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"Flyway Conservation at Work – Review of the Past, Vision for the Future"

DRAFT INTERNATIONAL SINGLE SPECIES ACTION PLAN FOR THE CONSERVATION OF THE LESSER FLAMINGO (*PHOENICONAIAS MINOR)*

Introduction

This International Single Species Action Plan for the Conservation of the Lesser Flamingo (*Phoeniconaias minor*) was initiated in 2006 and was commissioned to the IUCN-SSC/Wetlands International Flamingo Specialist Group (FSG) and Wildfowl & Wetlands Trust (WWT). It has been compiled by Brooks Childress, Chair of the FSG and Research Associate at WWT; Baz Hughes, Head of Species Conservation at WWT; and Szabolcs Nagy, Senior Biodiversity Officer at Wetlands International. The drafts of the plan went through rigorous consultations including comments from experts, CMS Scientific Council Members and the AEWA Technical Committee followed by official consultation with governmental officials from the range states, The draft plan was endorsed by the Standing Committee at its 5th meeting in June 2008 for submission to MOP4.

The Action Plan follows the format for Single Species Action Plans approved by the AEWA 2nd Meeting of the Parties in September 2002.

This SSAP is being prepared under the auspices of AEWA and CMS. Apart from India and Pakistan, the range of the species lies entirely within the AEWA region.

Action requested from the Meeting of the Parties

The Meeting of the Parties is invited to review this SSAP and adopt it for further implementation. The SSAP will be submitted for final approval by India and Pakistan within the framework of the CMS governing bodies.

Convention on the Conservation of
Migratory Species of Wild Animals (CMS)

Agreement on the Conservation of
African-Eurasian Migratory Waterbirds (AEWA)

International Single Species Action Plan for the Conservation of the Lesser Flamingo (*Phoeniconaias minor*)

Produced by

IUCN-SSC/Wetlands International Flamingo Specialist Group
Wildfowl & Wetlands Trust
Wetlands International
BirdLife International Africa Partnership

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- Workshop: 25-29 September 2006, ICIPE Campus, Nairobi, Kenya
- First draft: January 2007, presented to experts
- Second draft: March 2007, presented to CMS 14th Scientific Council Meeting, Bonn, Germany, 14-17 March 2007
- Third draft: 10 May 2007
- Fourth draft: May 2008, presented to AEWA Standing Committee Meeting, Bonn, Germany, 24-25 June 2008
- Fifth draft: July 2008, presented to the AEWA 4th Meeting of Parties in September 2008

Geographical scope: With the exception of India and Pakistan, the range of the Lesser Flamingo is fully included within the AEWA geographic scope. This action plan covers the entire African, South Asian and SW Asian Lesser Flamingo breeding and non-breeding range. It requires implementation in the following 12 countries regularly supporting >1% of the regional populations of the Lesser Flamingo: Botswana, Ethiopia, Guinea, Guinea-Bissau, India, Kenya, Mauritania, Namibia, Senegal, South Africa, United Republic of Tanzania and Uganda.

Reviews: This International Single Species Action Plan should be reviewed and updated every ten years (first review 2018). An emergency review will be undertaken if there is a sudden major change liable to affect the population.

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Preface

This International Single Species Action Plan for the Conservation of the Lesser Flamingo (*Phoeniconaias minor*) was commissioned to the IUCN-SSC/Wetlands International Flamingo Specialist Group (FSG) and Wildfowl & Wetlands Trust (WWT). It has been compiled by Brooks Childress, Chair of the FSG and Research Associate at WWT; Baz Hughes, Head of Species Conservation at WWT; and Szabolcs Nagy, Senior Biodiversity Officer at Wetlands International. The drafts of the plan went through rigorous consultations including comments from experts, governmental officials from the range states, CMS Scientific Council Members and the AEWA Technical Committee. The Action Plan follows the format for Single Species Action Plans approved by the AEWA 2nd Meeting of Parties in September 2002.

Executive summary

Although the most numerous of the world's flamingos, the Lesser Flamingo is classified "Near Threatened" in the 2008 IUCN Red List of Threatened Species, indicating that it is considered likely to qualify for a threatened category in the near future. The species is also listed in Columns A and B of the Agreement on the Conservation of African-Eurasian Migratory Waterbirds (AEWA) Action Plan, Appendix II of the Bonn Convention (CMS) and Appendix II of the CITES convention. Implicit in these agreements is the need for the production of a conservation action plan.

The Lesser Flamingo is an itinerant species adapted to respond to changes in local environmental conditions by moving among wetlands, and thus depends on a network of suitable sites. Four separate populations are recognised for conservation purposes, although it is assumed that some interchanges probably occur among them. The largest population, estimated to be 1.5 - 2.5 million individuals, occurs on the alkaline-saline lakes of the Great Rift Valley in East Africa, where aggregations of several hundred thousand birds regularly provide one of the world's most impressive wildlife spectacles. Smaller populations occur in the Rann of Kachchh in north-western India, estimated to be approximately 390,000 birds, in southern Africa, estimated to be 55,000 - 65,000 birds and in West Africa, estimated to be 15,000 - 25,000 birds. Declines have been suggested for much of Africa, but are difficult to clarify due to widescale movement within the continent.

The Lesser Flamingo occurs regularly in 30 countries from West Africa, across sub-Saharan Africa and along the SW Asian coast to South Asia, and occurs as a vagrant in 26 additional countries. However, its global population is concentrated in 12 primary range states. Because of its specialized diet of microscopic alkaline cyanobacteria ('blue-green algae'), the Lesser Flamingo is totally dependent on a habitat of shallow saline/alkaline lakes, pans, wetlands and coastal areas, and >95% of its non-breeding population is concentrated at just 73 sites in the 12 primary range states.

Confirmed regular breeding is confined to just five sites in four of these countries: Makgadikgadi Pans in Botswana, Etosha Pan in Namibia, Lake Natron in Tanzania, and Zinzuwada and Purabcheria salt pans in India. Breeding occurred at Lake Abijata in Ethiopia in 2005, producing approximately 3,000 chicks, and has also occurred in 2008 on a new artificial breeding island at Kamfers Dam in Kimberley, South Africa, producing approximately 9,000 chicks. However, it is not yet known whether these sites will become regular breeding sites. Other major breeding sites near Bela in the Great Rann of Kachchh in India and in Aftout es Sâheli in Mauritania are also suspected, but have yet to be documented.

The major threats to the survival of the Lesser Flamingo are the loss and/or the degradation of its specialised habitat at these key sites through altered hydrology and water quality, wetland pollution, extraction of salt and soda ash, particularly at its breeding sites, and the disruption of its few breeding colonies by other human activities. Other threats include disruption of nesting colonies by predators, particularly by the Marabou Stork (*Leptoptilos crumeniferus*), poisoning, disease, harvesting of eggs and live birds, human disturbance at non-breeding sites, predation, and competition for food and breeding sites.

Lake Natron in Tanzania is by far the most important breeding site for this species, as it is the only breeding site for the East African population that accounts for >75% of the species' global population. For this reason, the currently proposed soda extraction facility at this unprotected site represents a potentially serious threat to the survival of the entire species. Of the other confirmed regular breeding sites, only Etosha Pan and the two sites in India are officially protected.

The activities identified in this plan focus on measures to address these threats and fill current knowledge gaps. These measures include protecting the Lesser Flamingo and its habitats, appropriate management of key sites and increasing public awareness of the need for protecting the Lesser Flamingo and its habitats. This action plan is based on the AEWA International Single Species Action Plan format prepared by BirdLife International and provides a framework for the conservation of the Lesser Flamingo in all of its primary range states. The plan has been developed using internationally agreed standards including the monitoring and evaluation of implementation, linking threats, actions and measurable activities. Because the Lesser Flamingo is an itinerant species dependent on a network of sites in several countries, successful implementation of the plan will require effective international coordination of organisation and action.

The long-term goal of this plan is to upgrade the Lesser Flamingo from a "near-threatened" species to a species of "least concern" in the IUCN Red List of Threatened Species. In the short term, the aim is to maintain the species' current population and range, while the medium-term goal is to promote an increase in population size and range. Each country within the primary range of the Lesser Flamingo should be committed to the implementation of this plan, including the development of national Lesser Flamingo action plans and the establishment of national Lesser Flamingo working groups to facilitate implementation.

1. Biological assessment

General information	The Lesser Flamingo is an itinerant species adapted to respond to changes in local environmental conditions by moving, and thus depends on a network of suitable sites. Although the most numerous of the world's flamingos, it is classified "Near Threatened", nearly qualifying as threatened under criteria A3c: A population size reduction of ≥30%, projected or suspected to be met within the next 10 years or three generations, whichever is the longer (up to a maximum of 100 years), based on a decline in area of occupancy, extent of occurrence and/or quality of habitat. The species is also listed in Columns A and B of the Agreement on the Conservation of African-Eurasian Migratory Waterbirds (AEWA) Action Plan, Appendix II of the Bonn Convention (CMS) and Appendix II of the CITES convention.
Systematic Classification & Taxonomy	Phylum: *Chordata* Class: *Aves* Order: *Ciconiiformes* Family: *Phoenicopteridae* Genus: *Phoeniconaias* Species: *Phoeniconaias minor* (Geoffroy Saint-Hilaire, 1798) The taxonomic relationships of flamingos have been difficult to establish. Historically, they have been thought to be most closely related to Anseriformes, Charadriiformes or Ciconiiformes by different researchers. Recent DNA analyses have shown that flamingos are most closely related to the Podicipedidae and are divided into two clades based on their genetic similarities: one containing *Phoenicopterus ruber, Phoenicopterus roseus and Phoenicopterus chilensis*, with the other containing *Phoeniconaias minor, Phoenicoparrus andinus* and *Phoenicoparrus jamesi*.
Population development	Four separate populations are recognised for conservation purposes, although it is assumed that some interchange probably occurs among the populations. The largest population, estimated to be 1.5 - 2.5 million individuals, occurs on the alkaline-saline lakes of the Great Rift Valley in East Africa. Smaller populations occur in the Rann of Kachchh in north-western India, estimated to be approximately 390,000 birds, in southern Africa, estimated to be 55,000 - 65,000 birds, and in West Africa, estimated to be 15,000 - 25,000 birds. Declines have been suggested for much of Africa, but are difficult to clarify due to widescale movement within the continent. Increasing numbers of vagrant Lesser Flamingos are sighted each year in the Middle East and the Mediterranean region.
Geographical distribution	The Lesser Flamingo is regularly seen in 30 countries from West Africa, across sub-Saharan Africa and along the SW Asian coast to South Asia, and occurs as a vagrant in 26 additional countries and territories. However, its global population is concentrated in just 12 primary range states, each of which regularly holds >1% of the breeding or non-breeding Lesser Flamingos regularly found in the geographical region of which the country is part (*i.e.* West Africa, East Africa, southern Africa and South Asia). Confirmed regular breeding is confined to only five sites in four of these countries.

Table 1a. Geographical distribution of the Lesser Flamingo. Country names follow the official short names in English used by the International Organisation for Standardisation.

Primary range states (States regularly containing >1% of regional LF populations)			**Other range states** (LF regularly seen, but <1% of regional populations)	**Vagrant range states** (States where LF is a vagrant)
Country	**Regular Breeding**	**Non breeding**	**Non breeding**	**Non breeding**
Botswana	X	X	Angola	Afghanistan
Ethiopia	?	X	Burundi	Chad
Guinea		X	Cameroon	Comoros
Guinea-Bissau		X	Congo, The Democratic Republic of the (Br?)	Denmark
India	X	X	Djibouti	Egypt
Kenya		X	Eritrea	Ghana
Mauritania	?	X	Gabon	France
Namibia	X	X	Gambia	France-(Réunion)
Senegal		X	Lesotho	Iran, Islamic Republic of
South Africa	?	X	Madagascar	Israel
Tanzania, United Rep. of	X	X	Malawi	Italy
Uganda		X	Mozambique	Mauritius
			Pakistan	Morocco
			Sierra Leone	Niger
			Sudan	Nigeria
			Yemen	Oman
			Zambia	Rwanda
			Zimbabwe	Saudi Arabia
				São Tomé and Principe
				Somalia
				Spain
				Swaziland
				The Netherlands
				Turkey
				United Arab Em.
				Western Sahara

Sources: (1) UNEP-WCMC (2005). *Checklist of birds listed in the CITES Appendices and in EC Regulation 338/97*. 8th Edition. JNCC Reports, No. 381; (2) BirdLife International (2008) Species factsheet: *Phoeniconaias minor*. www.birdlife.org; (3) range state data.

Distribution throughout the annual cycle

Breeding periods are erratic, depending on the timing of seasonal rains, but most breeding occurs between September and November in South Asia and between November and February in eastern and southern Africa. Breeding in West Africa has not been confirmed. During breeding periods, if there has been sufficient rainfall and breeding conditions are suitable, Lesser Flamingos congregate at five well-known and regular breeding sites, frequently in large mixed breeding colonies with Greater Flamingos. When not breeding, the Lesser Flamingo occurs in virtually all sub-Saharan countries and from the Arabian Peninsula to India. It is an itinerant species with flocks constantly on the move between feeding sites, sites that are often in different countries and several hundred kilometres apart. These movements occur mostly at night.

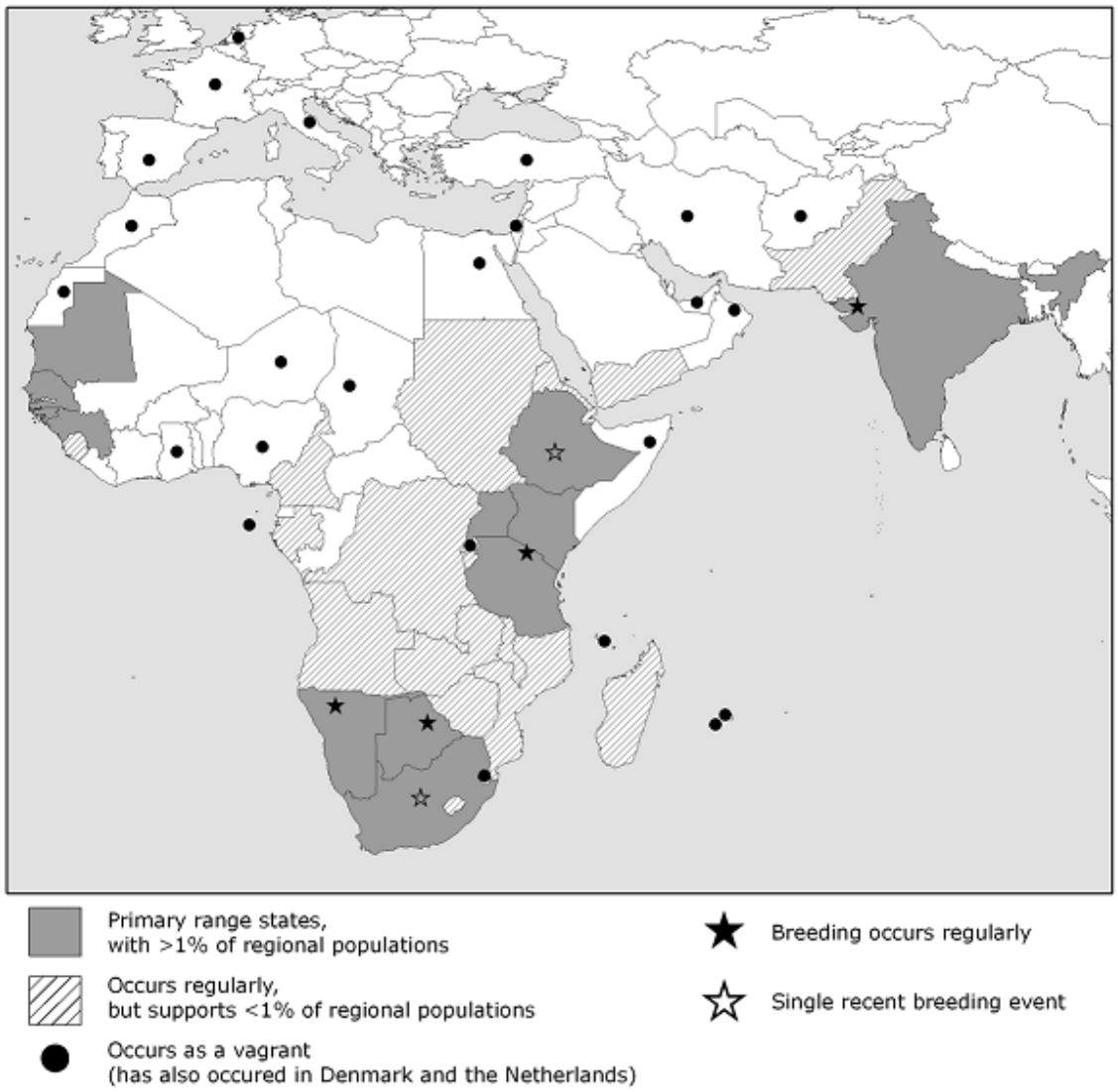

Figure 1. Lesser Flamingo distribution map. Primary range states (dark grey) regularly hold >1% of the breeding or non-breeding Lesser Flamingos regularly found in the geographical region of which the country is part (*i.e*. West Africa, East Africa, southern Africa and South Asia). Lesser Flamingos occur regularly in light grey striped states, but these states support <1% of the regional populations. Lesser Flamingos occur as vagrants in states with dots. Sources: Distribution: (1) UNEP-WCMC (2005). *Checklist of birds listed in the CITES Appendices and in EC Regulation 338/97*. 8th Edition. JNCC Reports, No. 381; (2) BirdLife International (2007) Species factsheet: *Phoeniconaias minor*. www.birdlife.org; (3) range state data. Breeding: Range country data.

Productivity & survival	Individual Lesser Flamingos do not breed annually, and their clutch size is one. Between 1953 and 1962, estimated mean fledging success in five major breeding attempts observed at lakes Natron and Magadi in East Africa was 41-43% (range: < 5% to 70%) of eggs laid. Most of the mortality occurred during the first three weeks from predation, nest desertion and getting entrapped in the mud surrounding the nesting area. Lesser Flamingos live at least 40 years in the wild and have an estimated generation length of 22-24 years. There is insufficient data to estimate annual mortality/survival.

<table>
<tr><td>Life history</td><td>Breeding: Believed to reach sexual maturity at 3-4 years of age. Breeds following seasonal rains that provide the flooding necessary to isolate remote breeding sites from terrestrial predators and the soft muddy material for nest building. Nests built from mud substrate; mean incubation: 28 days; fledging: ~70 days. Lesser Flamingos do not breed readily in captivity.</td><td>Feeding: Feed on species of microscopic cyanobacteria and benthic diatoms found only in alkaline lakes, salt pans and saline lagoons and estuaries. Feed primarily by swimming and filtering the algae and diatoms with a specialised bill that contains up to 10,000 microscopic lamellae.</td><td>Outside breeding season: In East Africa and India, they congregate in huge flocks on major feeding lakes. In southern Africa, they disperse among small wetlands.</td></tr>
<tr><td>Habitat requirements</td><td colspan="3">Lesser Flamingos depend primarily on shallow saline/alkaline lakes, pans, wetlands and coastal areas.</td></tr>
<tr><td></td><td colspan="2">Breeding habitat requirements:

• Inaccessible to terrestrial disturbance from humans or animal predators.

• Subject to seasonal flooding that is sufficiently shallow (and calm) to enable the construction of the traditional conical mud nests without them being washed away, but sufficiently deep and long-lasting to prohibit terrestrial predators from reaching the nesting colony.

• Within easy flying distance (i.e. 120-180 km) of a good feeding site for the parents.</td><td>Feeding habitat requirements:

• Water chemistry that enables growth of cyanobacteria and diatoms.

• Wet mud supporting surface growth of diatoms

• Several hours each day when the surface of the water is sufficiently calm to enable the flamingos to feed. If the surface of the water is not calm, they are unable to feed and are confined to the limited areas of wet mud.</td></tr>
</table>

2. Available key knowledge

The total non-breeding population in the primary range states was estimated by the workshop participants to range from approximately 865,000 to 2,640,000 (Annex 1a), with a mean of 1,752,500. Data quality is mostly good. The large range is the result of frequent large-scale movements of birds among sites and range states, resulting in low minimum counts and high maximum counts for individual sites.

Habitat use and food requirements are generally well known in countries with larger population concentrations (Annex 2). The species depends primarily on shallow saline/alkaline lakes, pans, wetlands and coastal areas. Generally, the birds breed on large shallow saline lakes and pans in areas that are inaccessible to terrestrial predators. At Kamfers Dam in South Africa, they bred in 2008 on an artificial island that is also inaccessible to terrestrial predators. Lesser Flamingos in East Africa and southern Africa feed primarily on microscopic cyanobacteria and benthic diatoms. Diets in West Africa and South Asia and southwest Asia are not well known but in South Asia include diatoms from the surface of tidal mud in Sewree Bay near Mumbai for part of each year.

The species is known to breed regularly in only five sites, two in southern Africa (Makgadikgadi Pans in Botswana and Etosha Pan in Namibia), one in East Africa (Lake Natron) and two in India (Zinzuwada and Purabcheria salt pans). Major breeding sites near Bela in the Great Rann of Kachchh in India and at Aftout es Sâheli in Mauritania are suspected, but have yet to be confirmed. Breeding occurred at Lake Abijata in Ethiopia in 2005, producing approximately 3,000 chicks, and has also occurred in 2008 on a new artificial breeding island at Kamfers Dam in Kimberley, South Africa, producing approximately 9,000 chicks. However, it is not yet known whether these sites will become regular breeding sites.

Lake Natron in Tanzania is by far the most important breeding site for this species, as it is the only breeding site for the East African population that accounts for >75% of the species' global population. For this reason, the currently proposed soda extraction facility at this unprotected site represents a potentially serious threat to the survival of the entire species. Of the other confirmed regular breeding sites, only Etosha Pan and the two sites in India are officially protected (Annexes 2 and 7).

3. Threats

The species experts assembled at the action plan workshop concluded that the most critical threat to the survival of the Lesser Flamingo (a factor causing or likely to cause very rapid declines >30% over 10 years or three generations) to be the degradation of its specialised breeding and feeding habitats through altered hydrology and water quality, wetland pollution, extraction of salt and soda ash, and the disruption of its few breeding colonies by human activities. Other threats include disruption of nesting colonies by predators, particularly by the Marabou Stork (*Leptoptilos crumeniferus*), poisoning, disease, harvesting of eggs and live birds, human disturbance at non-breeding sites, predation, and competition for food and breeding sites (Annex 3a). Threats of high importance (factors causing or likely to cause rapid declines (20-30% over 10 years or three generations) were determined to include poisoning (particularly by cyanobacteria toxins), diseases and the disruption of its few breeding colonies by human activities (particularly from nearby settlements). All other threats, including human disturbance of non-breeding sites, collision with man-made structures, predation, competition with other species for food and breeding sites, harvesting of eggs and live birds were perceived as being threats of local importance (factors causing or likely to cause negligible decline). Descriptions of the threats are in Annex 3b, while threat importance rankings at the species and country levels are in Annex 3c.

4. Treaties, legislation and policies relevant for management

The Lesser Flamingo is classified "Near Threatened" in the 2008 IUCN Red List of Threatened Species, indicating that it is considered likely to qualify for a threatened category in the near future. The following section briefly reviews the obligations of the range states (Annexes 4a & 4b) arising from the major international conventions and agreements. The species is also affected by various regional treaties, and national conservation legislation and policies.

4.1. International conventions and agreements

4.1.1. Convention on the Conservation of Migratory Species of Wild Animals (CMS). The Lesser Flamingo is listed in Appendix II of the Convention on the Conservation of Migratory Species (CMS). This appendix refers to migratory species that have an unfavourable conservation status or would benefit significantly from international co-operation organised by tailored agreements. The Convention encourages the Range States to conclude global or regional Agreements for the conservation and management of individual species or, more often, of a group of species listed on Appendix II.

4.1.2. The Agreement on the Conservation of African-Eurasian Migratory Waterbirds (AEWA). AEWA is a regional agreement negotiated and concluded in accordance with Article 4 of CMS. The Lesser Flamingo is listed in Annex II of this agreement, as well as Columns A and B of Table 1. Parties that are Range States of a migratory waterbird species listed in Column A shall endeavour:

a) to conserve and, where feasible and appropriate, restore those habitats of the species which are of importance in removing the species from danger of extinction;

b) to prevent, remove, compensate for, or minimize, as appropriate, the adverse effects of activities or obstacles that seriously impede or prevent the migration of the species; and

c) to the extent feasible and appropriate, to prevent, reduce or control factors that are endangering or are likely to further endanger the species, including strictly controlling the introduction of, or controlling or eliminating, already introduced exotic species.

4.1.3. Convention on International Trade in Endangered Species of Wild Flora and Fauna (CITES). The Lesser Flamingo is listed in Appendix II of the Convention on International Trade in Endangered Species of Wild Flora and Fauna (CITES). Appendix II refers to species that are not necessarily now threatened with extinction but that may become so unless trade is closely controlled. Trade in Lesser Flamingo specimens requires the prior grant and presentation of an export permit. An export permit shall only be granted when the following conditions have been met: (a) a Scientific Authority of the State of export has advised that such export will not be detrimental to the survival of that species; (b) the Management Authority of the State of export is satisfied that the specimen was not obtained in contravention of the laws of that State for the protection of fauna and flora; and (c) a Management Authority of the State of export is satisfied that any living specimen will be so prepared and shipped as to minimize the risk of injury, damage to health or cruel treatment.

4.1.4. Ramsar Convention on Wetlands. The Convention on Wetlands, signed in Ramsar, Iran, in 1971, is an intergovernmental treaty that provides the framework for the conservation and wise use of wetlands and their resources through local, regional and national actions and international cooperation, as a contribution towards achieving sustainable development throughout the world. It recognises the fundamental ecological functions of wetlands as regulators of water regimes and as habitats supporting a characteristic flora and fauna.

The Convention requires that each Contracting Party designate at least one suitable wetland within its territory for inclusion in a List of Wetlands of International Importance maintained by the Ramsar bureau. Wetlands should be selected for the List on account of their international significance in terms of ecology, botany, zoology, limnology or hydrology, particularly as habitat for waterfowl.

The Convention establishes guidelines for the formulation and implementation of national wetland management and conservation policies, including establishing inventories of wetlands, determining priorities for each site, requiring impact studies for all projects that may affect wetlands, regulating the use of wild flora and fauna to avoid over-exploitation, and drafting legislation that encourages wetland conservation, taking into account international responsibilities for the conservation, management and wise use of migratory stocks of waterfowl.

4.2. National institutions, laws and policies affecting bird conservation

A summary of the institutional, legislative and policy framework that relates to the conservation of birds and their habitats in the range states is beyond the scope of this action plan, and is more appropriately included in national Lesser Flamingo action plans. However, a summary of the conservation and protection status of the Lesser Flamingo in the primary range states is provided in Annex 5a, and is discussed below.

4.3 National Lesser Flamingo protection and conservation status

The Lesser Flamingo is a protected species and it is illegal to deliberately kill them, destroy their nests or harvest their eggs in all of the primary range states for which we have been able to collect such data (Annex 5a). In most cases, this protection derives from national legislation, although in South Africa it is included in provincial legislation. The penalties for these acts vary among the countries from a reprimand by park wardens to the potential for heavy fines and jail sentences (Annex 5a). Only in Tanzania is the trade in live Lesser Flamingos allowed.

In all primary range states, the attitude of the public and conservation authorities toward the Lesser Flamingo is positive, although it is not well known among the public in those countries where it occurs in isolated inhospitable places far from civilisation (Annexes 5b & 6). Conservation authorities in all primary range states consider the Lesser Flamingo a species of special concern that needs to be protected, and several countries have established Ramsar sites or protected areas specifically for the Lesser Flamingo. In those countries where the species gathers in flocks of hundreds of thousands, providing one of the most spectacular wildlife spectacles in the world, the conservation authorities are also conscious of the special tourist generating potential of the species.

5. Framework for action

The aim of this action plan is to improve the conservation status of the Lesser Flamingo from a "Near Threatened" species to a species of "Least Concern" globally and in each of its four regional populations – South Asia, East Africa, southern Africa and West Africa – by stabilising the size and distribution of the regional populations at current levels by 2020.

This aim will be achieved by:

1. Ensuring that all key breeding and feeding sites are designated as protected areas, Ramsar sites, BirdLife IBAs, and where appropriate, World Heritage Sites.

2. Ensuring that all key breeding and feeding sites are protected and maintained in good ecological condition by:

- Identifying the management needs of Lesser Flamingo habitat at key sites and implementing necessary management actions,
- Maintaining, and restoring where necessary, favourable hydrological conditions and water quality.

3. Ensuring that breeding colonies are not disturbed by:

- Preventing disturbance (especially by low flying aircraft) through legislation, planning, zoning, and through enforcement of these rules as appropriate,
- Raising awareness about the conservation needs of the species at national and local level,
- Helping local communities in India and Mauritania to develop alternative livelihood practices to reduce disturbance.

4. Reducing the effects of poisoning, particularly from cyanobacterial toxins, botulinus toxins, agricultural chemicals, industrial and domestic wastes, and infectious diseases, particularly avian influenza, avian cholera, salmonellosis and pseudomoniasis by:

- Establishing an integrated flamingo health surveillance programme to assess the effect of mass die-offs on the Lesser Flamingo population in East Africa,
- Ensuring that pollution guidelines and legislation are developed and enforced,
- Ensuring that pollution guidelines and legislation at all key sites reflect the sensitivity of the species, particularly to industrial chemicals and heavy metals,
- Raising awareness among decision makers and industry about the risk of pollution to Lesser Flamingo.

5. Ensuring that harvesting, particularly egg harvesting in India and the trade in live specimens in other range states has no effect on Lesser Flamingo populations by:

- Maintaining the ban on Lesser Flamingo trade where it is already in place,
- Regulating and enforcing stringent licensing mechanisms at the national level. The licensing process should be based on an assessment of the effect of trade, in combination with other factors, on the regional populations.

6. Ensuring that collisions with man-made structures, particularly power lines, telephone lines, fences, light masts and guide wires are minimised.

7. Ensuring that human disturbance, particularly disturbance from boating, fishing, hunting other species, tourists, planes/helicopters, birdwatchers, photographers and military patrol/exercises, at non-breeding sites is minimised.

The expected results and means of verification are shown in Table 2, while the activities by country are in Table 3, and the priorities by key site are shown in Annexes 8a – 8d.

Table 2. Expected results and means of verification

	The Action Plan	Indicators of success	Sources of verification	Assumptions
Aim	Remove the Lesser Flamingo from the IUCN Red List of Threatened Species globally and in each of its four regional populations by 2020	Red List categorisation as a species of Least Concern	Application of the IUCN Red List criteria	
Objective	Stabilise the size and distribution of regional and global non-breeding populations at 2009 levels by 2012	Population and distribution has been stabilised at 2009 levels by 2012	Coordinated annual African/Asian Waterbird Census surveys and tri-annual aerial surveys	1. An accurate method of counting Lesser Flamingos from the air can be developed for 2009 2. Tri-annual international counts can be co-ordinated and financed
Results to be achieved by:	1. Ensuring that all key breeding and feeding sites are maintained in good ecological condition	Water levels, salinity and prey (microbacteria and diatom) levels at key sites are maintained at levels that are ideal for Lesser Flamingos	Annual independent ecological surveys National government reports to CMS, the Bern, Biodiversity and Ramsar Conventions, and AEWA International and national Lesser Flamingo working group reports Periodic independent assessments carried out by national BirdLife partners as part of their IBA Monitoring Programme.	These indicators can be controlled, or influenced, by national conservation authorities
	2. Ensuring that breeding colonies are not disturbed by human activity	Five-year mean level of breeding success (≥50%)	Fortnightly aerial surveys of breeding sites during the breeding season	Aerial surveys will not cause disturbance to the breeding birds
	3. Reducing the effects on regional populations of toxicological and/or infectious diseases	Mass die-offs in the East African regional population eliminated	International and national Lesser Flamingo working group reports	Events can be controlled, or influenced, by national conservation authorities
	4. Ensuring that harvesting of eggs and trade in live specimens has no effect on the regional Lesser Flamingo populations	Population viability analysis (PVA) confirms that harvest is within the safe limits of exploitation	PVA, and desk and field surveys estimating annual take	1. National legislation on egg harvesting is passed and enforced. 2. CITES recommendations on Lesser Flamingo trade are properly implemented

	The Action Plan	Indicators of success	Sources of verification	Assumptions
	5. Minimising collisions with man-made structures	Number of reported LF mortalities due to collision with man-made structures declined to 25 % of the 2009 level	Reports by national Lesser Flamingo working groups	Effective EIA procedures are in place in all relevant countries
	6. Minimising human disturbance at non-breeding sites	No reports of human disturbance at non-breeding sites	Reports by national Lesser Flamingo working groups	Effective site management is in place for all sites
	7. Filling knowledge gaps	No substantial knowledge gaps by 2012	Monitoring reports and research reports in scientific publications	Funding for necessary research can be obtained

Table 3. Activities by country

Results	National activities	Priority	Time scale	Responsible organisations
Ensure that all key breeding and feeding sites are maintained in good ecological condition	Designate key breeding and feeding sites as protected areas, Ramsar sites, BirdLife IBAs, and where appropriate, World Heritage Sites.	Critical	Short	National conservation authorities
	Identify baseline conditions of habitat suitability for Lesser Flamingos and ensure that key sites are maintained in favourable ecological status	High	Medium	Governmental and non-government conservation organisations
	Conduct environmental impact assessments and audits of existing operations at all key sites	Medium	Medium	National conservation authorities
	Identify management needs of Lesser Flamingo habitat at key sites and implement necessary management actions	Medium	Medium	National conservation authorities
	Develop and implement integrated (catchments/coastal zone) management plans for the key sites	Medium	Medium	National conservation authorities
	Maintain, or restore where necessary, favourable hydrological conditions and water quality for the species	Medium	Long	National conservation authorities
	Enhance the habitat at suitable sites (e.g. creation of breeding islands, rehabilitate/create wetlands) where necessary	Low	Long	National conservation authorities
Ensure that breeding colonies are not disturbed	Prevent human disturbance (especially extraction of soda ash) through legislation, planning, zoning and through enforcement of these rules as appropriate	Critical	Short	National conservation and local government authorities
	Raise awareness about the conservation needs of the species at national and local level	Medium	Medium	National conservation and local government authorities
	Help local communities in India and Mauritania to develop alternative livelihood practices to reduce disturbance	Medium	Long	National conservation authorities

Reduce the effects on regional populations of poisoning and/or diseases	Establish an integrated flamingo health surveillance programme to assess the effect of mass die-offs on Lesser Flamingo populations	Medium	Ongoing	Governmental and non-government conservation organisations
	Raise awareness amongst decision makers and industry about the risk of pollution to the Lesser Flamingo	Medium	Medium	National conservation authorities
	Ensure that pollution guidelines/legislation at key sites reflect the sensitivity of the species	Medium	Medium	National conservation and local government authorities
	Ensure that pollution guidelines/legislation are developed and enforced, especially with reference to industrial chemicals and heavy metals	Medium	Immediate	National conservation and local government authorities
Ensure that specimen and egg harvesting have no negative effect on regional Lesser Flamingo populations	Maintain ban on trade in Lesser Flamingo specimens, body parts and eggs where it is already in place	High	Ongoing	National conservation authorities
	Regulate and enforce a stringent trade licensing mechanism at the national level, based on an assessment of the effect of trade on regional Lesser Flamingo populations, in combination with other factors.	High	Ongoing	National conservation authorities
Ensure that collisions with man-made structures are minimised	Avoid crossing important Lesser Flamingo habitats and flyways when routing new power lines, telephone lines, fences, light masts and guide wires	Medium	Short	National environmental and conservation authorities.
Minimise human disturbance at non-breeding sites	Prevent human disturbance (especially low flying aircraft) through legislation, planning, zoning and through enforcement of these rules as appropriate	High	Short	National conservation and local government authorities
	Raise awareness about the conservation needs of the species at national and local level	Medium	Medium	National conservation and local government authorities
	Help local communities in India and Mauritania to develop alternative livelihood practices to reduce disturbance	Medium	Long	National conservation and local government authorities

Fill population numbers and distribution knowledge gaps	Determine population sizes and trends by developing a monitoring strategy and protocols (numbers, distribution, key sites), conducting regular coordinated aerial population surveys at non-breeding sites, at least tri-annually, monitoring breeding populations and breeding success annually at all primary breeding sites, and identifying potentially unknown breeding and non-breeding sites	High	Ongoing	Government and non-government conservation organisations, scientific institutions
	Determine population delineation and movements by conducting satellite tracking and ringing studies to determine movements of individuals between lakes, interchange and possible gene flow between populations, site usage, and relations with food availability and quality	High	Ongoing	Government and non-government conservation organisations, scientific institutions
	Establish a health surveillance strategy and conduct an integrated flamingo health surveillance programme to assess the effect of mass die-offs on Lesser Flamingo populations	Medium	Ongoing	Government and non-government conservation organisations, scientific institutions
Fill demographic knowledge gaps	Systematically collect data on breeding success and recruitment, including factors influencing fluctuations in breeding populations, frequency of breeding by individuals, age of first breeding, reasons for breeding failure, the role of practice nest building, survival rates, population structure, plumage development, moult strategy (timing and location), relationship between nuptial display and start of breeding	Medium	Medium	Government and non-government conservation organisations, scientific institutions
Fill habitat requirement knowledge gaps	Systematically collect data on breeding habitat requirements, including the role of rainfall in determining breeding success	High	Medium	Government and non-government conservation organisations, scientific institutions
	Systematically collect data on feeding habitat requirements, including daily food requirements, food quality at key sites, carrying capacity of key sites, differences in freshwater requirements between East Africa and southern Africa	High	Medium	Government and non-government conservation organisations, scientific institutions
	Understanding catchment processes	Medium	Medium	Government and non-government conservation organisations, scientific institutions
Fill disease and poison threats knowledge gaps	Systematically collect data on the role of diseases and poisons in population regulation, including the effects of infectious and non-infectious diseases	High	Ongoing	Government and non-government conservation organisations, scientific institutions
	Model long-term effects of climate change and diseases	High	Ongoing	Government and non-government conservation organisations, scientific institutions
	Evaluate the relative importance of different threats	Medium	Short	Government and non-government conservation organisations, scientific institutions

Fill genetics knowledge gaps	Systematically collect data on the genetic relatedness within regional populations and genetic exchange between regional populations in order to detect genetic bottlenecks which might be dangerous for this species	Medium	Medium	Scientific institutions

Fill Lesser Flamingo value knowledge gaps	Understand the cultural importance of Lesser Flamingos from South Africa to India	Medium	Ongoing	Government and non-government conservation organisations, scientific institutions
	Calculate the economic value of Lesser Flamingos to nations and local communities	Medium	Ongoing	Government and non-government conservation organisations, scientific institutions

Fill operational knowledge gaps	Assemble a Lesser Flamingo bibliography	Medium	Ongoing	Government and non-government conservation organisations, scientific institutions
	Assemble a database of funding sources	Medium	Ongoing	Government and non-government conservation organisations, scientific institutions

Key to priority ratings:

Critical: a Result that is needed to prevent a large decline in the population, which could lead to extinction.
High: a Result that is needed to prevent a decline of more than 20% of the population in 20 years or less.
Medium: a Result that is needed to prevent a decline of less than 20% of the population in 20 years or less.
Low: a Result that is needed to prevent local population declines or which is likely to have only a small impact on the population across the range.

Key to time scale criteria:

Short: completed within the next 1-3 years
Medium: completed within the next 1-5 years
Long: completed within the next 1-10 years

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Annex 1a. Non-breeding population estimates in primary range states 2003-2007

National non-breeding population figures are based on counts during the five-year period 2003-07. They represent counts in different years of the number of birds at different lists of sites at different times of the year and reflect not only these variations, but also the frequent movement of this species among sites.

	Non-breeding total - min	Non-breeding total - max	Trend	Data Quality	Baseline Population
Botswana	18	412	F	GO	None
Ethiopia	3,269	24,021	F	ME	243,000 (1992/93)
Guinea	11,125	13,000	F	GO	None
Guinea-Bissau	158	2,000	F	GO	None
India	17,045	411,355	F	ME	388,028 (?)
Kenya	279,620	1,452,513	F	GO	1,900,000
Mauritania	160	4,800	F	GO	None
Namibia	5,468	55,995	F	GO	None
Senegal	16	4,361	F	GO	None
South Africa	1,794	55,550	F	GE	None
Tanzania	549,327	633,215	F	GO	None
Uganda	44	17,085	F	GO	62,790 (1999)
Totals	868,044	2,674,307			

Trends:
F = fluctuating

Data Quality:
GO = Good (Observed) based on reliable or representative quantitative data derived from complete counts or comprehensive measurements.
GE = Good (Estimated) based on reliable or representative quantitative data derived from sampling or interpolation.
ME = Medium (Estimated) based on incomplete quantitative data derived from sampling or interpolation.
P = Poor/suspected not based on quantitative data, but reflects 'best guess' derived from circumstantial evidence.
U = Unknown no information on quality available.

Annex 1b. Non-breeding population estimates in other range states 2001-2007

National non-breeding population figures are based on counts during the past five years. They represent counts in different years of the number of birds at different lists of sites at different times of the year and reflect not only these variations, but also the frequent movement of this species among sites. Blank spaces indicate no data available.

	Non-breeding total - min	Non-breeding total - max	Trend	Data Quality	Baseline Population
Angola	150	390	F	GO	none
Burundi	300	300	F	GO	none
Cameroon	n/a	n/a	n/a	n/a	n/a
Congo, The Democratic Republic of the (br?)	n/a	n/a	n/a	n/a	n/a
Djibouti	3,500	8,000	F	P	none
Eritrea	2	5	F	GO	none
Gabon	n/a	n/a	n/a	n/a	n/a
Gambia	n/a	n/a	n/a	n/a	n/a
Madagascar	263	3,849	F	ME	none
Malawi	40	130	F	GO	none
Mozambique	15	300	F	GO	none
Pakistan	270	560	F	GO	4,500 (1991)
Sierra Leone	50	60	F	GO	none
Sudan	2	20	F	n/a	none
Yemen	1,000	1,000	F	GO	9,200, Aden Wetlands 1996
Zimbabwe	2	28	F	GO	none

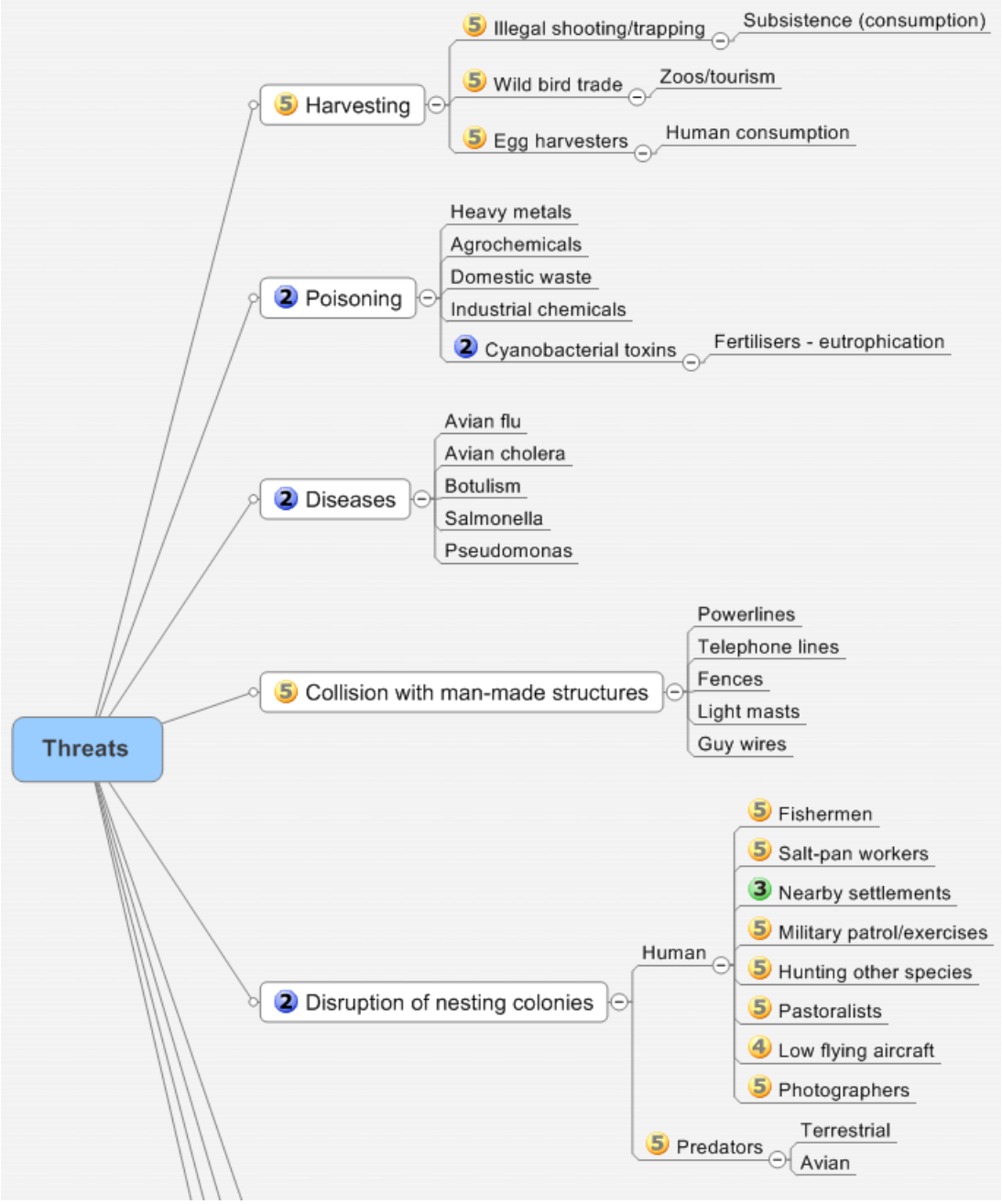
Trends:
F = fluctuating

Data Quality:
GO = Good (Observed) based on reliable or representative quantitative data derived from complete counts or comprehensive measurements.
GE = Good (Estimated) based on reliable or representative quantitative data derived from sampling or interpolation.
ME = Medium (Estimated) based on incomplete quantitative data derived from sampling or interpolation.
P = Poor/suspected not based on quantitative data, but reflects 'best guess' derived from circumstantial evidence.
U = Unknown no information on quality available.

Annex 2. Knowledge of habitat, diet, and occurrence of the Lesser Flamingo in Protected Areas, BirdLife Important Bird Areas and Ramsar sites in primary range states. Protected areas include national and regional parks and reserves, and private reserves.

	Habitat and diet knowledge		Site protection status		
Country	**Habitat use**	**Diet**	**Proportion of national population in protected areas**	**Proportion of national population in IBAs**	**Proportion of national population in Ramsar sites**
Botswana	*Breeding – Sua Pan in Makgadikgadi Pans* *Non-breeding – dispersal to small pans and wetlands throughout southern Africa*	*Cyanobacteria and benthic diatoms*	*Breeding: 0%* *Non-breeding: 0%-75%*	*Breeding: 100% (BW005)* *Non-breeding: 0%-40%*	*Breeding: 0%* *Non-breeding: 0%*
Ethiopia	*Non-breeding – Intertidal mudflats*	*No data available*	*18%-38%*	*100%*	*0%*
Guinea	*Non-breeding*	*No data available*	*0%*	*100%*	*100%*
Guinea-Bissau	*Non-breeding*	*No data available*	*>75%*	*>90%*	*<20%*
India	*Breeding - Zinzuwada Salt Pan and Purabcheria Salt Pan in Wild Ass Wildlife Sanctuary* *Non-breeding – dispersal to small pans and coastal wetlands*	*No data available*	*Breeding: 100%* *Non-breeding:4%-5%*	*Breeding: 100% (IN097)* *Non-breeding: 16%-38%*	*Breeding: 0%* *Non-breeding: 4%*
Kenya	*Non-breeding*	*Cyanobacteria and benthic diatoms*	*93%-100%*	*93%-100%*	*93%-100%*
Mauritania	*Non-breeding*	*No data available*	*2%-100%*	*100%*	*100%*
Namibia	*Breeding – Etosha Pan* *Non-breeding – dispersal primarily to coastal wetlands, particularly Walvis Bay & Sandwich Harbour*	*Benthic diatoms*	*Breeding: 100%* *Non-breeding: 40%*	*Breeding: 100% (NA004)* *Non-breeding: 97%-99%*	*Breeding: 100%* *Non-breeding:97%-99%*
Senegal	*Non-breeding*	*No data available*	*>90%*	*>90%*	*100%*
South Africa	*Non-breeding*	*No data available*	*Non-breeding: 2%-59%*	*Non-breeding: 78-100%*	*Non-breeding: 2%-59%*
Tanzania, United Republic of	*Breeding – Lake Natron* *Non-breeding – dispersal to saline lakes throughout East Africa*	*Cyanobacteria and benthic diatoms*	*Breeding: 0%* *Non-breeding: 4%-94%*	*Breeding: 100% (TZ031)* *Non-breeding: 94-100%*	*Breeding: 100%* *Non-breeding: 0%-16%*
Uganda	*Non-breeding –dispersal to saline crater lakes of South-western part of the country*	*No data available*	*Non-breeding:97-100% (Park & Reserve) 0-3% (Wildlife Sanctuary)*	*Non-breeding: 100%*	*Non-breeding:0%*

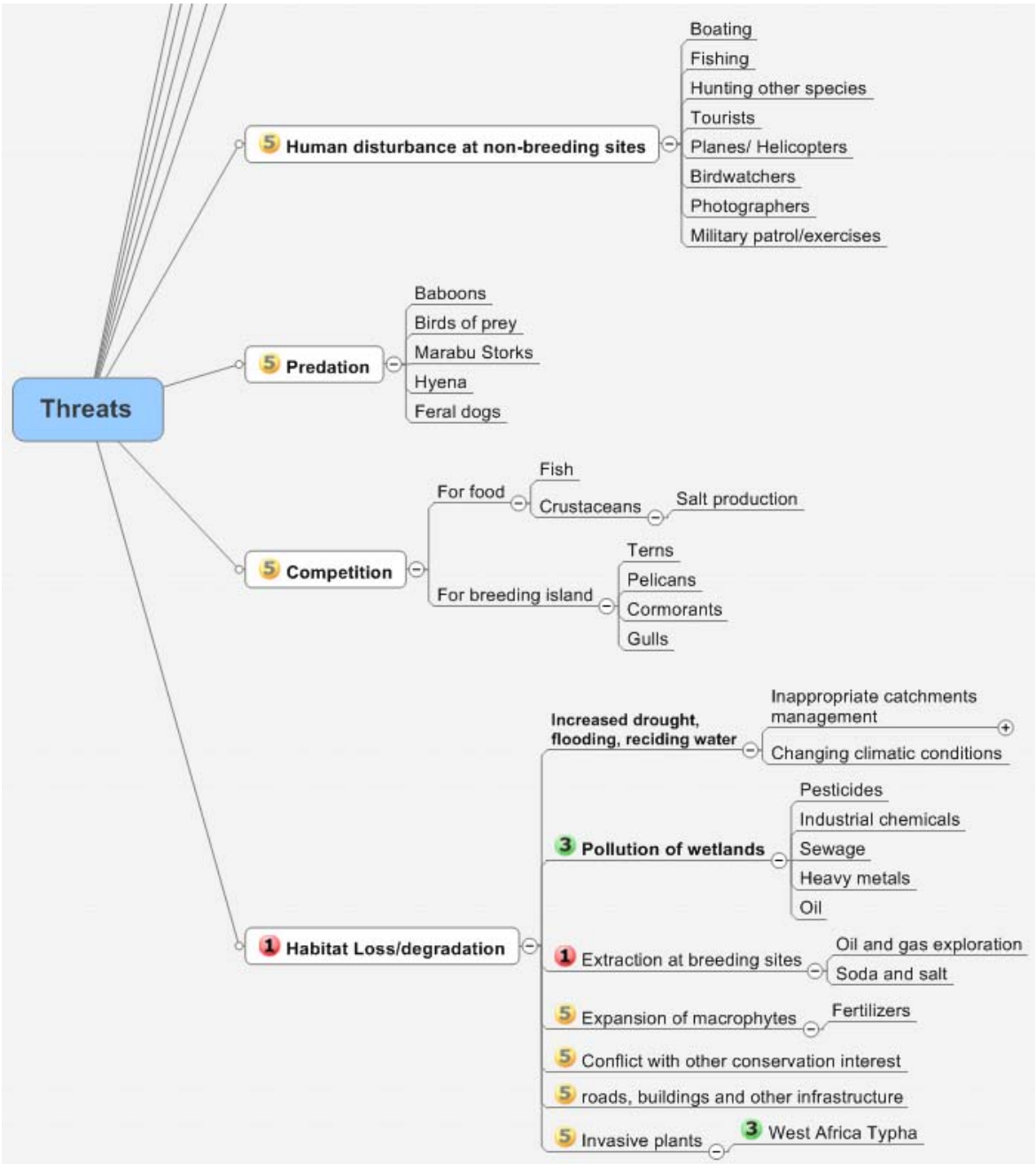
Annex 3a1. Primary sub-threats. Threat priority tree for the Lesser Flamingo produced by the range state delegates to the action plan workshop, Nairobi, Kenya, 25-29 September 2006. Numbers 1-5 represent the perceived seriousness of the threat; see key below. '+' means there is additional detail on the following sheet.



Key to ranks:

1: Critical: a factor causing or likely to cause very rapid declines (>30% over 10 years);
2: High: a factor causing or likely to cause rapid declines (20-30% over 10 years);
3: Medium: a factor causing or likely to cause relatively slow, but significant, declines (10-20% over 10 years);
4: Low: a factor causing or likely to cause fluctuations;
5: Local: a factor causing or likely to cause negligible declines;
?: Unknown: a factor that is likely to affect the species but it is unknown to what extent

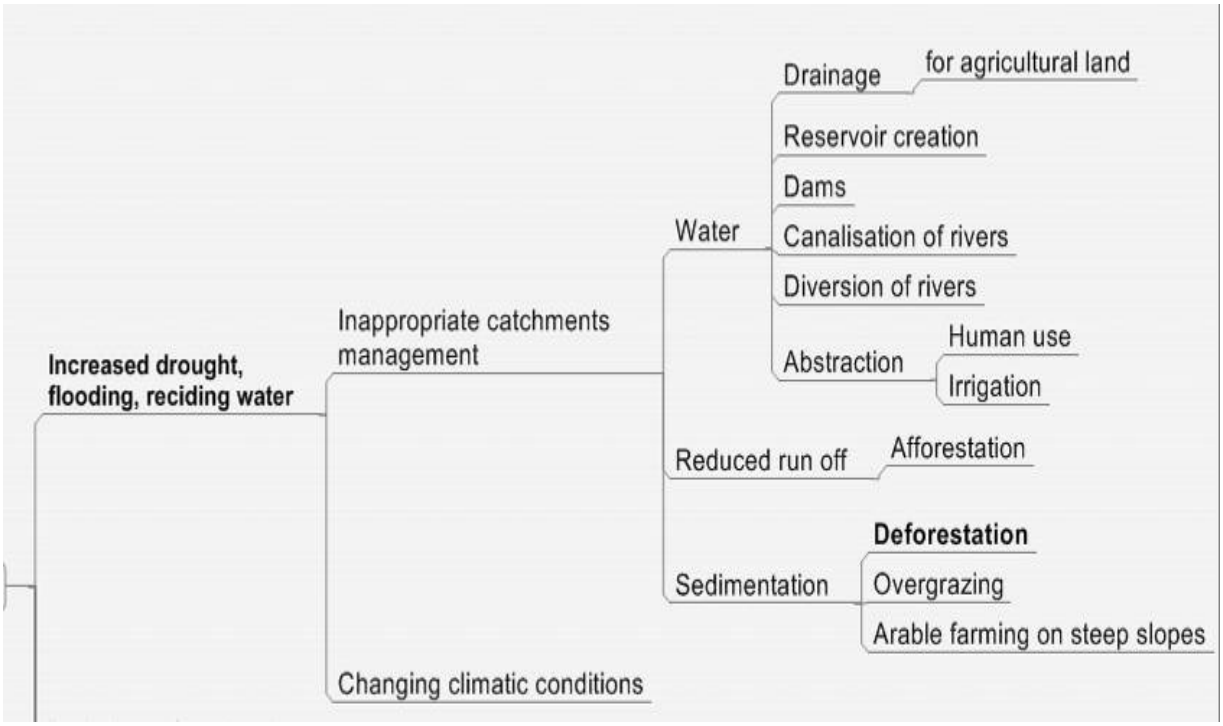
Annex 3a2 Primary sub-threats. Threat priority tree for the Lesser Flamingo produced by the range state delegates to the action plan workshop, Nairobi, Kenya, 25-29 September 2006. Numbers 1-5 represent the perceived seriousness of the threat; see key below. '+' means there is additional detail on the following sheet.



Key to ranks:

1: Critical: a factor causing or likely to cause very rapid declines (>30% over 10 years);
2: High: a factor causing or likely to cause rapid declines (20-30% over 10 years);
3: Medium: a factor causing or likely to cause relatively slow, but significant, declines (10-20% over 10 years);
4: Low: a factor causing or likely to cause fluctuations;
5: Local: a factor causing or likely to cause negligible declines;
?: Unknown: a factor that is likely to affect the species but it is unknown to what extent

Annex 3a3 Primary sub-threats. Threat priority tree for the Lesser Flamingo produced by the range state delegates to the action plan workshop, Nairobi, Kenya, 25-29 September 2006.



Annex 3b. Threat descriptions

3b.1. Habitat loss and/or degradation *Importance: Critical*

The ecology of the Lesser Flamingo is highly specialised. Its diet is limited to microscopic cyanobacteria and benthic diatoms that occur only in saline/alkaline lakes, salt pans and coastal lagoons, and the species is known to breed in only six locations throughout its vast range from Ethiopia to South Africa and from West Africa to India (Figure 1). The species is not only dependent on a specialised habitat, but because it is adapted to respond to changes in environmental conditions by moving among sites regularly, it is dependent on a network of such sites.

3b.1.1. Altered hydrology and/or water quality *Importance: Critical*

The Lesser Flamingo is sensitive to changes in water levels and quality. Cyanobacteria, its primary food, require a certain range of salinity to reproduce in sufficient quantities to feed large numbers of Lesser Flamingos. Changes in the abundance of cyanobacteria can have a substantial effect on the Lesser Flamingo population at a site. Water levels are also critical to successful breeding. If the level is too high, the birds are unable to build their nests. If it is too low, terrestrial predators are able to reach the nests and destroy the breeding attempt. If the water level drops prematurely after the eggs are laid, but before the chicks are ambulatory, terrestrial predators are able to reach the colony and destroy the breeding attempt by feeding on the eggs and chicks.

Changes in water and salinity levels can occur either from natural causes (*e.g.* from flooding due to heavy rainfall or evaporation due to prolonged drought), or from man-made causes including extraction of soda ash, sewage disposal, increased flooding and sedimentation due to deforestation, over-grazing or an increase in arable farming on steep slopes in the catchment, or reduced inflows and water levels due to drainage of land for agricultural or roads, buildings and other infrastructure, creation of dams and reservoirs, canalisation of rivers, diversion of rivers, abstraction from feeder streams and rivers for irrigation and drinking water, and reforestation.

3b.1.2. Wetland pollution *Importance: Medium*

Pollution of the feeding lakes, pans and coastal areas may cause large scale illness and death. Large-scale die-offs, each involving tens of thousands of Lesser Flamingos and attributed variously to pollution by industrial heavy metals and pesticides, have occurred on feeding lakes in Kenya and Tanzania. Pollution due to pesticides and industrial heavy metals is a problem also in Botswana.

3b.1.3. Extraction of salt and soda ash *Importance: High*

The saline lakes and pans traditionally have been important sources of salt for human use. Extraction methods vary from small local evaporation projects to large commercial operations run by international corporations often requiring their own power plants, roads and employee villages. While the flamingos can live with most small local projects, the large commercial operations can have devastating effects, depending on their size, location, methods and hours of operation.

3b.1.4. Invasive plants *Importance: Local*

Invasive fresh-water plants, particularly *Typha* in West Africa and macrophytes elsewhere may reduce the shallow littoral area available for Lesser Flamingo feeding. In the lower Senegal delta, both Greater and Lesser Flamingos are found in 'non-saline lakes. These lakes are linked to an estuarine hydrology, so their salt levels fluctuate. The water in these lakes is essentially brackish, sometimes fairly fresh, sometimes fairly salty depending on rains, tides etc. However, dams and canalisation have reduced the inflow of salt water to many areas, so many of the lakes have become more fresh water than brackish or saline. This has resulted in a massive growth of *Typha*. More recently, some counter-balance hydrological improvements have been initiated, which have resulted in some measure of restoration of former hydrological systems. However, the *Typha*, once established, is difficult to eradicate, and cannot simply be removed by periodical flooding with salty water.

3b.1.5. Building roads, buildings and other infrastructure *Importance: Local*

The disturbance caused by the building of roads, buildings and other infrastructure projects near a Lesser Flamingo feeding or breeding site, and the resulting long-term increase in human activity in the area may cause the abandonment of the site.

3b.2. Disruption of nesting colonies by human activities *Importance: Important*

Individual Lesser Flamingos are believed to breed only once every several years when conditions are suitable, and they are very sensitive to disturbance when nesting. The loss of a season's breeding attempt at one or more of the few breeding sites can have a major effect on the sustainability of the entire population. Major repeated disturbances have been known to cause the birds to abandon their breeding colony *en masse*. Even minor disturbances can cause large scale egg loss if incubating birds are frightened into leaving their nests too quickly, knocking their eggs out of the nests. They may or may not lay a second clutch. The most common causes of human disruption, all of which can cause a nesting colony to abandon their breeding attempt, and their level of importance are:

3b.2.1. Disruption by inhabitants of nearby settlements *Importance: Medium*

If human settlements are allowed to be built or expanded near a Lesser Flamingo nesting site, the activity surrounding the settlement could cause the birds to either not breed at all, or to abandon their breeding effort.

3b.2.2. Disruption by low-flying aircraft *Importance: Low*

Often private pilots are asked by tourists and professional photographers to fly low over breeding flamingos to make them fly so that they can get photographs of masses of flying flamingos. This not only causes the scared birds to leap off their nests quickly, flipping the eggs out of the nests, but can also cause the birds to abandon their breeding effort for the season.

3b.2.3. Disruption by fishermen *Importance: Local*

If Lesser Flamingos breed on an island site that is surrounded by shallow waters inhabited by fish, the activity of fishermen near the nesting colony can cause the birds to abandon their nesting effort.

3b.2.4. Disruption by salt pan workers *Importance: Local*

If Lesser Flamingos breed in an area that is near a local salt extraction project, repeated disturbance by the salt pan workers can cause the flamingos to abandon their breeding.

3b.2.5. Disruption by military exercises *Importance: Local*

Military patrols and exercises near a flamingo nesting site can also cause the birds to abandon their breeding.

3b.2.6. Disruption by the hunting of other species *Importance: Local*

Even though the flamingos themselves are not being hunted, the disturbance caused by the hunting of other species near the nesting site is likely to cause the flamingos to abandon their breeding.

3b.2.7. Disturbance by pastoralists *Importance: Local*

Shepherds herding their flocks of cattle, sheep or goats can cause sufficient disturbance to cause the flamingos to abandon their nesting efforts.

3b.3. Disruption of nesting colonies by predators *Importance: Local*

3b.3.1. Disruption by terrestrial predators *Importance: Local*

Nesting colonies are not often disrupted by terrestrial predators, unless the surrounding water level has dropped sufficiently to allow the predators to reach the colony. Feral dogs, hyenas, jackals and mongooses are typical of the terrestrial predators that will destroy a nesting colony if allowed to reach it.

3b.3.2. Disruption by avian predators *Importance:High*

Avian predators (birds of prey) include Marabou Stork, Egyptian Vulture, Lappet-faced Vulture, Steppe Eagle and African Fish Eagle, all of which can cause the abandonment of a nesting colony and destruction of the newly-hatched chicks.

3b.4. Toxicological Diseases *Importance: High*

Direct and indirect poisoning of Lesser Flamingos through the introduction of heavy metals, agrochemicals, domestic waste and industrial chemicals into the areas where they feed, or through cyanobacterial toxins and/or botulinus toxins may cause large scale illness and death. Large-scale die-offs, each involving tens of thousands of Lesser Flamingos and attributed variously to ingestion of industrial heavy metals, pesticides and cyanobacterial toxins, have occurred on feeding lakes in Kenya and Tanzania. Poisoning due to pesticides and industrial heavy metals is a problem also in Botswana.

3b.5. Infectious Diseases *Importance: High*

Diseases such as avian influenza, avian tuberculosis, avian cholera, salmonellosis and pseudomoniasis, might contribute to large scale die-offs among Lesser Flamingos. In the die-offs during the past 30 years at feeding lakes in Kenya and Tanzania, several of these diseases have been singled out as having contributed to the deaths.

3b.6. Harvesting *Importance: Local*

3b.6.1. Illegal shooting for subsistence *Importance: Local*

The effect of this activity is largely unknown, although it apparently occurs at a low level in Botswana.

3b.6.2. Wild bird trade *Importance: Local*

Officially, there has been a steady decline recently in the number of Lesser Flamingos taken from the wild, from approximately 2,000 in the year 2000 to 700 in 2003, the latest year for which CITES statistics are available. Almost all of the Lesser Flamingos taken from the wild are taken from Tanzania.

3b.6.3. Egg harvesting for human consumption *Importance: Local*

Egg harvesting for human consumption can be a problem locally in those areas where the breeding site is accessible to local residents for whom the relatively large Lesser Flamingo eggs provide nutritious meals at no cost. It is particularly a problem at the Purabcheria breeding site in the Little Rann of Kachchh in India, where this activity is the only reason for the repeated breeding failure at this site.

3b.7. Human disturbance at non-breeding sites *Importance: Local*

Lesser Flamingos utilise two types of sites: breeding sites, and non-breeding sites that are used for feeding and roosting. Because Lesser Flamingos depend on a network of non-breeding sites and move readily among sites depending on local environmental conditions, human disturbance (*e.g.* from boating, fishing, hunting other species, tourists, aeroplanes, bird watchers, photographers or military exercises) at one non-breeding site should not be an important problem for the species. However, at those sites where sources of fresh water are limited, disturbance of any type that has the effect of preventing the birds from getting to fresh water for drinking and bathing could have serious implications for the birds on a local basis in the short term.

3b.8. Predation *Importance: Local*

Baboons, African Fish Eagles, Steppe Eagles, Marabou Storks, feral dogs and hyenas do occasionally attempt to predate adult flamingos, but predation on healthy adult Lesser Flamingos is not usually a problem. Predation can be a serious problem at breeding sites, particularly the water level has receded allowing access to terrestrial predators. Predation of eggs and chicks by Steppe Eagles is a common occurrence in the Rann of Kachchh near Kuda. Egyptian Vultures have been recorded predating eggs and chicks at Lake Magadi in Kenya.

3b.9. Competition *Importance: Local*

3b.9.1. Competition for food *Importance: Local*

3b.9.1.1. Competition with fish *Importance: Local*

There is little information concerning the level of competition with fish for the microscopic cyanobacteria and benthic diatoms that form the majority of the Lesser Flamingo's diet. However, it is considered to be minimal on a species basis. Because of the high salinity, at least two of the feeding lakes in Kenya have no fish at all (lakes Bogoria and Elmenteita). Lake Nakuru has had a plankton-feeding species (*Oreochromis alcalicus grahami*) only since 1960 when it was introduced to help control mosquitoes, and yet Lake Nakuru is one of the most productive feeding lakes for the Lesser Flamingo.

3b.9.1.2. Competition with crustaceans *Importance: Local*

Artemia brine shrimp is sometimes introduced to the solar evaporation ponds of salt works to eat the algae that grow in the ponds, because algae reduce the quality of the salt and/or soda ash. The potential threat posed by such an *Artemia* introduction would be the extinction of

indigenous brine shrimp and a reduction in the food availability of the Lesser Flamingo through competition for the same food source. We know of no studies that have been conducted to determine whether it could survive in the wetland habitat surrounding the evaporation ponds, and if so how it would compete with the indigenous crustacean species and how it would affect cyanobacteria and diatom abundance.

3b.9.2. Competition for breeding sites *Importance: Local*

There is also little information concerning the level of competition with other avian species (e.g. pelicans, cormorants, terns or gulls) for breeding sites. The Lesser Flamingos are known to breed in only six sites throughout its range, and these sites are so specialised that it seems unlikely that they would be suitable for other species. Great White Pelicans did usurp a Greater Flamingo breeding site in Lake Elmenteita in recent years, but the isolated, flooded Lesser Flamingo breeding sites would not seem suitable for other species.

Annex 3c. Threat importance rankings at species and country levels in primary range states.

Threat importance ranking key: 1 = critical, 2 = high, 3 = medium, 4 = low, 5 = local threat; n/k = not known; blank space: factor does not apply to this country; see descriptions of ranks at end of table.

Species level import-ance	Primary threat	Sub-threat	Sub-threat	Sub-threat	Sub-threat	Sub-threat	Botswana	Ethiopia	Guinea	Guinea-Bissau	India	Kenya	Mauritania	Namibia	Senegal	South Africa	Tanzania	Uganda
1	**Habitat loss and/or degradation**	Altered hydro-logy and/or water quality	Reduced water flow	Inappropriate catchment management	Water management	Drainage for agricultural land	3	1	4	5	5	3				4	4	
						Drainage for roads, buildings and other infrastructure	4	2	n/k		4		2	5			4	
						Reservoir creation	3	4	n/k							5		
						Dams	2	4	n/k		4		2			5		
						Canalisation of rivers	?	4	n/k					5				
						Diversion of rivers	2	2	n/k					4				
						Abstraction for human use	4	4	n/k			2	2	2		5		
						Abstraction for irrigation	3	4	n/k			2	2				4	
					Reduced runoff	Reforestation	4		n/k									
					Increased flooding and sedimentation	Deforestation	3	2	n/k		4	2					4	
						Over-grazing	3	2	n/k					4	?	5		4
						Arable farming on steep slopes	3		n/k									
			Increased drought	Climate change			2	4	n/k		4	2		3		2	4	?
			Wetland Pollution	Pesticides			2	?	n/k			2		4		5		
				Industrial chemicals			2	?	n/k		4	2				5		
				Sewage			4	?	n/k		4	2		5		5		
				Heavy metals			2	?	n/k		4	2				5		
				Oil			2	?	n/k		4	3	4			5		

Species level import-ance	Primary threat	Sub-threat	Sub-threat	Sub-threat	Sub-threat	Sub-threat	Botswana	Ethiopia	Guinea	Guinea-Bissau	India	Kenya	Mauritania	Namibia	Senegal	South Africa	Tanzania	Uganda
		Extraction	Salt / minerals				3	4	n/k		4	5				4	1	?
			Oil & gas				?		n/k				2					
		Expansion of macrophytes	Fertilisers				3		n/k							5		
		Conflict with other conservation interests					4		n/k									
		Roads, buildings, other infrastructure					2		n/k		4			5			2	
		Invasive plants (W. Africa Typha)					3		n/k				2		?			
2	**Disruption of nesting colonies**	Human	Fishermen				?						2				4	
			Salt pan workers				4				3					5		
			Nearby settlements				4				4							
			Military exercises				4											
			Hunting other species				4									5		
			Pastoralists				4									5		
			Low-flying aircraft	Tourists			2							4				
				Film crews			2											
			Photographers				2				5							
		Predators	Terrestrial				4				5					3		
			Avian				3				5			4		5		
2	**Toxicological Diseases**	Heavy metals					3	3	n/k		4	3				5		
		Agro-chemicals					?	3	n/k			3				4		
		Domestic waste					4		n/k		4	3				5		
		Industrial chemicals					2	3	n/k		4	2				5		
		Botulism						3	n/k			3		?		5		
		Cyanobacterial toxins	Fertiliser eutrophication				4	3	n/k			3		?		5		?
2	**Infectious Diseases**	Avian influenza					?	?	n/k					?		5		?
		Avian cholera					?	?	n/k							5		?
		Avian tuberculosis					?	?	n/k			3						?
		Salmonella					?	?	n/k			3						?
		Pseudomonas					?	?	n/k			3						?
5	**Harvesting**	Illegal shooting	Subsistence				4	4	n/k		5			5				
		Wild bird trade	Zoos/ tourism				4	4	n/k								4	?
		Egg harvesting	Human consumption				4	4	n/k		4							
5	**Human disturbance at non-breeding sites**	Boating					?	4	n/k									

Species level import-ance	Primary threat	Sub-threat	Sub-threat	Sub-threat	Sub-threat	Sub-threat	Botswana	Ethiopia	Guinea	Guinea-Bissau	India	Kenya	Mauritania	Namibia	Senegal	South Africa	Tanzania	Uganda
		Fishing					?	4	n/k		4		4	4			4	
		Hunting other species					4	4	n/k		5		4	4		4	4	?
		Tourists					?	4	n/k		5	4	4			4	4	4
		Planes/ Helicopters					4	4	n/k					4		5	4	4
		Birdwatchers					?	4	n/k		5					4	4	4
		Photographers					?	4	n/k			?	2			4	4	4
		Military exercises					4		n/k							4		
5	**Predation**	Baboons					?	4	n/k			5			?	4		5
		Birds of prey					4	4	n/k		5	5		5				5
		Marabou Storks					4	3	n/k			5		5				5
		Hyenas					4	4	n/k			5		5		4		5
		Feral dogs					?		n/k		5							
5	**Competition**	For food	Fish				?	4	n/k		5	?						?
			Crustaceans				4		n/k		5			?		4		?
		For breeding sites	Terns				?											
			Pelicans				?							?				
			Cormorants				?											
			Gulls				?							?				
5	**Collision with man-made structures**	Power lines					3	4	n/k		4	?		4				4
		Telephone lines					4	4	n/k		5	?		4				4
		Fences					3	4	n/k		5				?	4		
		Light masts					?	4	n/k			?			?	4		
		Guide wires					3	4	n/k						?	4		

Key to ranks:

1. Critical: a factor causing or likely to cause very rapid declines (>30% over 10 years);
2. High: a factor causing or likely to cause rapid declines (20-30% over 10 years);
3. Medium: a factor causing or likely to cause relatively slow, but significant, declines (10-20% over 10 years);
4. Low: a factor causing or likely to cause fluctuations;
5. Local: a factor causing or likely to cause negligible declines;
? Unknown: a factor that is likely to affect the species but it is unknown to what extent
Blank space: factor does not apply in this country

Annex 4a. Membership of primary range states in international conservation conventions and agreements

Primary Range States	Convention on International Trade in Endangered Species of Wild Flora and Fauna (CITES)	Convention on the Conservation of Migratory Species CMS)	African-Eurasian Migratory Waterbird Agreement (AEWA)	Ramsar Convention
Botswana	x			x
Ethiopia	x			
Guinea	x	x	x	x
Guinea-Bissau	x	x	x	x
India	x	x		x
Kenya	x	x	x	x
Mauritania	x	x		x
Namibia	x			x
Senegal	x	x	x	x
South Africa	x	x	x	x
Tanzania	x	x	x	x
Uganda	x	x	x	x

Annex 4b. Membership of other range states in international conservation conventions and agreements

Other Range States	Convention on International Trade in Endangered Species of Wild Flora and Fauna (CITES)	Convention on the Conservation of Migratory Species CMS)	African-Eurasian Migratory Waterbird Agreement (AEWA)	Ramsar Convention
Angola		x		
Burundi	x			x
Cameroon	x	x		x
Congo, The Dem. Republic of the	x	x	x	
Djibouti	x	x	x	x
Eritrea	x	x		
Gabon	x			x
Gambia	x	x	x	x
Lesotho	x			x
Madagascar	x	x	x	x
Malawi	x			x
Mozambique	x			x
Pakistan	x	x		x
Sierra Leone	x			x
Sudan	x			x
Yemen	x	x		
Zambia	x			x
Zimbabwe	x			

Annex 5a. Lesser Flamingo conservation and protection status in primary range states (n/k = not known)

Country	Lesser Flamingo Status in national Red Data Book	Date of RDB	What is the national protection status of the LF?	Under what laws is the species protected?	Is the LF legally protected from being deliberately killed?	Is the LF legally protected from egg harvest?	Is the LF legally protected from nest destruct'n?	What are the penalties for:			Who is the highest national authority
								Illegal Killing	Egg Harvest	Nest Destruct	
Botswana	No national RDB	In process	Protected Game Animal - highest level of protection	1992 Wildlife Conservation and National Parks Act	Yes	Yes	It would have to be proved that the intention was wilful.	Pula 10,000 (€1,205) and 7 years imprisonment		Not clear	Director of Department of Wildlife and National Parks
Ethiopia	No national RDB		Protected from live trade and hunting	Wildlife conservation regulations, Legal Notice 416 of '72 & Proclamation 192 of 1980	Yes, but enforcement of laws very low at all levels	Yes, but enforcement of laws very low at all levels	Generally protected but no legal statement defining the act	Not clear	Not clear	Not clear	Ethiopian Wildlife Development and Conservation Department
Guinea	No national RDB		n/k	n/k	n/k	n/k	n/k	n/k	n/k	n/k	n/k
Guinea-Bissau	n/k		n/k	n/k	n/k	n/k	n/k	n/k	n/k	n/k	n/k
India	No National RDB, Near Threatened species for Asia	2001	Protected from capture & hunting	Wildlife Protection Act 1972, species included under Schedule 4	Yes	Yes	Yes but no legal statement defining the act	6 mo. prison & fine of Rs.2000/ + (€31.90)	n/a	n/a	Ministry of Environment & Forests, Govt. India
Kenya	No national RDB		Fully protected from trade, hunting etc	Kenya Wildlife Act	Yes	Yes	Yes	Ranges from fines to prison	Ranges from fines to prison	Ranges from fines to prison	Kenya Wildlife Service
Mauritania	No national RDB			Protection of wild fauna and protected areas	Yes	No	Yes	Ranges from confiscation of firearm to prison		Reprimand by reserve managers	The Director of Protected Areas
Namibia	Vulnerable	In press	Protected species	1975 Nature Conservation Ordinance 4	Yes	Yes	Yes	Court	N$ 300 (€25.60)	N$ 300 (€25.60)	Minister of Environment and Tourism

Country	Lesser Flamingo Status in national Red Data Book	Date of RDB	What is the national protection status of the LF?	Under what laws is the species protected?	Is the LF legally protected from being deliberately killed?	Is the LF legally protected from egg harvest?	Is the LF legally protected from nest destruct'n?	What are the penalties for:			Who is the highest national authority
								Illegal Killing	Egg Harvest	Nest Destruct	
Senegal	No National RDB		Fully Protected species	1986, law N° 86-04 of January 24th and decree N° 86-844 of July 14th 1986	Yes	Yes	Yes	240,000 to 2,400, 000 FCFA (€366 to €3,659) and 1 to 5 years in jail			Minister of Environment and Nature Protection
South Africa	Near-threatened	2000	Not protected nationally	Nine provincial nature conservation ordinances	Yes	Yes	Yes, during breeding	In Northern Cape, maximum of R100,000 (€10,600) or ten years in jail or both or three times the commercial value of the birds			Provincial Depts. of Environ-mental Affairs & Tourism
Tanzania	No National RDB		National protection	Wildlife Conservation Act, National Parks Act and Ngorongoro Conservation Area Act.	Yes	Yes	Yes	TZS 200,000 (€107.50) and/or imprisonment of not less than 10 years		Fine not exceeding TZS 5,000 (€2.70) and/or imprisonment not exceeding 2 years	Director of Wildlife
Uganda	Regional / Uganda: Near Threatened (NT)	2003	Fully Protected Species	Uganda wildlife statute (1996): Species which migrate to or through Uganda which are protected under any international convention to which Uganda is party, shall be protected under this statute.	Yes	Not applicable	Not applicable	First offenders: (UShs30K (€11.50) – 3,000,000 (€1,150) and or 3months jail). Second offenders: UShs300K (€115)– 6,000,000 (€2,300) and or 6months in jail).	Not applicable	Not applicable	Uganda Wildlife Authority

Annex 5b. Lesser Flamingo research and conservation in primary range states

Country	What research has been conducted with the LF over the past 10 years?	What conservation efforts have there been for the LF over the past 10 years?	What is the general attitude of the public toward the LF?	What is the general attitude of the conservation authorities toward the LF?
Botswana	Annual breeding success monitoring on Sua Pan; satellite tracking in 2001-02; diet study	None	Positive	It is a species of concern and protected as such by the authorities.
Ethiopia	Monitoring of numbers annually based on AfWC counts	None	Neutral	Though protected by non-specific wildlife laws, does not receive special attention.
Guinea	None	Key sites for flamingos have been declared Ramsar Sites	Not widely known	A species that merits conservation attention
Guinea-Bissau	None	Creation of Natural Park for key site	Not widely known	Recognised as a species of conservation interest.
India	1. Monitoring of numbers annually based on AWC and individuals 2. Population estimates 3. Habitat preference & distribution 4. Habitat evaluation through remote sensing 5. Breeding ecology & identification of newer nesting sites	Some feeding sites are protected areas as well as IBA. All breeding sites are under protected areas	Sympathetic	State Government is quite concerned & takes conservation measures, if needed.
Kenya	Coordinated waterbird counts based on AfWC, an assessment of the factors triggering their movements, and causes of deaths	Key sites are Ramsar and IBA sites and have some protection status either as parks or reserves	Positive	Positive and firmly protected
Mauritania	Research on the breeding and monitoring of the population	The Chat Boul reserve was created to strengthen the protection of the LF	The LF is not well-known by the public as it frequents very isolated sites	It is a rare species that needs to be conserved/protected
Namibia	Coordinated Waterbird Counts	Ramsar sites	Positive	Positive
Senegal	Coordinated waterbird counts based on AfWC and Monitoring programmes in protected areas	The LF is included in waterbirds conservation programs	The LF is not well-known by the public	Positive because LF is fully protected by law
South Africa	Coordinated Waterbird Counts	Conservation of wetlands, recognition of wetlands as Ramsar Sites	Positive	Positive
Tanzania	Satellite tracking of movements	• Extension of the protected areas boundaries • Designation of wetlands of international importance (Ramsar Sites)	Positive	Positive It is a key bird species and therefore of conservation importance by authorities.

Country	What research has been conducted with the LF over the past 10 years?	What conservation efforts have there been for the LF over the past 10 years?	What is the general attitude of the public toward the LF?	What is the general attitude of the conservation authorities toward the LF?
Uganda	Regular monitoring of numbers through the African waterfowl counts done twice every year.	All sites are within the Parks and Wildlife Sanctuary and all considered IBAs.	Positive (Some local groups near wildlife sanctuaries are very enthusiastic about monitoring)	Positive

Annex 6. Conservation measures and attitude towards the Lesser Flamingo in primary range states

Country	Is there a national Lesser	Is there a national Lesser Flamingo working group?	Is there a national census?	Is there a monitoring programme in protected areas?	Are there routines for informing the responsible authorities regarding nesting areas and nest sites?	Have there been any conservation efforts specifically for this species over the last ten years?	General attitude towards the species
Botswana	No	No	Some sites	Yes	Yes	No	Positive
Ethiopia	No	No	Some sites	No	NA	No	Positive
Guinea	No	No	Yes	Yes	n/a	Key sites for flamingos have been declared Ramsar Sites.	Not well known
Guinea-Bissau	No	No	Yes	Yes	n/a	No	Not well known
India	No	No	Some sites	Yes	No	No	n/a
Kenya	No	No	Yes	Yes	n/a	No	Positive
Mauritania	No	No	Yes	Yes	Yes	The Chat Boul reserve was created to strengthen the protection of the LF	Not well known
Namibia	No	No	Yes	Yes	Yes	No	Positive
Senegal	No	No	Yes	Yes	Yes	n/a	Not well known
South Africa	No	No	Some sites	Yes	Yes	No	Positive
Tanzania	No	Yes	No	Yes	Yes	No	Positive
Uganda	No	No	Yes	Yes	NA	No	Positive

Key:

n/a = not applicable

Annex 7. Key Lesser Flamingo site protection status in the primary range states

Key sites: > 1% of the estimated regional population has been counted at these sites at some time during the past five years. Protection status codes: NP = National protected area; RP = Regional protected area; PR = Private Preserve; NO = No official protection

Country	Local site name	International site name	Breeding (BR), non-breeding (NB) or both (BO)	Protection status	BirdLife IBA	Ramsar site
Botswana	Sua Pan	Makgadikgadi Pans	BO	NO	Yes	No
	Bokaa Dam	Bokaa Dam	NB	NO	Yes	No
	Gaborone Game Reserve Dam		NB	NP	No	No
	Shashe Dam		NB	NO	No	No
	Lake Ngami	Lake Ngami	NB	NP	Yes	No
Ethiopia	Akaki - Aba-Samuel Wetlands	Akaki - Aba-Samuel Wetlands	NB	NO	Yes	No
	Lake Abijatta	Abijatta - Shalla Lakes National Park	NB	NP	Yes	No
	Lake Awassa	Lake Awassa	NB	NO	Yes	No
	Green Lake	Green Lake	NB	NO	Yes	No
	Lake Chitu	Lake Chitu	NB	NO	No	No
Guinea	Vasieres de Khonibenki et Yongo Sale	Rio Kapatchez	NB	n/a	Yes	Yes
Guinea-Bissau	Rio Cacheu	Rio Cacheu	NB	NP	Yes	No
India-Gujarat	Ahmedabad: Nal Sarovar Bird Sanctuary	Nal Sarovar Wildlife Sanctuary	NB	RP	Yes	No
	Anand : Khambhat-Vadgam		NB	NO	No	No
	Anand: Khambhat-Vasana P.H. in sea coast		NB	NO	No	No
	Anand: Tada Talav		NB	NO	No	No
	Bharuch: Sarod (Mahi Estuary)		NB	NO	No	No
	Bhavnagar: Hathab Sea Coast		NB	NO	No	No
	Bhavnagar: Kumabharwada IPCL salt pan		NB	NO	No	No
	Bhavnagar: Kumabharwada sewage pond		NB	NO	No	No
	Bhavnagar: New Port salt pans		NB	NO	No	No
	Bhavnagar: Nirma salt pans		NB	NO	No	No
	Dholera: Sea coast nr. GHCL PH-2		NB	NO	No	No
	Dholera: GHCL salt pan		NB	NO	No	No
	Jamnagar: Charakhala salt pans	Khijadia Bird Sanctuary	NB	RP	Yes	No
	Porbandar: Birla Khadi		NB	NO	No	No
	Porbandar: Chhaya rann	Chhaya Creek	NB	NO	No	No
	Porbandar: Gosa-Karli TR		NB	NO	No	No
	Porbandar: Jawar salt pan		NB	NO	No	No
	Porbandar: Kuchadi		NB	NO	No	No

Country	Local site name	International site name	Breeding (BR), non-breeding (NB) or both (BO)	Protection status	BirdLife IBA	Ramsar site
	Rann of Kachchh (Gt): near Bela		?	NO	No	No
	Rann of Kachchh (Gt): Chharidhandh		NB	NO	No	No
	Rann of Kachchh (Gt): Khirjog Dhandh		NB	NO	No	No
	Rann of Kachchh (Lt): Purabcheria	Wild Ass Wildlife Sanctuary	BO	NP	Yes	No
	Rann of Kachchh (Lt): nr Zinzuwada	Wild Ass Wildlife Sanctuary	BO	NP	Yes	No
	Shetruanji est.: Gopnath seacoast		NB	NO	No	No
India-Maharashtra	Sewree Bay, Mumbai		NB	NO	No	No
India-Rajasthan	Sambhar Lake	Sambhar Lake	NB	NP	`Yes	Yes
Kenya	Lake Bogoria	Lake Bogoria National Reserve	NB	NP	Yes	Yes
	Lake Elmenteita	Lake Elmenteita	NB	NO	Yes	Yes
	Lake Magadi	Lake Magadi	NB	NO	Yes	No
	Lake Nakuru	Lake Nakuru	NB	NP	Yes	Yes
	Lake Logipi	Lake Logipi	NB	NO	No	No
	Sonachi Crater Lake	Sonachi Crater Lake	NB	NO	No	Yes
	Lake Oloidien	Lake Oloidien	NB	NO	Yes	Yes
Mauritania	Aftout es Sâheli	Aftout es Sâheli	?	NO	Yes	Yes
	Chat Tboul	Chat Tboul	NB	NO	Yes	n/a
	Senegal River Delta	Diawling National Park	NB	NP	Yes	Yes
Namibia	Cape Cross Saltworks	Cape Cross lagoon	NB	NP	Yes	No
	Etosha Pan	Etosha National Park	BO	NP	Yes	Yes
	Lake Oponono and Exuma River	Lake Oponono & Cuvelai drainage	NB	NO	No	Yes
	Mile 4 Saltworks	Mile 4 saltworks	NB	PR	Yes	No
	Sandwich Harbour	Sandwich Harbour	NB	NP	No	Yes
	Swakopmund Saltworks		NB	NO	No	No
	Tsumkwe Conservancy (incl. Tsumkwe Pans and Nyae Nyae)	Bushmanland (Tsumkwe) pan system	NB	NO	Yes	No
	Walvis Bay (incl. Walvis Bay sewage ponds and Swakop River estuary)	Walvis Bay-Swakopmund Nature Reserve	NB	NP	Yes	Yes
Senegal	Djoudj National Park	Djoudj wetlands	NB	NP	Yes	Yes
	Ndiaël Basin	Ndiaël basin	NB	NO	Yes	Yes
South Africa	Kamfers Dam		BO	NO	Yes	No
	Lake St Lucia	Lake St Lucia and Mkuzi Swamps	NB	NP	Yes	Yes
	Orange River Mouth	Orange River Mouth Wetlands	NB	NP	Yes	Yes
	Welkom wetlands (Goldfields)Flamingo Pan	Welkom wetlands (Goldfields)Flamingo Pan	NB	NO	No	No
Tanzania	Balangidas	Lakes Balangida & Balangida Lelu	NB	NO	No	No
	Big Momella	Arusha National Park	NB	NP	Yes	No
	Empakai	Embakai Crater Lake (NCA)	NB	NP	Yes	No

Country	Local site name	International site name	Breeding (BR), non-breeding (NB) or both (BO)	Protection status	BirdLife IBA	Ramsar site
	Lake Bahi (a.k.a. Bahi Swamp)	Lake Bahi	NB	NO	No	No
	Lake Eyasi	Lake Eyasi	NB	NO	Yes	No
	Lake Manyara	Lake Manyara National Park (partial)	NB	NP	Yes	No
	Lake Natron	Lake Natron and Engaruka basin	BO	NO	Yes	Yes
Uganda	Kasenyi	Kazinga Wildlife Sanctuary	NB	NP	Yes	No
	Lakes Maseche, Nshenyi and Bagusa	Kyambura Wildlife Reserve	NB	NP	Yes	No
	Munyanyange	Kazinga Wildlife Sanctuary	NB	NP	Yes	No
	Nyamunuka	Queen Elizabeth National Park	NB	NP	Yes	No

Annex 8a. Priority of Lesser Flamingo conservation objectives and tasks for key sites in East Africa primary range states

H = high priority; M = medium priority; L = low priority; X = already completed; blank = does not apply. Key sites: > 1% of the estimated regional population has been counted at these sites at some time during the past five years.

Primary range states:	Ethiopia						Kenya								Tanzania								Uganda			
Key site names:	Akaki-Aba-Samuel Wetls	Lakes Abijatta & Shalla	Green Lake	Lake Awassa	Lake Chitu		Lake Bogoria	Lake Elmenteita	Lake Magadi	Lake Nakuru	Lake Logipi	Sonachi Crater Lake	Lake Oloidien		Balangidas lakes	Empakai Crater Lake	Momella lakes	Lake Bahi (a.k.a. Bahi	Lake Eyasi - Kitangiri	Lake Manyara	Lake Natron		Kasenyi	Kyambura Wildlife Res.	Munyanyange	Nyamunuka
Conservation objectives / tasks																										
Objective 1: Maintain all key sites in good ecological condition																										
Projects:																										
- Designate key sites as protected areas and as Ramsar sites	**L**	**H**	**H**	**L**	**H**		**X**	**X**	**L**	**X**	**H**	**X**	**X**		**L**	**X**	**X**	**M**	**H**	**H**	**H**		**X**	**H**	**H**	**X**
- Conduct strategic and project level Environmental Impact Assessment and audit of existing operation																										
- Develop and implement integrated (catchments/coastal zone) management plans for the key sites	**H**	**H**	**M**	**M**	**M**		**X**	**H**	**L**	**X**	**L**	**H**	**H**		**M**	**X**	**X**	**H**	**H**	**X**	**H**		**X**	**X**	**H**	**X**
- Identify management needs of Lesser Flamingo habitat and implement necessary management actions to maintain all key in good ecological condition	**M**	**H**	**H**	**L**	**M**		**X**	**X**	**H**	**X**	**M**	**X**	**X**		**L**	**X**	**X**	**M**	**M**	**X**	**H**		**X**	**X**	**H**	**X**
- Maintain, or restore where necessary, favourable hydrological conditions and water quality for the species							**H**	**H**	**M**	**H**	**L**	**L**	**M**													
- Enhance the habitat at suitable sites (e.g. creation of breeding islands, rehabilitate/create wetlands) where necessary	**L**	**L**	**L**	**L**	**L**																					
- Prevent disturbance (especially low flying aircraft) through legislation, planning, zoning and through enforcement of these rules as appropriate	**H**	**H**	**H**	**H**	**H**		**L**	**M**	**L**	**H**	**L**	**L**	**L**										**H**	**H**	**H**	**M**
- Raise awareness about the conservation needs of the species at national and local level							**L**	**L**	**L**	**L**	**L**	**L**	**L**													

Primary range states:	Ethiopia						Kenya								Tanzania								Uganda			
Key site names:	Akaki-Aba-Samuel Wetls	Lakes Abijatta & Shalla	Green Lake	Lake Awassa	Lake Chitu		Lake Bogoria	Lake Elmenteita	Lake Magadi	Lake Nakuru	Lake Logipi	Sonachi Crater Lake	Lake Oloidien		Balangidas lakes	Empakai Crater Lake	Momella lakes	Lake Bahi (a.k.a. Bahi	Lake Eyasi - Kitangiri	Lake Manyara	Lake Natron		Kasenyi	Kyambura Wildlife Res.	Munyanyange	Nyamunuka
Conservation objectives / tasks																										
Objective 2: Ensure that breeding colonies are not disturbed																										
Projects:																										
- Prevent disturbance (especially low flying aircraft) through legislation, planning, zoning and through enforcement of these rules as appropriate																					**H**					
- Raise awareness about the conservation needs of the species at national and local level																					**H**					
- Help local communities to develop alternative livelihood practices to reduce disturbance (and to enhance new community-based tourism projects)																					**M**					
Objective 3: Reduce the impact of poisoning and diseases on LF populations																										
Projects:																										
- Establish an integrated flamingo health surveillance program to assess the effects of mass die-offs on LF in E. Africa							**H**	**H**	**L**	**H**	**M**	**M**	**H**													
- Raise awareness amongst decision-makers and industry about the risk of pollution to LF							**M**	**H**	**L**	**H**		**L**	**H**													
- Ensure that pollution guidelines/legislation at key sites reflect the sensitivity of the species	**H**	**M**	**L**	**M**	**L**		**L**	**H**	**L**	**H**		**L**	**L**											**H**		
- Ensure that pollution guidelines/legislation are developed and enforced							**M**	**H**	**L**	**H**		**M**	**M**													

Primary range states:	Ethiopia						Kenya								Tanzania								Uganda			
Key site names:	Akaki-Aba-Samuel Wetls	Lakes Abijatta & Shalla	Green Lake	Lake Awassa	Lake Chitu		Lake Bogoria	Lake Elmenteita	Lake Magadi	Lake Nakuru	Lake Logipi	Sonachi Crater Lake	Lake Oloidien		Balangidas lakes	Empakai Crater Lake	Momella lakes	Lake Bahi (a.k.a. Bahi	Lake Eyasi - Kitangiri	Lake Manyara	Lake Natron		Kasenyi	Kyambura Wildlife Res.	Munyanyange	Nyamunuka
Conservation objectives / tasks																										
Objective 4: Ensure harvesting of eggs and live specimens has no effect on LF populations																										
Projects:																										
- Maintain existing bans on LF specimen trade																										
- Regulate and enforce strict licensing at national level. Licensing process to be based on analysis of effect of proposed trade on regional populations																							**L**	**L**	**L**	**L**
Objective 5: Ensure collisions with man-made structures are minimised																										
Project:																										
- Conduct project level Environmental Impact Assessments and audit of existing operations																							**L**	**L**	**M**	**L**
Objective 6: Ensure human disturbance at non-breeding sites is minimised																										
Project:																										
Project:																										
- Prevent disturbance through legislation, planning, zoning and through enforcement of these rules as appropriate							**L**	**M**	**L**	**M**	**L**	**L**	**L**										**H**	**H**	**H**	**M**

Annex 8b. Priority of Lesser Flamingo conservation objectives and tasks for key sites in southern Africa primary range states

H = high priority; M = medium priority; L = low priority; X = already completed; blank = does not apply. Key sites: > 1% of the estimated regional population has been counted at these sites at some time during the past five years.

Primary range states:	Botswana						Namibia									S. Africa			
Key site names:	**Makgadikgadi Pans**	**Bokaa Dam**	**Gaborone Reserve Dam**	**Shashi Dam**	**Lake Ngami**		**Cape Cross Saltworks**	**Etosha National Park**	**L.Oponono & Exuma R**	**Mile 4 Saltworks**	**Sandwich Harbour**	**Swakopmund Saltwks**	**Tsumkwe Conservancy**	**Walvis Bay-Swakopmd**		**Kamfers Dam**	**Orange River Mouth**	**Lake St. Lucia**	**Welkom Flamingo Pan**
Conservation objectives / tasks																			
Objective 1: Maintain all key sites in good ecological condition																			
Projects:																			
- Designate key sites as protected areas and as Ramsar sites	**H**		**X**		**H**		**M**	**X**	**M**	**M**	**X**	**M**	**M**	**H**		**H**	**M**	**X**	**H**
- Conduct strategic and project level Environmental Impact Assessment and audit of existing operation																			
- Develop and implement integrated (catchments/coastal zone) management plans for the key sites	**H**				**H**		**H**	**H**	**H**	**H**	**M**	**L**	**H**	**H**		**H**	**M**	**H**	**H**
- Identify management needs of Lesser Flamingo habitat and implement necessary management actions to maintain all key in good ecological condition	**H**				**H**		**L**	**M**	**M**	**M**	**M**	**M**	**M**	**H**		**M**	**M**	**H**	**H**
- Maintain, or restore where necessary, favourable hydrological conditions and water quality for the species							**L**												**H**
- Enhance the habitat at suitable sites (e.g. creation of breeding islands, rehabilitate/create wetlands) where necessary	**M**						**L**	**H**						**M**		**X**	**H**	**H**	**L**
- Prevent disturbance (especially low flying aircraft) through legislation, planning, zoning and through enforcement of these rules as appropriate	**L**						**M**	**M**	**L**	**L**	**H**	**M**	**L**	**H**		**H**	**M**	**M**	**H**

Primary range states:	Botswana						Namibia									S. Africa			
Key site names:	Makgadikgadi Pans	Bokaa Dam	Gaborone Reserve Dam	Shashi Dam	Lake Ngami		Cape Cross Saltworks	Etosha National Park	L.Oponono & Exuma R	Mile 4 Saltworks	Sandwich Harbour	Swakopmund Saltwks	Tsumkwe Conservancy	Walvis Bay-Swakopmd		Kamfers Dam	Orange River Mouth	Lake St. Lucia	Welkom Flamingo Pan
- Raise awareness about the conservation needs of the species at national and local level	M				M		L		L	L	L	M	M	M		X	L	L	M
Objective 2: Ensure that breeding colonies are not disturbed																			
Projects:																			
- Prevent disturbance (especially low flying aircraft) through legislation, planning, zoning and through enforcement of these rules as appropriate	H							H								M			
- Raise awareness about the conservation needs of the species at national and local level	H							X								L			
- Help local communities to develop alternative livelihood practices to reduce disturbance (and to enhance new community-based tourism projects)	M							L								L			
Objective 3: Reduce the impact of poisoning and diseases on LF populations																			
Projects:																			
- Establish an integrated flamingo health surveillance program to assess the effects of mass die-offs on LF in E. Africa							L		L	L		L	L						
- Raise awareness amongst decision-makers and industry about the risk of pollution to LF							L	L	L	L	L	L	L	H					M
- Ensure that pollution guidelines/legislation at key sites reflect the sensitivity of the species	M						L	L	L	L	L	L	L	H		H	L	M	L
- Ensure that pollution guidelines/legislation are developed and enforced							L	L	L	L	L	L	L	H					M
Objective 4: Ensure harvesting of eggs and live specimens has no effect on LF populations																			

Primary range states:	Botswana						Namibia									S. Africa			
Key site names:	Makgadikgadi Pans	Bokaa Dam	Gaborone Reserve Dam	Shashi Dam	Lake Ngami		Cape Cross Saltworks	Etosha National Park	L.Oponono & Exuma R	Mile 4 Saltworks	Sandwich Harbour	Swakopmund Saltwks	Tsumkwe Conservancy	Walvis Bay-Swakopmd		Kamfers Dam	Orange River Mouth	Lake St. Lucia	Welkom Flamingo Pan
Projects:																			
- Maintain existing bans on LF specimen trade	**M**						**L**	**L**	**L**	**L**	**L**	**L**	**L**	**L**		**X**	**X**	**X**	**X**
- Regulate and enforce strict licensing at national level. Licensing process to be based on analysis of effect of proposed trade on regional populations	**M**						**L**	**L**	**L**	**L**	**L**	**L**	**L**	**L**		**X**	**X**	**X**	**X**
Objective 5: Ensure collisions with man-made structures are minimised																			
Project:																			
- Conduct project level Environmental Impact Assessments and audit of existing operations	**H**	**M**	**M**	**H**	**M**		**L**	**M**	**M**	**L**	**L**	**L**	**L**	**L**		**H**	**H**	**H**	**H**
Objective 6: Ensure human disturbance at non-breeding sites is minimised																			
Project:																			
- Prevent disturbance through legislation, planning, zoning and through enforcement of these rules as appropriate		**L**	**L**	**L**	**M**		**L**	**H**	**L**	**L**	**L**	**L**	**L**	**L**		**M**	**M**	**M**	**M**

Annex 8c. Priority of Lesser Flamingo conservation objectives and tasks for key sites in West Africa primary range states

H = high priority; M = medium priority; L = low priority; X = already completed; blank = does not apply. Key sites: > 1% of the estimated regional population has been counted at these sites at some time during the past five years.

Primary range states:	Guinea		Guinea-Bissau		Mauritania				Senegal	
Key site names:	Vasieres de Khonibenki et Yongo Sale		Rio Cacheu		Aftout es Sâheli	Chat Tboul	Diawling National Park		Djoudj National Park	Ndiaël Basin
Conservation objectives / tasks										
Objective 1: Maintain all key sites in good ecological condition										
Projects:										
- Designate key sites as protected areas and as Ramsar sites	H		X		H	H	X		X	X
- Conduct strategic and project level Environmental Impact Assessment and audit of existing operation	L		L		H	M	L		L	L
- Develop and implement integrated (catchments/coastal zone) management plans for the key sites	M		H		H	H	H		M	M
- Identify management needs of Lesser Flamingo habitat and implement necessary management actions to maintain all key in good ecological condition	H		H		H	H	M		H	H
- Maintain, or restore where necessary, favourable hydrological conditions and water quality for the species	L		M		M	M	H		M	M
- Enhance the habitat at suitable sites (e.g. creation of breeding islands, rehabilitate/create wetlands) where necessary	L		L		H	M	L		L	M
- Prevent disturbance (especially low flying aircraft) through legislation, planning, zoning and through enforcement of these rules as appropriate	L		L		L	L	L		L	L

Primary range states:	Guinea		Guinea-Bissau		Mauritania				Senegal	
Key site names:	Vasieres de Khonibenki et Yongo Sale		Rio Cacheu		Aftout es Sâheli	Chat Tboul	Diawling National Park		Djoudj National Park	Ndiaël Basin
- Raise awareness about the conservation needs of the species at national and local level	H		H		H	H	L		H	H
Objective 2: Ensure that breeding colonies are not disturbed										
Projects:										
- Prevent disturbance (especially low flying aircraft) through legislation, planning, zoning and through enforcement of these rules as appropriate					H					
- Raise awareness about the conservation needs of the species at national and local level					H					
- Help local communities to develop alternative livelihood practices to reduce disturbance (and to enhance new community-based tourism projects)					H					
Objective 3: Reduce the impact of poisoning and diseases on LF populations										
Projects:										
- Establish an integrated flamingo health surveillance program to assess the effects of mass die-offs on LF in E. Africa										
- Raise awareness amongst decision-makers and industry about the risk of pollution to LF	L		L		M	M	L		H	H
- Ensure that pollution guidelines/legislation at key sites reflect the sensitivity of the species	L		L		M	M	L		M	M
- Ensure that pollution guidelines/legislation are developed and enforced	L		L		M	M	L		H	H

Primary range states:	Guinea		Guinea-Bissau		Mauritania				Senegal	
Key site names:	Vasieres de Khonibenki et Yongo Sale		Rio Cacheu		Aftout es Sâheli	Chat Tboul	Diawling National Park		Djoudj National Park	Ndiaël Basin
Objective 4: Ensure harvesting of eggs and live specimens has no effect on LF populations										
Projects:										
- Maintain existing bans on LF specimen trade					**L**	**L**	**L**			
- Regulate and enforce strict licensing at national level. Licensing process to be based on analysis of effect of proposed trade on regional populations					**L**	**L**	**L**			
Objective 5: Ensure collisions with man-made structures are minimised										
Project:										
- Conduct project level Environmental Impact Assessments and audit of existing operations					**M**	**M**	**L**			
Objective 6: Ensure human disturbance at non-breeding sites is minimised										
Project:										
- Prevent disturbance through legislation, planning, zoning and through enforcement of these rules as appropriate	**H**				**H**	**H**	**X**		**X**	**M**

Annex 8d. Priority of Lesser Flamingo conservation objectives and tasks for key sites in South Asia primary range states

H = high priority; M = medium priority; L = low priority; X = already completed; blank = does not apply. Key sites: > 1% of the estimated regional population has been counted at these sites at some time during the past five years.

Primary range state:	**India**																								
Key site names (alphabetical order):	**Bela (near), Gt Rann**	**Birla Khadi**	**Charakhala salt pans**	**Chharidhandh**	**Chhaya Rann**	**Dholera Sea coast -GHCL**	**Gopnath sea coast**	**GHCL salt pan**	**Gosa-karli TR**	**Hathab sea coast**	**Jawar salt pans**	**Khambhat-Vadgam**	**Khambhat-Vasana P.H.**	**Khirjog Dhandh**	**Kuchadi**	**Kumabharwada IPCL sp**	**Kumabharwada sewage**	**Nal Sarovar Bird Sanct.**	**New Port salt pans**	**Nirma salt pans**	**Sambhar Lake**	**Sarod (Mahi Estuary)**	**Sewree Bay, Mumbai**	**Tada Talav**	**Wild Ass Sanctuary**
Conservation objectives / tasks																									
Objective 1: Maintain all key sites in good ecological condition																									
Projects:																									
- Designate key sites as protected areas and as Ramsar sites	**X**	**H**	**L**	**H**	**H**	**H**	**L**	**H**	**H**	**H**	**H**	**H**	**H**		**H**	**H**	**H**	**X**	**H**	**H**	**X**	**H**	**H**	**H**	**X**
- Conduct strategic and project level Environmental Impact Assessment and audit of existing operation	**H**	**H**	**L**	**H**	**H**	**H**	**H**	**H**	**H**	**H**	**H**	**H**	**H**		**H**	**H**	**H**	**H**	**H**	**H**	**L**	**H**	**H**	**H**	**H**
- Develop and implement integrated (catchments/coastal zone) management plans for the key sites	**H**	**L**	**L**	**M**	**L**				**L**	**H**	**L**				**L**	**H**	**H**	**H**	**H**	**H**	**L**				**H**
- Identify management needs of Lesser Flamingo habitat and implement necessary management actions to maintain all key in good ecological condition	**H**	**L**	**L**	**H**	**L**	**M**	**L**	**M**	**L**	**M**	**L**	**H**	**H**		**L**	**M**	**M**	**H**	**M**	**M**	**L**	**H**	**H**	**H**	**H**
- Maintain, or restore where necessary, favourable hydrological conditions and water quality for the species	**H**	**H**			**H**	**H**	**H**	**H**	**H**	**H**	**H**	**H**	**H**		**H**	**H**	**H**		**H**	**H**	**L**	**H**	**H**	**H**	**H**
- Enhance the habitat at suitable sites (e.g. creation of breeding islands, rehabilitate/create wetlands) where necessary	**H**	**H**	**H**	**M**	**H**	**M**		**M**	**H**		**H**	**H**	**H**		**H**						**L**	**H**	**H**	**H**	**H**
- Prevent disturbance (especially low flying aircraft) through legislation, planning, zoning and through enforcement of these rules as appropriate	**H**	**L**	**L**	**L**	**L**				**L**		**L**				**L**								**L**		**H**
- Raise awareness about the conservation needs of the species at national and local level	**H**	**H**	**H**		**H**	**M**		**M**	**H**	**H**	**H**	**H**	**H**		**H**	**H**	**H**	**H**	**H**	**H**	**L**	**H**	**H**	**H**	**H**

Primary range state:	India																								
Key site names (alphabetical order):	**Bela (near), Gt Rann**	**Birla Khadi**	**Charakhala salt pans**	**Chharidhandh**	**Chhaya Rann**	**Dholera Sea coast -GHCL**	**Gopnath sea coast**	**GHCL salt pan**	**Gosa-karli TR**	**Hathab sea coast**	**Jawar salt pans**	**Khambhat-Vadgam**	**Khambhat-Vasana P.H.**	**Khirjog Dhandh**	**Kuchadi**	**Kumabharwada IPCL sp**	**Kumabharwada sewage**	**Nal Sarovar Bird Sanct.**	**New Port salt pans**	**Nirma salt pans**	**Sambhar Lake**	**Sarod (Mahi Estuary)**	**Sewree Bay, Mumbai**	**Tada Talav**	**Wild Ass Sanctuary**
Objective 2: Ensure that breeding colonies are not disturbed																									
Projects:																									
- Prevent disturbance (especially low flying aircraft) through legislation, planning, zoning and through enforcement of these rules as appropriate	**H**																								**H**
- Raise awareness about the conservation needs of the species at national and local level	**H**																								**H**
- Help local communities to develop alternative livelihood practices to reduce disturbance (and to enhance new community-based tourism projects)																									**H**
Objective 3: Reduce the impact of poisoning and diseases on LF populations																									
Projects:																									
- Establish an integrated flamingo health surveillance program to assess the effects of mass die-offs on LF in E. Africa																									
- Raise awareness amongst decision-makers and industry about the risk of pollution to LF		**H**	**M**		**H**	**H**	**M**	**H**	**H**		**H**	**H**	**H**		**H**			**H**			**L**	**H**	**H**	**H**	
- Ensure that pollution guidelines/legislation at key sites reflect the sensitivity of the species	**H**	**H**	**L**		**H**				**H**		**H**	**H**	**H**		**H**			**H**			**L**	**H**	**H**	**H**	**H**
- Ensure that pollution guidelines/legislation are developed and enforced	**H**	**H**	**L**		**H**				**H**		**H**	**H**	**H**		**H**			**H**			**L**	**H**	**H**	**H**	**H**

Primary range state:	India																										
Key site names (alphabetical order):	**Bela (near), Gt Rann**	**Birla Khadi**	**Charakhala salt pans**	**Chharidhandh**	**Chhaya Rann**	**Dholera Sea coast -GHCL**	**Gopnath sea coast**	**GHCL salt pan**	**Gosa-karli TR**	**Hathab sea coast**	**Jawar salt pans**	**Khambhat-Vadgam**	**Khambhat-Vasana P.H.**	**Khirjog Dhandh**	**Kuchadi**	**Kumabharwada IPCL sp**	**Kumabharwada sewage**	**Nal Sarovar Bird Sanct.**	**New Port salt pans**	**Nirma salt pans**	**Sambhar Lake**	**Sarod (Mahi Estuary)**	**Sewree Bay, Mumbai**	**Tada Talav**	**Wild Ass Sanctuary**
Objective 4: Ensure harvesting of eggs and live specimens has no effect on LF populations																											
Projects:																											
- Maintain existing bans on LF specimen trade	**H**													**H**													**H**
- Regulate and enforce strict licensing at national level. Licensing process to be based on analysis of effect of proposed trade on regional populations																											
Objective 5: Ensure collisions with man-made structures are minimised		**L**	**L**		**L**				**L**	**H**	**L**				**L**	**H**	**H**		**H**	**H**					**M**
Project:																											
- Conduct project level Environmental Impact Assessments and audit of existing operations	**M**	**M**			**M**				**M**	**H**	**M**				**M**	**H**	**H**		**H**	**H**					**M**
Objective 6: Ensure human disturbance at non-breeding sites is minimised																											
Project:																											
- Prevent disturbance through legislation, planning, zoning and through enforcement of these rules as appropriate																							**H**				