INDIA’S 75
AMRIT DHAROHAR
RAMSAR SITES OF INDIA FACTBOOK
MESSAGE

Wetlands form the core of society’s ecological and economic security. If forests are our lungs, wetlands are the kidneys of the landscape. The continued functioning of these ecosystems is imperative for sustaining food and water security. Concerted global and national action is required for the conservation of wetlands and wetland-dependent species. The Ramsar List makes an important contribution towards this cause.

India has shown exemplary leadership by expanding its network of Ramsar Sites and committing to the goal of wise use of these sites and all wetlands within its territory. To commemorate India’s 75th year of Independence, 75 wetlands meeting International Significance Criteria have been designated as Wetlands of International Importance under the Ramsar Convention. With this, India has the largest network of Ramsar Sites in Asia. The extent of wetlands within this network now spans 1.33 million ha, which is nearly 8% of the known wetland regime in the country.

Hon’ble Prime Minister Shri Narendra Modi in the 97th edition of the Mann ki Baat Programme on January 29, 2023, highlighted the invaluable role played by local communities in the conservation of Ramsar Sites. Recognizing the contribution of local communities in the conservation of these Ramsar Sites, the Government under the leadership of Hon’ble Prime Minister Shri Narendra Modi has announced Amrit Dharohar scheme to promote unique conservation values of Ramsar Sites.

I am pleased to unveil India’s 75 Amrit Dharohar- the Ramsar Sites Factbook, a compendium of factsheets of the 75 Ramsar Sites of India. The factbook presents the values and benefits of these wetlands of international importance and the threats facing them.

Ramsar site designation is only a stepping stone. These sites need to be effectively conserved and managed to achieve their wise use and to realise actual changes. This factbook is thus a step forward in synthesising the dispersed knowledge on Ramsar areas to allow their effective conservation and sustainable management.

I congratulate the Wetlands Division of the MoEFCC and their Knowledge Partners who have put together this comprehensive document.

Date: 02.02.2023

(Bhupender Yadav)
Message

Wetlands are our country's critical natural endowment. While forests are the lungs and rivers are the veins of the landscape, wetlands are its kidneys. Though occupying only a fraction of the earth's surface, these unique ecosystems play a significant role in providing water, food and climate security to society and are inextricably linked with our diverse culture.

Water is life, and wetlands are the life support systems that ensure the functioning of the water cycle. India is endowed with a rich diversity of wetlands ranging from high-altitude wetlands of the Himalayas, floodplains of mighty rivers Ganga and Brahmaputra, lagoons and mangrove marshes on the coastline and reefs in the marine environments.

The continued functioning of wetlands has acquired new meaning in the age of increasing water and food security. Indeed, wetlands are the life support for a range of plant and animal life, and as wetlands degrade, the existence of these life forms would be under stress. At the same time, wetland conservation acquires prominence for the security of human well-being.

India ratified the Ramsar Convention on Wetlands of International Importance to conserve these valuable ecosystems in 1982. The designation of a wetland as internationally important under the Convention is the first step along the conservation and sustainable use pathway, the endpoint of which is achieving the long-term wise use of the wetland.

In August 2022, India achieved a significant milestone on the eve of her 75th year of independence by designating 75 wetlands as Ramsar Sites. The network of Indian Ramsar Sites currently covers 1.33 million ha, the largest in Asia.

It is with great pleasure that we present the Ramsar Sites of India Factbook, which provides a glimpse of the varied ecosystem services that these wetlands of international importance provide, the rich biodiversity they sustain and the threats being faced in their effective management. The management of Ramsar sites serves as a role model for other wetlands. I hope that this factbook will serve as a one-stop resource for information on India's Ramsar Site, enabling coordinated action to ensure a healthy wetland future.
The Government of India accords high significance to wetlands conservation and seeks to mainstream their full range of values at all levels of developmental planning and decision-making. Management of water resources entails balancing water allocation for food, development, nature and society. A harmonised understanding of wetlands and their hydrological functions is the foundation step. It is imperative that conservation and wise use of wetlands form an integral part of solutions for building resilient societies.

India’s ratification of the Ramsar Convention in 1982 provided the necessary backdrop for the establishment of a national programme on wetlands, which was launched in 1986 to assist state governments in implementing management plans for prioritised wetlands. The national wetlands programme is currently known as the National Programme for Conservation of Aquatic Ecosystems (NPCA) and has subsumed the earlier programme on wetlands. Over 250 wetlands have been covered under these national programmes. The NPCA assists state governments in implementing management plans for prioritised wetlands.

Since 2014, the government has accorded a significant policy push for meeting commitments under the Ramsar Convention. By designating wetlands to the International List, India is making its valuable contribution, as a megadiverse country, to the global goal of wise use of wetlands. The network of Indian Ramsar Sites is the largest in Asia.

This publication, ‘Ramsar Sites of India Factbook’, provides essential information on the designated wetlands of International Importance, and is beneficial not only to stakeholders entrusted with their conservation and management but also for informing the public about the values, benefits and threats to the Indian Ramsar Sites. I congratulate Wetlands Division of the MoEFCC and their knowledge partners for their efforts in producing this valuable and detailed publication.


(Leena Nandan)
Foreword

The designation and management of Wetlands of International Importance i.e. Ramsar Sites, one of the three pillars of the Ramsar Convention, are the world’s largest network of protected areas. The sites acquire an international status, as these are considered important not just nationally or sub-nationally but for the entire humanity. Also known as the Wetlands of International Importance, the Ramsar Sites have been adjudged important for global biodiversity as they fulfill at least one of the nine criteria established by the Convention.

India ratified the Ramsar Convention in 1982 by designating Keoladeo National Park (in Rajasthan) and Chilika (in Odisha) as the first two sites on the Ramsar List. The number of Ramsar Sites in India is now an incredible 75, the highest in Asia. The sites are highly diverse, ranging from Himalayan high-altitude wetlands, floodplains and marshes of the Gangetic – Brahmaputra alluvial plains, the river stretches, saline flats of the Great Indian Desert, mangrove swamps and coral reefs, lagoons and estuaries, crater lake and assemblages of sewage-fed fish farms. Ramsar sites make a significant contribution to biological diversity. A recent compilation of faunal diversity of 42 Indian Ramsar Sites by the Zoological Survey of India enlists 6200 species. For several of the faunal groups, these wetlands represent a significant share of the known diversity (for example, over one-third of recorded mammalian species, one-fifth of reptiles, and about two-thirds of known bird species).

When we select wetlands for designation, we also consider elements such as the diverse ecosystem services of wetlands, their role in livelihoods and cultural diversity.

Wise use, the central tenet of wetlands management, is predicated on the extent to which the wetland managers can define these elements and use the information to plan and implement effective actions for wetlands management and conservation.

The Ramsar Sites of India Factbook provides a glimpse of the significance, values and benefits of the Indian Ramsar Sites and the threats they face, that need to be considered while designing and implementing conservation and management efforts. The publication has been prepared under the Global Environment Facility - MoEFCC - United Nations Environment Programme funded Integrated Management of Wetland Biodiversity and Ecosystem Services (IMWBES) project, with the knowledge partners Wetlands International South Asia (also the Lead Technical Support Agency of the IMWBES project), WWF-India and GIZ.

The publication brings together the disparate information on the Indian Ramsar sites in a concise and engaging format for the varied stakeholders working towards conserving these valuable ecosystems.

27 January, 2023

(Sujit Kumar Bajpayee)
<table>
<thead>
<tr>
<th>#</th>
<th>CONTENTS</th>
<th>Pg.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Ramsar sites of India Map</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>The Ramsar Sites Criteria</td>
<td>II</td>
</tr>
<tr>
<td>1</td>
<td>Chilika Lake</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>Keoladeo National Park</td>
<td>3</td>
</tr>
<tr>
<td>3</td>
<td>Horlick Lake</td>
<td>5</td>
</tr>
<tr>
<td>4</td>
<td>Loktak Lake</td>
<td>7</td>
</tr>
<tr>
<td>5</td>
<td>Sambhar Lake</td>
<td>9</td>
</tr>
<tr>
<td>6</td>
<td>Wular Lake</td>
<td>11</td>
</tr>
<tr>
<td>7</td>
<td>150</td>
<td>13</td>
</tr>
<tr>
<td>8</td>
<td>150</td>
<td>15</td>
</tr>
<tr>
<td>9</td>
<td>Ashtamudi Wetland</td>
<td>17</td>
</tr>
<tr>
<td>10</td>
<td>Bhitarankanika Mangroves</td>
<td>19</td>
</tr>
<tr>
<td>11</td>
<td>Bholi Wetland</td>
<td>21</td>
</tr>
<tr>
<td>12</td>
<td>Deepor Beel</td>
<td>23</td>
</tr>
<tr>
<td>13</td>
<td>East Kolkata Wetlands</td>
<td>25</td>
</tr>
<tr>
<td>14</td>
<td>Kolleru Lake</td>
<td>27</td>
</tr>
<tr>
<td>15</td>
<td>Point Calimere Wildlife and Bird Sanctuary</td>
<td>29</td>
</tr>
<tr>
<td>16</td>
<td>Pong Dam Lake</td>
<td>31</td>
</tr>
<tr>
<td>17</td>
<td>Sasthamkotta Lake</td>
<td>33</td>
</tr>
<tr>
<td>18</td>
<td>Tsonimajyi</td>
<td>35</td>
</tr>
<tr>
<td>19</td>
<td>Vembannad-Kol Wetland</td>
<td>37</td>
</tr>
<tr>
<td>20</td>
<td>Chandertal Wetland</td>
<td>39</td>
</tr>
<tr>
<td>21</td>
<td>Hokera Wetland</td>
<td>41</td>
</tr>
<tr>
<td>22</td>
<td>Renuka Wetland</td>
<td>43</td>
</tr>
<tr>
<td>23</td>
<td>Rudrasagar Lake</td>
<td>45</td>
</tr>
<tr>
<td>24</td>
<td>Surinsar-Mansar Lakes</td>
<td>47</td>
</tr>
<tr>
<td>25</td>
<td>Upper Ganga River</td>
<td>49</td>
</tr>
<tr>
<td>26</td>
<td>Nalsarvar</td>
<td>51</td>
</tr>
<tr>
<td>27</td>
<td>Sundarban Wetland</td>
<td>53</td>
</tr>
<tr>
<td>28</td>
<td>Nandur Madhameshwar</td>
<td>55</td>
</tr>
<tr>
<td>29</td>
<td>Nawabganj Bird Sanctuary</td>
<td>57</td>
</tr>
<tr>
<td>30</td>
<td>Saras Nawar Jheel</td>
<td>59</td>
</tr>
<tr>
<td>31</td>
<td>Beas Conservation Reserve</td>
<td>61</td>
</tr>
<tr>
<td>32</td>
<td>Keshopur-Miali Community Reserve</td>
<td>63</td>
</tr>
<tr>
<td>33</td>
<td>Nangal Wildlife Sanctuary</td>
<td>65</td>
</tr>
<tr>
<td>34</td>
<td>Sandi Bird Sanctuary</td>
<td>67</td>
</tr>
<tr>
<td>35</td>
<td>Samaspur Bird Sanctuary</td>
<td>69</td>
</tr>
<tr>
<td>36</td>
<td>Parvati Arga Bird Sanctuary</td>
<td>71</td>
</tr>
<tr>
<td>37</td>
<td>Saman Bird Sanctuary</td>
<td>73</td>
</tr>
<tr>
<td>38</td>
<td>Aasi Conservation Reserve</td>
<td>75</td>
</tr>
<tr>
<td>39</td>
<td>Kabartal Wetland</td>
<td>77</td>
</tr>
<tr>
<td>40</td>
<td>Lonar Lake</td>
<td>79</td>
</tr>
<tr>
<td>41</td>
<td>Sur Sarovar</td>
<td>81</td>
</tr>
<tr>
<td>42</td>
<td>Tso Kar Wetland Complex</td>
<td>83</td>
</tr>
<tr>
<td>43</td>
<td>Thol Lake Wildlife Sanctuary</td>
<td>85</td>
</tr>
<tr>
<td>44</td>
<td>Wadhvana Wetland</td>
<td>87</td>
</tr>
<tr>
<td>45</td>
<td>Haiderpur Wetland</td>
<td>89</td>
</tr>
<tr>
<td>46</td>
<td>Khijadia Wetland</td>
<td>91</td>
</tr>
<tr>
<td>47</td>
<td>Bhindawas Wetland</td>
<td>93</td>
</tr>
<tr>
<td>48</td>
<td>Sultapur National Park</td>
<td>95</td>
</tr>
<tr>
<td>49</td>
<td>Bakhira Wildlife Sanctuary</td>
<td>97</td>
</tr>
<tr>
<td>50</td>
<td>Pala Wetland</td>
<td>99</td>
</tr>
<tr>
<td>51</td>
<td>Anuspa Lake</td>
<td>101</td>
</tr>
<tr>
<td>52</td>
<td>Hirakud Reservoir</td>
<td>103</td>
</tr>
<tr>
<td>53</td>
<td>Satkosia Gorge</td>
<td>105</td>
</tr>
<tr>
<td>54</td>
<td>Tamara Lake</td>
<td>107</td>
</tr>
<tr>
<td>55</td>
<td>Chitrangudi Bird Sanctuary</td>
<td>109</td>
</tr>
<tr>
<td>56</td>
<td>Koonthankulam Bird Sanctuary</td>
<td>111</td>
</tr>
<tr>
<td>57</td>
<td>Sakhiya Sagar</td>
<td>113</td>
</tr>
<tr>
<td>58</td>
<td>Sirpur Wetland</td>
<td>115</td>
</tr>
<tr>
<td>59</td>
<td>Yashwant Sagar</td>
<td>117</td>
</tr>
<tr>
<td>60</td>
<td>Ranganathittu Bird Sanctuary</td>
<td>119</td>
</tr>
<tr>
<td>61</td>
<td>Gulf of Mannar Marine Biosphere Reserve</td>
<td>121</td>
</tr>
<tr>
<td>62</td>
<td>Kanjirankulam Bird Sanctuary</td>
<td>123</td>
</tr>
<tr>
<td>63</td>
<td>Karikili Bird Sanctuary</td>
<td>125</td>
</tr>
<tr>
<td>64</td>
<td>Pallikaranai Marsh Reserve Forest</td>
<td>127</td>
</tr>
<tr>
<td>65</td>
<td>Pichavaram Mangrove</td>
<td>129</td>
</tr>
<tr>
<td>66</td>
<td>Suchindram Theroor Wetland Complex</td>
<td>131</td>
</tr>
<tr>
<td>67</td>
<td>Udhayamathandapuram Bird Sanctuary</td>
<td>133</td>
</tr>
<tr>
<td>68</td>
<td>Vaduvur Bird Sanctuary</td>
<td>135</td>
</tr>
<tr>
<td>69</td>
<td>Vedanthangal Bird Sanctuary</td>
<td>137</td>
</tr>
<tr>
<td>70</td>
<td>Vellode Bird Sanctuary</td>
<td>139</td>
</tr>
<tr>
<td>71</td>
<td>Vembannur Wetland Complex</td>
<td>141</td>
</tr>
<tr>
<td>72</td>
<td>Thane Creek</td>
<td>143</td>
</tr>
<tr>
<td>73</td>
<td>Hygam Wetland Conservation Reserve</td>
<td>145</td>
</tr>
<tr>
<td>74</td>
<td>Nanda Lake</td>
<td>147</td>
</tr>
<tr>
<td>75</td>
<td>Shallighbag Wetland Conservation Reserve</td>
<td>149</td>
</tr>
</tbody>
</table>
Ramsar Sites of India

Shallbugh Wetland Conservation Reserve
Jammu & Kashmir, March 23, 1990

Wular Lake
Jammu & Kashmir, March 23, 1990

Hygam Wetland Conservation Reserve
Jammu & Kashmir, June 8, 2022

Surinsar-Mansar Lakes
Jammu & Kashmir, November 8, 2005

Kashopur-Miani Community Reserve
Punjab, September 26, 2019

Beas Conservation Reserve
Punjab, September 26, 2019

Kanji
Punjab, January 22, 2022

Harke Lake
Punjab, March 23, 1990

Haiderpur Wetland
Uttar Pradesh, October 3, 2019

Sultanpur National Park
Haryana, May 25, 2021

Bhindwasa Wildlife Sanctuary
Haryana, May 25, 2021

Keoladeo National Park
Rajasthan, October 1, 1981

Samhbar Lake
Rajasthan, March 23, 1990

Sirpur Wetland
Madhya Pradesh, January 7, 2022

Yashwant Sagar	
Madhya Pradesh, January 7, 2022

Thol Lake Wildlife Sanctuary
Gujarat, April 6, 2021

Khijadia Wildlife Sanctuary
Gujarat, April 13, 2021

Nalsarovar
Gujarat, September 24, 2012

Thane Creek
Maharashtra, April 15, 2021

Wadhwana Wetland
Gujarat, April 5, 2021

Bhog Wetland
Madhya Pradesh, August 19, 2002

Nanda Lake
Goa, June 8, 2022

Nandur Madhmeshwar
Maharashtra, June 21, 2019

Maharashtra, July 22, 2020

Ranganathittu Bird Sanctuary
Karnataka, February 18, 2022

Vellakoil Bird Sanctuary
Tamil Nadu, April 8, 2022

Vembanad-Koll Wetland
Kerala, August 19, 2002

Sasthamkotta Lake
Kerala, August 19, 2002

Ashtamudi Wetland
Kerala, August 19, 2002

Vembanur Wetland Complex
Tamil Nadu, April 8, 2022

Suchindram Thiruvan Wetland Complex
Tamil Nadu, April 8, 2022

Koonthankulam Bird Sanctuary
Tamil Nadu, November 8, 2005

Chitturugdi Bird Sanctuary
Tamil Nadu, November 8, 2005

Hokra Wetland
Jammu & Kashmir, November 8, 2005

Chandertal Wetland
Himachal Pradesh, November 8, 2005

Tso Kar Wetland Complex
Ladakh, November 17, 2020

Tsomoriri
Ladakh, August 19, 2002

Pong Dam Lake
Himachal Pradesh, August 19, 2002

Nangal Wildlife Sanctuary
Punjab, September 26, 2019

Ropar
Punjab, January 22, 2002

Sangrur Bird Sanctuary
Punjab, April 13, 2021

Emanon Wildlife Sanctuary
Jammu & Kashmir, November 8, 2005

Renuka Wetland
Himachal Pradesh, November 8, 2005

Asan Conservation Reserve
Uttarakhand, July 21, 2020

Upper Ganga River
Uttar Pradesh, November 8, 2005

Saman Bird Sanctuary
Uttar Pradesh, December 2, 2019

Sandi Bird Sanctuary
Uttar Pradesh, September 26, 2019

Nawabganj Bird Sanctuary
Uttar Pradesh, September 19, 2019

Parvati Arga Bird Sanctuary
Uttar Pradesh, December 2, 2019

Bakhrigaon Wildlife Sanctuary
Uttar Pradesh, June 29, 2021

Kabartal Wetland
Uttar Pradesh, July 21, 2020

Daenep Boil
Assam, August 19, 2002

Loktak Lake
Manipur, March 23, 1890

Pals Wetland
Madhya Pradesh, August 19, 2002

Rudrasagar Lake
Tripura, November 8, 2005

Sundarban Wetland
West Bengal, January 30, 2019

East Kolkata Wetlands
West Bengal, August 19, 2002

Bhitarakhina Mangroves
Odisha, August 19, 2002

Sattosha Gorge
Odisha, October 12, 2021

Palikkaranai Marsh Reserve Forest
Tamil Nadu, April 8, 2022

Karkili Bird Sanctuary
Tamil Nadu, April 8, 2022

Vedanthangal Bird Sanctuary
Tamil Nadu, April 8, 2022

Pichavaram Mangrove
Tamil Nadu, April 8, 2022

Udhayamthandapuram Bird Sanctuary
Tamil Nadu, August 19, 2002

Point Calimere Wildlife and Bird Sanctuary
Tamil Nadu, August 19, 2002

Veduvur Bird Sanctuary
Tamil Nadu, April 8, 2022

Gulf of Mannar Marine Biosphere Reserve
Tamil Nadu, August 19, 2002

Kanjirankulam Bird Sanctuary
Tamil Nadu, August 19, 2002
THE RAMSAR SITES CRITERIA

The nine criteria for identifying Wetlands of International Importance

Group A of the Criteria. Sites containing representative, rare or unique wetland types

Criterion 1: A wetland should be considered internationally important if it contains a representative, rare, or unique example of a natural or near-natural wetland type found within the appropriate biogeographic region.

Group B of the Criteria. Sites of international importance for conserving biological diversity

Criteria based on species and ecological communities

Criterion 2: A wetland should be considered internationally important if it supports vulnerable, endangered, or critically endangered species or threatened ecological communities.

Criterion 3: A wetland should be considered internationally important if it supports populations of plant and/or animal species important for maintaining the biological diversity of a particular biogeographic region.

Criterion 4: A wetland should be considered internationally important if it supports plant and/or animal species at a critical stage in their life cycles, or provides refuge during adverse conditions.

Specific criteria based on waterbirds

Criterion 5: A wetland should be considered internationally important if it regularly supports 20,000 or more waterbirds.

Criterion 6: A wetland should be considered internationally important if it regularly supports 1% of the individuals in a population of one species or subspecies of waterbird.

Specific criteria based on fish

Criterion 7: A wetland should be considered internationally important if it supports a significant proportion of indigenous fish subspecies, species or families, life-history stages, species interactions and/or populations that are representative of wetland benefits and/or values and thereby contributes to global biological diversity.

Criterion 8: A wetland should be considered internationally important if it is an important source of food for fishes, spawning ground, nursery and/or migration path on which fish stocks, either within the wetland or elsewhere, depend.

Specific criteria based on other taxa

Criterion 9: A wetland should be considered internationally important if it regularly supports 1% of the individuals in a population of one species or subspecies of wetland-dependent non-avian animal species.
MISSION LIFE CAN BE SUCCESSFUL ONLY WHEN IT REACHES EVERY CORNER OF THE WORLD. WE HAVE TO REMEMBER THIS MANTRA—PRAKRITI RAKSHATI RAKSHITA—that is, those who protect nature, nature protects them. I BELIEVE WE WILL BUILD A BETTER WORLD BY FOLLOWING MISSION LIFE

- Hon’ble Prime Minister Narendra Modi
MINDFUL AND DELIBERATE UTILISATION, NOT MINDLESS AND DESTRUCTIVE CONSUMPTION, IS NEEDED TODAY

- Hon’ble Prime Minister Narendra Modi
Chilika Lake

Date of designation
October 1, 1981

Chilika, the largest brackish water lagoon in Asia and the second largest coastal lagoon in the world, is the first Indian Ramsar site. The wetland is influenced by three hydrologic sub-systems, the Mahanadi distributaries, 52 rivulets, and streams draining into the lagoon from the western catchment and the Bay of Bengal. Also known as the lifeline of the state of Odisha, the wetland is an assemblage of marine, brackish and freshwater ecosystems and a hotspot of biodiversity. It is one of the few brackish water wetlands in the world which sustains the population of threatened Irrawaddy Dolphin. The lagoon is an avian grandeur and the wintering ground for more than one million migratory birds. The highly productive ecosystem of the lagoon, with its rich fishery resources, sustains the livelihood of more than 0.2 million fishers. A basin-scale restoration programme implemented in the 2000s by Chilika Development Authority has led to the rejuvenation of biodiversity, restoration of salinity regimes, and enhanced fisheries. The restoration was recognized with a Ramsar Conservation Award in 2002, and the lagoon was delisted from the Montreux Record.

<table>
<thead>
<tr>
<th>Designation Criteria</th>
<th>Wetland Type</th>
<th>Protection Status</th>
<th>Management Authority</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>Natural Lagoon</td>
<td>15.5 km² island Nalabana designated as Bird Sanctuary</td>
<td>Chilika Development Authority</td>
</tr>
</tbody>
</table>
Species of global conservation significance

<table>
<thead>
<tr>
<th>Notable</th>
<th>Irrawaddy Dolphin</th>
</tr>
</thead>
<tbody>
<tr>
<td>Critically Endangered</td>
<td>Scalloped Hammerhead, Smalltooth Sawfish, Ganges Shark</td>
</tr>
<tr>
<td>Endangered</td>
<td>Irrawaddy Dolphin, Winghead Shark, Longhead Eagle Ray</td>
</tr>
<tr>
<td>Vulnerable</td>
<td>Lesser White-Fronted Goose, Indian Skimmer, Woolly-Necked Stork, Great Knot, Common Pochard, Toli Shad</td>
</tr>
</tbody>
</table>

**THREATS**

<table>
<thead>
<tr>
<th>Significance</th>
<th>Pollution from settlements</th>
<th>Phragmites in northern sector</th>
<th>Siltation</th>
<th>Extreme events changes lagoon mouth</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Medium</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Illegal aquaculture</td>
<td>Unsustainable fish harvest</td>
<td>Unsustainable tourism</td>
<td></td>
</tr>
</tbody>
</table>
Keoladeo National Park lies at the confluence of the rivers Gambhir and Banganga in the Bharatpur district of Rajasthan. The wetland, locally known as Ghana, is a mosaic of grasslands, woodlands, woodland swamps, and wetlands. Keoladeo National Park is a significant wintering area for migratory birds from Central Asia, including the elusive and endangered Siberian Crane, the last known sighting of which at the site was in 2002. The ancient Keoladeo temple inside the park is revered by the local community. The wetland serves as a freshwater buffer in an arid zone and recharges groundwater aquifers in the surrounding areas. Keoladeo National Park is a world-famous tourist destination providing direct employment opportunities to nearly 400 people from local communities.

<table>
<thead>
<tr>
<th>Designation Criteria</th>
<th>Wetland Type</th>
<th>Protection Status</th>
<th>Management Authority</th>
<th>Other Designation</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>Freshwater marsh &amp; swamp</td>
<td>National Park</td>
<td>Rajasthan Forest Department</td>
<td>UNESCO World Heritage Site</td>
</tr>
</tbody>
</table>
Species of global conservation significance

<table>
<thead>
<tr>
<th>Category</th>
<th>Species</th>
</tr>
</thead>
<tbody>
<tr>
<td>Notable</td>
<td>Sarus Crane, Greater Spotted Eagle, Painted Stork, Hog Deer</td>
</tr>
<tr>
<td>Endangered</td>
<td>Greater Adjutant, Hog Deer</td>
</tr>
<tr>
<td>Vulnerable</td>
<td>Common Pochard, Woolly-Necked Stork, Sarus Crane, Lesser Adjutant, Greater Spotted Eagle, Smooth-Coated Otter, Sambar</td>
</tr>
</tbody>
</table>

**VALUES AND BENEFITS**

- **Significance**
  - Groundwater recharge
  - Habitat for several migratory species
  - Tourism offers livelihood to local communities

**THREATS**

- Hydrological regime alteration
- Invasive species proliferation like Water hyacinth, Knot grass, Mesquite and African Catfish
- Encroachment
Harike Lake

Date of designation
March 23, 1990

Harike, also known as Hari-ke-Pattan, is one of the largest wetlands in northern India. The wetland is situated at the confluence of two major rivers of Punjab, Sutlej, and Beas. Harike came into existence in 1953 due to the construction of a barrage on river Sutlej. The barrage is located 700 meters downstream of the confluence of the Beas and Sutlej rivers. This human-made riverine wetland was constructed to enhance water security for Punjab and nearby states. The rich biodiversity of the wetland plays a vital role in maintaining the hydrological balance in the catchment. Located close to the Indo-Pakistan border, Harike is in proximity to the Himalayas and the Indus-Sutlej River system that falls in the migratory route of many birds from western Himalayas, Central Asia and Siberia. The wetland also supports the population of endangered Indus River Dolphins, critically endangered Gharial, and endangered freshwater turtles and fishes.
Species of global conservation significance

<table>
<thead>
<tr>
<th>Category</th>
<th>Species</th>
</tr>
</thead>
<tbody>
<tr>
<td>Notable</td>
<td>Indus River Dolphin, Smooth-coated Otter</td>
</tr>
<tr>
<td>Critically Endangered</td>
<td>Gharial, Red-crowned Roofed Turtle</td>
</tr>
<tr>
<td>Endangered</td>
<td>Indus River Dolphin, Black-bellied Tern, Egyptian Vulture, Indian Narrow-headed Softshell Turtle</td>
</tr>
<tr>
<td>Vulnerable</td>
<td>Smooth-coated Otter, Jerdon’s Babbler, Lesser White-fronted Goose, Eastern Imperial Eagle, Common Pochard, Eurasian Carp</td>
</tr>
</tbody>
</table>

THREATS

<table>
<thead>
<tr>
<th>Significance</th>
<th>Threats</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>Encroachment</td>
</tr>
<tr>
<td>Medium</td>
<td>Illegal fishing</td>
</tr>
<tr>
<td>High</td>
<td>Water hyacinth proliferation</td>
</tr>
<tr>
<td></td>
<td>Siltation</td>
</tr>
</tbody>
</table>
Loktak Lake

Date of designation
March 23, 1990

Loktak, the largest freshwater wetland in North East India, spans an area of 260 km² and has an average height of 800–2070 m above the mean sea level. Phumdi, floating mats of vegetation, are a characteristic feature of the wetland. Loktak is divided into three zones: the northern zone, the central zone, and the southern zone. The south zone of Loktak forms the Keibul Lamjao National Park, composed of a continuous mass of floating phumdis and the natural habitat of globally endangered ungulate Sangai deer. The phumdi mass in the northern zone acts as a nutrient sink, thus, helping maintain the water quality of the wetland. The main open water area is the central zone, which is relatively free from phumdi. Loktak is considered the lifeline of people of Manipur, owing to its socio-economic and cultural significance. The wetland plays an essential role in providing ecological and economic security to the region. Loktak is an important source of water, fisheries, and vegetation, providing sustenance to a large population dependent upon lake resources for their sustenance. The water from the wetland is used for irrigation, domestic purposes, and power generation. The vegetation is harvested for use as food, fodder, fiber, fuel, handicrafts, and medicinal purposes. Loktak is the major water source for the 105 MW hydropower project, the single largest source of electricity for the northeastern region.

<table>
<thead>
<tr>
<th>Designation Criteria</th>
<th>Wetland Type</th>
<th>Protection Status</th>
<th>Management Authority</th>
</tr>
</thead>
<tbody>
<tr>
<td>1, 2</td>
<td>Freshwater marsh</td>
<td>40 km² in southern part designated as Keibul Lamjao National Park. Wetland notified under Manipur Loktak Lake (Protection) Act, 2006</td>
<td>Loktak Development Authority</td>
</tr>
</tbody>
</table>
Species of global conservation significance

<table>
<thead>
<tr>
<th>Notable</th>
<th>Manipur Brow-antlered Deer or Sangai</th>
</tr>
</thead>
<tbody>
<tr>
<td>Endangered</td>
<td>Manipur Brow-antlered Deer, Hog Deer, Dhole, Red Jasper Barb, Keeled Box Turtle</td>
</tr>
<tr>
<td>Vulnerable</td>
<td>Lesser Adjutant, Sarus Crane, Common Pochard, Hooded Crane, Common Carp, Amboina Box Turtle, King Cobra, Burmese Python</td>
</tr>
</tbody>
</table>

**VALUES AND BENEFITS**

Significance

- Tourism & recreation
- Source of drinking water
- Water for 105 MW hydropower
- Groundwater recharge
- Lifecycle maintenance
- Medicinal & ornamental plants
- Protection from floods
- Purifies wastewater
- Livelihood for 5,000 fishers
- Carbon sink
- Scientific and educational importance
- Revered as Loktak ima

**THREATS**

Significance

- Low
- Medium
- High

- Siltation
- Pollution
- Unsustainable water abstraction for hydropower
- Spread of Phumdi
- Fragmentation by roads
- Water regime alteration by Ichai barrage
Sambhar Lake

Date of designation
March 23, 1990

Sambhar is a shallow natural saline wetland located in Rajasthan’s Jaipur, Nagaur, and Ajmer districts, close to the desert fringe line. The wetland is famous for harbouring lesser flamingos in large numbers, next only to Rann of Kutch in the country. The waders congregate at the site in appreciable numbers especially pochards, coots, and other waterbirds. The vegetation present in the catchment area is primarily xerophytic. The wetland is significant as it provides a habitat for migratory waterbirds, is an important tourist destination, and is also an important site for salt production in the country. Sambhar is also famous for the ancient Shakambari Devi temple, which is revered by people of the surrounding villages and is the venue for a famous religious fair in the month of August. The temple has cultural and spiritual significance attached, and it is believed that the deity of the temple protects the wetland.

<table>
<thead>
<tr>
<th>Designation Criteria</th>
<th>Wetland Type</th>
<th>Management Authority</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Natural Saline lake</td>
<td>Rajasthan State Wetlands Authority</td>
</tr>
</tbody>
</table>
**VALUES AND BENEFITS**

- **Significance**
  - Low
  - Medium
  - High

- **Tourism destination**

- **~5% of country’s salt production**

- **Lifecycle of migratory waterbirds**

- **Scientific and educational values**

- **Ancient temple of Shakambhari Devi**

---

**Species of global conservation significance**

<table>
<thead>
<tr>
<th>Category</th>
<th>Species</th>
</tr>
</thead>
<tbody>
<tr>
<td>Notable</td>
<td>Lesser and Greater Flamingo, Demoiselle Crane</td>
</tr>
<tr>
<td>Endangered</td>
<td>Egyptian Vulture</td>
</tr>
<tr>
<td>Vulnerable</td>
<td>Common Pochard</td>
</tr>
</tbody>
</table>

---

**THREATS**

- **Significance**
  - Low
  - Medium
  - High

- **Regime fragmentation by roads and railways**

- **Hyper-salinity**

- **Illegal salt mining**
Wular Lake

Date of designation
March 23, 1990

Wular, the largest freshwater wetland within the river Jhelum basin, plays a significant role in the hydrography of Kashmir valley by acting as a absorption basin for floodwaters. Wular, with its associated wetlands, support rich biodiversity and provides important habitats for migratory waterbirds within the Central Asian Flyway. The wetland is the largest fisheries resource in Kashmir Valley, supporting the livelihoods of a large human population living along its fringes. Regulation of hydrological regimes of the basin through Wular and its associated wetlands protects the Kashmir valley from floods and maintains flows to support agriculture and hydropower generation. The wetland also generates revenue for the state government through fisheries and auctioning water chestnuts, fodder, and other economically important species. The wetland catchment supports coniferous forests and alpine pastures, adding to the natural beauty and biodiversity of the wetland area.

<table>
<thead>
<tr>
<th>Designation Criteria</th>
<th>Wetland Type</th>
<th>Management Authority</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Freshwater lake &amp; marsh</td>
<td>Wular Conservation &amp; Management Authority</td>
</tr>
</tbody>
</table>
**VALUES AND BENEFITS**

**Significance**

- Low
- Medium
- High

- Groundwater recharge
- Tourism and recreation
- Important source of vegetables for 30+ villages
- Spiritual and historical significance

---

**Species of global conservation significance**

<table>
<thead>
<tr>
<th>Critically Endangered</th>
<th>White-bellied Heron, Pink-headed Duck, Baer’s Pochard, Kashmir Catfish</th>
</tr>
</thead>
<tbody>
<tr>
<td>Endangered</td>
<td>Oriental Stork, White-headed Duck, White-winged Duck, Black-bellied Tern</td>
</tr>
<tr>
<td>Vulnerable</td>
<td>Black-necked Crane, Indian Skimmer, Marbled Teal, Common Carp</td>
</tr>
</tbody>
</table>

---

**THREATS**

**Significance**

- Low
- Medium
- High

- Construction of embankments
- Pollution
- Siltation
- Encroachment (Willow plantation)

---

- ~1500 MT fish catch annually
- Buffers floods
- Fodder
Kanjli

**Date of designation**
January 22, 2002

Kanjli is a human-made freshwater wetland spreading over 12 villages in the Kapurthala district of Punjab. The wetland came into existence in 1870 with the construction of the Head Regulator near village Kanjli on the Kali Bein rivulet. The Kali Bein rivulet travelling long after originating from Budha Barkat Regulator near village Dhanoa upstream in Hoshiarpur District feeds Kanjli and the wetland area. It moves towards Bakarke village, 10 km short of Harke Pattan Regulator and joins the river Beas. Kanjli acts as a groundwater discharging and recharging source and helps flood management. Kali Bein and Kanjli wetland have religious significance as they are associated with the first Guru of Sikhs, Shri Guru Nanak Dev Ji. The margins of the wetland also support a great variety of biodiversity including a large number of resident and migratory birds.

<table>
<thead>
<tr>
<th>Designation Criteria</th>
<th>Wetland Type</th>
<th>Protection Status</th>
<th>Management Authority</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>River stretch</td>
<td>Conservation Reserve</td>
<td>Department of Forest &amp; Wildlife Preservation, Punjab</td>
</tr>
</tbody>
</table>
VALUES AND BENEFITS

**Significance**

<table>
<thead>
<tr>
<th>Low</th>
<th>Medium</th>
<th>High</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- Purifies wastewater
- Traps sediments
- Recharges groundwater

**LOCATION**
Kapurthala District

**AREA**
183 hectares

<table>
<thead>
<tr>
<th>Holy river associated with Guru Nanak Dev Ji</th>
</tr>
</thead>
<tbody>
<tr>
<td>Habitat for several migratory species</td>
</tr>
<tr>
<td>Scientific and educational values</td>
</tr>
<tr>
<td>Provides water for irrigation</td>
</tr>
<tr>
<td>Buffers floods</td>
</tr>
<tr>
<td>Recreation and tourism</td>
</tr>
</tbody>
</table>

**Species of global conservation significance**

<table>
<thead>
<tr>
<th>Notable</th>
<th>Utricularia sp.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vulnerable</td>
<td>Humped Bladderwort, Common Carp, Wallagu Catfish</td>
</tr>
</tbody>
</table>

**THREATS**

<table>
<thead>
<tr>
<th>Significance</th>
<th>Encroachment</th>
<th>Hydrological regime alteration</th>
<th>Siltation</th>
<th>Pollution from upstream cities and towns</th>
<th>Water hyacinth proliferation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Medium</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Ropar

Date of designation
January 22, 2002

Ropar is a permanent freshwater human-made reservoir located in the North-West of Chandigarh, Punjab. The wetland came into existence after the construction of a barrage in 1952 to divert the River Sutlej for drinking and irrigation water supplies in parts of Punjab. The area is an important habitat for some threatened species in Shivalik Foothills, like the scaly anteater and Indian rock python. Areas including a vast stretch of water and a forest environment along the marshy zone are vital habitats for migratory birds. The diversity of floral and faunal components in this strategic ecosystem is of immense value to the region. This freshwater wetland falls on the migratory route of various birds and is regarded as an important stopover. Ropar plays a substantial hydrological role in recharging the aquifers and is also a source of water for irrigation, industry, and domestic use in far-off places by way of Sirhind and Bist Doab Canals.

<table>
<thead>
<tr>
<th>Designation Criteria</th>
<th>Wetland Type</th>
<th>Protection Status</th>
<th>Management Authority</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,3</td>
<td>Barrage/Water storage area</td>
<td>Conservation Reserve</td>
<td>Department of Forest &amp; Wildlife Preservation, Punjab</td>
</tr>
</tbody>
</table>
**VALUES AND BENEFITS**

- **Significance**
  - Low
  - Medium
  - High

- **Flood buffer**
- **Purifies wastewater**

**LOCATION**
Rupnagar and Nawanshahr Districts

**AREA**
1,365 hectares

- **Source of drinking water, irrigation for lower Sutlej Basin**
- **Habitat for several migratory species**
- **Traps sediments**
- **Recharges groundwater**
- **Scientific and educational value**
- **Recreation and tourism adjoining historical site**

**Species of global conservation significance**

<table>
<thead>
<tr>
<th>Notable</th>
<th>Hog Deer, Indian Narrow-headed Softshell Turtle, Indian Pangolin</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vulnerable</td>
<td>Common Pochard, Mrigal Carp, Common Carp, Smooth Indian Otter, Sambar</td>
</tr>
</tbody>
</table>

**THREATS**

- **Significance**
  - Low
  - Medium
  - High

- **Encroachment**
- **Alteration in hydrological regimes**
- **Siltation**
- **Pollution from upstream cities and towns**
- **Sand Mining**
Ashtamudi Wetland

Date of designation
August 19, 2002

Ashtamudi wetland is an estuarine system in the Kollam district and is the second largest in Kerala. The wetland is palm-shaped with eight cones that signify the local culture and belief systems, with many sites of historical and cultural significance, such as Quilon port located along its shorelines. Moving from the east, Thevally, Kureepuzha, Kandachira, Thekkumbhagam, Peruman, Kanjirottu, Kallada, and Kumbaluthu form the eight cones of the estuary, thus named Ashtamudi. The mouth of Ashtamudi has been developed into a harbour, Neendakara, which is used by over 3000 marine fishing boats and trawlers. The wide-ranging ecosystem services and biodiversity values for Ashtamudi exist within a densely populated and highly developed landscape. The clam fisheries of the estuary are famed for being the country’s first Marine Stewardship Council-certified fishery. This picturesque estuary serves as the gateway of Cochin backwaters and is one of the prominent tourist destinations of the state.
VALUES AND BENEFITS

Significance

<table>
<thead>
<tr>
<th>Low</th>
<th>Medium</th>
<th>High</th>
</tr>
</thead>
</table>

**Carbon sink**

**Prevents shoreline erosion**

**Location**

Kollam District

**Area**

6,140 hectares

**CO2**

Part of famed Cochin backwaters

Livelihood for 30,000 fishers

Habitat for migratory fish and water birds

Flood buffering

Species of global conservation significance

<table>
<thead>
<tr>
<th>Notable</th>
<th>Pearspot</th>
</tr>
</thead>
<tbody>
<tr>
<td>Critically Endangered</td>
<td>Syzygium travancoricum</td>
</tr>
<tr>
<td>Vulnerable</td>
<td>Greater Spotted Eagle</td>
</tr>
</tbody>
</table>

**THREATS**

Significance

<table>
<thead>
<tr>
<th>Low</th>
<th>Medium</th>
<th>High</th>
</tr>
</thead>
</table>

**Freshwater flow reduction**

**Salinization**

**Encroachment**

**Pollution**

**Slit deprivation**

High pressure on fishing
Bhitarkanika Mangroves

**Date of designation**
August 19, 2002

Bhitarkanika mangroves are located within the estuarine region of Rivers Bramhani-Baitarani, in the northeastern part of the Kendrapara district of Odisha. The Ramsar Site is a designated Wildlife Sanctuary, the core of which forms the Bhitarkanika National Park. The wetland is a maze of mangroves, creeks, and mudflats. With 30 recorded true mangrove species in the wetland, Bhitarkanika is the most diverse mangrove ecosystem in the country. The floral diversity of the wetland is known to be the largest in India and the second largest, after Papua New Guinea, in the world. Bhitarkanika is home to the largest number of saltwater crocodiles in the Indian sub-continent. The breeding program at the wetland is among the most successful conservation initiatives in the country. The wetland serves as a mass nesting/egg laying ground for the vulnerable Olive Ridley turtles and is also the world’s largest rookery. Bhitarkanika has a large heronry at Bagagahana / Mathaadia and buffers communities living along the shoreline from intense tropical storms.
Species of global conservation significance

<table>
<thead>
<tr>
<th>Classification</th>
<th>Species</th>
</tr>
</thead>
<tbody>
<tr>
<td>Notable</td>
<td>Olive Ridley Sea Turtle, Salt-water Crocodile, <em>Avicennia sp.</em> and <em>Herritera sp.</em></td>
</tr>
<tr>
<td>Critically Endangered</td>
<td>Baer's Pochard, White-rumped Vulture</td>
</tr>
<tr>
<td>Endangered</td>
<td>Irrawaddy Dolphin, Black-bellied Tern</td>
</tr>
<tr>
<td>Vulnerable</td>
<td>Indo-Pacific Humpback Dolphin, Scrub Mahogany</td>
</tr>
</tbody>
</table>

**THREATS**

<table>
<thead>
<tr>
<th>Significance</th>
<th>Threat</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>Changes in freshwater flow</td>
</tr>
<tr>
<td></td>
<td>Expansion of and effluents from shrimp farms</td>
</tr>
<tr>
<td>Medium</td>
<td>Proposed expansion of Paradip and Dhamra ports</td>
</tr>
<tr>
<td>High</td>
<td>High fishing pressure</td>
</tr>
</tbody>
</table>
Bhoj Wetland

Date of designation
August 19, 2002

Bhoj Wetland comprises two lakes, the Upper Lake and Lower Lake, located in Bhopal, Madhya Pradesh. The Upper Lake drains a catchment of 361 km² spread in the Bhopal and Sehore districts. The catchment of the Upper Lake is primarily rural, with some urbanized areas around its eastern end. The catchment of Lower Lake is mainly urbanized. The Upper Lake was constructed during the regime of Paramara Raja Bhoj, ruler of Malwa, by damming the Kolans River, formerly a tributary of the Halali River. The Lower Lake was created in 1794 by Nawab Chhote Khan, Minister of Nawab Hayath Mohammad Khan, to beautify the city. It is also contained behind an earthen dam and drains into the Halali River via the lower reach of the Kolans River, presently known as the Patra drain. Both the Kaliasot and Halali Rivers are tributaries of the Betwa River. The city of Bhopal is centralized in and around these two lakes, and the locals are sentimentally attached to them. The Upper Lake is one of the city’s principal sources of drinking water; the Lower Lake meets the requirement of raw water and enhances the city’s beauty. The wetland supports a wide variety of flora and fauna, providing ideal habitat in the form of food and shelter to a large number of migratory waterbirds.

<table>
<thead>
<tr>
<th>Designation Criteria</th>
<th>Wetland Type</th>
<th>Management Authority</th>
</tr>
</thead>
<tbody>
<tr>
<td>1, 2, 3, 5, 8</td>
<td>Reservoir</td>
<td>Bhopal Municipal Corporation</td>
</tr>
</tbody>
</table>
**VALUES AND BENEFITS**

- **Significance:**
  - Low
  - Medium
  - High

**Species of global conservation significance**

<table>
<thead>
<tr>
<th>Notable</th>
<th>Red-crested Pochard</th>
</tr>
</thead>
<tbody>
<tr>
<td>Endangered</td>
<td>Egyptian Vulture</td>
</tr>
<tr>
<td>Vulnerable</td>
<td>Sarus Crane</td>
</tr>
</tbody>
</table>

**THREATS**

- **Significance:**
  - Low
  - Medium
  - High

- Pollution
- Siltation
- Invasive species
- Encroachment
Deepor Beel is a permanent freshwater wetland and the largest beel in the Brahmaputra valley of Lower Assam. It is located 10 km southwest of Guwahati, surrounded by residential, commercial, and institutional areas. It is believed that the wetland is an abandoned channel of the river Brahmaputra, situated in a wide U-shaped valley rammed between two cliffs on the north and the south. A perennial stream originating from the Basistha basin runs through the wetland and joins the Brahmaputra at Khandmukh. The Deepor Beel system is fed by streams and rivulets flowing from the south and southwestern parts of the wetland. Rain and stormwater from the surrounding areas are also the primary sources of flow during the monsoon season. The wetland supports fishery, providing a means of livelihood for several locals, and is an essential source of domestic water supply. Deepor Beel has also been serving as a potential source of groundwater as well as a stormwater receptacle for the surrounding areas. Deepor and the adjoining Beels absorb a significant proportion of the flood pulse of the Brahmaputra, providing flood protection to Guwahati.

**Date of designation**
August 19, 2002

<table>
<thead>
<tr>
<th>Designation Criteria</th>
<th>Wetland Type</th>
<th>Protection Status</th>
<th>Management Authority</th>
</tr>
</thead>
<tbody>
<tr>
<td>1, 2, 4, 7, 8</td>
<td>River Floodplain</td>
<td>Part of wetland notified as Wildlife Sanctuary</td>
<td>Forest Department, Assam</td>
</tr>
</tbody>
</table>
LOCATION
Kamrup District

AREA
4,000 hectares

VALUES AND BENEFITS

Significance
Low  Medium  High

Source of fresh water
Recreation and tourism
Cultural and spiritual importance

Species of global conservation significance

Notable  Asian Elephant
Critically Endangered  Baer’s Pochard
Endangered  Greater Adjutant, Asian Elephant
Vulnerable  Lesser Adjutant

THREATS

Significance
Low  Medium  High

Encroachment
Invasive species
Hydrological regime alteration
Pollution from sewage and solid waste dumping
Regime fragmentation by roads and railways
**East Kolkata Wetlands**

**Date of designation**
August 19, 2002

The East Kolkata Wetlands (EKW), located on the eastern fringes of Kolkata city, sustain one of the world’s largest integrated resource recovery systems based on a combination of aquaculture, agriculture, and horticulture. The existing wetland regime is a remnant of a series of brackish wetlands connected to the freshwater and marine environments of the Gangetic Delta and the Bay of Bengal, in an ecological continuum with the Sundarbans. EKW is a critical natural infrastructure for Kolkata City. The wetland treats over 900 million litres of sewage generated by Kolkata Municipal Corporation every day (approximately 65% of the total sewage generated in the metropolitan area) saving the city nearly Rs. 4,680 million annually in terms of treatment costs saved, as well as providing a much-needed flood buffer on the periurban interface. As the nutrient-rich effluent moves through a maze of fish farms, horticulture and agriculture systems, it is progressively cleaned, and nutrients are redirected to produce annually 20,000 MT of fish and 50,000 MT of vegetables and irrigate 4700 ha of paddy lands. Over 60% of carbon from wastewater is also locked in various forms in the production process, thus reducing harmful Green House Gas emissions from the region.

<table>
<thead>
<tr>
<th>Designation Criteria</th>
<th>Wetland Type</th>
<th>Protection Status</th>
<th>Management Authority</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Aquaculture ponds &amp; wastewater treatment areas</td>
<td>Protected under the East Kolkata Wetlands(Conservation &amp; Management) Act, 2006</td>
<td>East Kolkata Wetlands Management Authority</td>
</tr>
</tbody>
</table>
LIVELIHOODS FOR 20,000+ FAMILIES
LARGEST ASSEMBLAGE OF SEWAGE FED FISHERIES

TREATS KOLKATA CITY’S SEWAGE
SCIENTIFIC AND EDUCATIONAL VALUE
RECREATION AND TOURISM
CLIMATE REGULATION

SPECIES OF GLOBAL CONSERVATION SIGNIFICANCE

<table>
<thead>
<tr>
<th>Notable</th>
<th>Catla, Rohu, Common Water Monitor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Critically Endangered</td>
<td>Baer’s Pochard</td>
</tr>
<tr>
<td>Vulnerable</td>
<td>Indian Spotted Eagle, Wood Snipe, Common Carp</td>
</tr>
</tbody>
</table>

THREATS

Significance
- Low
- Medium
- High

- Pollution
- Siltation
- Encroachment
Kolleru Lake

Date of designation
August 19, 2002

Kolleru, the largest natural freshwater wetland on the East Coast of India, is located between Krishna and Godavari deltas. The wetland is fed by two seasonal rivers and several drains and channels. Kolleru acts as a flood balancing system between the two deltas and plays a significant role in the region's hydrography. The Ramsar Site, with its variety of habitats, supports rich biodiversity, including some endangered and endemic species. Kolleru was once famous for breeding colonies of spot-billed Grey Pelican, which represented the highest known population of this species in India. Located amid the deltaic floodplains, the wetland receives large quantities of nutrient-rich sediments and was traditionally utilized by the communities for fisheries during monsoon and agriculture in the lean period.
Species of global conservation significance

<table>
<thead>
<tr>
<th>Notable</th>
<th>Spot-billed Pelican</th>
</tr>
</thead>
<tbody>
<tr>
<td>Endangered</td>
<td>Greater Adjutant</td>
</tr>
<tr>
<td>Vulnerable</td>
<td>Grey Pelican, Lesser Adjutant</td>
</tr>
</tbody>
</table>

**VALUES AND BENEFITS**

Significance
- Low
- Medium
- High

Recreation and tourism
Spiritual and inspirational importance
Habitat for migratory species
Fisheries
Buffers floods

**THREATS**

Significance
- Low
- Medium
- High

Siltation
Pollution
Aquaculture
Hydrological regime regulation
Road network
Invasive species
Point Calimere Wildlife and Bird Sanctuary

Date of designation
August 19, 2002

Point Calimere Wildlife & Bird Sanctuary is located along the Palk Strait in three districts of Tamil Nadu, namely Nagapattinam, Tiruvarur, and Thanjavur. This site is a mosaic of mangroves, mudflats, tropical dry evergreen forest, tidal creeks and lagoon, beach, dunes, backwaters, grassland, salt pans, fishing canals, and aquaculture. The Point Calimere region was first identified as an area of high significance in the conservation of birds by late Dr Salim Ali in 1962. The wetland coast has been a regular nesting site of the endangered Olive Ridley Turtle. Dolphins and Dugongs are frequently sighted along the wetland coast. The livelihoods of the local communities are intrinsically linked to the wetland. The locals accrue their revenue from its natural resources, especially fish, salt products, firewood, forest produce, and grazing lands for livestock. The Point Calimere Wildlife and Bird Sanctuary, along with the great Vedaranyam Swamp and the mangrove forests of Thalainayar Reserve Forest, act as bioshield during tsunamis, floods, and cyclones.

<table>
<thead>
<tr>
<th>Designation Criteria</th>
<th>Wetland Type</th>
<th>Protection Status</th>
<th>Management Authority</th>
</tr>
</thead>
<tbody>
<tr>
<td>2, 5, 6, 8</td>
<td>Mangrove swamps, lagoons, mudflats, salt pans</td>
<td>Part notified as Wildlife Sanctuary and Reserve Forest</td>
<td>Tamil Nadu State Wetland Authority</td>
</tr>
</tbody>
</table>
VALUES AND BENEFITS

Significance

Low  Medium  High

Ecotourism hotspot

Scientific and educational importance

- Wintering ground for waterbirds
- Nesting site for Olive Ridley Turtles
- Largest Blackbuck population in Tamil Nadu
- ~200 species of medicinal plants

Blue Carbon sink 120 km² of Muthupet mangrove wetland

Sites of historical importance such as Ramar Pedam, Modi mandapam and Chola lighthouse

~100 MT annual fish catch

Nearly 40 km² under salt production

Species of global conservation significance

<table>
<thead>
<tr>
<th>Notable</th>
<th>Blackbuck, Spot-billed Pelican</th>
</tr>
</thead>
<tbody>
<tr>
<td>Critically Endangered</td>
<td>Spoon-billed Sandpiper, Hawksbill Turtle</td>
</tr>
<tr>
<td>Endangered</td>
<td>Green Turtle</td>
</tr>
<tr>
<td>Vulnerable</td>
<td>Star Tortoise</td>
</tr>
</tbody>
</table>

THREATS

Significance

Low  Medium  High

Salinization

Siltation

Pollution from Settlements

Illegal aquaculture and unsustainable fish harvest
WE ARE BLESSED TO BE A PART OF A CULTURE WHERE LIVING IN COMPLETE HARMONY WITH THE ENVIRONMENT IS CENTRAL TO OUR ETHOS. LET'S ENSURE THAT EVEN THE SMALLEST STEP WE TAKE IN OUR DAILY LIVES WILL BE AN EFFORT TOWARDS CONSERVING NATURE AND NATURAL RESOURCES.

- Hon'ble Prime Minister Narendra Modi
WHEN WE SPEAK ONLY OF CLIMATE CHANGE, THERE IS A PERCEPTION OF OUR DESIRE TO SECURE THE COMFORTS OF OUR LIFESTYLE. BUT WHEN WE SPEAK OF CLIMATE JUSTICE, WE DEMONSTRATE OUR SENSITIVITY AND RESOLVE TO SECURE THE FUTURE OF THE POOR FROM THE PERILS OF NATURAL DISASTERS.

- Hon’ble Prime Minister Narendra Modi
Pong Dam Lake

Date of designation
August 19, 2002

Pong dam is a human-made wetland that came into existence in 1975 due to damming of the river Beas in Kangra District of Himachal Pradesh. It is one of the highest earth-core gravel shell dams in India. Over 7,200 MCM of water stored in the reservoir, also known as Maharana Pratap Sagar, is used to generate nearly 390 MW of hydropower and irrigate agricultural lands in Beas Basin. The Dhauladhar mountain range forms a scenic backdrop to the Ramsar Site. Pong is famed for supporting one of the world’s largest congregations of bar-headed geese. The migratory waterbirds use the wetland as a transitory habitat during their winter migration route along the Central Asian Flyway. About 2,000 families are directly dependent on the wetland for commercial fishing, which has been practiced since reservoir inundation. In addition to local people, migratory graziers like Gaddis and Gujjars benefit from the wetland.

<table>
<thead>
<tr>
<th>Designation Criteria</th>
<th>Wetland Type</th>
<th>Protection Status</th>
<th>Management Authority</th>
</tr>
</thead>
<tbody>
<tr>
<td>2, 5, 8</td>
<td>Reservoir</td>
<td>Wildlife Sanctuary</td>
<td>Himachal Pradesh</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Forest Department</td>
</tr>
</tbody>
</table>
VALUES AND BENEFITS

Significance

- Groundwater recharge
- Erosion prevention
- Cultural and spiritual importance
- Moderation of extreme events
- Tourism and recreation
- Scientific and educational importance

LOCATION
Kangra District

AREA
15,662 hectares

Lifecyle maintenance
- Over 1 lakh migratory birds
- One of the world’s largest congregation of Bar-headed Geese

Irrigates 1.6 million ha agricultural land

~ 400 tonnes annual fish production livelihood for nearly 2700 fishers

Water for 396MW hydropower generation

Species of global conservation significance

<table>
<thead>
<tr>
<th>Notable</th>
<th>Bar-headed Goose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Critically Endangered</td>
<td>White-rumped Vulture</td>
</tr>
<tr>
<td>Endangered</td>
<td>Black-bellied Tern, Mahseer</td>
</tr>
<tr>
<td>Vulnerable</td>
<td>Common Pochard, Asian Woollyneck, Indian Softshell Turtle</td>
</tr>
</tbody>
</table>

THREATS

Significance

- Low
- Medium
- High

- Pollution
- Hydrological regime alteration/Regime fragmentation
- Siltation
- Unsustainable harvest of wetland resources
- Over-grazing
- Extreme events
# Sasthamkotta Lake

**Date of designation**
August 19, 2002

Sasthamkotta, the largest freshwater wetland in Kerala, is located in Kunnathur Taluk of Kollam District. The main source of water is underground sprouts. The wetland is the principal source of water for nearly 0.5 million people living in Kollam City and its suburbs. Sasthamkotta forms a part of the extensive floodplain wetland of river Kallada. Sastha temple, from which the wetland is believed to have got the name, is an important religious and cultural center for the region. The striking beauty of Sasthamkotta’s placid waters surrounded by lush green hills has earned it the distinction of ‘Queen of Lakes’. Sasthamkotta is part of several freshwater wetlands separated by natural ridge features that dot the landscape of the river Kollada basin. The present form and shape of the lake are believed to have been acquired about 4,000 years ago, when extensive sedimentation, heavy load of siltation from the rivers along with meandering and migration cut-off isolated lakes and marshes.

<table>
<thead>
<tr>
<th>Designation Criteria</th>
<th>Wetland Type</th>
<th>Management Authority</th>
</tr>
</thead>
<tbody>
<tr>
<td>1, 2, 7, 8</td>
<td>Freshwater Lake</td>
<td>State Wetland Authority Kerala</td>
</tr>
</tbody>
</table>
VALUES AND BENEFITS

Significance

- Groundwater recharge
- Water for Kollam City
- Buffers flood
- Means of transport
- Local tourism

Species of global conservation significance

<table>
<thead>
<tr>
<th>Notable</th>
<th>Butter Catfish, Malabar Mystus</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vulnerable</td>
<td>Günther’s Catfish, Wallago Catfish</td>
</tr>
</tbody>
</table>

THREATS

Significance

- Pollution
- Over abstraction of water
- Laterite mining
Tsomoriri is a fresh to brackish water wetland located in the Changthang region, 200 km southeast of Leh. The wetland receives water from several small mountain streams. Tsomoriri is considered a relic of the ice age, formed by meltwaters of ice masses left behind by retreating glaciers. Waters from surrounding areas drain into the wetland, though the wetland has no outflow. Due to desert-like conditions, vast amounts of water evaporate very fast from the lake’s surface, changing, what had initially been a freshwater lake into a brackish, and finally saline water lake. Tsomoriri represents one of the few known breeding grounds outside China for the black-necked crane and the only known breeding ground of the bar-headed geese in India. The catchment area is also home to notable mammalian species such as snow leopard, Himalayan wolf, blue sheep, argali, Himalayan marmot, and kiang. Korzok monastery in Korzok village, some 400 years old, unlike most gompas in Ladakh, is built on a gentle slope, is not multi-storeyed, and attracts many tourists. The wetland is considered sacred by the local Buddhist community, and they do not use the water of the wetland.

<table>
<thead>
<tr>
<th>Designation Criteria</th>
<th>Wetland Type</th>
<th>Protection Status</th>
<th>Management Authority</th>
</tr>
</thead>
<tbody>
<tr>
<td>1, 2, 4</td>
<td>Brackish/ Alkaline lake</td>
<td>Conservation Reserve</td>
<td>Forest Department, Government of the UT of Ladakh</td>
</tr>
</tbody>
</table>
VALUES AND BENEFITS

Significance

Scientific and educational values

Fodder

Carbon sink

400-year-old Korzok Monastery is a tourism destination

Breeding ground for migratory waterbirds

Buffers flood

Species of global conservation significance

Notable  Black-necked Crane

Vulnerable  Common Pochard, Black-necked Crane

THREATS

Significance

Low  Over-grazing

Medium  Construction of roads

High  Tourism pressure
Vembanad-Kol Wetland

Date of designation
August 19, 2002

Vembanad-Kol constitutes one of the largest wetland regimes on the Malabar coastline. The wetland complex comprises the Vembanad estuary, flanked by river floodplains of Kuttanad and Kol in the south and north, interspersed by river estuaries and mangrove marshes which are interconnected by an intricate network of natural and human-made channels. Spanning around 145 km along the coastline of Alappuzha, Kottayam, Ernakulam, and Thrissur Districts, Vembanad-Kol wetlands form a part of the extensive chain of backwaters that are characteristic features of the state. The wetland supports rich biodiversity and harbors one of the highest populations of migrating waterbirds in the Central Asian Flyway within India. Vembanad-Kol sustains the livelihoods of nearly 0.2 million households through backwater tourism, inland navigation, and a range of resources such as clams, shellfish, and finfish. Located at the apex of the basin, the Ramsar Site also regulates hydrological regimes, providing flood protection to large settlements such as Cochin and Ernakulam and water for agriculture in the Kuttanad region – the Rice Bowl of Kerala. Mangalavanam, located on the eastern fringes of the wetland, is a site of a large waterbird congregation. Shallower wetland regions and marshes in the Kuttanad and Kol regions were converted into polders, locally called padashekhrams, to enable agriculture.

<table>
<thead>
<tr>
<th>Designation Criteria</th>
<th>Wetland Type</th>
<th>Management Authority</th>
</tr>
</thead>
<tbody>
<tr>
<td>1, 2, 4, 5, 8</td>
<td>Lagoon &amp; floodplain complex</td>
<td>State Wetland Authority Kerala</td>
</tr>
</tbody>
</table>
VALUES AND BENEFITS

Significance

- Flood buffer for Cochin and Ernakulam cities
- Backwater tourism
- Livelihoods for over 0.2 million households
- Kuttanad: Rice bowl of Kerala
- Habitat for several migratory species
- Scientific and educational values
- Cultural significance: Poikkali farming-geographical indication

LOCATION
Ernakulam, Alappuzha, Kottayam and Thrissur Districts

AREA
1,51,250 hectares

Species of global conservation significance

<table>
<thead>
<tr>
<th>Notable</th>
<th>Pearl Spot, Malabar Mystus</th>
</tr>
</thead>
<tbody>
<tr>
<td>Endangered</td>
<td>Steppe Eagle</td>
</tr>
</tbody>
</table>

THREATS

Significance

- Invasive species
- Regulation by Thaneermukkom Barrier
- Regime fragmentation
- Encroachment
- Pollution
- Tourism pressure
Chandertal Wetland

Date of designation
November 8, 2005

Nested within the upper part of the River Chandra basin and flanked by Pir Panjal and Zanskar mountain ranges, Chandertal is one of the significant High-Altitude Wetlands of Himachal Pradesh. The crescent-moon-shaped wetland, from which it is believed to have derived its name, is situated at nearly 4,300 m AMSL. A distal lake linked with the Chandra-Bhaga glacier complex, Chandertal is an important element of the arid landscape, providing sustenance to diverse animal and plant species, including the iconic and globally vulnerable Snow Leopard, the state animal of Himachal Pradesh. The peatlands on the margins of the wetland are an important carbon store. The wetland is an integral part of the Central Asian Flyway network and is used by a range of migratory waterbird species in their sojourn from temperate to tropics to complete their lifecycle. Chandertal is also a popular trekking destination visited by over 40,000 tourists annually.
Species of global conservation significance

<table>
<thead>
<tr>
<th>Notable</th>
<th>Snow Leopard, Tibetan Wolf, Himalayan Ibex, Ruddy Shelduck</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vulnerable</td>
<td>Snow Leopard</td>
</tr>
</tbody>
</table>

VALUES AND BENEFITS

- **Significance**
  - Source of freshwater
  - Lifecycle Maintenance
  - Scientific and educational importance
  - Medicinal plants
- **Location**
  - Lahaul and Spiti District
- **Area**
  - 49 hectares

THREATS

- **Significance**
  - Low
  - Medium
  - High
- **Threats**
  - Siltation
  - Solid waste
  - Unsustainable tourism
  - Climate Change
  - Over grazing
Hokera Wetland

Date of designation
November 8, 2005

Hokera, an oval-shaped permanent freshwater wetland, is located in the northwest Himalayan biogeographic province of Kashmir, flanked by picturesque snow-draped Pir Panjal mountain ranges. The wetland lies in the flood basin of River Jhelum and the sub-basin of Doadh-Ganga and Sukhnag-Nalla. Of the total water received by the wetland, 91% is contributed from surface inlets and just 9% through precipitation. The water greatly fluctuates through the year’s seasons in response to the primary discharge from the Flood Spill Channel. Apart from the silt from the catchment, the water which enters the wetland also brings nutrients from surrounding agricultural fields. The complex floral composition of the wetland traps the sediments and nutrients, besides acting as a flood absorption basin through water storage. Thus, providing flood buffer to the city of Srinagar and surrounding fields. Hokera plays a significant role as a biodiversity conservation site, eco-tourism destination and livelihood security for local communities.

<table>
<thead>
<tr>
<th>Designation Criteria</th>
<th>Wetland Type</th>
<th>Protection Status</th>
<th>Management Authority</th>
</tr>
</thead>
<tbody>
<tr>
<td>2, 4, 5, 8</td>
<td>Marshes</td>
<td>Conservation Reserve</td>
<td>Department of Wildlife Protection, Government of UT of Jammu &amp; Kashmir</td>
</tr>
</tbody>
</table>
VALUES AND BENEFITS

Significance

Low  Medium  High

Water for agriculture
Fisheries supports livelihood for 30 villages
Groundwater recharge
Tourism and recreation

LOCATION
Budgam and Srinagar Districts

AREA
1,375 hectares

Species of global conservation significance

<table>
<thead>
<tr>
<th>Category</th>
<th>Species</th>
</tr>
</thead>
<tbody>
<tr>
<td>Notable</td>
<td>Eurasian Otter, <em>Schizothorax sp.</em>, Little Grebe</td>
</tr>
<tr>
<td>Endangered</td>
<td>Pallas’s Fish-eagle</td>
</tr>
<tr>
<td>Vulnerable</td>
<td>Common Carp, Common Pochard</td>
</tr>
</tbody>
</table>

THREATS

Significance

Low  Medium  High

Pollution  Encroachment  Invasive species  Siltation
Renuka Wetland

Date of designation
November 8, 2005

Renuka is a natural wetland in the Western Himalayan foothills (or Shivaliks) in the Sirmaur district of Himachal Pradesh. The wetland is located within the Renuka Ji Wildlife Sanctuary, which forms the majority of its forested catchment. Renuka is fed by catchment rainwater runoff and several active springs. Water from the wetland drains into a smaller Parshuram Tal through a small channel. Renuka also carries tremendous cultural and religious value in Hindu mythology, with temples of Renuka Ji and Lord Parshuram located along its banks along with three ashrams. The wetland is named after the mother of a Hindu sage Parshuram, Renuka Ji. While many legends surround this wetland, the reunion of the mother Renuka and her son Parshuram is the most well-known. This event is celebrated annually as a major festival, Renuka Ji International Fair, which attracts lakhs of pilgrims to the wetland.

<table>
<thead>
<tr>
<th>Designation Criteria</th>
<th>Wetland Type</th>
<th>Protection Status</th>
<th>Management Authority</th>
</tr>
</thead>
<tbody>
<tr>
<td>3, 4</td>
<td>Freshwater lake &amp; marshes</td>
<td>Wildlife Sanctuary</td>
<td>Himachal Pradesh Forest Department</td>
</tr>
</tbody>
</table>
VALUES AND BENEFITS

Significance

- Freshwater for domestic use and irrigation
- Moderation of extreme events
- Water purification
- Erosion prevention
- Tourism and recreation
- Groundwater recharge
- Scientific and educational importance
- Lifecycle maintenance

Species of global conservation significance

<table>
<thead>
<tr>
<th>Notable</th>
<th>Mahseer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Endangered</td>
<td>Golden Mahseer</td>
</tr>
</tbody>
</table>

THREATS

Significance

- Low
- Medium
- High

- Siltation
- Pollution
- High tourism pressure
Rudrasagar Lake

Date of designation
November 8, 2005

Rudrasagar is located in the Melaghar area under the Sonamura sub-division of Sepahijala district of Tripura. This floodplain wetland of river Gumti receives inflows from three perennial streams: Oacherra, Durlavnaraya cherra, and Kemtalicherra. The wetland is regularly flooded with 4–5 times the annual peak, assisting in groundwater recharge. Rudrasagar is famous for ‘Neermahal’ the Royal Palace of Agartala, located amid the lake. Maharaja Bir Bikram Kishore Manikya, the ruler of Tripura in pre-independent India, constructed the Palace in the northern part of the wetland and used it as a summer resort. The surrounding seasonal wetlands are used for paddy cultivation. Over 2,000 families derive livelihoods from fisheries and agriculture-related activities in the wetland. Rudrasagar supports large congregations of waterbirds, both resident and migratory.
Species of global conservation significance

<table>
<thead>
<tr>
<th>Category</th>
<th>Species</th>
</tr>
</thead>
<tbody>
<tr>
<td>Critically Endangered</td>
<td>Baer’s Pochard</td>
</tr>
<tr>
<td>Endangered</td>
<td>Three-striped Roofed Turtle, Greater Adjutant</td>
</tr>
<tr>
<td>Vulnerable</td>
<td>Common Pochard, Lesser Adjutant, Common Carp, Wallago Catfish</td>
</tr>
</tbody>
</table>

**THREATS**

<table>
<thead>
<tr>
<th>Significance</th>
<th>Threat</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>Hydrological regime alteration</td>
</tr>
<tr>
<td>Medium</td>
<td>Invasive species</td>
</tr>
<tr>
<td>High</td>
<td>Siltation</td>
</tr>
<tr>
<td></td>
<td>Encroachment</td>
</tr>
<tr>
<td></td>
<td>Regime fragmentation by roads</td>
</tr>
<tr>
<td></td>
<td>Pollution/disposal of urban sewage</td>
</tr>
</tbody>
</table>
Surinsar-Mansar Lakes

Date of designation
November 8, 2005

Surinsar and Mansar are the twin wetlands in Udhampur district and Jammu District of the Union Territory of Jammu and Kashmir, respectively. Mansar is semi-oval, while Surinsar is oval in shape with a small island in the center. The wetlands form an ideal habitat and breeding ground for many endangered and threatened species. High micronutrients make Surinsar-Mansar an attractive habitat, breeding, and nursery ground for migratory waterbirds. The Ramsar site is socially and culturally significant, with many temples around, owing to its mythical origin from the Mahabharata period and an important and popular tourist destination. According to Hindu mythology, the origin of the wetlands is associated with Arjuna—the warrior of Mahabharata. It is believed that Arjuna shot an arrow into the ground at Mansar; the arrow pierced the earth, and a spring of water gushing from there formed Mansar wetland, and the spring gushing from the arrow–exit-land turned into Surinsar wetland. Although the lakes support a variety of fishes, however, due to their religious significance, fishing is not encouraged.
VALUES AND BENEFITS

Significance

Water for agriculture

Fodder

Buffers floods

Tourism and recreation

Religious tourism

Groundwater recharge

Species of global conservation significance

Notable
Indian Flapshell Turtle

Vulnerable
Common Pochard, Indian Softshell Turtle, Common Carp

THREATS

Significance

Low

Medium

High

Siltation

Pollution

Invasive species
Upper Ganga River

Date of designation
November 8, 2005

Upper Ganga is a shallow river stretch of the Ganges with intermittent small stretches of deep-water pools and reservoirs upstream from barrages. The entire river stretch from Brijghat to Narora is classified into different habitat types depending on the nature of the bank and the river depth during the dry season. All the habitat types have been formed due to barrages, deep pools, and shallow zones in the stretch. The wetland has high Hindu religious importance for thousands of pilgrims and is used for cremation and holy baths for spiritual purification. The Upper Ganga River supports rich biodiversity. The important fauna of the Ramsar site includes the Gangetic River Dolphin, gharials, freshwater turtles, many species of fish, and waterbirds. In addition, the wetland also supports millions of farmers through irrigation.
VALUES AND BENEFITS

Significance

- Tourism and recreation
- Groundwater recharge
- Traps sediment and water purification
- Bathing ghats having religious values namely Brighat, Anoopshahr Ghat and Raighat
- Habitat for migratory species

Species of global conservation significance

<table>
<thead>
<tr>
<th>Notable</th>
<th>Gangetic Dolphin</th>
</tr>
</thead>
<tbody>
<tr>
<td>Critically Endangered</td>
<td>Gharial, Red-crowned Roofed Turtle</td>
</tr>
<tr>
<td>Endangered</td>
<td>Pallas’s Fish-eagle, Gangetic Dolphin</td>
</tr>
<tr>
<td>Vulnerable</td>
<td>Wolly-necked Stork</td>
</tr>
</tbody>
</table>

THREATS

Significance

- Tourism pressure
- Hydrological regime alteration
- Siltation
- High pressure on wetland resources
- Spread of invasive species
- Encroachment
- Pollution due to agricultural runoff
- Mining
Nalsarovar

Date of designation
September 24, 2012

Nalsarovar is a natural shallow muddy wetland dotted by over 300 islets. The wetland is situated at the junction of the Saurashtra plateau with the Gujarat Mainland. Formerly an estuary, this area results from tectonic uplift, sedimentation, and aeolian infill. Although the primary water source is rainwater, the rivers Suren-drangar-Bhogavo and Brahmani flow into the wetland. In addition, the Ghoda feeder canal from Mehsana District also feeds Nalsarovar. As per the locals, the wetland is named after King Nal, who ruled in the region. Padhar community, which is one of the most ancient tribal groups, resides on the periphery of the Nalsarovar. The most significant hydrological service of the wetland is its utility as a sponge against flooding in the monsoon. Moreover, it plays an important role during droughts as water is retained in it for a longer duration compared to the surrounding landscape during such a water scarcity period.
VALUES AND BENEFITS

Significance
- Cultural and spiritual importance
- Provides food & fodder
- Support several grass species
- Support livelihood of 40,000+ fishers
- Supports large congregation of waterbirds
- Maintains hydrological regime
- Attracts 70,000+ visitors annually

LOCATION
Surendranagar and Ahmedabad Districts

AREA
12,000 hectares

Species of global conservation significance

**Notable**
- Greater Flamingo, Dalmatian Pelican

**Critically Endangered**
- Sociable Lapwing, Red-headed Vulture, White-rumped Vulture

**Endangered**
- Spotted Greenshank, Lesser Florican, Black-bellied Tern, Pallas’s Fish-eagle

**Vulnerable**
- Eastern Imperial Eagle

THREATS

Significance
- Low
- Medium
- High

- Unsustainable tourism
- Pollution
- Poaching, high pressure on resources
Sundarban Wetland

Date of designation
January 30, 2019

Sundarban Wetland is located within the largest mangrove forest in the world, the Sunderbans, which encompasses hundreds of islands and a maze of rivers, rivulets, and creeks in the delta of the rivers Ganges and Brahmaputra. The name ‘Sundarban’ means ‘beautiful forest’, and it is believed to be derived from a mangrove tree species ‘Sundari’ (Heritiera fomes). The Indian Sundarban, covering the southwesternmost part of the delta, constitutes over 60% of the country’s total mangrove forest area and includes 90% of Indian mangrove species. The mangrove forests protect the hinterland from storms, cyclones, tidal surges, seepage and intrusion of saltwater inland and into waterways. They serve as nurseries for shellfish and finfish and sustain the fisheries of the entire eastern coast. The Sundarban Tiger Reserve is situated within the Site and part of it has been declared a critical tiger habitat and also a Tiger Conservation Landscape of global importance. The Sunderbans are the only mangrove habitat that supports a significant population of tigers, and they have unique aquatic hunting skills.

<table>
<thead>
<tr>
<th>Designation Criteria</th>
<th>Wetland Type</th>
<th>Protection Status</th>
<th>Management Authority</th>
<th>Other Designations</th>
</tr>
</thead>
<tbody>
<tr>
<td>2, 3, 7, 8</td>
<td>Mangrove swaps, mud flats, lagoons</td>
<td>National Park</td>
<td>West Bengal Forest Department</td>
<td>UNESCO World Heritage Site, UNESCO Biosphere Reserve</td>
</tr>
</tbody>
</table>
**VALUES AND BENEFITS**

**Significance**
- Recreation and tourism
- Wild honey
- Fodder
- Fisheries
- Blue carbon sink
- Tropical cyclone buffer
- Scientific and educational values
- Shoreline protection
- Habitat for several migratory species

**LOCATION**
- 24 Parganas District

**AREA**
- 4,23,000 hectares

**Species of global conservation significance**

<table>
<thead>
<tr>
<th>Notable</th>
<th>Bengal Tiger, Sundari</th>
</tr>
</thead>
<tbody>
<tr>
<td>Critically Endangered</td>
<td>Ganges Shark, Northern River Terrapin, Spoon-billed Sandpiper</td>
</tr>
<tr>
<td>Endangered</td>
<td>Irrawaddy Dolphin, Greater Adjutant</td>
</tr>
<tr>
<td>Vulnerable</td>
<td>Lesser Adjutant, Masked Finfoot, Estuarine Crocodile, Smooth-coated Otter</td>
</tr>
</tbody>
</table>

**THREATS**

**Significance**
- Low
- Medium
- High

- Pollution
- Salinization
- Prawn larva collection
- Encroachment
- Coastal erosion
- High tourism pressure
Nandur Madhameshwar

Date of designation
June 21, 2019

Nandur Madhameshwar, located 40 km from the Nashik town of Maharashtra and at the confluence of the Godavari and Kadwa Rivers, is a mosaic of marshes, intermittent pools, and riparian forests. Juxtaposed to the rain shadow semi-arid area of the Western Ghats within the Deccan Plateau, the wetland has a species assemblage representing both of these biogeographic zones. The construction of the Nandur Madhameshwar Weir at the confluence of the Godavari and Kadwa Rivers helped create this thriving wetland. Originally designed to overcome water shortages in the surrounding area, Nandur Madhameshwar now also serves as a buffer against floodwaters and as a biodiversity hotspot. The wetland is also known for providing a variety of ecosystem services like recharging of groundwater, climate regulation, safety from floods, facilitating nutrient recycling, soil formation, providing habitat to flora and fauna, providing recreational and tourism opportunities, supporting spiritual and cultural practices, facilitating scientific research.

<table>
<thead>
<tr>
<th>Designation Criteria</th>
<th>Wetland Type</th>
<th>Protection Status</th>
<th>Management Authority</th>
</tr>
</thead>
<tbody>
<tr>
<td>2, 3, 4, 5, 6, 7, 8</td>
<td>Barrage &amp; water storage area</td>
<td>Wildlife Sanctuary</td>
<td>Maharashtra Forest Department (Wildlife Wing)</td>
</tr>
</tbody>
</table>
VALUES AND BENEFITS

Significance

- Madhmeshwar temple is a pilgrimage site
- Groundwater recharge
- Prevention of erosion
- Lifecycle maintenance of migratory fishes and waterbirds
- Micro-climate regulation
- Flood control
- Water Purification
- Provides water for domestic use and irrigation
- Site for tourism and recreation
- Scientific and educational value

Species of global conservation significance

<table>
<thead>
<tr>
<th>Category</th>
<th>Species</th>
</tr>
</thead>
<tbody>
<tr>
<td>Notable</td>
<td>Butter Catfish</td>
</tr>
<tr>
<td>Critically Endangered</td>
<td>White-rumped Vulture, Indian Vulture, Deudali Minnow</td>
</tr>
<tr>
<td>Endangered</td>
<td>Egyptian Vulture, Kooral</td>
</tr>
<tr>
<td>Vulnerable</td>
<td>Common Pochard, Bristled Grassbird, Shalyni Barb</td>
</tr>
</tbody>
</table>

THREATS

Significance

- Low: Regime fragmentation
- Medium: Unsustainable tourism
- High: Pollution, Unsustainable fish harvest, Hydrological regime alteration, Over-grazing, Invasive species
- Unsustainable water abstraction
Nawabganj Bird Sanctuary

Date of designation
September 19, 2019

Nawabganj is a shallow marshland located 45 kilometres from Lucknow in Uttar Pradesh. The wetland is surrounded by plantations and agricultural fields and is fed by monsoon runoff and water from Sarda Canal. The Ramsar Site supports recreation and tourism activities as well as local biodiversity. The wetland is an important wintering site for several migratory bird species of the Central Asian flyway. Nawabganj contributes to moderating temperature, maintaining humidity, carbon sequestration through aquatic vegetation, buffering floods, and maintaining gene pool through the area’s aquatic biodiversity.

<table>
<thead>
<tr>
<th>Designation Criteria</th>
<th>Wetland Type</th>
<th>Protection Status</th>
<th>Management Authority</th>
</tr>
</thead>
<tbody>
<tr>
<td>2, 3, 4, 5, 6</td>
<td>Marsh</td>
<td>Bird Sanctuary</td>
<td>Uttar Pradesh State Wetland Authority</td>
</tr>
</tbody>
</table>
Species of global conservation significance

**Endangered**

Palla’s Fish-eagle, Egyptian Vulture

**Vulnerable**

Greater Spotted Eagle, Common Pochard, Lesser Adjutant

**THREATS**

<table>
<thead>
<tr>
<th>Significance</th>
<th>Low</th>
<th>Medium</th>
<th>High</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pollution</td>
<td>Canalization</td>
<td>Invasive species</td>
</tr>
</tbody>
</table>
Sarsai Nawar Jheel is a permanent marsh in the Indo-Gangetic floodplain landscape of the Etawah district of Uttar Pradesh. It is an example of co-habitation of humans and wildlife since the farming practices across most of the wetland play important roles in sustaining the waterbird habitats. The wetland derives its name from the Sarus crane and is considered the roosting area of the region’s largest flock of Sarus cranes, consisting of nearly 400 individuals. Sarsai Nawar is also a site of spiritual and religious significance. Thousands of pilgrims visit the nearby Hajari Mahadev temple each year, particularly during the Shivaratri festival in the first week of March.
VALUES AND BENEFITS

Significance
Low  Medium  High

Scientific and educational value

Lifecycle maintenance of fish and water birds

LOCATION
Etawah District

AREA
161.3 hectares

Hajari Mahadev Temple is revered in the region

Recharges groundwater

Water for irrigation

Species of global conservation significance

<table>
<thead>
<tr>
<th>Notable</th>
<th>Sarus Crane</th>
</tr>
</thead>
<tbody>
<tr>
<td>Critically Endangered</td>
<td>White-rumped Vulture</td>
</tr>
<tr>
<td>Endangered</td>
<td>Palla’s Fish-eagle</td>
</tr>
<tr>
<td>Vulnerable</td>
<td>Greater Spotted Eagle, Sarus Crane</td>
</tr>
</tbody>
</table>

THREATS

Significance
Low  Medium  High

Encroachment

Intensive agriculture

Invasive species

Hydrological regime alteration
CONNECTING WITH NATURE MEANS TO CONNECT WITH OURSELVES. IF WE DO SO, WE NURTURE A BETTER PLANET.

- Hon’ble Prime Minister Narendra Modi
CLIMATE CHANGE IS A PRESSING GLOBAL CHALLENGE. IT CALLS FOR A COLLECTIVE HUMAN ACTION AND A COMPREHENSIVE RESPONSE. IN INDIA, FAITH AND NATURE HAVE HAD A DEEP LINK SINCE ANCIENT TIMES.

- Hon'ble Prime Minister Narendra Modi
Beas Conservation Reserve

Date of designation
September 26, 2019

The Beas Conservation Reserve is a 185-kilometre stretch of the River Beas, located in north-western Punjab. The river meanders down from the Himalayan foothills to the Harike Headworks, diverting its course into several channels. River Beas is dotted with islands, sand bars, and braided channels, creating a complex environment supporting substantial biodiversity. The wetland also hosts the only known population of the endangered Indus river dolphin in India. In 2017, a programme was initiated to re-introduce the critically endangered gharial, with 47 individuals released into the river 30 years after their disappearance. The wetland provides vital habitat for a large number of birds and is a critical staging area for both summer and winter migratory waterbirds. The Ramsar Site also supports freshwater turtles like the Indian softshell turtle, Indian flap shell turtle, narrow-headed softshell turtle, spotted pond turtle, crowned river turtle, and brown roofed turtle.

<table>
<thead>
<tr>
<th>Designation Criteria</th>
<th>Wetland Type</th>
<th>Protection Status</th>
<th>Management Authority</th>
</tr>
</thead>
<tbody>
<tr>
<td>2, 7</td>
<td>River Stretch</td>
<td>Conservation Reserve</td>
<td>Department of Forest &amp; Wildlife Preservation, Punjab</td>
</tr>
</tbody>
</table>
VALUES AND BENEFITS

Significance

- Nutrient and sediment retention
- Cultural and Spiritual values
- Source of freshwater
- Maintenance of hydrological regime
- Scientific and educational importance
- Lifecycle maintenance

LOCATION

Hoshiarpur, Amritsar, Gurdaspur, Kapurthala, Jalandhar and Tarn Taran Districts

AREA

6,428.9 hectares

Species of global conservation significance

- Notable: Indus River Dolphin, Gharial
- Critically Endangered: Gharial
- Endangered: Indus River Dolphin, Spotted Pond Turtle, Hog Deer, Mahseer
- Vulnerable: Common Pochard, Crowned River Turtle, Smooth-coated Otter, Indian Softshell Turtle, Common Carp, Wallago Catfish

THREATS

- Over-grazing
- Water abstraction
- Pollution due to domestic and industrial effluents
- Spread of invasive species
- Encroachment
- Hydrological regime alteration
Keshopur-Miani Community Reserve

Date of designation
September 26, 2019

Keshopur-Miani Community Reserve is located in the Gurdaspur district of Punjab. It is India’s first-ever notified community reserve under the Wildlife Protection Act, 1972 (amended 2002). The wetland lies in the former flood plains of the rivers Ravi and Beas and consists of a mosaic of natural marshes, aquaculture ponds, and agricultural wetlands where crops such as lotus and chestnut are cultivated. Keshopur-Miani is the only habitat for Sarus and common cranes in Punjab and hosts many resident and migratory birds both during the summer and winter seasons. The Ramsar Site plays an important ecological function such as recharging groundwater for sustaining agriculture, habitat for rare and endangered species, stabilisation of local climate, natural storage base for carbon, and natural sinks for pollutants.
**VALUES AND BENEFITS**

**Significance**

- **Tourism and recreation**
- **Fodder**
- **Supports Agro-ecology: Rice, Water Chestnut and other crops along with fisheries**

**LOCATION**
Gurdaspur District

**AREA**
343.9 hectares

**Recharges groundwater**

**Scientific and educational importance**

**Buffers flood**

**Lifecycle maintenance of migratory species**

**Species of global conservation significance**

<table>
<thead>
<tr>
<th>Notable</th>
<th>Common Crane, Sarus Crane</th>
</tr>
</thead>
<tbody>
<tr>
<td>Endangered</td>
<td>Spotted Pond Turtle, Black-bellied Tern</td>
</tr>
<tr>
<td>Vulnerable</td>
<td>Common Pochard, Sarus Crane, Greater Spotted Eagle, Indian Softshell Turtle, Common Carp</td>
</tr>
</tbody>
</table>

**THREATS**

**Significance**

- **Low**
- **Medium**
- **High**

- **Pollution due to agricultural runoff**
- **Invasive species**
- **Drainage**
Nangal Wildlife Sanctuary is a human-made reservoir that came into existence due to the Bhakra-Nangal Project in 1961. The Bhakra-Nangal Dams are among India’s first river valley multipurpose developmental projects immediately after independence. The Bhakra Dam is constructed across the river Sutlej and is the second highest dam in India. 13 km downstream of the Bhakra Dam, another dam was constructed across the Sutlej near the town of Nangal to use it as a backup in case of fluctuation of the Bhakra Dam water levels. The construction of this dam led to the formation of Nangal. Situated in the highly eco-sensitive Shivalik foothills, the reservoir’s presence has attracted several resident and migratory birds, making it a vibrant wetland. Nangal is a very important and strategic refuelling base for long-route migratory birds. The Indian and Chinese Prime Ministers formalized the ‘Five Principles of Peaceful Coexistence’ on the banks of Nangal dam in 1954. More than half a million people downstream benefit from the reservoir as water flow is regulated, reducing the risks to both people and property from floods.
VALUES AND BENEFITS

Significance

Source of freshwater

Buffers flood

Lifecycle maintenance of migratory birds

Groundwater recharge

Sediment and nutrient retention

LOCATION
Rupnagar District

AREA
116 hectares

Species of global conservation significance

Endangered
Egyptian Vulture, Black-bellied Tern, Hog Deer, Indian Pangolin

Vulnerable
Common Pochard, Leopard, Wallago Catfish, Burmese Python

THREATS

Significance

Low

Medium

High

Tourism pressure

Pollution (sewage inflow and garbage dumping)
Sandi Bird Sanctuary

Date of designation
September 26, 2019

Sandi Bird Sanctuary is a freshwater swamp located in the Hardoi district of Uttar Pradesh and represents the ecosystems characteristic of the Indo-Gangetic Plains. The wetland provides varied habitats for several species of flora and fauna. The primary water source for the wetland is monsoon rains flowing through natural watercourses. Sandi is particularly rich in aquatic plants such as duckweed and water chestnut and is home to a resident flock of around 200 Sarus cranes. Thick stands of cattails on the fringes provide suitable breeding habitats for resident waterbirds. The wetland is a popular recreational and tourism destination and supports surrounding farmers as a source of livestock fodder. Sandi also creates a barrier to floods for nearby villages and agricultural fields.
Species of global conservation significance

<table>
<thead>
<tr>
<th>Notable</th>
<th>Sarus Crane</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vulnerable</td>
<td>Greater Spotted Eagle, Sarus Crane</td>
</tr>
</tbody>
</table>

**VALUES AND BENEFITS**

- **Significance**
  - Low
  - Medium
  - High

- **Recharges groundwater**
- **Fisheries for livestock**
- **Buffers floods**
- **Water for agriculture**
- **Tourism and recreation**
- **Maintenance of lifecycles of migratory birds**

**THREATS**

- **Significance**
  - Low
  - Medium
  - High

- **Spread of invasive species**
- **Over-grazing**
- **Pollution**
- **Water abstraction**
- **Encroachment**
Samaspur Bird Sanctuary

Date of designation
October 3, 2019

Samaspur Bird Sanctuary is a lowland marsh in Salon tehsil of Raebareli district of Uttar Pradesh. This S-shaped Ramsar Site comprises six connected wetlands, Samaspur, Maman, Gorwa, Hasanpur, Hakganj, and Rohnia. The wetland is perennial and receives water from the Sharda canal supplemented by monsoon run-off. Samaspur is a hotspot of biological diversity and is an important site for migratory bird species arriving in the winter. The wetland contributes to moderating temperature, maintaining humidity, carbon sequestration through aquatic vegetation, and maintaining gene pool through the area's aquatic biodiversity. Samaspur also helps in controlling floods in the area.

<table>
<thead>
<tr>
<th>Designation Criteria</th>
<th>Wetland Type</th>
<th>Protection Status</th>
<th>Management Authority</th>
</tr>
</thead>
<tbody>
<tr>
<td>2, 3, 4, 5, 6, 7</td>
<td>Freshwater marsh</td>
<td>Bird Sanctuary</td>
<td>Uttar Pradesh State Wetland Authority</td>
</tr>
</tbody>
</table>
Species of global conservation significance

<table>
<thead>
<tr>
<th>Notable</th>
<th>Sarus Crane</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vulnerable</td>
<td>Greater Spotted Eagle, Common Pochard, Sarus Crane</td>
</tr>
</tbody>
</table>

**VALUES AND BENEFITS**

- **Significance**
  - Low
  - Medium
  - High

- Recharges groundwater
- Buffers floods
- Fodder
- Fisheries
- Water for agriculture

**THREATS**

- **Significance**
  - Low
  - Medium
  - High

- Siltation
- Pollution
- Over-grazing
- Drainage
- Spread of invasive species
- Intensive agriculture
Parvati Arga Bird Sanctuary

Date of designation
December 2, 2019

Parvati Arga Bird Sanctuary is situated in the Gonda District of Uttar Pradesh. The Ramsar Site is one of the largest natural floodplain wetlands in the state, comprising two horseshoe-shaped oxbow wetlands. Formed in the Terai region of Gangetic plains, the wetland harbours a rich floral and faunal diversity. These wetlands are characteristic of Uttar Pradesh and offer exceptional habitats for waterbirds, providing roosting and breeding sites with over 100,000 birds documented in annual counts. Parvati Arga is a refuge for some of India’s threatened vulture species: the critically endangered white-rumped vulture and Indian vulture, and the endangered Egyptian vulture have all been recorded. The wetland is also critical in maintaining hydrological regimes, ensuring groundwater recharge and discharge. The ancient temples around Parvati Arga provide religious significance and thus contribute to tourism.

<table>
<thead>
<tr>
<th>Designation Criteria</th>
<th>Wetland Type</th>
<th>Protection Status</th>
<th>Management Authority</th>
</tr>
</thead>
<tbody>
<tr>
<td>2, 3, 4, 5, 8</td>
<td>Freshwater marshes</td>
<td>Bird Sanctuary</td>
<td>Uttar Pradesh State Wetland Authority</td>
</tr>
</tbody>
</table>
LOCATION
Gonda District

AREA
722 hectares

VALUES AND BENEFITS

Significance
Low  Medium  High

- Recharges groundwater
- Scientific and educational importance
- Maintenance of lifecycles of migratory birds and fish
- Buffers floods
- Water for agriculture
- Cultural and spiritual importance

Species of global conservation significance

<table>
<thead>
<tr>
<th>Notable</th>
<th>Sarus Crane</th>
</tr>
</thead>
<tbody>
<tr>
<td>Critically Endangered</td>
<td>White-rumped Vulture, Indian Vulture</td>
</tr>
<tr>
<td>Endangered</td>
<td>Egyptian Vulture</td>
</tr>
<tr>
<td>Vulnerable</td>
<td>Greater Spotted Eagle, Common Pochard, Sarus Crane</td>
</tr>
</tbody>
</table>

THREATS

Significance
Low  Medium  High

- Tourism pressure
- Regime fragmentation through roads
- Pollution from agricultural run-off
- Invasive species
Saman Bird Sanctuary

Date of designation
December 2, 2019

Saman Bird Sanctuary in the Mainpuri district of Uttar Pradesh is a seasonal oxbow wetland on the river Ganga floodplain. It relies heavily on the south-western monsoon in July and August, which provides the vast majority of annual rainfall. The wetland regularly provides refuge to large numbers of waterbirds and is particularly important as a wintering site for many migrants, including the greylag goose. Vulnerable species such as the Sarus crane are also found. Ecosystem services provided by the wetland include the supply of fresh water for agriculture, recreation, and nature-based tourism based on the vast diversity of birds.
VALUES AND BENEFITS

Significance
Low  Medium  High

Water for agriculture
Tourism and recreation

Habitat for migratory waterbirds
Recharges groundwater

Species of global conservation significance

<table>
<thead>
<tr>
<th>Notable</th>
<th>Sarus Crane</th>
</tr>
</thead>
<tbody>
<tr>
<td>Endangered</td>
<td>Pall’s Fish-eagle, Egyptian Vulture</td>
</tr>
<tr>
<td>Vulnerable</td>
<td>Greater Spotted Eagle, Sarus Crane</td>
</tr>
</tbody>
</table>

THREATS

Significance
Low  Medium  High

Over grazing and feral dogs
Intensive agriculture
Pollution

Spread of invasive species
Encroachment
Asan Conservation Reserve

Date of designation
July 21, 2020

Asan Conservation Reserve is located at the confluence of rivers Yamuna and Asan in the Dehradun District of Uttarakhand. The damming of the Asan river near the confluence in 1967 resulted in water stagnation and siltation upstream, thus providing an ideal habitat for many migratory and resident waterbirds. The wetland is one of the best sites for the congregation of Brahminy Ducks. Asan has a year-round availability of freshwater owing to a constant inflow of water through the Yamuna canal and Asan River. The outflow is through the Yamuna canal, which feeds two hydroelectric generating stations downstream. The villages Dhalipur, Kunja, Kunja Grant, Kulhal, and Dhakrani lie in the reserve’s vicinity, but their dependence on the reserve is minimal. However, the residents have high aspirations for the reserve as a potential source of livelihood.
Species of global conservation significance

<table>
<thead>
<tr>
<th>Notable</th>
<th>Himalayan Mahseer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Critically Endangered</td>
<td>Baer’s Pochard, White-rumped Vulture, Red-headed Vulture</td>
</tr>
<tr>
<td>Endangered</td>
<td>Steppe Eagle, Egyptian Vulture, Black-bellied Tern, Copper Mahseer, Himalayan Salmon, Yellowfin Mahseer, Wayanad Mahseer</td>
</tr>
<tr>
<td>Vulnerable</td>
<td>Lesser White-fronted Goose, Common Pochard, Marbled Duck</td>
</tr>
</tbody>
</table>

VALUES AND BENEFITS

- Significance
  - Low
  - Medium
  - High

- Water for energy production
- Tourism and recreation
- Habitat for migratory birds
- Scientific and educational importance
- Recharges groundwater

THREATS

- Significance
  - Low
  - Medium
  - High

- Pollution/disposal of urban drainage
- Spread of invasive species
- Regime fragmentation
- Encroachment
- Siltation
- Hydrological regime alteration
Kabartal Wetland

Date of designation
July 21, 2020

Kabartal is a part of an extensive floodplain wetland complex formed in the lower reaches of Gandak – Kosi interfan in North Bihar. Located at a distance of 21 km from Begusarai town, Kabartal is the largest of a series of shallow permanent and intermittently inundated wetlands formed in the depression between river Burhi Gandak and the paleochannel of river Bagmati. The exchange of water, sediment, and species with the flood pulses of the Burhi Gandak (and Kosi before the 1950s) support highly productive fisheries and agriculture sustaining the livelihoods of nearly 15,000 households in 17 villages in and around the wetland. Kabartal also plays an important role in the hydrography of the region by accommodating a significant proportion of rainfall and bank flows of river Gandak, protecting the adjoining settlements from flood risk as well as recharging groundwater. The wetland teems with waterbirds in the winters and is one of the important congregation areas in North Bihar, particularly for migrating ducks and coots. The island of Jaimangalgarh, located near the wetland’s southern boundary, is revered as a religious and cultural significance site.
VALUES AND BENEFITS

Significance

Source of drinking water

Water purification

Cultural and spiritual importance
Recharges groundwater
Tourism and recreation
Scientific and educational importance
Fisheries support livelihood of 25 villages
Flood protection
Lifecycle maintenance
Reeds fibre and fodder

Species of global conservation significance

Critically Endangered: Baer’s Pochard, White-rumped Vulture, Indian Vulture, Red-headed Vulture, Sociable Lapwing
Endangered: Common Pochard, Saker Falcon, Greater Adjutant, Egyptian Vulture
Vulnerable: Wallago Catfish, Greater Spotted Eagle, Woolly-necked Stork, Lesser Adjutant

THREATS

Significance

Siltation
Pollution/disposal of urban drainage
Regime fragmentation
Encroachment
Spread of invasive species
Hydrological regime alteration

Low
Medium
High

Low
Medium
High
Lonar Lake

Date of designation
July 22, 2020

Lonar is a natural, saline wetland situated in the Buldhana district of Maharashtra. The wetland was formed by a meteorite impact in the Deccan Trap region and is composed of basaltic flows. Almost circular, the depression is surrounded by steeply rising escarpments, lying amongst the vast monotonous plateau. The drainage is endorheic, with natural springs and precipitation as major sources of water. Lonar, the third-largest crater in the world, is the only crater in basaltic rock to have been created by a meteorite impact in India. Lonar is high in salinity and alkalinity, as the lack of an outflow leads to a concentration of minerals as the water evaporates. Between November and March, the wetland attracts a significant number of wintering migratory birds. Locals visit the historic Hembal Panthi Devi, Gaimukh, and Ramgaya in the sanctuary region all year long as a pilgrimage destination.
VALUES AND BENEFITS

Significance

National Geo-heritage Monument as the wetland was created by an asteroid collision with earth impact during the Pleistocene Epoch

<table>
<thead>
<tr>
<th>CO₂</th>
<th>Carbon storage and sequestration</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Nature observation and nature-based tourism</td>
</tr>
<tr>
<td></td>
<td>Important knowledge systems, importance for research</td>
</tr>
<tr>
<td></td>
<td>Genes for tolerance to high salinity conditions</td>
</tr>
</tbody>
</table>

Species of global conservation significance

- Vulnerable
- Common Pochard

THREATS

- Significance
  - Low
  - Medium
  - High

- Fragmentation due to roads
- Hydrological regime alteration
- Pollution from household sewage, urban wastewater

- Livestock farming and ranching
- Encroachment
- Unsustainable tourism
**Sur Sarovar**

**Date of designation**
August 21, 2020

Sur Sarovar, also known as Keetham Lake, is a human-made reservoir along the River Yamuna, 20 km from Agra City in Uttar Pradesh. Constructed by the British to meet the water requirements of the city of Agra during the summer months, the primary source of water for the wetland is Agra Canal. Sur Sarovar comprises a mosaic of habitats that support a rich diversity of flora and fauna. The Ramsar Site is important for bird species that migrate on the Central Asian flyway. Unique for scenic beauty and rich assemblage of fauna and flora, the wetland has been named after Surdas – the great poet of Hindi literature— whose place of birth is said to be within the boundary of this Sur Sarovar. A temple complex dedicated to Surdas is present within the complex, thereby making Sur Sarovar a culturally significant wetland. Though initially planned to supply water to the city of Agra, it was subsequently embanked to work as a reservoir. The wetland is also a source of water for the Mathura oil refinery.
Species of global conservation significance

<table>
<thead>
<tr>
<th>Notable</th>
<th>Indian Pangolin, Sarus Crane</th>
</tr>
</thead>
<tbody>
<tr>
<td>Endangered</td>
<td>Hog Deer, Indian Pangolin</td>
</tr>
<tr>
<td>Vulnerable</td>
<td>Common Carp, Long-whiskered Catfish, Greater Spotted Eagle, Sarus Crane, Lesser Adjutant</td>
</tr>
</tbody>
</table>

THREATS

<table>
<thead>
<tr>
<th>Significance</th>
<th>Hydrological regime alteration</th>
<th>Fishing and harvesting aquatic resources</th>
<th>Pollution from household sewage, urban wastewater</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Medium</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

LIFE CYCLE MAINTENANCE

- Maintenance of hydrological regimes
- Hazard reduction
- Scientific and education value
- Source of freshwater

ACTIVITIES

- Recreation and tourism
- Cultural and spiritual importance

LOCATION

- Area: 431 hectares
- Location: Agra District
Tso Kar Wetland Complex

Date of designation
November 17, 2020

Tso Kar is a high-altitude wetland complex located in the Changthang region of Ladakh. The wetland complex consists of two connected wetlands, Startsapuk Tso, a freshwater wetland to the south, and Tso Kar itself, a hypersaline wetland to the north. Tso Kar refers to the white salt efflorescence on the margins of the wetlands caused by the evaporation of the saline waters. The glacial meltwater is the primary water source for the wetlands. The presence of freshwater attracts biodiversity in a biologically sparse region. During autumn migration, Tso Kar wetland complex becomes an assembling place for local breeding birds and a major staging spot for migratory birds along the Central Asian Flyway. The wetland complex plays a significant role in maintaining the water table in the high-altitude mountain steppe and cold desert region and is paramount in maintaining the overall water cycle. There is no other wetland in India that supports the breeding of black-necked crane, bar-headed goose, and saker falcon during the same time of the year in the same basin, making this a unique wetland complex. The local Changpa community considers the basin’s wetlands to be of sacred origin. As a result, the local community has imposed sanctions and rules that prohibit the use of water from the wetlands and its biotic resources.

<table>
<thead>
<tr>
<th>Designation Criteria</th>
<th>Wetland Type</th>
<th>Protection Status</th>
<th>Management Authority</th>
</tr>
</thead>
<tbody>
<tr>
<td>1, 2, 3, 4</td>
<td>Brackish/alkaline lake &amp; freshwater lake</td>
<td>Partially designated as Wildlife Sanctuary</td>
<td>Department of Wildlife Protection, Government of the UT of Ladakh</td>
</tr>
</tbody>
</table>
Species of global conservation significance

<table>
<thead>
<tr>
<th>Notable</th>
<th>Tibetan Wolf, Kiang, Snow Leopard, Black-necked Crane, Saker Falcon, Tibetan Argali</th>
</tr>
</thead>
<tbody>
<tr>
<td>Endangered</td>
<td>Saker Falcon</td>
</tr>
<tr>
<td>Vulnerable</td>
<td>Common Pochard, Black-necked Crane, Snow Leopard</td>
</tr>
</tbody>
</table>

**VALUES AND BENEFITS**

- **Traditional knowledge**
- **Groundwater recharge and discharge**
- **Wetland non-food products eg. livestock fodder**
- **Recreation and tourism**
- **Cultural and spiritual importance**
- **Lifecycle maintenance**

**THREATS**

- **Low**: Roads and railroads
- **Medium**: Pollution from household sewage, urban wastewater
- **High**: Livestock farming and ranching, Unsustainable tourism
Thol Lake Wildlife Sanctuary

Date of designation
April 5, 2021

Thol Lake Wildlife Sanctuary, a shallow reservoir dominated by open water, is located in the Mehsana district of Gujarat. The wetland was initially constructed as an irrigation reservoir by the Gaekwad rulers in 1912 to store rainwater and prevent soil erosion and flooding. The wetland’s southern, western, and eastern boundary is encrusted with an earthen bund, which helps retain water that flows into it during the monsoon. Thol is home to approximately 57% of the total species of Gujarat, making it one of the most important Wildlife Sanctuaries of the state as far as avian diversity is concerned. The vegetation provides excellent thatching material and is also used as fodder for domestic animals. The livelihoods of the local communities are intrinsically linked with the wetland as it is the primary source of drinking water and irrigation to fields. Tourism-related activities are another source of income for the local population.
**VALUES AND BENEFITS**

- **Significance**
  - Local climate regulation
  - Educational activities and opportunities
  - Supports biodiversity
  - Nature based tourism
  - Groundwater recharge
  - Water use for irrigation and domestic use

**Location**
- Mehsana District
- 699 hectares

**Species of global conservation significance**

<table>
<thead>
<tr>
<th>Category</th>
<th>Species</th>
</tr>
</thead>
<tbody>
<tr>
<td>Notable</td>
<td>Glossy Ibis, Greylag Goose, Bar-headed Goose, Black-tailed Godwit</td>
</tr>
<tr>
<td>Critically Endangered</td>
<td>White-rumped Vulture, Sociable Lapwing</td>
</tr>
<tr>
<td>Endangered</td>
<td>Saker Falcon, Egyptian Vulture, Black-bellied Tern</td>
</tr>
<tr>
<td>Vulnerable</td>
<td>Lesser White-fronted Goose, Common Pochard, Sarus Crane, River Tern</td>
</tr>
</tbody>
</table>

**Threats**

- Oil & gas drilling
- Increase in housing and urban areas
- Pollution from household sewage, urban wastewater
- Roads and railroads
- Vegetation clearance

**Significance**
- Low
- Medium
- High
Wadhvana Wetland

Date of designation
April 5, 2021

Wadhvana wetland is situated at a distance of 45 km from Vadodara city in Gujarat. The wetland is a century-old human-made wetland, created in 1909-10 by the erstwhile ruler Shrimant Maharaja Sir Sayajirao Gaekwad III of the then Baroda State. Wadhvana is located in a semi-arid agricultural landscape surrounded by wheat and paddy fields and villages. The ecosystem services provided by the wetland include irrigation, fisheries, groundwater recharge, ecotourism, and nature education. The wetland is internationally important considering its heritage value, avifaunal richness, including migratory waterbird species that use the Central Asian Flyway for migration, and the occurrence of some globally threatened waterbird species like Indian Sarus crane. Wadhvana provides a global example of how a wetland created for irrigation purposes by a princely state has also been serving as one of the finest waterbird abodes and how it has also been serving as an ecotourism-cum-nature education hub owing to its proximity to a metro-city of Western India.

<table>
<thead>
<tr>
<th>Designation Criteria</th>
<th>Wetland Type</th>
<th>Management Authority</th>
</tr>
</thead>
<tbody>
<tr>
<td>2, 3, 4, 5, 6, 7</td>
<td>Water storage area/reservoir, freshwater lake</td>
<td>Gujarat Forest Department</td>
</tr>
</tbody>
</table>
**Species of global conservation significance**

<table>
<thead>
<tr>
<th>Status</th>
<th>Species</th>
</tr>
</thead>
<tbody>
<tr>
<td>Notable</td>
<td>Glossy Ibis, Greylag Goose, Ruddy Shelduck</td>
</tr>
<tr>
<td>Critically Endangered</td>
<td>Oriental White-backed Vulture, Indian Vulture</td>
</tr>
<tr>
<td>Endangered</td>
<td>Pallas’ Fish-eagle, Greater Adjutant, Black-bellied Tern</td>
</tr>
<tr>
<td>Vulnerable</td>
<td>Marsh Crocodile, Greater Spotted Eagle, Common Pochard, Sarus Crane, River Tern, Mugger</td>
</tr>
</tbody>
</table>

**THREATS**

<table>
<thead>
<tr>
<th>Significance</th>
<th>Biological resource extraction/poaching</th>
<th>Vegetation clearance</th>
<th>Unsustainable tourism</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Medium</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- **Invasive species**
- **Alteration of hydrological regime**
Haiderpur is a floodplain wetland of River Ganga located near the Bijnor Barrage, falling in Muzaffarnagar and Bijnor districts of Uttar Pradesh. Towards the east of the wetland is the river Ganga, to the west is Nizampur and Haiderpur Reserved Forest, and Bijnor Barrage on the south of the wetland. The wetland came into existence in 1984 after the construction of Madhya Ganga Barrage on river Ganga, about 10 km west of Bijnor city, and is located within the boundaries of Hastinapur Wildlife Sanctuary. It comprises various deep upstream reservoirs, shallow flooded land, and stretches of river (Ganga and Solani). This diverse aquatic habitat thrives with life forms and provides a significant abode, especially for migratory waterbirds. Haiderpur is not only significant ecologically but also supports the local communities which depend on the wetland for fisheries and livelihood options like water chestnut cultivation.

<table>
<thead>
<tr>
<th>Designation Criteria</th>
<th>Wetland Type</th>
<th>Protection Status</th>
<th>Management Authority</th>
</tr>
</thead>
<tbody>
<tr>
<td>2, 3, 4, 5, 6</td>
<td>Water storage area/reservoir</td>
<td>Wildlife Sanctuary</td>
<td>Uttar Pradesh Forest Department</td>
</tr>
</tbody>
</table>
VALUES AND BENEFITS

Significance

Low  Medium  High

Socio cultural significance

Source of drinking water

Water Chestnut cultivation
Source for irrigation
Capture fisheries
Groundwater recharge

Species of global conservation significance

Notable  Sarus Crane, Indian Skimmer, Smooth-coated Otter, Swamp Deer, Greylag Goose, Bar-headed Goose

Critically Endangered  Gharial

Endangered  Indian Hog Deer, Indian Narrow-headed Softshell Turtle, Steppe Eagle, Indian Skimmer, Black-bellied Tern

Vulnerable  Marsh Crocodile, Lesser White-fronted Goose, Tawny Eagle, Common Pochard

THREATS

Significance

Low  Medium  High

Catchment Degradation
Flow Fluctuations
Invasive weeds
Inflow of chemical rich agricultural residue

Excessive use of fertilizer and pesticides in Water Chestnut cultivation
LET US PLEDGE TO COLLECTIVELY WORK TOWARDS CONSERVING PRECIOUS ENVIRONMENT RESOURCES. LET US LIVE IN HARMONY WITH NATURE AND KEEP OUR BELOVED EARTH CLEAN AND GREEN.

- Hon’ble Prime Minister Narendra Modi
WE, THE PRESENT GENERATION, HAVE THE RESPONSIBILITY TO ACT AS A TRUSTEE OF THE RICH NATURAL WEALTH FOR THE FUTURE GENERATIONS. THE ISSUE IS NOT MERELY ABOUT CLIMATE CHANGE; IT IS ABOUT CLIMATE JUSTICE.

- Hon’ble Prime Minister Narendra Modi
Khijadia Wildlife Sanctuary

Date of designation
April 13, 2021

Khijadia Wildlife Sanctuary is a complex of inland and coastal wetlands, located 12 Km from Jamnagar Town in Gujarat. These wetlands form the fringes of the watershed of seasonal rivers Ruparel and Kalindri. Khijadia is a mosaic of a seasonal freshwater shallow lake, inter-tidal mudflats, creeks, salt pans, saline land, and mangroves. The wetland existed as a saline marsh till the 1930s when an earthen embankment was constructed between Jamnagar and Navlakhi to reclaim parts of the marsh as a storage area for freshwater. In the succeeding decades, the freshwater inundation regime created conducive conditions for the colonization of hydrophytes such as Typha angustata, Hydrilla verticillate, and Vallisneria spiralis. While the monsoon runoff governs the hydrology of the inland zone, creeks from the Gulf carry sea water landward and reach the bunds of the wetland, passing through intertidal mudflats, salt pans, and salt marshes.

<table>
<thead>
<tr>
<th>Designation Criteria</th>
<th>Wetland Type</th>
<th>Protection Status</th>
<th>Management Authority</th>
</tr>
</thead>
<tbody>
<tr>
<td>2, 3, 4, 5, 6, 8</td>
<td>Freshwater marsh</td>
<td>Wildlife Sanctuary</td>
<td>Gujarat Forest Department</td>
</tr>
</tbody>
</table>
**VALUES AND BENEFITS**

- **Significance**
  - Low
  - Medium
  - High

- **Nutrient cycling**
- **Water use for irrigation and domestic use**

**LOCATIONS**
- Jamnagar District
- Area: 510 hectares

**Species of global conservation significance**

<table>
<thead>
<tr>
<th>Notable</th>
<th>Dalmatian Pelican, Great Knot, Greater Flamingo, Indian Skimmer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Endangered</td>
<td>Great Knot, Indian Skimmer</td>
</tr>
</tbody>
</table>

**THREATS**

- **Significance**
  - Low
  - Medium
  - High

- **Water abstraction**
- **Gathering terrestrial resources/ grazing**
- **Invasive species**
- **Increase in housing and urban areas**
- **Intensive agriculture**
Bhindawas Wildlife Sanctuary

Date of designation
May 25, 2021

Bhindawas Wildlife Sanctuary, situated in the Jhajjar District of Haryana, is a human-made wetland carved from a saucer-shaped depression. The wetland is surrounded by private agricultural lands and is separated from these fields by a 12 km long elevated embankment. Water is received into the wetland from an escape channel of Jawahar Lal Nehru Canal. The main wetland habitat types include large open deep-water and shallow water areas with emergent vegetation. Bhindawas is home to thousands of migratory as well as resident birds. Bhindawas lies on the western route of migratory birds and is used as a stopover by birds heading towards Keoladeo National Park, Bharatpur.

<table>
<thead>
<tr>
<th>Designation Criteria</th>
<th>Wetland Type</th>
<th>Protection Status</th>
<th>Management Authority</th>
</tr>
</thead>
<tbody>
<tr>
<td>2, 3, 4, 6</td>
<td>Water storage area / reservoir</td>
<td>Wildlife Sanctuary</td>
<td>Forest &amp; Wildlife Department, Government of Haryana</td>
</tr>
</tbody>
</table>
VALUES AND BENEFITS

Significance

Flood control

Local climate regulation

Nature based tourism

Groundwater recharge

Storage recycling processing and acquisition of nutrients

Supports biodiversity

LOCATION
Rohtak and Jhajjar District

AREA
412 hectares

Species of global conservation significance

Notable
Mallard, Red-crested Pochard, Ferruginous Duck, Baer’s Pochard

Endangered
Steppe Eagle, Egyptian Vulture, Black-bellied Tern

Vulnerable
Lesser White-fronted Goose, Eastern Imperial Eagle, Common Pochard

THREATS

Significance

Low

Medium

High

Weed infestation and choking of water channel

Diurnal fluctuation of water level
Sultanpur National Park

Date of designation
May 25, 2021

Sultanpur National Park is an intermittent freshwater wetland located in Gurugram District of Haryana. The wetland has been carved out from the land of adjoining villages, namely Sadharrana, Chandu, Sultanpur, and Saiapur Mohmadpur. This shallow wetland is fed by the overflows from neighboring canals and agricultural fields and is replenished by saline groundwater. Sultanpur is a mosaic of shallow inundated areas, grasslands, and tree groves, which have developed over vast alluvial and sandy tracts of recent to sub-recent age. Till the late 19th century, Sultanpur was the center of salt production, supported by brine extracted from shallow borewells, for use in Delhi and surrounding regions. The ecosystem services offered by the Ramsar Site include nutrient cycling, recreation and tourism, and scientific and educational activities.

<table>
<thead>
<tr>
<th>Designation Criteria</th>
<th>Wetland Type</th>
<th>Protection Status</th>
<th>Management Authority</th>
</tr>
</thead>
<tbody>
<tr>
<td>2, 4, 5, 6</td>
<td>Freshwater lake</td>
<td>National Park</td>
<td>Forest &amp; Wildlife Department, Government of Haryana</td>
</tr>
</tbody>
</table>
VALUES AND BENEFITS

Significance
- Nature based tourism
- Local climate regulation
- Supports biodiversity
- Educational activities and opportunities
- Groundwater recharge
- Storage recycling processing and acquisition of nutrients

Species of global conservation significance

<table>
<thead>
<tr>
<th>Notable</th>
<th>Bar-headed Goose, Greylag Goose, Lesser White-fronted Goose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Critically Endangered</td>
<td>Sociable Lapwing</td>
</tr>
<tr>
<td>Endangered</td>
<td>Saker Falcon, Pallas's Fish-eagle, Egyptian Vulture, Black-bellied Tern</td>
</tr>
<tr>
<td>Vulnerable</td>
<td>Lesser White-fronted Goose, Eastern Imperial Eagle, Sarus Crane, Common Pochard</td>
</tr>
</tbody>
</table>

THREATS

Significance
- Low
- Medium
- High

- Mining and quarrying
- Agriculture and forestry effluents
- Increase in housing and urban areas
- Weed infestation
Bakhira Wildlife Sanctuary

Date of designation
June 29, 2021

Bakhira Wildlife Sanctuary is a freshwater wetland located 44 km from Gorakhpur Town in Sant Kabir Nagar District of Uttar Pradesh. Forming the core of the Sanctuary, the Ramsar site is one of the prominent wetlands of the Gangetic Basin. The sanctuary and the wetland have drawn their name from the village Bakhira in the vicinity. The terrain of the wetland is primarily flat with an average elevation of 100 meters above mean sea level, characteristic of a typical terai landscape. Precipitation and inflows from river Ami are the wetland’s primary water sources. The site is known to support the breeding population of purple moorhens and act as a congregation site for Sarus cranes.

---

<table>
<thead>
<tr>
<th>Designation Criteria</th>
<th>Wetland Type</th>
<th>Protection Status</th>
<th>Management Authority</th>
</tr>
</thead>
<tbody>
<tr>
<td>2, 3, 4, 8</td>
<td>Freshwater marsh</td>
<td>Wildlife Sanctuary</td>
<td>Uttar Pradesh Forest Department</td>
</tr>
</tbody>
</table>
VALUES AND BENEFITS

Significance

- Groundwater recharge
- Nutrient cycling
- Nature based tourism

LOCATION
Sant Kabir Nagar District

AREA
2,894 hectares

Species of global conservation significance

<table>
<thead>
<tr>
<th>Notable</th>
<th>Purple Swamphen, Sarus Crane</th>
</tr>
</thead>
<tbody>
<tr>
<td>Endangered</td>
<td>Egyptian Vulture</td>
</tr>
<tr>
<td>Vulnerable</td>
<td>Swamp Francolin, Greater Spotted Eagle, Common Pochard, Sarus Crane</td>
</tr>
</tbody>
</table>

THREATS

Significance

- Invasive species
- Drainage
- Unsustainable fishing and harvesting of aquatic resources
Pala Wetland

Date of designation
August 31, 2021

Pala is the largest natural wetland located at an altitude of 275–689 meters (above mean sea level) in the Sina district of Mizoram. The oval-shaped Ramsar Site is revered by the local Mara people and has a deep connection with their history. It is believed that the Mara tribe first settled in and around this wetland after leaving Myanmar (formerly Burma). According to oral history, Pala is said to have originated after the demise of an ancient humonous snake terrorizing the villagers. This origin story has been passed down through generations, instilling a sense of guardianship among the inhabitants towards the wetland and its vegetation. The wetland is a popular tourist site because of its distinctive assemblage and immaculate condition. Pala is the primary source of freshwater and fish for the villages at its fringe and the major irrigation water source for wet rice cultivation, horticulture, and other forms of agriculture.
VALUES AND BENEFITS

Significance

- **Low**
- **Medium**
- **High**

Food for humans - fishes

Water use for irrigation and domestic use

Supports biodiversity

Groundwater recharge

Scientific studies

Nature based tourism

Spiritual and inspirational values

---

### Species of global conservation significance

<table>
<thead>
<tr>
<th>Category</th>
<th>Species</th>
</tr>
</thead>
<tbody>
<tr>
<td>Notable</td>
<td>Elongated Tortoise, Asian Brown Tortoise, Black Soft-shelled Turtle, Sambar</td>
</tr>
<tr>
<td>Critically Endangered</td>
<td>Elongated Tortoise, Asian Brown Tortoise, Black Soft-shelled Turtle</td>
</tr>
<tr>
<td>Endangered</td>
<td>Hoolock Gibbon, Bengal Slow Loris, Phayre's Langur</td>
</tr>
<tr>
<td>Vulnerable</td>
<td>Asiatic Softshell Turtle, Sambar, Asian Black Bear</td>
</tr>
</tbody>
</table>

---

### THREATS

Significance

- **Low**
- **Medium**
- **High**

Livestock farming and ranching

Unsustainable biological resource extraction

Roads and railroads

Invasive species

Vegetation clearance
Ansupa Lake

Date of designation
October 12, 2021

Ansupa is the largest freshwater wetland of Odisha situated in the Banki subdivision of Cuttack district. The oxbow wetland was formed due to the meandering of River Mahanadi. Ansupa is connected with the river on its southern side with a channel known as ‘Kabula Nala’ through which floodwater of river Mahanadi enters the wetland. The Ramsar Site was known as ‘Ansapata’—a wetland formed out of a part of River Mahanadi and ‘Hansapata’—a wetland that attracted hoards of wild swans. Ansupa sustains the freshwater demands of the surrounding areas and supports the livelihood of the local communities through fisheries and agriculture. The wetland has immense recreational and tourism potential since it is a significant wintering ground for migratory birds and is also known for its scenic beauty.
VALUES AND BENEFITS

Significance

<table>
<thead>
<tr>
<th>Low</th>
<th>Medium</th>
<th>High</th>
</tr>
</thead>
</table>

Groundwater recharge and discharge
Food for humans - fishes
Supports biodiversity
Water for domestic use
Spiritual and inspirational values
Nature based tourism and observation

Species of global conservation significance

<table>
<thead>
<tr>
<th>Notable</th>
<th>Indian Skimmer, Black-bellied Tern, River Tern</th>
</tr>
</thead>
<tbody>
<tr>
<td>Endangered</td>
<td>Magur, Indian Skimmer, Black-bellied Tern</td>
</tr>
<tr>
<td>Vulnerable</td>
<td>Common Carp, Freshwater Shark, River Tern</td>
</tr>
</tbody>
</table>

THREATS

Significance

<table>
<thead>
<tr>
<th>Low</th>
<th>Medium</th>
<th>High</th>
</tr>
</thead>
</table>

Pollution
Hydrological regime alteration
Unsustainable tourism
Spread of invasive species
Encroachment
Hirakud Reservoir

Date of designation
October 12, 2021

Hirakud Reservoir, formed due to the damming of river Mahanadi at Sambalpur in 1957, is the largest and most significant water infrastructure in Odisha. It is said that ‘Hirakud,’ meaning Diamond (Hira) Island (Kud), was Sambalpur’s traditional reserve for extracting diamonds from the sands of Mahanadi river. Spanning an area up to 700 km² when full, the Hirakud Reservoir provides water for generating ~300 MW hydropower through its two powerhouses at Burla and Chiplima; irrigating 462,100 ha culturable command area within Bargarh, Bolangir, Sambalpur and Subarnapur districts; and securing 9,500 km² of Mahanadi Delta region from floods. The gradient of habitats ranging from riverine to lacustrine, while moving towards the dam, enables the reservoir to support a range of floral and faunal species, including several of high conservation significance. Over 7,000 fisher households depend on the reservoir fisheries for livelihood. The vast open waterbody attracts a sizeable population of ducks, geese, and waders during winters, making it one of the major waterbird congregation areas in the state. The scenic surrounding of the reservoir, along with historically and culturally significant landmarks, marks its significance in cultural and recreation perspectives.

<table>
<thead>
<tr>
<th>Designation Criteria</th>
<th>Wetland Type</th>
<th>Management Authority</th>
</tr>
</thead>
<tbody>
<tr>
<td>1, 2, 3, 4, 5, 6, 8</td>
<td>Freshwater lake, water storage area</td>
<td>Odisha Forest Department</td>
</tr>
</tbody>
</table>
**VALUES AND BENEFITS**

**Significance**

- Groundwater recharge and discharge
- Food for humans - fishes

**Supports biodiversity**

**Water for domestic use**

**Spiritual and inspirational values**

**Nature based tourism and observation**

---

**Species of global conservation significance**

<table>
<thead>
<tr>
<th>Notable</th>
<th>Northern Pintail, Common Pochard, Common Teal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Endangered</td>
<td>Black-bellied Tern, White-winged Duck, Palla’s Fish-eagle, Indian Narrow-headed Softshell Turtle</td>
</tr>
<tr>
<td>Vulnerable</td>
<td>Lesser Adjutant, Sloth Bear, Leopard, Sambar</td>
</tr>
</tbody>
</table>

---

**THREATS**

**Significance**

- Siltation
- Hydrological regime alteration
- Unsustainable tourism
- Spread of invasive species
- Encroachment
Satkosia Gorge

Date of designation
October 12, 2021

Satkosia spreads along the magnificent gorge over the mighty river Mahanadi across the Angul, Cuttack, Nayagarh, and Boud districts of Odisha. The wetland is a mosaic of rivers, marshes, and evergreen forests at the meeting point of two biogeographic regions, the Deccan Peninsula and the Eastern Ghats. Satkosia, the second-largest and second-oldest sanctuary in the country, supports a rich ecosystem, representing a diverse population of floral and faunal species. The name Satkosia originates from two words, ‘sat’ meaning seven and ‘kos’ meaning two miles, indicating the gorge’s length as 14 miles or 22.4 km. The wetland aids in preserving a particular desired water depth that is essential for the survival of the endangered gharial population and the spawning of species of commercially significant carp and prawns. Satkosia is also known for providing various ecosystem services to surrounding communities, like fishing, groundwater recharging, climate regulation, and safety from floods. The Ramsar Site also offers recreational and tourism opportunities and supports spiritual and cultural practices.
**VALUES AND BENEFITS**

- **Significance**
  - Low
  - Medium
  - High

- **Groundwater recharge and discharge**
- **Food for human - fishes**
- **Supports biodiversity**
- **Spiritual and inspirational values**
- **Water for domestic use**
- **Nature based tourism and observation**

---

**Species of global conservation significance**

- **Notable**
  - Bar-headed Goose, Brahminy Duck, Asian Elephant, Tiger
- **Critically Endangered**
  - Red-crowned Roofed Turtle, Indian Gharial
- **Endangered**
  - Indian Skimmer, Black-bellied Tern
- **Vulnerable**
  - Indian River Tern

---

**THREATS**

- **Significance**
  - Low
  - Medium
  - High

- **Siltation**
- **Spread of invasive species**
- **Hydrological regime alteration**
- **Unsustainable tourism**
Tampara Lake

Date of designation
October 12, 2021

Tampara is among the most prominent freshwater wetlands in Odisha situated near Chatrapur town in the Ganjam district. The wetland lies within the Rushikulya river basin. In the year 1766 English East India Company took possession of the Ganjam district from the French during which explosives were used near Rushikulya leading to a depression near the river. The depression on the ground gradually filled with rainwater from catchment flow and was called “Tamp” by the British and subsequently termed “Tampara” by the locals. A narrow channel connecting Rushikulya river to Tampara was dredged later on for the transportation of goods which eventually helped to provide flood water of river Rushikulya to the wetland. Tampara acts as an important source of livelihood for the local communities. Along with fishes, the wetland also provides provisioning services like water for agriculture, and domestic use and is a well-known tourism and recreation site.
VALUES AND BENEFITS

Significance

- Groundwater recharge and discharge
- Food for humans - fishes
- Supports biodiversity
- Water for domestic use
- Buffers floods
- Nature based tourism and observation

Species of global conservation significance

<table>
<thead>
<tr>
<th>Notable</th>
<th>Black-capped Kingfisher, Lesser Whistling Duck, Red-wattled Lapwing, Black-headed Ibis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vulnerable</td>
<td>Common Pochard, Common Carp, River Tern</td>
</tr>
</tbody>
</table>

THREATS

Significance

- Siltation
- Hydrological regime alteration
- Unsustainable tourism
- Spread of invasive species
- Agriculture effluents
Chitrangudi Bird Sanctuary

Date of designation
November 8, 2021

Chitrangudi Bird Sanctuary, locally known as Chitrangudi Kanmoli, is located in the Ramanathapuram district of Tamil Nadu. An aerial view of the sanctuary presents a crescent or fishtail shape. The primary water sources for the wetland are rainfall, groundwater, and surrounding runoff from the catchment area and the Vaigai and Gundaru Rivers. Therefore, water is primarily intermittent in nature with frequent occasions of drying, which help in replenishing the groundwater. Even though it is an inland wetland, it is biogeographically near the coastal region. Collective characteristics of nutrient and sediment inflows put together facilitate sediment trapping and provide stabilization of the shoreline. The most remarkable feature of the sanctuary is the prominent growth of Babul trees, with the first Babul plantation done by the Farm forestry division in 1979. The wetland is surrounded by agricultural fields, where different crops are grown throughout the year. Plant remains and grains scattered after harvesting along with the water in the wetland allure avifauna to the regions. The wetland is an ideal habitat for winter migratory birds. The wetland plays the primary role of buffering by acting as a sponge during floods and extreme rainfall and is a significant source of groundwater recharge.

<table>
<thead>
<tr>
<th>Designation Criteria</th>
<th>Wetland Type</th>
<th>Protection Status</th>
<th>Management Authority</th>
</tr>
</thead>
<tbody>
<tr>
<td>3, 4, 6</td>
<td>Pond</td>
<td>Bird Sanctuary</td>
<td>Tamil Nadu Forest Department</td>
</tr>
</tbody>
</table>
VALUES AND BENEFITS

Significance

- Temples and religious institutions in the bank
- Fresh water (irrigation)
- Groundwater recharge
- Pollination
- Soil formation
- Biodiversity
- Flood buffer, stabilization of shoreline
- Carbon Sequestration
- Recreation and tourism

LOCATION
Ramanathapuram District

AREA
260.47 hectares

Species of global conservation significance

Notable: Spot Billed Pelican, Painted Stork, Indian Peafowl, Black-headed Ibis, Oriental Darter

THREATS

Significance

- Encroachment
- Vegetation clearance/land conversion
- Water abstraction
- Fishing and harvesting aquatic resources
- Recreational and tourism activities
- Salinization
- Pollution
- Climate change and severe weather (droughts, storms and flooding)
- Invasive non-native species
- Livestock grazing
Koonthankulam Bird Sanctuary

Date of designation
November 8, 2021

Koonthankulam Bird Sanctuary, or Kunthankulam, is an important human-made wetland in the Tirunelveli district of Tamil Nadu. The Ramsar Site consists of irrigation tanks interconnected by a network of canals built a few centuries ago and fed by rivers from the Western Ghats Mountain range. Koonthankulam is the largest reserve for breeding resident and migratory water birds in South India. The water from the wetland is not used for drinking purposes. Koonthankulam plays the primary role of buffering by acting as a sponge during events of floods and extreme rainfall and is a major source of groundwater recharge. There is significant runoff from the surrounding catchment area, and the wetland acts as a sink for sediments.

<table>
<thead>
<tr>
<th>Designation Criteria</th>
<th>Wetland Type</th>
<th>Protection Status</th>
<th>Management Authority</th>
</tr>
</thead>
<tbody>
<tr>
<td>3, 4, 5, 6</td>
<td>Pond</td>
<td>Bird Sanctuary</td>
<td>Tamil Nadu Forest Department</td>
</tr>
</tbody>
</table>
VALUES AND BENEFITS

Significance

<table>
<thead>
<tr>
<th>Low</th>
<th>Medium</th>
<th>High</th>
</tr>
</thead>
<tbody>
<tr>
<td>Food for humans</td>
<td>Fresh water</td>
<td>Maintenance of hydrological regimes</td>
</tr>
<tr>
<td>Erosion protection</td>
<td>Climate regulation</td>
<td></td>
</tr>
</tbody>
</table>

LOCATION
Tirunelveli District

AREA
72.04 hectares

Biodiversity
Spiritual and inspirational
Hazard reduction
Pollination
Soil formation
Recreation and tourism
Nutrient cycling

Species of global conservation significance

Notable
Spot-billed Pelican, Painted Stork, Black-headed Ibis, Greater Flamingo

THREATS

Significance

<table>
<thead>
<tr>
<th>Low</th>
<th>Medium</th>
<th>High</th>
</tr>
</thead>
<tbody>
<tr>
<td>Encroachment</td>
<td>Fishing and harvesting aquatic resources</td>
<td>Recreational and tourism activities</td>
</tr>
<tr>
<td>Water release</td>
<td>Climate change and severe weather (droughts, storms and flooding)</td>
<td>Invasive non-native species</td>
</tr>
<tr>
<td>Water abstraction</td>
<td>Drainage</td>
<td></td>
</tr>
</tbody>
</table>

112
Sakhya Sagar

Date of designation
January 7, 2022

Sakhya Sagar is a human-made reservoir on the outskirts of Shivpuri town within the Madhav National Park, one of the oldest national parks of Madhya Pradesh. The Ramsar Site features a mosaic of landforms, including open water and surrounding marshes, plantations, and a small patch of agricultural land. The northeastern part maintains open water and marsh areas yearly, whereas the north-western part is often dried out. The wetland was created due to damming of the Manier River in 1918 by the Maharaja of the Scindias clan. Sakhya Sagar not only adds to the area’s natural beauty but also provides a permanent source of water for wildlife and a habitat for animals, including thousands of migratory waterfowl and mugger crocodiles, whose presence attracts tourists. The wetland also plays a vital role in nutrient cycling, groundwater recharge, and regulating the area’s micro-climate.
VALUES AND BENEFITS

Significance

- Medicinal products
- Wetland non-food products
- Groundwater recharge
- Climate regulation
- Erosion protection

LOCATION
Shivpuri District

AREA
248 hectares

Species of global conservation significance

**Notable**
Asian Openbill Stork, Lesser Whistling Duck, Indian Cormorant, Ruddy Shelduck, Northern Shoveler

**Endangered**
Indian Skimmer

**Vulnerable**
Sambar, Wallago Attu, Common Pochard, Sarus Crane

THREATS

**Significance**

- Low
- Medium
- High

- Encroachment
- Invasive non-native species
- Livestock farming and ranching
- Dams and water management
- Fishing and harvesting aquatic resources
- Pollution
- Water abstraction
- Drainage
- Recreational and tourism activities
- Roads and railroads
- Storms and flooding
Sirpur Wetland is a human-made wetland created by the Holkers, the former kings of Indore. Over the last two centuries, the wetland has stabilized and acquired near-natural characteristics. Commonly named Pakshi Vihar (bird sanctuary), the site is a shallow, alkaline, nutrient-rich lake that floods during the monsoon to a maximum depth of two meters. It boasts a wealth of plants and animals, including threatened species. Sirpur provides surrounding communities with fisheries and medicinal plants and acts as a buffer against flooding while helping to regulate the local microclimate. The wetland offers significant ecological benefits, such as serving a significant water supply and assisting groundwater recharge in the areas downwind of it. Sirpur Wetland is also important to the city’s local populations on a cultural level. The local communities also benefit from spiritual enrichment, recreation, and education.
Values and Benefits

<table>
<thead>
<tr>
<th>Significance</th>
<th>Water purification</th>
<th>Food for humans</th>
<th>Medicinal products</th>
<th>Historical and archaeological heritage</th>
<th>Carbon sequestration</th>
<th>Nutrient cycling</th>
</tr>
</thead>
</table>

Location

Indore District

Area

161 hectares

Species of global conservation significance

<table>
<thead>
<tr>
<th>Notable</th>
<th>Oriental Darter, Northern Shoveler, Eurasian Wigeon, Little Cormorant, Black Kite, Indian Grey Hornbill, Greater Flamingo</th>
</tr>
</thead>
<tbody>
<tr>
<td>Endangered</td>
<td>Egyptian Vulture</td>
</tr>
<tr>
<td>Vulnerable</td>
<td>Eurasian Carp, Wallago Attu, Common Pochard, Sarus Crane, River Tern</td>
</tr>
</tbody>
</table>

Threats

Significance

<table>
<thead>
<tr>
<th>Low</th>
<th>Medium</th>
<th>High</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Drainage</th>
<th>Encroachment</th>
<th>Invasive non-native species</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Aquaculture</th>
<th>Water abstraction</th>
</tr>
</thead>
</table>
Yashwant Sagar

Date of designation
January 7, 2022

Yashwant Sagar, a human-made reservoir on the river Gambhir, is located in the Indore district of Madhya Pradesh. The wetland is one of the 19 important bird areas of Madhya Pradesh. Yashwant Sagar reservoir was built by the erstwhile ruler of Holker State of Indore, Yashwant Rao Holkar in 1930 to fulfil multipurpose objectives such as irrigation and supply of drinking water. Presently, it is mainly used for water supply to the city of Indore and is also being used for fish culture on a commercial scale. The wetland is considered to be a stronghold of the vulnerable Sarus Crane in central India. The backwaters of the wetland have plenty of shallow areas conducive for waders and other waterfowl. As the water level recedes, many islands serve as roosting sites for waterfowl. Due to its vast shallow reed beds, the wetland is considered heaven to a large number of winter migratory birds.

<table>
<thead>
<tr>
<th>Designation Criteria</th>
<th>Wetland Type</th>
<th>Management Authority</th>
</tr>
</thead>
<tbody>
<tr>
<td>2, 3, 4, 5, 7, 8</td>
<td>Water storage area/ Reservoir</td>
<td>Indore Municipal Corporation, Madhya Pradesh State Wetland Authority</td>
</tr>
</tbody>
</table>
VALUES AND BENEFITS

Significance

Low  | Medium  | High

Fresh water for drinking

Maintenance of hydrological regimes

Nature based tourism

Biodiversity

LOCATION
Indore District

AREA
822.9 hectares

Species of global conservation significance

Notable
Northern Shoveler, Eurasian Wigeon, Bar-headed Goose, Greylag Goose, White-necked Stork, Northern Pintail, Ferruginous Duck

Endangered
Egyptian Vulture

Vulnerable
Eurasian Carp, Wallago Attu, Common Pochard, Sarus Crane, River Tern

THREATS

Significance

Low  | Medium  | High

Encroachment
Livestock farming and ranching
Water abstraction
Dams and water management
Pollution

Recreational and tourism activities
Logging and wood harvesting
Fishing and harvesting aquatic resources
Invasive non-native species
Storms and flooding
Ranganathittu Bird Sanctuary

Date of designation
February 15, 2022

Ranganathittu Bird Sanctuary is located in the Mandya district of Karnataka. The major islands and islets of Ranganathittu are located in the midstream of river Cauvery and form part of the wetland system. A weir across river maintains the water level of Ranganathittu. The weir was built between 1645–1648 when Kanthirava Narasaraja Wodeyar was the ruler of Mysuru princely state. Ranganathittu is one of India’s oldest Bird Sanctuaries, sustaining a spectacular congregation of waterbirds and waders within the Western Ghats Biological Diversity Hotspot. The wetland is essential for groundwater recharge and nutrient cycling, both of which have an impact on nearby irrigation activities. The wetland is well known for nature tourism which generates considerable revenue for local authorities and communities and provides educational and research opportunities.

<table>
<thead>
<tr>
<th>Designation Criteria</th>
<th>Wetland Type</th>
<th>Protection Status</th>
<th>Management Authority</th>
</tr>
</thead>
<tbody>
<tr>
<td>2, 3, 4, 6, 7, 8</td>
<td>River stretch</td>
<td>Bird Sanctuary</td>
<td>Karnataka Forest Department</td>
</tr>
</tbody>
</table>
Species of global conservation significance

<table>
<thead>
<tr>
<th>Classification</th>
<th>Species</th>
</tr>
</thead>
<tbody>
<tr>
<td>Notable</td>
<td>Painted Stork, Common Pochard, River Lapwing, Red-wattled Lapwing</td>
</tr>
<tr>
<td>Critically Endangered</td>
<td>Oriental White-backed Vulture</td>
</tr>
<tr>
<td>Vulnerable</td>
<td>Greater Spotted Eagle</td>
</tr>
</tbody>
</table>

THREATS

Significance

- **Low**
  - Spread of invasive species

- **Medium**
  - Hydrological regime alteration

- **High**
  - Pollution
  - Unsustainable tourism
FOR US, PROTECTION OF ENVIRONMENT IS AN ARTICLE OF FAITH. WE HAVE NATURAL RESOURCES BECAUSE OUR PREVIOUS GENERATIONS PROTECTED THESE RESOURCES. WE MUST DO THE SAME FOR OUR FUTURE GENERATIONS.

- Hon’ble Prime Minister Narendra Modi
WE HAVE TO MOVE TOWARDS 'ZERO-DEFECT AND ZERO EFFECT. ZERO DEFECT IN PRODUCTION WITH NO ADVERSE EFFECT ON THE ENVIRONMENT.'

- Hon'ble Prime Minister Narendra Modi
Gulf of Mannar Marine Biosphere Reserve

Date of designation
April 8, 2022

Located at the southeastern tip of India, the Gulf of Mannar Marine Biosphere Reserve is the first Marine Biosphere Reserve in South and South-East Asia, running down south from Rameswaram to Kanyakumari in Tamil Nadu. The importance of the Gulf of Mannar region dates back to the 2nd Century AD because of its highly productive pearl banks and religious significance. The wetland houses a wide range of floral and faunal species representing primitive to higher forms making it one of the richest coastal regions in India. This habitat is the feeding ground for the largest endangered marine mammal, dugong, and sea turtles. This area is also the last refuge of an invertebrate, the unique ‘living fossil’ Balanoglossus that links vertebrates and invertebrates. The Gulf of Mannar is also a significant surviving natural habitat for dugongs globally. Fishery resources in the inshore waters had been the sole occupations and livelihoods for several thousand families living along the coast of the Gulf of Mannar for centuries.
VALUES AND BENEFITS

Significance

Low  Medium  High

- Pollution control and detoxification
- Food for humans
- Maintenance of hydrological regimes (groundwater recharge, water storage and delivery system)

LOCATION
Thuthukudi and Ramanathapuram District

AREA
52671.9 hectares

Biochemical products (extraction of material from biota)
Nutrient cycling
Coastal shoreline stabilization and storm protection
Climate regulation
Flood control
Nature based tourism
Carbon sequestration
Biodiversity
Scientific and educational
Erosion protection
Soil formation
Hazard reduction

Species of global conservation significance

Notable  Dugong, Olive Ridley Sea Turtle, Leatherback Sea Turtle
Critically Endangered  Spoon-billed Sandpiper, Hawksbill Sea Turtle, Pondicherry Shark, Sharpnose Guitarfish, Largetooth Fish, Longcomb Sawfish, Rhina ancylostoma
Endangered  Chelonio mydas, Spotted Eagle Ray, Mottled Eagle Ray, Knifefish Sawfish, Whitecheek Shark, Winghead Shark, Bramble Shark
Vulnerable  Dugong, Loggerhead Sea Turtle, False Killer Whale, Banded Eagle Ray, Common Thresher, Narcine tilmel

THREATS

Significance

Low  Medium  High

- Recreational and tourism activities
- Water abstraction, release
- Shipping lanes
- Aquaculture
- Industrial encroachment
- Pollution
- Invasive non-native species
- Drainage
- Logging and wood harvesting
- Temp extremes
- Land conversion
- Storms and flooding
- Droughts
- Earthquake, tsunami
- Mining and quarrying
- Fishing and harvesting aquatic resources
Kanjirankulam Bird Sanctuary

Date of designation
April 8, 2022

Kanjirankulam Bird Sanctuary, also known as Kanjirankulam Kanmai, is located in the Mudukulathur Ramanathapuram District of Tamil Nadu. The wetland serves as a nesting site for several migratory heron species that roost in the prominent growth of babul trees. Located on the tail end of River Gundar, a biodiversity hotspot, Kanjirankulam was carved out of the Raghunada Cauvery canal that the Maravar Kings dug out. It is a near homogenous tank-like structure with dense overgrowth of Prosopis and intermittent plantations of Acacia nilotica. The North Western portion of the wetland retains water even during summer. The wetland provides a wide spectrum of ecosystem services to the fringe population, including hydrological regulation of floods and droughts, carbon sequestration and climate regulation, and storm protection. Local villagers representing indigenous races of India have a symbiotic relationship with the bird communities residing in the wetland.

<table>
<thead>
<tr>
<th>Designation Criteria</th>
<th>Wetland Type</th>
<th>Protection Status</th>
<th>Management Authority</th>
</tr>
</thead>
<tbody>
<tr>
<td>2, 3, 6, 7, 8</td>
<td>Freshwater marsh</td>
<td>Bird Sanctuary</td>
<td>Public Works Department, Tamil Nadu Forest Department</td>
</tr>
</tbody>
</table>
VALUES AND BENEFITS

Significance
- Low
- Medium
- High

- Fresh water for drinking, irrigation
- Fuel wood
- Maintenance of hydrological regimes (groundwater recharge, water storage and delivery system)
- Climate regulation
- Erosion protection

Nutrient cycling
Carbon sequestration
Soil formation
Biodiversity
Nature based tourism
Scientific and educational

Species of global conservation significance

<table>
<thead>
<tr>
<th>Notable</th>
<th>Spot-billed Pelican, Oriental Darter, Painted Stork, Black-headed Ibis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Endangered</td>
<td>River Tern, Spotted Greenshark, Tephrosia purpurea</td>
</tr>
<tr>
<td>Vulnerable</td>
<td>River Tern</td>
</tr>
</tbody>
</table>

THREATS

Significance
- Low
- Medium
- High

- Human intrusion and disturbance
- Livestock farming and ranching
- Gathering terrestrial plants, Logging
- Land conversion
- Invasive non-native species
- Drainage
- Water abstraction, release
- Encroachment
- Drought, storm flood
Karikili Bird Sanctuary comprises two rain-fed non-perennial irrigation tanks, spreading over an area of more than 58 hectares. These are old water storage reservoirs constructed for irrigation in the Chengalpet plains. The wetland is flat or gently undulating and lies near low ridged, rocky hillocks. Rainfall varies significantly from year to year, from 400 mm to almost 1,700 mm, flooding the wetland in the monsoon months from July to September. Karikili provides a habitat for a variety of resident and migratory birds, most of them waterbirds and a few species of scavengers. The wetland also supports several mammals, reptiles, and amphibians, such as the jungle cat, bonnet macaque, jackal, python, sand boa, and frogs. Karikili Bird Sanctuary has a history of people cooperating in protecting waterbirds, as their guano enables the supply of nutrient-enriched water to crop fields.
**VALUES AND BENEFITS**

**Significance**

- **Low**
- **Medium**
- **High**

- **Food for humans**
- **Fresh water for drinking, irrigation**
- **Maintenance of hydrological regimes (groundwater recharge, water storage and delivery system)**

**LOCATION**

Chengalpattu and Kancheepuram District

**AREA**

58.442 hectares

- **Nutrient cycling**
- **Spiritual and inspirational**
- **Biological control of pests and disease**
- **Climate regulation**
- **Nature based tourism**
- **Sediment retention**
- **Biodiversity**
- **Hazard reduction**
- **Erosion protection**
- **Pollination**

---

**Species of global conservation significance**

**Notable**

- Garganey Teal, Common Teal, Shoveller, Pintail Duck, Stilts, Sandpoper, Spoonbill, White Ibis, Night Heron, Jungle Cat, Grey Mongoose, Palm Civet, Flying Fox

**Endangered**

- Spotted Greenshark, Nilgiri White-breasted Laughing Thrush, Nilgiri Chilappan

**Vulnerable**

- Mrigal Carp, Common Pochard

---

**THREATS**

**Significance**

- **Low**
- **Medium**
- **High**

- **Encroachment**
- **Fishing and harvesting aquatic resources**
- **Non-timber crops**
- **Invasive non-native species**
Pallikaranai Marsh Reserve Forest

Date of designation
April 8, 2022

Pallikaranai Marsh is located in the Kanchipuram district and is Chennai’s last remaining natural wetlands. It is locally known as Kazhuveli which means a marsh or waterlogged area. The adjoining wetlands discharge water as an overflow or through a drainage network. About 54 large and small satellite human-made wetlands are located around Pallikaranai marsh, which release surplus water during monsoons. The wetland situated serves as an aquatic buffer of the flood-prone Chennai and Chengalpattu districts, soaking up water during wet periods and releasing it during dry spells. Pallikaranai also serves as a foraging ground for migratory birds. Inhabitants of seven surrounding villages partially depend on the wetland for their subsistence.
### Values and Benefits

#### Significance

- **Low**
- **Medium**
- **High**

- **Buffers flood**
- **Nutrient retention**
- **Carbon sink**
- **Supports biodiversity**
- **Tourism & recreation**
- **Scientific and educational importance**

### Species of Global Conservation Significance

<table>
<thead>
<tr>
<th>Category</th>
<th>Species</th>
</tr>
</thead>
<tbody>
<tr>
<td>Notable</td>
<td>Purple Swamphen, Black-winged Stilt, Spot-billed Pelican, Black-headed Ibis</td>
</tr>
<tr>
<td>Endangered</td>
<td>Black-bellied Tern, Great Knot</td>
</tr>
<tr>
<td>Vulnerable</td>
<td>Indian Flap-shelled Turtle, Greater Spotted Eagle, Common Pochard</td>
</tr>
</tbody>
</table>

### Threats

#### Significance

- **Low**
- **Medium**
- **High**

- **Pollution**
- **Encroachment**
- **Invasive species**
- **Hydrological regime alteration**
Pichavaram Mangrove

Date of designation
April 8, 2022

Pichavaram mangrove is located between two prominent estuaries, the Vellar and the Coleroon. The Vellar–Coleroon estuarine complex forms the Killai backwater and Pichavaram mangroves. The Pichavaram forest offers waterscape, backwater cruises, and another very rare sight – the mangrove forest trees that are permanently rooted in a few feet of water. Pichavaram support unique diversity of flora and fauna. The mangrove ecosystem acts as a bio-shield during natural disasters, holds and stabilizes shorelines, retards erosion, acts as a buffer zone between land and sea, and helps adapt to climate change. The wetland supports livelihoods of around 1000 families through fisheries and are revered by the local communities. According to the Sthala Purana, the Sthala Vriksham in Chidambaram Lord Nataraja Temple was the mangrove species Excoecaria agallocha commonly known as Tilai, worshipped since the 18th Century. The region used to be called Tilai Vanam.

<table>
<thead>
<tr>
<th>Designation Criteria</th>
<th>Wetland Type</th>
<th>Protection Status</th>
<th>Management Authority</th>
</tr>
</thead>
<tbody>
<tr>
<td>1, 2, 3, 4, 5, 6, 7, 8</td>
<td>Intertidal Forested Wetland</td>
<td>Reserve Forest</td>
<td>Tamil Nadu Forest Department</td>
</tr>
</tbody>
</table>
**VALUES AND BENEFITS**

**Significance**

- Food for humans
- Fresh water for drinking, irrigation
- Hazard reduction
- Erosion protection

**LOCATION**

Cuddalore District

**AREA**

1,478.64 hectares

- Nutrient cycling
- Scientific and educational
- Historical and archaeological
- Carbon sequestration
- Biodiversity
- Nature based tourism

**Species of global conservation significance**

- **Notable**
  - Spot-billed Pelican, Black-necked Stork, White-necked Stork, White Ibis, Asian Dowitcher, Oriental Darter
- **Critically Endangered**
  - Great White-bellied Heron, Spoon-billed Sandpiper
- **Endangered**
  - Spotted Greenshark
- **Vulnerable**
  - *Tecticornia Indica Ciliolata*, *Tecticornia Indica Indica*, *Ditylenchus Dipsaci*, Smooth-coated Otter, Bonnet Macaque, Olive Ridley Turtle

**THREATS**

- **Significance**
  - Low
  - Medium
  - High
- **Encroachment**
- **Livestock farming and ranching**
- **Mining and quarrying**
- **Hunting and collecting terrestrial animals**
- **Pollution**
- **Salinization**
- **Gathering terrestrial plant, logging and wood harvesting**
- **Fishing and harvesting aquatic resources**
- **Land conversion**
- **Invasive non-native species**
Suchindram Theroor Wetland Complex

Date of designation
April 8, 2022

Suchindram-Theroor-Wetland Complex is located in the Kanyakumari district of Tamil Nadu. The Theroor and Suchindrum are the two human-made tanks created primarily for irrigation. These two wetlands receive water from the Kodayar river basin in the Western Ghats. The wetland complex has a diverse habitat, including large and deep reservoirs with many inlets and surrounding agricultural fields, which provide suitable bird nesting and foraging habitats. This diversity of habitats enables the wetland to act as an important breeding site for some important bird species. Suchindram Theroor have five temples and one church along its bank, adding to its spiritual significance. While agriculture is practiced around the wetland, no commercial fishing activities are undertaken. Theroor and Suchindram also act as a sponge during events of floods and extreme rainfall and are a major source of groundwater recharge.

<table>
<thead>
<tr>
<th>Designation Criteria</th>
<th>Wetland Type</th>
<th>Protection Status</th>
<th>Management Authority</th>
</tr>
</thead>
<tbody>
<tr>
<td>2, 3, 4, 5, 6, 7</td>
<td>Water storage areas/</td>
<td>Conservation Reserve</td>
<td>Tamil Nadu Forest Department</td>
</tr>
<tr>
<td></td>
<td>Reservoirs</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Values and Benefits

Significance
- Food for humans: High
- Fresh water for drinking, irrigation: Medium
- Climate regulation: Medium
- Maintenance of hydrological regimes (groundwater recharge, water storage and delivery system): Medium
- Soil formation: Low

Species of global conservation significance

Notable
- Indotristicha ramossissima
- Jungle Myna (Acridotheres fuscus)
- Common Myna (Acridotheres tristis)
- Blyth’s Reed Warbler (Acrocephalus dumetorum)
- Common Sandpiper (Actitis hypoleucos)
- Common Kingfisher (Alcedo atthis)
- Commelina carolliniana

Endangered
- Tephrosia purpurea
- Tringa guttifer
- Spotted Greenshank

Vulnerable
- River Tern

Threats

Significance
- Recreational and tourism activities: Low
- Livestock farming and ranching: Low
- Drainage: Medium
- Storms and flooding: Medium
- Fishing and harvesting aquatic resources: High
- Invasive non-native species: High
- Non-timber crops: High
- Droughts: High
- Pollution: High
- Water release: High
- Gathering terrestrial plants: High
- Encroachment: High
Udhayamarthandapuram Bird Sanctuary

Date of designation
April 8, 2022

Udhayamarthandapuram is one of the important Bird Sanctuaries in Tamil Nadu, located one km off East Coast Road connecting Chennai and Kanyakumari. The primary sources of water for the wetland are rainfall, the surrounding runoff from the catchment area & the Mettur dam. Udhayamarthandapuram is an important roosting site for local migrants and resident waterbirds and feeding and wintering grounds for the long distant migrant waterbird such as Ducks and Waders. The Ramsar Site provides the surrounding communities with fresh water for domestic usage, livestock and agriculture as it stores the floodwaters during the monsoon and maintains surface water flow during drier periods. It also helps replenish groundwater and feeds surrounding smaller wetlands and agricultural land.
**Values and Benefits**

**Significance**
- Food for humans
- Fresh water for drinking, irrigation
- Maintenance of hydrological regimes (groundwater recharge, water storage and delivery system)

**Species of Global Conservation Significance**

**Notable**
- Oriental Darter, Glossy Ibis, Grey Heron, Eurasian Spoonbill, Eurasian Wigeon, Northern Pintail

**Endangered**
- *Tephrosia purpurea*

**Threats**

**Significance**
- Low
- Medium
- High

- Recreational and tourism activities
- Fishing and harvesting aquatic resources
- Livestock farming and ranching
- Drainage
- Water release
- Salinization
- Water abstraction
- Invasive non-native species
- Water shortage
- Land conversion
- Pollution
- Droughts
- Encroachment
- Storms and flooding
- Habitat shifting and alteration
Vaduvur Bird Sanctuary

Date of designation
April 8, 2022

Vaduvur bird sanctuary is a large human-made irrigation tank located in the Thiruvarur district of Tamil Nadu. The wetland is an abode for migratory birds as it provides a suitable environment for food, shelter, and breeding ground. The surrounding vast agricultural fields and abundance of aquatic insects attract numerous birds. Vaduvur is part of the Cauvery delta and hence is dependent on the release of water from the Mettur dam. Apart from providing suitable habitats for plants and animals, Vaduvur provides water for irrigation, a buffer from extreme hydrological events such as drought and floods, influences the microclimate, and expands the range of recreational opportunities.

Sri Kodandaramaswamy temple, located in Vaduvuragraharam village just opposite the eastern end of the wetland, is revered by the local people.
**VALUES AND BENEFITS**

**Significance**
- Food for humans
- Fresh water for drinking, irrigation
- Maintenance of hydrological regimes (groundwater recharge, water storage and delivery system)

**LOCATIONS**
- Tamil Nadu
- Vadichirai Wetland Sanctuary

**AREA**
- Tiruvur District
- 112.638 hectares

**Biological control of pests and disease**

**Flood control**

**Soil formation**

**Climate regulation**

**Pollination**

**Nature based tourism**

**Biodiversity**

**Nutrient cycling**

**Erosion protection**

**Species of global conservation significance**

**Notable**
- Northern Pintail
- Asian Openbill Stork
- African Darter
- Black-headed Ibis
- Grey Heron
- Purple Heron

**Endangered**
- *Tephrosia purpurea*
- *Achyranthes aspera*

**THREATS**

**Significance**
- Low
- Medium
- High

- Recreational and tourism activities
- Fishing and harvesting aquatic resources
- Livestock farming and ranching
- Drainage
- Water release
- Salinization
- Pollution
- Invasive non-native species
- Water abstraction
- Land conversion
- Droughts
- Habitats shifting and alteration
- Storms and flooding

136
Vedanthangal Bird Sanctuary

**Date of designation**
April 8, 2022

Vedanthangal, located in the Chengalpattu district of Tamil Nadu, is one of the oldest bird-protected areas in the country. The wetland is a people-protected waterbird area, the history of which goes back to centuries where locals have been protecting this heronry and, in return, have benefited from the manure-rich water from the wetland, which increases the agriculture yield multifold. At the end of the 18th century, the local villagers of Vedanthangal obtained a ‘Cowle’ from the first Collector of Chengalpet, recognizing their right to safeguard the nesting colony in their tank from those seeking to shoot the birds. In 1936, the Collector officially recognized the place as a protected area. Vedanthangal also plays a vital role in nutrient cycling and groundwater recharge, influencing irrigation activities in the immediate vicinity. Within the immediate periphery of the sanctuary, there is an old Arman temple that attracts a number of devotees.

<table>
<thead>
<tr>
<th>Designation Criteria</th>
<th>Wetland Type</th>
<th>Protection Status</th>
<th>Management Authority</th>
</tr>
</thead>
<tbody>
<tr>
<td>2, 3, 4, 5, 6, 7, 8</td>
<td>Intertidal forested wetland</td>
<td>Bird Sanctuary</td>
<td>Tamil Nadu Forest Department</td>
</tr>
</tbody>
</table>
VALUES
AND
BENEFITS

Significance

Low
Medium
High

Food for humans
Biological control of pests and disease
Fresh water for drinking, irrigation
Pollination
Maintenance of hydrological regimes (groundwater recharge, water storage and delivery system)

Nutrient cycling
Sediment retention
Hazard reduction
Climate regulation
Spiritual and inspirational
Carbon sequestration
Biodiversity
Nature based tourism
Erosion protection
Flood control

Species of global conservation significance

Notable
Spot-billed Pelican, Asian Openbill Stork, Painted Stork, Greater Spotted Eagle

Vulnerable
Mrigal Carp, Greater Spotted Eagle

THREATS

Significance

Low
Medium
High

Encroachment
Fishing and harvesting aquatic resources
Non-timber crops
Vellode Bird Sanctuary

Date of designation
April 8, 2022

Vellode Bird Sanctuary, also known as Periyakulam Yeri, is a human-made tank located in the Erode District of Tamil Nadu. The wetland supports a large number of resident and migratory birds due to the abundant food resources it provides from neighbouring agricultural fields. Vellode is an important staging and breeding ground for migratory and resident waterbirds on the Central Asian Flyway. The wetland provides drinking water and fish to local communities, and the manure-rich water from the wetland increases the agriculture yield multi-folds. The wetland plays the primary role of buffering by acting as a sponge during events of floods and extreme rainfall and is a significant source of groundwater recharge. An old Karupparayan temple located in the immediate periphery of the Vellode Bird Sanctuary attracts a number of devotees.

<table>
<thead>
<tr>
<th>Designation Criteria</th>
<th>Wetland Type</th>
<th>Protection Status</th>
<th>Management Authority</th>
</tr>
</thead>
<tbody>
<tr>
<td>2, 3, 5</td>
<td>Freshwater marsh, water</td>
<td>Bird Sanctuary</td>
<td>Tamil Nadu Forest Department</td>
</tr>
<tr>
<td></td>
<td>storage area/reservoir</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
VALUES AND BENEFITS

Significance

- Food for humans
- Fresh water for drinking, irrigation
- Maintenance of hydrological regimes (groundwater recharge, water storage and delivery system)
- Biological control of pests and disease
- Climate regulation

LOCATION
Erode District

AREA
77.185 hectares

Species of global conservation significance

Notable: Grey Heron, Oriental Darter, Asian Openbill Stork, Spot-billed Pelican, River Tern, Black-headed Ibis, Northern Shoveler

Endangered: Tephrosia purpurea

Vulnerable: River Tern, Crypsia pedata, Commelina tricolor

THREATS

Significance

- Low
- Medium
- High

- Recreational and tourism activities
- Livestock farming and ranching
- Vegetation clearance/land conversion
- Storms and flooding
- Droughts
- Invasive non-native species
- Salinization
- Fishing and harvesting aquatic resources
- Pollution
- Water release
- Water abstraction
- Encroachment
Vembannur is a human-made perennial irrigation tank in Kanyakumari District of Tamil Nadu. According to legend, the tank was built during the reign of Veeranarayana, a Pandyan king. The tank and the Therrakal canal were built to draw water for irrigation from the Pazhayar river. Vembannur provides suitable habitat to several waterbird species. The wetland supports more than 2,000 hectares of agricultural land on which more than 1,000 families depend. It also supplies fish and drinking water to local communities while moderating the impacts of drought and floods, influencing the local microclimate, enhancing the beauty of the landscape, and providing many recreational opportunities. Four temples and three mosques located in the vicinity of the wetland add to Vembannur's spiritual significance.
**VALUES AND BENEFITS**

**Significance**
- Food for humans
- Fresh water for drinking, irrigation
- Accumulation of organic matter
- Maintenance of hydrological regimes (groundwater recharge, water storage and delivery system)

**Biological control of pests and disease**
- Pollination
- Nature based tourism
- Climate regulation
- Hazard reduction
- Carbon sequestration
- Biodiversity
- Nutrient cycling
- Sediment retention
- Erosion protection

**Species of global conservation significance**

<table>
<thead>
<tr>
<th>Notable</th>
<th>Garganey, Oriental Darter, Spot-billed Pelican, Black-headed Ibis, Northern Pintail, Common Teal, Spot-billed Duck</th>
</tr>
</thead>
<tbody>
<tr>
<td>Endangered</td>
<td>Tephrosia purpurea, Tringa guttifer</td>
</tr>
<tr>
<td>Vulnerable</td>
<td>River Tern</td>
</tr>
</tbody>
</table>

**THREATS**

**Significance**
- Low
- Medium
- High

- Recreational and tourism activities
- Livestock farming and ranching
- Drainage
- Hazard (Drought, storm, flood)
- Fishing and harvesting aquatic resources
- Invasive non-native species
- Salinization
- Water release
- Water abstraction
- Land conversion
- Pollution
- Encroachment
Thane Creek

Date of designation
April 13, 2022

Thane Creek, a marine protected area spread across Thane, Mumbai, and Mumbai Suburban districts of Maharashtra, is one of the largest creeks in Asia. There are several sources of fresh water to the creek, of which river Ulhas is the largest, followed by many drainage channels from various suburban areas of Mumbai, Navi Mumbai & Thane. Thane creek is fringed by mangroves on both banks & comprises around 20% of the total Indian mangrove species. The high species diversity of birds in the wetland, presence of many globally important species, and the rich abundance of Lesser Flamingos and Greater Flamingos make this wetland globally significant. The mangrove forest acts as a natural shelter belt and protects the land from cyclones, tidal surges, seawater seepage and intrusions. The Koli community in Mumbai worships mangroves recognizing their importance as breeding and nursing grounds for marine organisms that the community relies on for sustenance.
Species of global conservation significance

Notable
- Lesser Flamingo, Greater Flamingo, Golden Jackal, Indian Mongoose, Wild Boar, Flying Fox, Marsh Snake, Wart Snake, Rat Snake, Windowpane Oyster, Red Mangrove Clam, Auceninio marina, Aegiceras cornulatum

Endangered
- Great Knot, Indian Skimmer

Vulnerable
- River Tern, Greater Spotted Eagle, Mozambique tilapia

Threats
Significance
- **Low**
  - Shipping lanes
  - Storms and flooding
  - Fishing and harvesting aquatic resources
- **Medium**
  - Invasive species
  - Encroachment
  - Water release
- **High**
  - Aquaculture
  - Drainage
  - Roads and railroads

VALUES AND BENEFITS

Significance
- **Low**
  - Spiritual and inspirational
- **Medium**
  - Nature based tourism
- **High**
  - Maintenance of hydrological regimes (groundwater recharge, water storage and delivery system)

**LOCATION**
Thane & Mumbai District

**AREA**
6,521.08 hectares

Carbon sequestration
Pollination
Soil formation
Climate regulation
Coastal shoreline and riverbank stabilization
Food for humans
Biodiversity
Scientific and educational
Erosion protection
Water purification
Hygam Wetland Conservation Reserve

Date of designation
June 8, 2022

Hygam Wetland Conservation Reserve, locally known as Hygam Rakh, is the largest remaining reed bed in the Kashmir valley. The wetland falls within the river Jhelum basin in the Baramulla district of the Union Territory of Jammu and Kashmir. It is adjacent to the southern tip of Wular, forming an interconnected ecosystem complex. The cone-shaped wetland was notified as a game reserve for duck shooting far back in 1945. Hygam is fed by a perennial stream of Ballakul, which enters the wetland in its south, while Ningli Nallah and other tributaries such as Hanjpora Kull and Trambgund Kull enter the wetland along its western boundary. The water table keeps on fluctuating through the seasons. The wetland plays a significant role as a flood absorption basin, biodiversity conservation site, eco-tourism site, and livelihood security for the local communities. Hygam is the only extensive marsh discernible in association with an artificial reservoir of lower Jhelum hydroelectric projects at Gantamullah. In emergencies, water from this wetland is used to irrigate the local villagers’ fields along the peripheries.
VALUES AND BENEFITS

Significance
Low Medium High

Drinking water
Food

Carbon sequestration Water storage and delivery Nature based tourism Biodiversity Scientific and educational importance

Species of global conservation significance

Notable
Common Teal, Northern Pintail, Mallard, Little Egret, Whiskered Tern

Endangered
Stoppe Eagle, Pallas’s Fish-eagle, Black-bellied Tern

Vulnerable
Lesser White-fronted Goose, Eastern Imperial Eagle, Tawny Eagle, Common Pochard, Yellow-eyed Pigeon, Wood Snipe, River Tern, Streptopelia turtur

THREATS

Significance
Low Medium High

Canalization and river regulation Wood and pulp plant Non-timber crops Habitat shifting and alteration

Water abstraction Fishing Pollution Encroachment
Nanda Lake

Date of designation
June 8, 2022

Nanda, located in the South Goa District of Goa, comprises intermittent freshwater marshes adjacent to one of the major tributaries of the river Zuari. They are linked to the adjoining river channel by a sluice gate. The wetland supports various migratory waterbirds and many other important plants and animals. The water from the wetland is utilized to cultivate paddy downstream of the lake and supports fishing and recreation. Large volumes of monsoon rain are also absorbed by Nanda, preventing floods in the nearby catchment and downstream low-lying communities.

<table>
<thead>
<tr>
<th>Designation Criteria</th>
<th>Wetland Type</th>
<th>Protection Status</th>
<th>Management Authority</th>
</tr>
</thead>
<tbody>
<tr>
<td>1, 2, 3</td>
<td>Seasonal/ intermittent freshwater marshes</td>
<td>Wetland notified under Wetlands (- Conservation &amp; Management) Rules 2017</td>
<td>Goa State Wetland Authority</td>
</tr>
</tbody>
</table>
**VALUES AND BENEFITS**

- **Significance**
  - Low
  - Medium
  - High

  - Food
  - Drinking water
  - Erosion protection
  - Water for irrigation
  - Hazard reduction
  - Spiritual and inspirational
  - Pest control
  - Climate regulation
  - Hydrological regime
  - Biodiversity

---

**Species of global conservation significance**

**Notable**

**Vulnerable**
- Smooth-coated Otter, River Tern, Lesser Adjutant

**Critically Endangered**
- Great Indian Bustard

---

**THREATS**

- **Significance**
  - Low
  - Medium
  - High

  - Encroachment
  - Fishing and harvesting aquatic resources
  - Dams and water management
  - Storms and flooding
  - Canalization
  - Pollution
  - Invasive non-native species
Shallbugh Wetland Conservation Reserve

Date of designation
June 8, 2022

Shallbugh Wetland Conservation Reserve, falling within the river Jhelum basin, is located in the Srinagar District of the Union Territory of Jammu & Kashmir. The wetland is situated in the deltaic region of the Sindh Nallan, about 18 km from Srinagar to the west of Anchar Lake. The wetland is an important aquatic ecosystem of Kashmir. Shallbugh harbors a rich diversity of resident and migratory avifaunal species and macrophytes of high socio-economic importance. The wetland plays a significant role as a flood absorption basin, biodiversity conservation site, Eco-tourist destination, groundwater recharge, control streamflow, and carbon sequestration. The livelihood of a sizeable population of around ten villages depends on the Shallbugh wetland reserve to extract wicker willow, popular fishery, and livestock grazing.

<table>
<thead>
<tr>
<th>Designation Criteria</th>
<th>Wetland Type</th>
<th>Protection Status</th>
<th>Management Authority</th>
</tr>
</thead>
<tbody>
<tr>
<td>1, 2, 3, 4</td>
<td>Freshwater Lake</td>
<td>Wildlife Conservation Reserve</td>
<td>Department of Wildlife Protection, Government of UT of Jammu &amp; Kashmir</td>
</tr>
</tbody>
</table>
VALUES AND BENEFITS

Significance

Food

Water irrigated

Groundwater recharge

Nature based tourism

Scientific and educational

Climate regulation

Biodiversity

Carbon sequestration

Pollination

Species of global conservation significance

Notable
Common Teal, Mallard, Northern Pintail, Gadwall, Eurasian Wigeon, Northern Shoveler, Common Pochard

Critically Endangered
Garganey, Leopard, Indian Himalayan Wolf, Red Fox, Jackal, Jungle Cat

Vulnerable
Eastern Imperial Eagle, Lesser White-fronted Goose, Tawny Eagle, Common Pochard

THREATS

Significance

Low

Medium

High

Canalization and river regulation

Drainage

Non-timber crops

Habitat shifting and alteration

Water abstraction

Fishing

Pollution

Encroachment
RESPECT FOR NATURE IS AN INTEGRAL PART OF OUR CULTURE, AND HAS BEEN PASSED ACROSS GENERATIONS. PROTECTION OF ENVIRONMENT COMES NATURALLY TO US.

- Hon'ble Prime Minister Narendra Modi
IT MUST BE OUR DUTY TO PROTECT THE ENVIRONMENT SO THAT THE BENEFITS COULD BE PASSED ONTO FUTURE GENERATIONS. ON WORLD ENVIRONMENT DAY, THE GLOBAL CAMPAIGN OF CONNECTING WITH NATURE SHOULD BE OUR OWN TOO.

- Hon'ble Prime Minister Narendra Modi
Compilation team

**Overall direction**
Dr Sujit Kumar Bajpayee, Joint Secretary, MoEFCC  
Ms Manju Pandey, Joint Secretary, MoEFCC

*Wetlands Division, MoEFCC*
Mr Raghu Kumar Kodali, Director  
Mr Chandan Singh, Consultant

*Wetlands International South Asia*
Ms Suchita Awasthi  
Ms Preethi Vasudevan  
Mr Harsh Ganapathi  
Mr Dhruv Verma  
Mr Kamal Dalakoti  
Ms Nehha Sharma  
Dr Ritesh Kumar

*GIZ-India*
Mr Kunal Bharat  
Mr Debojyoti Mukherjee  
Dr Avantika Bhaskar  
Ms Neha Owaisy  
Mr Ravindra Singh  
Ms Shambhavi Krishna

*WWF-India*
Mr Suresh Babu  
Dr Amit Dubey  
Ms Gitanjali Kanwar  
Mr Yaiphaba Meetei Akoijam  
Dr Abhishek Bhatnagar  
Mr Sanjeev Yadav  
Mr Mohd Shahnawaz Khan  
Ms Shoma Stanley  
Dr G Areendran  
Dr Krishna Raj
Home to 75 Ramsar sites, India's wetlands are testimony to our ethos of living in harmony with nature and also give an important message of sustainable development.

- Hon’ble Prime Minister Narendra Modi

Prepared under Global Environment Facility-Ministry of Environment, Forest and Climate Change-UN Environment Programme funded Integrated Management of Wetland Biodiversity and Ecosystems Services Project.