grass permits for a period of 4 months from April onwards, at a nominal rate of Rs 15 per permit per month. On an average 70,000 quintals of grass is removed from the park to be used as fodder and thatching material. The estimated social benefit @ 0.50/ kg of grass is Rs 35 lakhs.

Every entry into the park is with an eco-development surcharge. This money is to be used in carrying out of eco-development works in the surrounding villages and the development of the park. Eco-tourism in Keoladeo National Park provides income to forest department, casual labourers, hotels, rickshaw wallahs, guides and city auto rickshaws. NGO's like BNHS, WWF-India play a leading role in conducting PRA's and educating the local people.

## Scientific research and facilities

The park's research wing is headed by the Junior research officer. The research wing collect data on important parameters like the heronry count, water fowl count, python holes and python count, meteorological data, animal census etc. that assist in taking management decisions by way of habitat management and tourism management.

The park is collecting copies of the research material/publications available with various organisations/people on the park. One of the pioneering studies in the field of wetland ecology (in effect an ecosystem study) was conducted by the Bombay Natural History Society (BNHS) for a period of ten years, with financial assistance from US fish and wildlife service, through the Ministry and Environment & Forests, India. Data was generated on the structure and basic functioning of the system going into details of those aspects affecting park management. A number of detailed studies on the various components of the system were conducted. Water budgeting, water quality, plankton and macrophytic primary productivity, seasonal and annual fluctuation of the plankton, invertebrates, macrophytes, fish, birds and mammals. Decomposition of some of the major weeds and the resultant chemical changes in the quality of water were also studied. Various management techniques were experimented upon for controlling wetland vegetation. Ecology of the major species of fish, birds and mammals were studied in detail.

A two year study conducted by a team from the Botany Department of the Iowa State University (Davis et al 1988) brought out the seed bank potential, autecology of a few species of macrophytes, *Paspalum distichum*, *Nymphoides cristata* and *N. Indica*, the effect of herbivory on some of the emergent species and decomposition rates of a few major species. Very few detailed studies have been conducted prior to the 1980s, except that of Ron Sauey (1985) on the Siberian crane and Mahajan's study(1980) concentrating on plankton and fish. The BNHS conducted bird migration studies, initiated by Dr. Salim Ali (1959), which were thereafter carried out during many winters since the 1960s ( Mathew 1971 Vijayan 1971, Daniel 1973, Ali Hussain 1982, Hussain 1992 ).

Besides these, avifauna observations by the officials of the Forest Department of Bharatpur and some bird watchers are available ( Saxena 1975, Vardhan 1976, Abdulali & Pandey 1978, Anon. 1981, Kumar 1992 ) Sankhala ( 1958, 1990 ) has published a detailed report on the annual cycle of the Park .

Regular research should be carried out on the various aspects of the park in the shape of projects. The park has no funds to aid the researchers. Proposals may be sent to various Institutions, who might be aided by providing them funds to do the research.

## **Capacity building**

There is an enormous amount of information that can be generated and analysed for the better management of the park. New technologies like computers, GIS, communication with e-mail that are not available with the park are to be made available. This would strengthen the capability of the research wing.

The staff of the site have to be trained regularly and on a variety of topics. This is necessary so that data collected by them is correct and accurate. The training needs of the staff are given in the Questionnaire.

## **Budget**

The pattern of funding in the last 5 years is enclosed.

## **II.5 Factors affecting the property**

### **Development pressure**

The source of water, its *quantity and quality* are major factors affecting the Keoladeo wetland. The main source of water to the park is a temporary reservoir, namely Ajanbandh, situated 500 m southwest of the present border of the park. Ajanbandh receives water from the Gambhir and Banganga river systems, at the confluence of which the National Park is located.

To cope up with the situation, a meeting was held under the chairmanship of the Chief Secretary on 21.6.1991 and it was decided that the water from Panchna would be released to Ajan bandh so that water could be made available for the park well in time so that the breeding of birds is not affected. In 2001 a meeting under the Principal Secretary, Irrigation resulted in the lowering of the reserve level of Panchna dam, with the excess water being diverted to the park. Proposals for bringing the water of the Chambal river to the park are being explored into.

In order to maintain the values of the wetland it is essential to have a permanent source of freshwater from which water can be drawn upon in times of necessity should have utmost priority.

The catchment areas of the rivers have undergone tremendous changes with the increased human pressure to cultivate land. Cultivation of land involves use of fertilizers and insecticides. Water from the catchment area brings in a very high level of toxic chemicals that are responsible for slow chemical poisoning. Apart from that the park is surrounded by agricultural fields. A number of Sarus Cranes and other birds die in areas adjoining the park after feeding on seeds treated with pesticides. It is believed that pesticide poisoning also affect breeding levels of the bird population.

There has been no concluding study in this matter as to the exact source and pattern of ingestion. Tests that have been conducted on the dead ones indicate a potential problem. This calls for an integrated pest management programme in the catchment area of Ajan Bandh and in the socio-ecological boundaries of Keoladeo National Park. The modern technology of biocontrols, compost farming etc must reach the farmer by way of an intensive extension programme.

## Tourism

About 1 lakh tourists visit the park annually. Some of the visible impacts of tourism are *littering*, *overcrowding* on holidays, *excessive disturbance* etc. The park has a high visitation rate and hence the problems are to be minimised with the increase in tourist numbers.

Considering the fact that Keoladeo National park is one of the top bird areas in Asia the existing Interpretation facilities are rudimentary and outdated. WWF-India and Keoladeo National Park have developed an Interpretation programme. Swarovski & Co has agreed to fund 450,000USD for this programme for a period of 3 years. The Visitor Interpretation Centre and Programme is dedicated to the late Dr Salim Ali and would be called Dr Salim Ali Visitor Interpretation Centre. The main purpose of the project is to increase awareness and appreciation of KNP among key stakeholders leading to long term conservation of the park.

In order to reduce vandalism volunteers have to be trained, who can educate the tourists. The rickshaw pullers and guides can prove the best means of educating tourists apart from signboards being erected at vantage points .A large number of tourists hire guides or rickshaws who in turn can make them better aware of how to do their bit for the conservation of the area. These volunteers have to be trained at regular intervals. Nature awareness camps have to be conducted for young people who can prove a great force for the cause of conservation of our natural heritage.

## II.6 Monitoring

**The park's research wing is headed by the Junior research officer. The research wing collect data on important parameters like the heronry count, water fowl count, python holes and python count, meteorological data, animal census etc.**

The key indicators used to assess the health of the ecosystem are the amount of water, the various census counts, the vegetation survey and the overall health of the wild animals

The baseline for monitoring of data could be the Ecological Study conducted by Bombay Natural Historical Society.

The monitoring data involves sample analysis at laboratories and detailed continuous studies. The park has no resources to measure up to the levels of monitoring involved in the baseline survey. Certain data can be collected by educating and training the staff.

## II.7 Conclusions

Periodic Reporting Exercise on the Application of the World Heritage Convention  
Section II: State of conservation of specific World Heritage properties

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The subtropical climate of Keoladeo and the variety of habitats ranging from upland terrestrial to submerged aquatic, the dynamics of the wetland system and its strategic geographic location on the flyway of migratory birds all contribute to the diversity of life forms it supports. The World Heritage properties of the site have been integral and has sustained the test of nature by continuous intervention of man.

Keoladeo National Park is popularly known as “bird paradise.” Over 350 bird species have been recorded in the park. Keoladeo National Park has one of the world’s most spectacular heronry and hosts a large number of migratory and resident birds. It is the only wintering site in India for the central population of the rare and critically endangered Siberian Crane.

The agency responsible for implementation of the various programmes in the park is the

Deputy Chief Wildlife Warden  
Keoladeo National Park  
Bharatpur, Rajasthan -321001  
India  
Ph 05644-22777  
Fax 05644-22864,22555,32402

Technical expertise available on this wetland is with Rajasthan Forest Department, Bombay Natural History Society, Bombay, Salim Ali Centre for Ornithology and Natural History, Coimbatore and the Wildlife Institute of India whose help will be sought from time to time. Collaboration with Universities to help in the various research to be done.

International Assistance is required for the *conducting of research , intervention to be done based on the research, promotion of nonconventional energies and organic farming and ensuring supply of water to the park.*