

International Single Species Action Plan for the Conservation of the Eurasian Spoonbill

Platalea leucorodia















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

International Single Species Action Plan for the Conservation of the Eurasian Spoonbill

Platalea leucorodia



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Platalea leucorodia leucorodia: Atlantic Population

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Sweden: Naturvardsverket Naturresursavdelningen

United Kingdom: Joint Nature Conservation Committee (UK), Royal Society for Protection of Birds (RSPB, UK)

Platalea leucorodia leucorodia: Central European Population (Panonnian population) & Southeast European Population

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Algeria: Bureau des zones humides, Direction Générale des Forêts

Austria: BirdLife Österreich

Bulgaria: Bulgarian Society for the Protection of Birds / BirdLife Bulgaria, Institute of Zoology/Bulgarian Academy of Sciences

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Mali: Wetlands International, Bureau du Mali

Malta: BirdLife Malta Moldova: Eco-TIRAS

Montenegro: Center for Protection and Research of Birds

Niger: Brouwer Envir. & Agric. Consultancy

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Platalea leucorodia archeri: Red Sea subspecies

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Saudi Arabia: Avian Research and Monitoring Manager, National Wildlife Research Centre (NWRC), National

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Platalea leucorodia balsaci Mauritanian subspecies

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Milestones in the production of the Plan

Workshop: 22-26 October 2007, Djoudj National Park, Senegal

Draft 1: 15 November 2007, presented to all contributors

Draft 2: 31 January 2008, presented to the AEWA Technical Committee

Draft 3: 30 April 2008, presented to the Range States

Final draft: 25 July 2008, adopted by the 4th session of the Meeting of the Parties to AEWA in September 2008

Geographical Scope

The Spoonbill has a wide distribution from Europe to East Asia. Its distribution is partly included within the geographical range of the actions of AEWA. The present Action Plan covers the distribution in Europe, western Asia and Africa. The plan distinguishes five subspecies or populations:

The Atlantic Population Platalea leucorodia leucorodia

The Central European (Panonnian) & Southeast European Population P. l. leucorodia

The West Asian Population (so called "P. l. major")

The Red Sea subspecies (P. l. archeri)

The Mauritanian subspecies (P. l. balsaci)

Reviews

This International Single Species Action Plan should be reviewed and updated every ten years (first review in 2018). An emergency review will be undertaken if there is a sudden major change liable to affect one of the populations or subspecies.

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Picture on the cover: Adult Eurasian Spoonbill *Platalea leucorodia leucorodia* © Lars Soerink **Drawing on the inner cover:** Eurasian Spoonbill *Platalea leucorodia* © Sarah Plazzotta

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http://www.unep-aewa.org/publications/ssap/eurasian_spoonbill/index.htm

Executive Summary

The Eurasian Spoonbill Platalea leucorodia is distributed from the East Atlantic to India and China (Fig. 2). Four or five populations/subspecies can be distinguished: Platalea leucorodia leucorodia, the nominate subspecies, is distributed from Western to Central Europe/ Southeast Europe. It is often separated into two populations, the Atlantic and Central/Southeast European, differing in their distribution and ecology, in particular during the breeding season. The population which breeds in eastern Europe and throughout Asia has been designated as a separate subspecies, Platalea leucorodia major on the basis that it is larger in size than the nominate subspecies. Two subspecies are found in Africa, P. l. balsaci whose distribution is limited to the Banc d'Arguin (Mauritania) and P. l. archeri, the Spoonbill of the Red Sea. These two populations are not migratory and mix with Eurasian Spoonbills during the winter.

The current estimate of the numbers of the Atlantic population, the only one to increase, is 4,800 breeding pairs with a wintering population of 19,000 birds. The Central/ Southeast European population is probably made up of of 5,000 to 6,000 breeding pairs (current estimate 5,500 breeding pairs). Its known wintering numbers are only between 7,000 and 8,000 birds, indicating many gaps in knowledge of the wintering sites. The discrepancy between numbers of breeding pairs and wintering numbers is even higher for the "P. l. major" population (5,000 breeding pairs against only 2,100 known wintering birds. Most of the "P. l. major" birds breeding within the AEWA area probably winter in Pakistan and India (and perhaps as far Sri Lanka and Bangladesh).

The P. l. balsaci population is presently the most at risk with now only 750 breeding pairs (1,610 pairs in 1985) and very high mortality among fledgings. The breeding population is restricted to a single site, the Banc d'Arguin (Mauritania). A large proportion of juveniles are killed by predators (jackals) and the breeding site faces an increasing risk of sea flooding.

The P. l. archeri population is composed of 1,100 to 1,200 breeding pairs, with, however, a lack of recent data from Sudan and Somalia. P. l. archeri is not protected in two countries, Djibouti and Eritrea. Some data indicate that colonies of this subspecies are often disturbed by human activities. Birds are often in non-protected areas and are liable to persecution.

The Central and Southeast Europe population, and probably the P. l. "major" population breed partly in non-protected sites and particularly in artificial fishponds. The decline of these populations seems to be due to a combination of several threats linked to human activities. Poaching is an important cause of death for this population.

The Spoonbill is classified as being of "Least Concern" in the 2006 IUCN Red List of Threatened Species but all populations are listed in Column A of Table I in the AEWA Action Plan.

The conservation priorities are to maintain (Atlantic population) or increase the number of breeding pairs in the different geographic areas beyond a critical level in particular for P. l. archeri and P. l. balsaci.

The Pannonian population is still subject to heavy illegal hunting pressure, particularly in staging areas between its breeding and wintering areas; reduction of illegal hunting in these staging areas is a priority. Rehabilitation of former wetlands is considered as important to improve post-fledging survival and would be also a major factor in promoting an increase in Spoonbills numbers. Cooperation with the owners of fishponds is important to protect the breeding sites.

The P. l. major population breeding in Eastern Europe and Western Asia is also thought to be subjected to hunting pressure on its migration and wintering sites.

For P. l. archeri, the priority is to encourage the relevant governments of the Range States to protect the subspecies and its key sites during the breeding and wintering periods. As the number of key sites seems to be limited, measures could probably be taken quite easily, except for states where the security situation makes this impossible.

Measures to be taken for P. l. balsaci include strict control of predators, in particular of jackals, as a high priority. The study of sea defences for protecting the nesting sites must start as soon as possible.

For each population, the study of migratory movements and demographic parameters is necessary. This will depend on colour ring schemes and, if possible, on satellite telemetry.

This Action Plan was prepared by the International Spoonbill Working Group, an informal group hosted by Eurosite. The present Action Plan is based on more or less complete answers from 75 countries. Implementation of this action plan is foreseen in 54 Range States.

1. Biological Assessment

1.1. General Information

The Eurasian Spoonbill Platalea leucorodia is about 60-70 centimeters long and weighs 1,800-2,400 grams. The bill is most characteristic, with a spoon-like shape. The plumage is predominantly white and, during the breeding season, adult birds have a large plume on the back of the head and an orange/yellow band across the breast. Juveniles and sub-adults show black tips on wing feathers. As a wading bird, it has long legs like herons and storks. Males are larger than females with longer bills and legs.

It lives in habitats with changing water levels such as tidal areas, river deltas, estuaries, alluvial wetlands, lakes and man-made wetlands such as carp fish farms or reservoirs. It is a colonially breeding species, breeding in mixed colonies with other waterbirds (herons, egrets, cormorants, gulls and/or tern species), nesting in trees, reedbeds, dunes, salt marshes and, in arid areas, in low shrubs or on the bare ground, surrounded by water. It forages in shallow open waters and prefers mudflats, searching for small fish species, shrimps or other aquatic invertebrates.

The species' distribution and numbers have recently decreased, especially the Mauritanian subspecies. Before 1900 they probably bred in all large inner river delta's and marine estuaries. Due to land reclamation, drainage, agriculture, house building and tourism, their habitats have disappeared or decreased in extent. Since the use of chemicals (mainly in agriculture/aquaculture) increased, pollution of their feeding habitat and accumulation of pesticides in their prey have resulted in a sharp decline in numbers and a restriction of their distribution. Some populations have recovered (i.e. the NW European and Hungarian populations) but other populations are still suffering.

It is a migratory species but African subspecies are resident. Migration distances of 4,000 kilometres are usual. During migration they use stop-over sites (stepping stones) to recover (sleep and feed) from the long distance flights.

1.2. Taxonomy

Phylum: *Chordata*

Class: Aves

Order: Ciconiiformes Suborder: Ciconiae Family: Threskiornithidae Subfamily: Threskiornithinae

Genus: Platalea Subspecies:

Platalea leucorodia leucorodia Linneaus 1758, the nominate subspecies.

Platalea leucorodia archeri Neumann 1928 (like balsaci but smaller, Cramp et al. 1977). Platalea leucorodia balsaci Naurois & Roux 1974 (bill completely; smaller than nominate subspecies (Cramp et al. 1977).

Platalea leucorodia "major" Temminck & Schlegel, 1849 (considered to be larger than nominate subspecies Cramp et al. 1977; this subspecies is not considered as valid by del Hoyo et al. 1992).

1.3. Population Development

The Eurasian Spoonbill has a wide but fragmented Palearctic distribution, with a breeding range that extends from Europe to China, India, the Red Sea and Northwest Africa (Cramp & Simmons 1977; Hancock et al. 1992). The breeding range was formerly more extensive. The species bred in France in the estuary of the Loire during the sixteenth century, in southern England, the Netherlands and in Northern Germany and Denmark in the seventeenth century and on the Baraba Steppes, in western Siberia, during the nineteenth century. It also bred in the Pinsk marshes of Belarus and Poland, and, according to Vaurie (1965), has bred in northern Algeria (Lake Fetzara). The species is migratory throughout its range, except for the populations of Northwest Africa (P. l. balsaci) and the Red Sea (P. l. archeri). Wintering areas include the river estuaries of the Atlantic coast, the Mediterranean, Sub-Saharan countries, Pakistan, Iran, India, Sri Lanka, Japan and southern China.

The world population is estimated at 65,000-142,250 individuals (Wetlands International 2006). In most countries, breeding populations are declining except for Western Europe, Hungary, Romania and Italy.

The East Atlantic flyway population is well known and breeding sites are protected throughout its length. New colonies have recently been established in Morocco, Portugal, France, Spain, the Netherlands, Belgium, Germany and Denmark (and there are signs of recolonization in the United Kingdom), and the breeding population has increased to about 4,800 pairs (September, 2007). The total population has been estimated at 19,000 individuals (September, 2007).

In Central and Southeast Europe, the population is estimated to be from 4,910-6,160 breeding pairs (September, 2007). The population is increasing in Hungary (Kovács, Végvári & Kapocsi 2001), Italy (Fasola 2001) and in Romania (Papp & Sándor 2007), but decreasing sharply in Russia and Turkey (Osiek 1994, September, 2007). New colonies have recently been established in the Czech Republic and Slovakia.

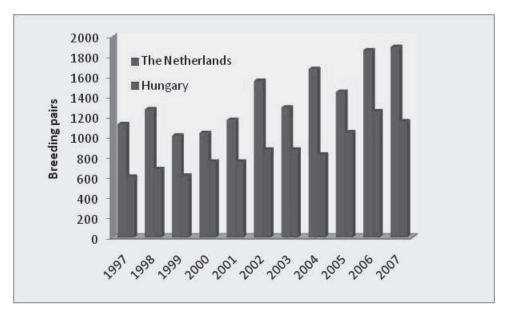


Fig. 1: Changes in the numbers of breeding pairs in The Netherlands and in Hungary

Recent counts show a serious decrease in the numbers of breeding pairs of the Mauritanian subspecies in the Banc d'Arguin, in fact numbers have decreased from 1,610 breeding pairs in 1985 (Gowthorpe & Lamarche 1996) to less than 750 pairs in recent years (O.Overdijk, T.Lok in prep).

Little detailed information is available on numbers of the "P. l. major" population breeding within the AEWA area from west of the Sea of Azov to Kazakhstan. Wetlands International (2006) indicates a population numbering over 25,000 individuals and a stable tendency, but there are indications of a decrease at breeding sites (present enquiry).

Detailed data are also lacking on population trends for the Red Sea subspecies P. l. archeri, but a decrease is likely given the lack of protection of the main breeding and wintering sites. Wetlands International data (2006) indicates a declining trend.

1.4. Geographical Distribution

The distinctions between breeding areas of the different populations/subspecies are often not clear, although the wintering areas can be distinguished with greater clarity (Fig. 2):

- 1. The westernmost "Atlantic" population (P. l. leucorodia), the most clearly demarcated, breeds in Western Europe and migrates along the East Atlantic coast to winter mainly in coastal West Africa
- 2. The Central and Southeastern European population (P. l. leucorodia) breeds in the Danube basin, northern Italy, Greece, the Black Sea region and Anatolia. Birds from the western breeding colonies winter mainly in the Eastern Maghreb, with small numbers crossing the Sahara to winter in the Sahel wetlands (mainly the Inner Niger Delta and Lake Chad). Birds from the eastern end of this population winter either along the Nile, as far south as Sudan, or in Israel, Syria and Iraq, with a few reaching the Gulf and even south western Pakistan and India. Some western birds may however also go to the Nile, while eastern breeders may winter in the Maghreb. Further studies may reveal whether two separate populations are involved. The status of birds breeding in Turkey is not clear; those from western Anatolia may belong to this population, those from eastern Anatolia may belong to the "P. l. major" population.
- 3. The Azov/Caspian population ("P. l. major") breeds east of the Sea of Azov, some birds migrate via eastern Iran and Baluchistan to winter mainly in the Indus Delta in southern Pakistan; others cross eastern Afghanistan and the Hindu Kush to winter in northern Pakistan (Punjab) and along the Ganges in northern India (this enquiry). The status of birds nesting in Iran is not clear; they may winter along the Iranian coast of the Gulf, or may migrate to the Indus Delta in southern Pakistan. Figure 2b shows migration routes/flyways used by birds marked at the nest with darvic rings in Netherlands and Hungary and with metal rings in Turkey, Ukraine, Russia, Azerbaijan, Kazakhstan and Uzbekistan. Birds breeding in Syria and Iraq are considered to belong to the "P. l. major" population.
- 4. P. l. archeri is a subspecies, found in the Red Sea, with an estimated population of 860 to 1,270 breeding pairs, according to the present enquiry. It is mainly distributed along the coasts of the Red Sea and Indian Ocean (Somalia, del Hoyo & al. 1992). Most Spoonbills breeding on the Arabian side of the Southern Red Sea are likely to belong to this subspecies. The identity of the population breeding in the Northern Red Sea is unclear but may be the subspecies P. l. major (Jennings, in prep). In the Northern Egyptian Red Sea, the population appears to have declined by up to 50% (Jennings et al. 1985; Grieve & Millington 1999).
- 5. P. l. balsaci is another endemic subspecies with an estimated population size of 3,100 birds (Tamar Lok, pers. comm., O. Overdijk), breeding only in the Banc d'Arguin National Park (Mauritania). Birds are probably resident in the park, although a few observations have occurred elsewhere (notably in the Senegal Delta).

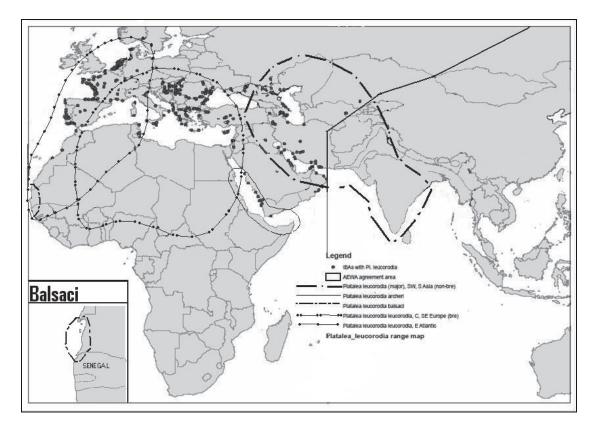


Fig. 2a: The distribution of the various populations and subspecies in the AEWA region.

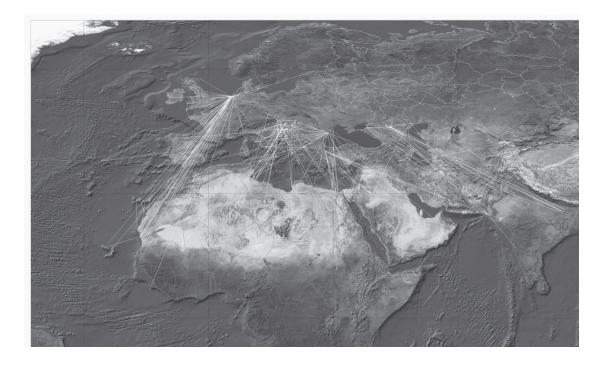


Fig. 2b: Spoonbill movements as shown by ring recoveries.

Table I: Geographical distribution of the Spoonbill

Y=Yes, N=No, V=Vagrant, W=Wintering, PM=Passage Migrant, S=Summering

	rodia: The A	Atlantic	P. l. leucorodia: The Central Europe/Mediterra population			
Country	Breeding	Non breeding	Country	Breeding	Non breeding	
Belgium	Y	N	Albania	Extinct	W, PM	
Denmark	Y	N	Austria	Y	N	
France	Y	Y	Bosnia	Extinct	PM	
Germany	Y	N	Bulgaria	Y	PM, W	
Morocco	Y	PM, W	Croatia	Y	PM	
Netherlands	Y	N	Czech Republic	Y	N	
Portugal	Y	PM, W	Greece	Y	W	
Spain	Y	PM, W	Hungary	Y	Y	
United Kingdom	Y	PM, W	Italy	Y	PM, W	
			Moldova	Y	PM	
Cape Verde	N	V	Montenegro	Y	PM	
Gambia	N	W	Romania	Y	PM	
Luxemburg	N	V	Serbia	Y	PM	
Mauritania	N	W, S	Slovakia	Y	Y	
Senegal	N	W, S	Turkey	Y	PM	
Sweden	N	V	Ukraine	Y	N	
			Algeria	Extinct	W	
			Burkina Faso	N	W	
I	P. l. balsaci		Cameroon	N	W	
Mauritania	Y	W	Chad	N	W	
			Cyprus	N	PM	
			Dem. Rep. Congo	N	V	
			Egypt	N	PM, W, (S?)	
			Israel	N	PM, W	
			Jordan	N	V	
			Kenya	N	W	
			Lebanon	N	V	
			Libya	N	W	
			Macedonia FYR	N	PM	
			Mali	N	W	
			Malta	N	PM	
			Niger	N	W	
			Nigeria	N	W	
			Poland	N	PM	
			Slovenia	N	V	
			Tunisia	N	W, S	
			Uganda	N	V	

P. 1		P. l. archeri			
	Breeding	Non breeding		Breeding	Non Breeding
Armenia	Y	PM	Djibouti	Y	W
Azerbaijan	Y	N	Eritrea	Y	W
Iran	Y	PM, W	Egypt	Y	W
Iraq	Y	W, PM	Saudi Arabia	Y	W
Kazakhstan	Y	PM	Somalia	Y	W
Kuwait	Y	PM, W	Sudan	Y	W
Russian Federation	Y	PM	Yemen	Y	W
Syria	Y	W, PM	Ethiopia	N	V
Turkmenistan	Y	PM			
Uzbekistan	Y	N, PM			
Bahrain	n.a.	V			
Belarus	n.a.	V			
Georgia	n.a.	PM			
Oman	n.a.	W			
Qatar	n.a.	V			
Tajikistan	n.a.	PM			
United Arab Emirates	n.a.	W			
India*	n.a.	W			
Pakistan*	n.a.	W, PM			

^{*} Countries outside the AEWA Agreement area

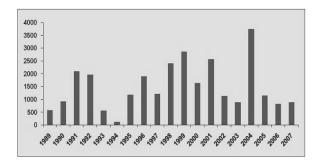
1.5. Distribution throughout the Annual Cycle

The breeding strongholds of the Atlantic population are in the Netherlands (particularly on the offshore islands of the Wadden Sea) and southern Spain (Odiel and Coto Doñana). The current breeding distribution is clearly a relict of a formerly much wider breeding area, the decrease caused by disturbance and above all wetland loss. In recent years, with improved protection and wetland restoration, some former breeding areas have been recolonized notably in France (Atlantic coast) and also in northern Morocco. In Germany and Denmark, the species was established as a breeder during the last two decades. These breeding populations migrate along the Atlantic coast, most birds crossing central Spain via Santoña, using an inland route over the Iberian peninsula to Morocco, to winter along the Atlantic coast of Mauritania and Senegal, where they mingle with the Mauritanian subspecies *P. l. balsaci* and the African Spoonbill *Platalea alba*. However, some of them follow the north coast of the Iberian Peninsula to overwinter in the estuaries of NW Spain and Portugal. Increasing numbers also remain in France to winter. Their movements have been intensively studied through colour ringing and by observations throughout the flyway which have shown that young birds spend their first three or four years in Africa, before returning to breeding colonies. Sightings of Dutch and Spanish breeding birds in the Mediterranean are rare.

Spring migration starts in Western Africa around 1 February and birds arrive at breeding sites by February (Southern Spain) and March / April in Northwestern Europe. Autumn migration starts in September and birds arrive at the wintering sites again in November.

The Central and Southeast European population breeds along the Danube and its tributaries: in the Danube Delta, on the Pannonian Plain (Carpathian Basin) in central and northern Greece and in Anatolia. The nest sites are mainly in man-made fishponds and reedbeds or flooded riparian forests, as well as on the ground on bare islands. Since about 1990 breeding Spoonbills have colonized northern Italy (Po Delta). Recoveries of ringed birds show that some winter south of the Sahara (the Inner Niger Delta and Lake Chad). A Hungarian and a Serbian bird have been monitored in Niger (J. Brouwer;

Pigniczki *in press*). Nonetheless, numbers are small and totals from Sub-Saharan Africa east of Senegal recorded by the International Waterbird Census were only 25 in 1995, six in 1996 and 54 in 1998 (Dodman & al. 1995, 1996, 1999) but 100-200 in Niger (Brouwer & Mullié 2001, Niger Bird Data Base, coordinator Joost Brouwer). Single Hungarian ringed individuals were reported from Mali and Nigeria (Pigniczki *in press*). Many more birds stay in freshwater or saltwater sites in the Mediterranean (mainly the tidal areas of southern Tunisia and Libya), thus avoiding a long trans-Saharan journey. New colour-marking programmes in the Danube Basin, Italian and Greek breeding colonies have provided more information on these wintering birds (Akriotis & Handrinos 2004). It is strongly suspected that young birds summer in Israel, Tunisia and probably Algeria too. Some Central and Southeast European Spoonbills migrate through the Nile Delta (curiously, very few appear to stay to winter in the Nile Delta itself (Goodman & Meininger 1989)) and along the Nile to winter in inland southern Egypt and Sudan, at latitudes similar to those where the Western European breeding population winters in Senegal and Mauritania; a few winter in the Gulf. A single Hungarian young individual and one Croatian bird during its third winter were seen in Morocco, along the main migration route of the Western European (Atlantic) population.



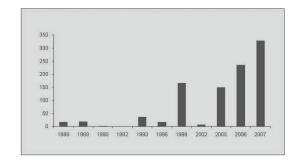


Fig. 3: Changes in numbers of wintering Spoonbills in the Senegal Delta

Fig. 4: Changes in numbers of wintering Spoonbills in Turkey

Central and Southeast European breeding Spoonbills thus have two main migration routes; one leads south-west over the Adriatic Sea, through Italy to North Africa, and another across the Sahara. The other route leads south-east, through the Balkans, Anatolia, the Middle East and the Nile Delta to the Egyptian and Sudanese sectors of the Upper Nile. A small number of birds from the eastern end of this population (whose eastern limit is poorly defined at present) migrate through Syria and Iraq and as far as the Gulf or even the Indus Delta in Pakistan. There is considerable crossover between the two main routes: most Austrian and Hungarian breeding birds winter in Tunisia, but some take the Nile route; Mullié *et al* (1989) list fifteen ringing recoveries in Egypt, nearly all from the period 1930 to 1957, with eleven in the general area of the Nile Delta: one from Neusiedler See in Austria, six from Kisbalaton in Hungary, three from Kus Gölü, Turkey and one from Romania. In addition they list four recoveries without precise places of ringing (one from Turkey and three from "Hungary/Yugoslavia"). Similarly many Greek and Romanian breeding birds winter along the Nile, but some take the southwestern route. The colour-ringing programme in the Romanian sector of the Danube Delta began in 2003 and recoveries in Spain, Tunisia, and Oman illustrate differing migration directions taken by these birds (Kiss *et al* 2007).

Some first-year Spoonbills may stay in the Carpathian Basin until as late as December in small numbers (2-20 individuals) and there have been reports of birds overwintering in Hungary since 2005. Recoveries of two- and three- year old Spoonbills from Central and Southeast European colonies show that immatures summer in Tunisa and southern Italy, notably in Sardinia. Some were found in Albania and Bulgaria between their wintering and natal areas during the summer; they may also reach the Carpathian Basin. Four-year old metal ringed Spoonbills were found in the Carpathian Basin in the breeding period, but over 100 km from their natal area in the 1900s (Pigniczki, in press). It is thought that half the colour-ringed Spoonbills bred over 100 km from their natal colony in Hungary in 2007,

mainly because of the condition of feeding areas around their natal area. Ringing recoveries support the meta-population hypothesis: two Italian and Romanian (from the Danube Delta) individuals appeared to breed in Hungary, and a Hungarian bird was recovered in Romania, outside the Carpathian Basin, in the breeding season (Pigniczki, in press).

The cutoff point between the Central and Southeast European breeding population and the population breeding in Northeastern Europe and western Asia (Azov/Caspian), the so-called "P. l. major" subspecies, is as yet unclear. Birds nesting in the eastern Black Sea and eastern Turkey may belong to the Central and Southeast European population, or to the Azov/Caspian population. A few birds have nested on the Kuwaiti islands of Warba and Bubaiyan since the 19th century, and a few birds summer in the Gulf. Most birds in the Gulf are winter visitors or passage migrants. Numbers vary from year to year, with highest numbers between September and April. Larger feeding concentrations from December to April are known from the coast of central Oman, including 270 at Bar al Hikman (in February).

P. l. major breeds from the east coast of the Sea of Azov to the lower Volga (north to Lake Sarpa, lower Ural, the Ilek and Khoboda rivers north to about 50 N and to about 54 to 55 E in the Ubagan valley north of Kustanai, south to the region north of the Caucasus (swamps of the lower Kuban and Terek rivers and of the Manych depression); also elsewhere in Kazakhstan from the east coast of the Aral Sea to the valley of the lower Syr Darya, at Lake Tengiz, and from Zaisan Nor east to the valley of the Kara Irtysh and Tanna Tuva; the breeding range of the Spoonbill extends further east (outside the AEWA area) as far as Mongolia, Manchuria and Ussuriland (Vaurie 1965). This West Asian population probably numbers at least 25,000 individuals (Wetlands International, 2006). In the wintering area, birds breeding within the AEWA area mingle with birds breeding further east, outside the AEWA area: the East Asian population is estimated to number 10,000 individuals (Wetlands International 2006), wintering in South Asia (mainly India and Pakistan) and East Asia (mainly China). The latest winter census data available relate to January 2002, 2003 and 2004 (Li & Mundkur 2007): the total number of wintering Eurasian Spoonbills counted in the whole of Asia were respectively 10,753 in 2002, 13,472 in 2003 and 14,044 in 2004. Of these 2,799 (2002), 4,063 (2003) and 6,069 (2004) were found in India and 975 (2002), 752 (2003) and 16 (2004) in Pakistan; numbers recorded in Bhutan, Nepal and Sri Lanka were much smaller. It should be emphasized that these counts are undoubtedly under-estimates, as not all potential wintering sites were visited, but also that some of these birds had undoubtedly bred outside the AEWA area. Larger wintering numbers were noted in East Asia with 6,889, 8,329 and 7,729 birds respectively in 2002, 2003 and 2004.

Recoveries of Moscow ringed birds show that only a tiny number of birds from the western Asian population winter along the Nile Valley (though a few may join post breeding assemblies in the Sea of Azov). Most birds from the western part of the population migrate across the breeding range, (following a remarkably constant bearing between 120 and 140 degrees from their breeding place) and concentrating in north east Iran; they then appear to take one of two separate routes to reach their winter quarters: they either fly via Sistan and Baluchistan to reach wintering grounds along the Arabian Sea (mainly round the Indus Delta or the lower reaches of the river Indus); or they fly through Turkmenistan, Uzbekistan and eastern Afghanistan, over the Hindu Kush and Khyber Pass, to reach the Punjab and the Ganges plain, wintering in numbers as far east as 87E (this enquiry). Birds breeding in northern Iran appear to winter along the Iranian shores of the Gulf (D.A. Scott, pers comm.), or may move into Pakistan.

P. l. archeri occurs in the Red Sea. It breeds mainly on islands, from the Tiran archipelago at the mouth of the Gulf of Aqaba to Yemen. It is believed to be mainly sedentary, but the picture is complicated by the arrival of birds from Europe in winter, and birds nesting in the northern part of the Red Sea may indeed belong to P. l. major rather than to P. l. archeri. It is a gregarious bird by nature, but migrants and visitors often occur individually. Small parties, usually no more than about a dozen together, may occur along all parts of the Red Sea coast where their subspefic identity is not clear (see Jennings, *in press*. for more comments on status and numbers).

P. l. balsaci breeds exclusively on the ground on bare islands in the Banc d'Arguin National Park in Mauritania. Only very small numbers breed in mangrove trees at a height of 2-3 meters. Mostly they breed in mixed colonies with Western Reef Herons and/ or Little Egrets, in trees also mixing with African Cormorants and Grey Heron. Breeding starts around March and continues to September or October. Most of them seem to winter around the breeding place, though a few may wander south to the Senegal Delta. In winter, they intermingle (and perhaps compete) with wintering birds from the Eastern Atlantic population of *P. l. leucorodia*.

1.6. Productivity and Survival

The age at maturity is well known in the Atlantic population: there are three observations of birds breeding at the age of two years (all males) in the Dutch database (T. Lok, O. Overdijk) but most birds start breeding at the age of four to five years. The average first breeding age is 3.6 years. Nonbreeding birds either stay on the wintering grounds or come back to the breeding grounds during summer. Maximum observed longevity (in the Dutch Ringing Scheme data) is 26 years. Birds in captivity are reported to live for 29 years but they are subject to fewer threats.

The estimate for survival (probability of an adult bird surviving until the next breeding season) is 0.83 in the Netherlands (s.e. = 0.4) while survival rate average 0.87 (0.84-0.90) in Spain (de le Court 2001, Doctoral Thesis). The estimate for observation (probability of a bird being observed at least once a year if this bird has already been seen back in Holland as an adult, given that bird is alive) is 0.82 (s.e. = 0.4) while it is highly variable from year to year in Spain. The return rate of juveniles to the breeding grounds (at a modal age of 3 years) is 0.32 for the Dutch population (Bauchau et al 1998). Recent follow up study indicates that the survival of the Dutch Spoonbill population has decreased over the last 15 years from 0.92 in 1990 to 0.79 in 2005. This may be caused by density-dependent population regulation (T. Lok, pers. comm.). Recoveries suggest that a minimum of 11.7 - 16% of Spoonbills reach maturity (4 or 5 year old) in Hungary based on metal ringed recoveries from the 1900s (Pigniczki in press).

Reproductive success is heavily dependent on weather, food availability and/or predation. Droughts and floods can have a major influence on reproductive success. Larger colonies produce less hatched chicks per nest than smaller colonies (breeding success = 1.13 ± 0.91 (s. d.) on Schiermonnikoog 2007 and Figures 5 and 6). Under excellent circumstances (i.e. in NL / D Wadden Sea islands with little predation and a lot of food, shrimps, for the chicks), Spoonbills can raise three chicks in a season. If the first breeding attempt fails, Spoonbills may make a second attempt in the same season (sometimes even when they already had 2-weeks old chicks). Predation by ground predators (foxes, domestic cats, rats, wild boars, etc.) can destroy a whole cohort of juveniles. Spoonbills breed in trees as well as on the ground. It was shown in the Netherlands that after large scale predation in a colony the breeding population spread out over a larger area, discovering new breeding sites (O. Overdijk, pers. obs.).

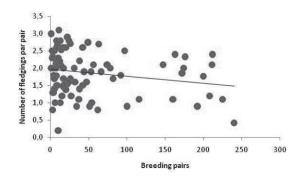


Fig. 5: Relationship between the size of colonies and the production of fledging birds (data from The Netherlands, France, Germany)

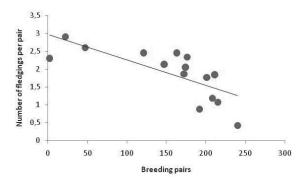


Fig. 6: Relationship between the size of one colony (NP Schiermonnikoog) and the production of fledging birds

Life history

Breeding

The Spoonbill breeds in close proximity to shallow waters. The species is social, monogamous and sexually polygynous. Sexual dimorphism is slight (legs and bill size, de Voogt 2004).

Pair formation occurs after arrival on the breeding grounds. Birds breed in large high density colonies, small colonies or alone, in reedbeds, on the ground or in shrubs or trees.

Clutch size 2-6 eggs. Incubation 24-28 days. Chicks hatch some days apart; younger ones usually die if the food supply is poor. Fledging after 42 days. Mortality of eggs, chicks or young varied from 0 - 90%.

After breeding almost 100% divorce (Overdijk, obs. pers). Males, females and their young disperse/migrate separately (Overdijk, obs. pers).

Breeding may start as early as January in Spain, while it is not before March or April in the Netherlands.

Southeastern European and Pannonian population usually starts breeding activity in March or mid-April and clutch size is 2-4 eggs. The last finish their

Feeding

Alone or in social groups by day and night using shallow waters in alluvial or tidal wetlands, lakes, marshes and pastures. Diet composed of small fishes (sticklebacks) in freshwater, crustaceans (mainly shrimps), aquatic insects, frogs, leeches and other worms.

In tidal areas mainly foraging during low tide.

Birds need about 555 g of small fishes (fresh weight) per day (Kersten 1998).

Sometimes in close cooperation with other fish-eating species such as cormorant, pelican and heron species.

Interactions with cormorant, pelican and gull species (to steal or to eat waste food), are observed frequently during the feeding of iuveniles by the adults.

Grey Herons and Great White Egrets showed

Outside breeding season

Migrates in large or smaller flocks or alone, rarely with other species (cormorants or herons observed). Spring migration starts in January and ends in mid-March or April. Autumn migration starts in August or September. Very small numbers winter in their natal area. Some disperse in nearby areas.

Great difference in migratory strategy. Some make small steps (100-300 km) and rest for a few days at stop-over sites. Others make large steps (1,000-2,000 km) and stop for longer periods to recover.

More birds of Atlantic population are wintering in the North than before (Overdijk 2002), probably in relation with the increase in numbers, the increase in quality of different sites in France and Spain, and possibly global warming.

nesting in July. They breed in reedbed, usually next to little pools without vegetation, or on Salix bushes in Hungary.

In Kazakhstan, inhabits steppe lakes with rich reedbeds, nests on trees along river channels, or bushes with shallow water nearby. Appears as early as mid-March, but usually only in April. Spring migration ends in mid-May. Settles in colonies, sometimes together with Grey Heron Ardea cinerea, Great Egret Egretta alba and Cormorant *Phalacrocorax sp.* Nest is built by both partners in reedbeds from reed stems, or in bushes and trees (willow) from dry twigs with some reed stems and leaves at a height of 2-7 m. Clutches of 3-5, more often 3-4 eggs in early May, but usually mid- May – early June. Juveniles hatch end of May early June (Gavrilov & Gavrilov 2005).

P. l. archeri breeds during or just after the rainy season from February until August/September. P. l. balsaci breeding starts in March and lasts until October or November. Breeds on volcanic rocky islands, on sandbanks and in mangroves. Nests made out of seagrass (Zostera)

Garbage is used for nestbuilding, bird feathers and bones too.

cleptoparasitic activity against Spoonbills in Hungary (Pigniczki in press b).

Spoonbills have been known to predate eggs from Lesser Blackbacked Gulls (O. Overdijk, obs. pers).

The west European population greatly depends on brackish habitats, most are intertidal ones, while central and eastern European birds mainly exploit fishponds and flooded areas after they return from their wintering sites in spring, and once again after the breeding season (Schneider-Jacoby 2002). Natron lakes are very important feeding areas especially in spring but from midsummer dried out fishponds are the most important for Spoonbills (Hungary). In northern regions, the shallow sea does not contain fish when birds arrive in their nesting area as the seawater is still too cold. They need food resources in farmland, ditches or artificial lakes (fishponds) for early spring (Overdijk 1994).

2. Available Key Knowledge

Survival rate and mortality factors are known for the Spanish and Dutch breeding populations. These are the best studied populations, but the bottlenecks for population development are still not known. A large gap in knowledge relates to the food situation for Spoonbills, especially about its availability at key wetlands present along the different flyways during the non-breeding season. In this context, although numbers are apparently influenced primarily by conditions in breeding or wintering areas (Newton 2004), many recent efforts have been made to clarify the influence of the conditions

experienced at stopover sites in population regulation of migratory waterbirds (e.g. Santoña Marshes for the Atlantic population; see Navedo 2005).

Atlantic Population	Central Southeast European Population	Western Asian Population	P. l. archeri	P. l. balsaci
Sensitive as during migration and winter, species is restricted to a few sites (O. Grove, Santoña marshes, Tajo Estuary, Ría Formosa, Guadalquivir marshes, Banc d'Arguin, Senegal Delta). During breeding restricted to three major sites. The current breeding distribution is the result of a long lasting historical decline.	Recovering from historical decline. Breeding sites of Pannonian population mostly on man-made wetlands, but feeding on temporary wetlands. South-east populations mainly use natural wetlands. Stop-over sites in the Balkans endangered, improving in Italy, unknown in Egypt and Sudan.	Status and population size are uncertain.	Small population size, declining. Breeding places are vulnerable to human disturbance. Low level of protection and knowledge, largely resident.	After 2000, major decrease: 750 breeding pairs in 2007. Total population size estimated at 2,800 in 2007, compared to ± 5,000 in 1997-2001. Generally, low breeding success. One main breeding colony. Mainly resident.

3. Threats

The main historic threat for Spoonbills is the loss of habitat for feeding and breeding. Feeding grounds have, over the years, been drained, regulated, empoldered, changed into intensive agricultural land or fish farms, abandoned, become overgrown by vegetational succession, lack of grazing or invasion by alien species, or used for recreation (disturbance) activities. Overfishing and water pollution also pose huge problems in some areas.

Breeding grounds are destroyed or abandoned by the species as a result of house building, or the management of water levels for agriculture, fish farming, industry, recreation, military activities and even forestry. In all cases, water management (usually drainage) is the key problem.

While Spoonbill habitat remains at risk throughout the range of the populations and subspecies under consideration in the present document, there is a growing acceptance of the need to preserve and restore Spoonbill habitats, and many major sites have been given protected status, notably: in the breeding area of the Atlantic population, in the breeding area of the Pannonian population, in the major West African sites of Banc d'Arguin, Diawling and Djoudj, in wintering areas in Tunisia, in some breeding areas in Turkey and southern Russia, in breeding and wintering grounds in Iran and in wintering areas in Pakistan and India. Nevertheless, there are still major areas where protected status is lacking or poorly applied, and much further work is needed.

In addition, particularly in Southeastern Europe and in the migration and wintering range of P. l. *major*, illegal hunting is a serious problem in some areas.

The highest non-natural cause of death in the Atlantic population during migration is poaching and collisions with electric power lines, especially in highly urbanized areas.

For the Central and Southeast European breeding population, most breeding areas now enjoy protected status, though some sites in Anatolia show a lack of protective measures. The principal threat on staging areas in the Balkans and Middle East is the heavy (generally illegal) hunting pressure, which causes direct mortality and also means that otherwise suitable feeding areas cannot be used because of disturbance; a shooting ban in Montenegro in spring 2006 (imposed because of the fear of Avian Influenza) led to increased numbers of Spoonbills using staging sites. Birds moving through Mesopotamia must also be exposed to illegal hunting.

Information is lacking on the conservation status of the breeding sites P. l. major, but it seems clear that, even where protected areas exist, funds for protective measures, monitoring and wardening are lacking. Little detailed information is available on hunting pressure in staging areas, but it appears highly likely that P. l. major Spoonbills are subjected to illegal hunting in migration routes through eastern Iran, Turkmenistan, Afghanistan and Pakistan.

Little information is available on threats to P. l. archeri, but it is clear that few of its breeding sites enjoy protected status and that such sites are open to predation and disturbance by fishermen and other visitors to breeding islands in the Red Sea. It is also likely that sites used outside the breeding season do not enjoy protected status, and that some birds are trapped and/or shot.

The source of the high mortality of P. l. balsaci recorded on the Banc d'Arguin over many years is still unknown. A high probability is predation by Jackal Canis aureus (i.e. in 2007, 43 of 45 young ringed birds were predated by Jackals within ten days ringing). Spoonbills breed on islands and Jackals can swim without difficulty. Jackals also breed on islands, sometimes in the middle of a Spoonbill colony. Another possibility is the increased frequency of flooding (due to sea level rise?) during extreme high tides. Other sources could be poisoning of vegetation (plankton) in the (warm) sea, because high mortality of other waterbird species was observed at the same time or predation by other bird species (Lesser Black-backed Gull, Slender-billed Gull). Further studies are necessary and some are underway.

Table II: Threats identified in each population/subspecies. Details of the main threats per country are given in Annex 2.

Critical	A factor causing or likely to cause very rapid declines (>30% over 10 years).	0
High	A factor causing or likely to cause rapid declines (20-30% over 10 years).	2
Medium	A factor causing or likely to cause relatively slow, but significant, declines (10-20% over 10 years).	6
Low	A factor causing or likely to cause fluctuations.	4
Local	A factor causing or likely to cause negligible declines.	6
Unknown	A factor that is likely to affect the species but it is unknown to what extent.	0

	Problem	Description	leucorodia (Atlantic)	leucorodia (Continental)	major	archeri	balsaci
uo	Starvation (mainly juveniles)	Juveniles arrive at unfamiliar sites and are not experienced enough to find food. Causes of problems: Farming operations, ducks hunting (France), uncontrolled tourism (canoe, dog walking, Wadlopen Netherlands), recreational shellfish collection, bird disturbing from fishponds (Israel, Croatia). Competition with individuals of the same species or with other fish feeders could add to the risk.	©	©	©	0	0
Migration	Disorientation	No experience of where to go, getting lost (at sea) and dying. Cases from Cape Verde Islands.	4				
	Collision with power lines	In river deltas with large ports or industry.	€	4	4		
	Industrial spills	Bird feathers get dirty or food is polluted.	6				
	Poaching	Direct mortality from illegal hunting, in the Balkans, in the area of the Caspian, and more especially in eastern Iran, Turkmenistan and Afghanistan.		0	0		
Wintering	Starvation	Not enough food available or they cannot find it in combination with disturbance. Causes: invasion of open water by plants (vegetation succession, invasive plant species), human settlements, overfishing, industrial and tourism development.	9	(SE) (SW)	€		

Problem	Description	leucorodia (Atlantic)	leucorodia (Continental)	major	archeri	balsaci
Run-off of agricultural chemicals (in particular DDT)	DDT is still in use in rice cultures in Africa where birds may feed. DDT is stored in their body fat and found later later in embryos and chicks. When food availability is limited, the body fat will be used and birds are less alert. They die because of secondary causes of death (shot, collisions with power lines).	•	6	4	0	•
Competition	Food competition at certain wintering sites with congenerics or individuals of other species.	6				
Poaching	Birds are killed or wounded. Direct mortality from illegal hunting, notably in Egypt, also in Sudan (subsistence hunting) and Pakistan. Weak legislation on protection and	0	(SE) (SW)	2	•	
Loss of habitat	little application of existing legislation. Food competition at neighbouring sites. Dredging for navigation (Seine Estuary, Santoña, Spain), river diversion (irrigation), land reclamation (construction of infrastructures for tourism, fruit plantations, agriculture (Nile Delta), intensive fish-farming, water regime regulation (water transfers, dams).	€	2	€		
Disturbance	Loss of condition (no food or no sleep) and loss of energy (birds fly away in panic) and if they move to other sites, food competition. Causes: hunters, insensitive ecotourism, motorised shepherds, Jackals and feral dogs, firewood cutting.	•	6	€	•	0

	Problem	Description	leucorodia	leucorodia	major	archeri	balsaci
	Collision with power lines	Birds collide with lines (they cannot judge the distance) and are hurt in the breast area or break their legs. They die sooner or later.	6	•	4		
	Botulism/ cyanotoxins/ parasites	Mostly directly after fledging when the temperatures are quite high and botulism can break out among other waterbirds as well. Some tens or hundreds of birds may die very quickly. Depends heavily on the type of parasites and most are in the feathers. Birds spend a long time removing the parasites with their bill and while doing so, they cannot sleep or feed. Their body mass decreases and they may die.	•	S	6	9	•
Reproduction	Heavy rain and hail- storms in spring	Adult birds cannot leave the eggs or new born chicks alone to go to feed. If these weather conditions continue, adults have to feed and chicks become cold and wet and die in few days.	2	•	4		
Rep	Poaching	Birds are shot by poachers and are killed or wounded, mostly during feeding.		6	6	0	
	Starvation after fledging	After fledging the parents nurse the chicks for a short time and then family relation ends. The juveniles are left to be independent: some juveniles are able to find food, others not and these suffer or die. The causes are overfishing (shrimps), restricted migration of seafish to inland waters, possibly competition for food.	•	€	€	0	
	Invasive plant species	In Doñana, invasion of <i>Azolla</i> filiculoides. In the Senegal Delta, <i>Typha</i> .	⑤				
	Predation	Mainly unfledged juveniles are killed by the predator. Some predators also destroy eggs. Adults are not caught or only small numbers. Fox, wild Boar, Jackal.	€	4	•	4	0

Problem	Description	leucorodia	leucorodia	major	archeri	balsaci
Flooding	Nests flood or eggs disappear from the nests. Small chicks can may get cold and die later. Sometime secondary predation by gulls occurs.	0	③	€	0	0
Future effect of sea level rise and climate change	Reproduction will decrease or cease altogether. Adult birds winter further to the north, with possible food problems. Sea level rise will affect (the number of) flooding events, the breeding sites and loss of existing feeding habitats; however, new habitats may be created.	2	2			0
	Global warming could cause drought in the Pannonian and Anatolian region, and could lead to loss of breeding and feeding areas.					
Pollutants	Oil spills: oil may cover the breeding site. Birds cannot feed in the neighbourhood and get dirty. Pollutants: birds are less fertile, thus lower production or their body fat is polluted which will have effects during migration when using this body fat.	€	©	•		9
Lack of water (drought, drainage)	Breeding areas are not protected by the water anymore and predators can come easily to the colonies. No feeding areas for the inland population, or the adults should fly large distance. Feeding areas overgrown by reed, and other vegetation. Spoonbills are not able to look for food on that site, so they have to fly longer distances to look for food, it costs more energy and results in a decrease in the number of chicks. Drought may affect but in a Mediterranean climate it does not cause a significant decline unless occurring continuously over many years. Fishpond abandonment and land reclamation are two other problems.	2	©	€		

Problem	Description	leucorodia	leucorodia	major	archeri	balsaci
Loss of trees for nesting	Nests in trees are safe against ground predators. If lost, adults must build their nests in a less safe place. Colonial birds contribute to the death of trees, in Doñana and other colonies.	9	6			
Competition for nesting places (Cormorant, large Gulls)	Adults need to spend energy in defending their nest (materials) and when they are chasing a competitor they abandon the nest which may be damaged by other birds. The faeces of Great Cormorants destroy the breeding habitat within 2-3 years.	6	4	4		
Disturbance	Tourism (including bird watchers): disturbance at breeding or feeding sites. Agricultural work also causes disturbance at feeding sites especially in early spring. Fisheries: food competition and disturbance at feeding sites. Exercises by military aircraft: this kind of disturbance is dangerous when planes fly above the colony for a long time, and the parents start to fly around the colony. It may cause the death of the eggs or small chicks, if the weather is rainy or/and cold.	€	4	2		6
Overfishing	No food or less food available. Disturbance at feeding sites.					2
Urban and industrial development	Loss of habitat (bridges, wind farms). Suboptimal water levels (flooding, varying levels, drought, shortage of freshwater). Drainage of feeding waters. Breeding habitats (wetlands) are degraded by water regime intervention, mainly for intensive agriculture.	2	2			
Burning and cutting of reed	Loss of breeding habitat. Loss of nests when burning is carried out in breeding season.		4			
Isolated population	Inbreeding. No immigrants.					0

4. Treaties, Legislation and Policies Relevant for Management

The Spoonbill is classified as being of "Least Concern" in the 2006 IUCN Red List of Threatened Species, indicating that it has been evaluated but does not qualify for any other category.

If the IUCN criteria are applied at subspecies/population level, P. l. archeri should be assessed as belonging to the category "Vulnerable" as it has declined up to 50% in the last ten years.

The present studies of P. l. balsaci indicate that this subspecies should be considered as "Endangered" due to its sharp decline in the last ten years.

The following section briefly reviews the obligations of the Range States arising from the major international conventions and agreements. The species is also affected by national conservation legislation and policies.

4.1. International Directive, Conventions and Agreements

4.1.1. At European Union level: Bird Directive

The terms of reference for the application are given in paragraphs 1 and 2 of Article 4 of the Directive, which is given in full below:

- 1. The species mentioned in Annex I shall be the subject of special conservation measures concerning their habitat in order to ensure their survival and reproduction in their area of distribution. In this connection, account shall be taken of:
- (a) species in danger of extinction;
- (b) species vulnerable to specific changes in their habitat;
- (c) species considered rare because of small populations or restricted local distribution;
- (d) other species requiring particular attention for reasons of the specific nature of habitat.

Trends and variations in population levels shall be taken into account as a background for evaluations. Member States shall classify in particular the most suitable territories in number and size as special protection areas for the conservation of these species, taking into account their protection requirements in the geographical sea and land area where this Directive applies. In this respect, Special Protection Areas have to be established to assist conservation measures. According to article 6, Member States shall take appropriate steps to avoid, in the special areas of conservation, the deterioration of natural habitats and the habitats of species as well as disturbance of the species for which the areas have been designated, in so far as such disturbance could be significant in relation to the objectives of this Directive.

4.1.2. The Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention)

Annex II: Special protection (appropriate and necessary legislative and administrative measures) for the animal taxa listed, including:

- All forms of deliberate capture and keeping and deliberate killing;
- The deliberate damage to or destruction of breeding or resting sites;
- The deliberate disturbance of wild fauna, particularly during the period of breeding, rearing and wintering, in so far as disturbance would be significant in relation to the objectives of this Convention;
- The deliberate destruction or taking of eggs from the wild or keeping these eggs even if empty:
- The possession of and internal trade in these animals, alive or dead, including stuffed animals and any readily recognisable part or derivative thereof.

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

Annex II of the Bonn Convention

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 in Appendix II.

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

The taxa in Column A Category 1 meet one or more of the following criteria:

- <u>Species</u> which are included in Appendix I to the Convention on the Conservation of Migratory species of Wild Animals;
 - Species which are listed as threatened in Threatened Birds of the World (BirdLife (b) International 2000); or
 - Populations which number less than around 10,000 individuals.

Category 2: Populations whose numbers are comprised between 10,000 and 25,000 individuals.

Table III: Classification of the different Spoonbill populations/subspecies according to their numbers

Populations/Subpecies	Population covered by the SSAP	Table 1 Column A	Global Conservation Status
Platalea leucorodia leucorodia	Western Europe & Northwest Africa	2	
Platalea leucorodia leucorodia	Central. & Southeastern Europe/Mediterranean, Mesopotamia and Sub-Saharan Africa	2	LC
Platalea leucorodia major	West Asia/Southwest & South Asia	2	
Platalea leucorodia archeri	Red Sea & Somalia	1c	
Platalea leucorodia balsaci	Coastal West Africa (Mauritania)	1c	

4.1.5. Ramsar Convention on Wetlands

The Convention on Wetlands provides the framework for the conservation and wise use of wetlands and their resources through local conservation activities.

The Convention requires that each Contracting Party should designate at least one suitable wetland within its territory for inclusion in a List of Wetlands of International Importance maintained by the Ramsar Bureau, but the parties are encouraged to designate all wetlands of international importance meeting the Ramsar criteria.

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.

4.1.6. Convention on International Trade in Endangered Species of Wild Flora and Fauna (CITES)

The 'Washington' Convention on International Trade in Endangered Species of Wild Fauna and Flora, more commonly known as CITES, aims to protect certain plants and animals by regulating and monitoring their international trade to prevent it reaching unsustainable levels.

The Spoonbill is listed in Appendix II, which lists species that are currently not necessarily threatened with extinction but may become so unless trade is closely controlled. International trade in specimens of Appendix II species may be authorized by the granting of an export permit or re-export certificate.

4.2. National Institutions, Laws and Policies Affecting Bird Conservation

There is a wide diversity of situations relating to institutions and laws dealing with bird protection in the countries covered by the species range. Some countries have no bird protection administration at all, while in others, the responsible body for the protection is either in the Ministry of Environment or it is linked to other offices (forestry, agriculture, even interior).

Surprisingly, the species is not protected everywhere. The Atlantic, Central and Southeastern European breeding populations are fully covered by legislation. The West Asian breeding population is protected almost everywhere. The archeri subspecies does not benefit from any real legal protection. In some African countries, the Eurasian Spoonbill is not protected, but it benefits from confusion with the African Spoonbill *Platalea alba* which is protected there.

Table IV: The legal status of the different populations/subspecies

	Protected	Not protected	Unknown
Atlantic breeding population	12	0	3
Central & Southeast European breeding population	31	4	0
Western Asian breeding population	10	2	3
P. l. archeri	4	2	1
P. l. balsaci	1	0	0

5. Framework for Action

The aim of this Action Plan is to improve the conservation status of the different populations of Spoonbills and in particular to meet the measures below.

Some priorities do not follow the criteria, but as monitoring or estimations will not prevent the population decline, it is essential to find the best measures which will really prevent the decline.

P. l. leucorodia Atlantic population

Belgium, Cape Verde, Denmark, France, Gambia, Germany, Luxembourg, Mauritania, Morocco, Netherlands, Portugal, Senegal, Spain, Sweden, United Kingdom.

P. l. leucorodia Central and SE European population

Albania, Algeria, Austria, Bosnia, Bulgaria, Burkina Faso, Cameroon, Chad, Croatia, Czech Republic, Cyprus, Dem. Rep. Congo, Egypt, Greece, Hungary, Israel, Italy, Jordan, Kenya, Lebanon, Libya, Macedonia FYR, Mali, Malta, Moldova, Montenegro, Niger, Nigeria, Poland, Romania, Serbia, Slovakia, Slovenia, Sudan, Tunisia, Turkey, Uganda, Ukraine.

P. l. maior

Armenia, Azerbaijan, Bahrain, Belarus, Georgia, Iran, Iraq, Kazakhstan, Kuwait, Oman, Qatar, Russia, Syria, Tajikistan, Turkmenistan, United Arab Emirates, Uzbekistan. Countries outside the Agreement area: India, Pakistan.

Djibouti, Eritrea, Egypt, Saudi Arabia, Somalia, Sudan, Yemen, Ethiopia.

P. l. balsaci

Mauritania.

Significance of the symbols used in the following tables

Critical Result needed to prevent a major decline in the population, which could lead to extinction.		0
High	Result needed to prevent a decline of more than 20% of the population in 20 years or less.	0
Medium	Result needed to prevent a decline of less than 20% of the population in 20 years or less.	6
Low Result needed to prevent local population declines or events likely to have only a small impact on the population across the range.		4
Not a priority	Local measure which has no significant impact on the population.	6

Key to time scale criteria:

Short: to be completed within the next 1-3 years **QQ** Medium: to be completed within the next 1-5 years △ **Long:** to be completed within the next 1-10 years

NCA National Conservation Authorities

GNG Governmental and non-governmental conservation organisations

NRA National and regional authorities and non-government conservation organisations

SI Scientific institutions

PAM Protected areas managers

Table V: The long and short term targets for the different populations/subspecies

	Long term target	Short term target
Atlantic breeding population	Maintain and increase current population size and promote conditions which will help expansion in Western Europe towards former breeding range or expansion of the breeding range in Central Europe, taking account of any possible effect on the <i>balsaci</i> subspecies.	The combination of survival and reproduction rates is sufficient to maintain a growing population.
Central and South-East European breeding population	Increase the breeding population in order to recolonise all suitable wetlands.	The combination of survival and reproduction rates is sufficient to maintain a growing population.
West Asian " <i>major</i> " population	Increase the breeding population in order to recolonise all suitable wetlands.	The combination of survival and reproduction rates is sufficient to maintain a growing population.
Red Sea " <i>archeri</i> " subspecies	Remove the subspecies from its present vulnerable status by increasing the size of the population to 3,000 breeding pairs (i.e. 10,000 individuals).	The decline of the population is arrested and increased by 20% compared to 2007 level.
Mauritanian " <i>balsaci</i> " subspecies	Restore the population to at least 1,400 breeding pairs or 3,000 mature individuals with enough reproduction to ensure a stable population.	The combination of survival and reproduction rate is sufficient to maintain a growing population. A 5-year average reproduction rate of 1.4 fledged young per breeding pair is maintained.

This aim will be achieved by actions applied at different levels.

\mathcal{F} At the species level

Objective	Activities	Priority
Coordinated research and monitoring	Continue and expand the internationally coordinated colour marking scheme as the crucial tool for determining and monitoring survival rates and metapopulation structure, investigate possibilities of satellite telemetry, and apply results.	2
	Maintain a central / coordinated database to collect, store and analyse data on metal and colour rings, count data, survival rate and breeding success.	0
	Develop standardised methodology for monitoring.	0
	Count breeding pairs at key colonies and wintering birds on an annual basis.	0
	Use recent techniques and models to analyse the trends in the populations (i.e. TRIM, MARK programmes, etc).	©
	Adapt the International Single Species Action Plan to each country.	0
Increased	Strengthen and expand activities of the International Spoonbill Working Group and encourage exchange of experience between the personnel of key sites.	6
awareness about the need	Organise regional meetings in Montenegro (2009) and in Tunisia (2011).	€
for collaboration	Produce an AEWA poster.	€
between countries along the flyways Networking	Develop a new travelling exhibition.	4
	Encourage fundraising activities to support Spoonbill conservation (e.g. adoption of birds/key sites).	6
Use the species	Improve collaboration between countries along the Central Asian Flyways.	6
as flagship	Increase education and public awareness of the Spoonbill, related species and wetlands.	6
Training	Organise training courses in management techniques for staff of protected areas.	0
	Organise training courses in monitoring techniques for observers (volunteers and wardens).	0
	Organise training courses in nature-friendly fishpond management for fishpond owners.	0

 $\ensuremath{\ensuremath{\mathcal{Z}}}$ At population and subspecies level

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lecorodia (Atlantic)			9
Responsible organisations	NCA	NCA	NCA
Sources of Validation	A national protection law is approved in all countries.	Banc d'Arguin National Park database.	The lists of protected areas and of Ramsar sites are improved.
Success	The subspecies are protected in all countries.	Regular measures of prey densities.	Protected area status of sites listed in the Annex of the action plan is maintained and sites stay in good ecological conditions.
Activities	Authorities responsible for the conservation of the species are identified, and convinced of the need to protect the species.	Environmental Impact Assessment (EIA) of activities in surrounding area is effective (industrial shellfishing).	Implementation of national politics for wetlands conservation. Use IBA and Ramsar criteria for designation.
The Action Plan	Designate the species as protected in all countries along the flyways in all the Range States.	Maintain the integrity of the coastal ecosystem at Banc d'Arguin.	Designate and maintain key breeding, feeding and stop-over sites as Protected Areas (European Union Special Protection Areas in EU countries) and Ramsar sites.
Aim	Survival rate is sufficient to maintain a growing population.		

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Responsible organisations	GNG	GNG	GNG
Sources of Validation	National reports.	National reports.	Database of ornithological ringing stations.
Success Indicators	Lower mortality due to natural causes.	Decrease in the number of overgrown sites by vegetation.	Lower mortality due to natural causes.
Activities	Give priority to known and threatened sites. In Senegal, a priority must be to restore the Guembeul reserve.	Develop training sessions about invasive plants species for wetlands managers and integrated management of sites, including the vegetation aspects.	Reduce disturbance through information, education and surveillance and visitor management.
The Action Plan	Restore former feeding areas and prevent drainage of existing feeding areas.	Prevent overgrowth of feeding areas by management of vegetation succession and/or invasive plants.	Take measures to limit activities which may reduce the availability of food (e.g. overfishing, disturbance, scaring at fishponds, constructions which may limit movement of prey species, wind farms, human
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Responsible organisations		GNG
Sources of Validation		Database of Ornithological Associations.
Success Indicators		Number of colonies and number of breeding pairs on fishponds.
Activities	Include site and species conservation in any project of development. Investigate the impact of oil exploration, exploration, exploration and transport on key sites and survival and take appropriate mitigation measures. Forbid gravel extraction in and around key wetlands.	Promote integrated management of fishponds.
The Action Plan	settlements and infrastructures, development, regulation of rivers).	Maintain the area of fishponds managed extensively in Central Europe, and adjust their management to the needs of the species.
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lecorodia (Atlantic)	6 6	8 8
Responsible organisations	GNG	NRA
Sources of Validation	Data on each site are updated in the IBA and the Ramsar databases.	Database of ormithological ringing stations.
Success Indicators	All key sites have a management plan.	Fewer birds are found beneath overhead power lines.
Activities	Strengthen staff capacity at protected areas both for administrative and surveillance tasks. Provide assistance for planning and management of key sites.	Identify critical sections of powerlines. Replace existing lines with underground cables or mark them with warning signs obvious to flying birds where necessary. Avoid sitting new lines near
The Action Plan	Develop management plans for key breeding, feeding and stop-over sites.	Reduce mortality caused by collision with overhead power lines.
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Responsible organisations		NCA
Sources of Validation		Database of ornithological ringing stations.
Success		Fewer birds are found dead, killed by poachers.
Activities	breeding or feeding areas through Environmental Impact Assessment (EIA).	Enforce nature policy. Information in hunting magazines is regular. Provide information, education and surveillance at key sites. Stop spring hunting in all countries along the flyways. Designate nohunting zones at key sites.
The Action Plan		Reduce direct mortality caused by poaching.
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lecorodia (Atlantic)	9 9 9	0 77 7	8
Responsible organisations	NCA	NCA	GNG, NCA
Sources of Validation	Database of ornithological ringing stations.	Database of ornithological ringing stations.	Data on each site are updated in the SPA, IBA and the Ramsar databases.
Success	Decrease in this semi- natural cause of mortality.	Decrease in the intensity of non natural causes of mortality.	Increase in the number of appropriate breeding sites.
Activities	Create an early warning system that helps to detect early cyanotoxin blooms so appropriate management can be carried out (remove dead birds, manage water levels).	Monitor level of pollutants in eggs, chicks and dead birds.	Conduct a strategy for protecting wetlands and waterbirds, in particular in and around existing colonies.
The Action Plan	Reduce direct mortality caused by toxins.	Phase out organochlorines (especially DDT) along the entire migratory flyways.	Restore wetlands for breeding, maintain adequate water level at colonies and create water supply systems.
Aim			Reproduction rate is sufficient to support an increase in the population to the target level.

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lecorodia (Atlantic)	8 8 8		6 6
Responsible organisations	DND	GNG	NCA
Sources of Validation	Database of ornithological ringing stations.	Database of Ornithological Associations.	Database of protected areas (for measures) and of ornithological ringing stations.
Success	Reduced mortality due to natural causes.	Colonies in reedbeds increase their breeding success.	Reduced mortality due to natural causes.
Activities	Use measures appropriate to fit local conditions (if there is higher risk of flooding with sea level rise). Manage fishponds for conservation or through integrated management.	Cut reed on a 3- year plan and prohibit cutting and burning during breeding period.	Study the best way to do so and use appropriate means.
The Action Plan	Protect colonies threatened by flooding.	Preserve colonies from burning and cutting reed, by avoiding such activities around colonies.	Take measures to protect threatened colonies against excessive predation (notably by fox, wild boar or jackal).
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Responsible organisations	GNG, SI	PMA, NGN
Sources of Validation	Database of Ornithological Associations.	Annual checks of the colonies.
Success Indicators	Increase in numbers of breeding pairs in colonies.	Fewer birds found dead. Increase in the breeding success, decrease in nest abandonment or colony desertion rate.
Activities	Try to understand of the relation between the species and the Sacred Ibis. Study the real impact before any possible intervention (Larus michahellis). Study the possible competition between P. I. leucorodia and P. I. leucorodia and P. I. balsaci.	Protect by restricted/ prohibited access or by visitor management. Increase surveillance in order to reduce disturbance factors by public, land-users,
The Action Plan	Manage competing species if necessary and appropriate.	Protect nesting colonies from disturbance.
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Responsible snoitsations		IS	IS	IS
Sources of Validation		Annual reports published in the Spoonbill Newsletter.	Scientific publications.	Annual National reports on breeding.
Success		Breeding success known from different colonies of each population.	Survival rate known from different colonies of each population.	Increase in numbers of colonies and of breeding pairs.
Activities	fisherman, reedcutters, farmers and other factors. Change flying techniques for military planes above the colonies in breeding season.	Use the same methods in the different countries.	Use the same methods in the different countries.	Use the same methods in the different countries.
The Action Plan		Determine and monitor breeding success and calculate the values necessary to meet the target in relation to survival rate.	Determine and monitor survival rate through colour ringing and satellite telemetry.	Identify limiting factors with a view to promoting further expansion of the breeding range and to creating an early warning
Aim		Key gaps in knowledge necessary for more effective conservation of the population are	filled.	

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Responsible organisations		IS	SI
Sources of Validation	colonies.	Wetlands International database.	Scientific publications.
Success	in colonies.	Increase in the known number of sites and of wintering birds.	Better knowledge of the role of the sites and development of adequate measures in a framework of optimal migration.
Activities		Develop and update the database in annex of the action plan, through surveys in poorly known sites. Develop local and coordinated studies on site occupancy by birds in different conditions.	All key sites participate in the study.
The Action Plan	system against potential threats.	Identify additional wintering and stop-over areas along the flyways and their role in limiting the growth of the different populations/subspecies (i.e. the influence of the conditions at wintering sites on breeding success).	Identify any potential age and gender differences in use of stop-over and wintering sites.
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Responsible organisations	SI	IS	IS	NGN
Sources of Validation	Scientific publications.	National reports and publication in the Spoonbill Newsletter.	Scientific publications.	Scientific publications.
Success	Better knowledge of all the sites used by the species during its migrations.	Number of breeding sites, number of breeding pairs, breeding success.	Better knowledge of potential mortality factors.	Predictions of single and multisite
Activities	Use the same methods in the different countries.	Develop networks of observers.	Monitor disease outbreaks and identify causes of mortality (botulism, cyanotoxins, avian flu etc). Check veterinary state by regular sampling (blood, feather).	Investigate the impact of oil exploration,
The Action Plan	Determine migratory status and the migratory flyways (study movements during non-breeding season using colourringing and satellite tracking).	Complete full survey for breeding areas (Turkey as a priority).	Study the sensitivity of Spoonbill to disease and toxins.	Identify key mortality factors and hot spots.
Aim				

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lecorodia (Atlantic)			8
Responsible organisations		SI	SI
Sources of Validation		Scientific publications.	Scientific publications.
Success Indicators	models help to determine appropriate measures to apply on different sites.	Analysed number of colonies and individuals birds.	Prey, feeding and ingestion rate, according to the prey species.
Activities	exploitation and transport on key sites and species survival and take appropriate mitigation measures.	Use the same methods in the different countries.	Use the same methods in the different countries.
The Action Plan		Collect and analyse genetic samples (Turkey, Hungary). Clarify the delineation between "P. I. major" and Central and South East European populations.	Study the feeding ecology of the species.
Aim			

Measures by Countries

When no score is given, it is necessary to use the population/subspecies score

P. l. leucorodia (Atlantic)

 Critical: Result needed to prevent a large decline in the population, which could lead to extinction. High: Result needed to prevent a decline of more than 20% of the population in 20 years or less. Medium: Result needed to prevent a decline of less than 20% of the population in 20 years or less. Low: Result needed to prevent local population declines or events likely to have only a small impact on the population across the range. Not a priority 	Belgium	Denmark	France	Germany	Morocco	Netherlands	Portugal	Spain	Senegal
Designate and maintain key breeding, feeding and stop-over sites as Protected Areas (European Union Special Protection Areas in EU countries) and Ramsar sites.			6		©		(C)		2
Restore former feeding areas and breeding sites and maintain the sites in good ecological conditions (esp. in favourable hydrological conditions and water quality).	0	4	2	4	2	2	2	8	2
Prevent overgrowth of feeding areas by management of vegetational								0	0
succession and/or invasive plants. Take measures to limit activities which may reduce the availability of food (e.g. overfishing, disturbance (including bird disturbing at fishponds, shellfish collection), constructions which may limit movement of prey species, wind farms, gravel mining, intensive fish farms, human settlements, infrastructures).	€	4	6	4	⑤	€	©	2	③
Develop management plans for key feeding and stop-over sites addressing off-	€	4	€	4	6	₿	€	₿	€
site threats at basin-level (e.g. pollution, water regime). Reduce mortality caused by collisions with overhead power lines.	2	4	2	4	2	2	2	2	
Reduce direct mortality caused by poaching.			4						
Reduce direct mortality caused by toxins.								€	
Phase out organochlorins (especially DDT) along the entire flyways.									2
Restore wetlands for breeding, maintain adequate water level at colonies and create water supply systems.	0		2			②	②	②	
Protect colonies threatened by flooding.						€		0	
Take measures to protect threatened colonies against excessive predation.		4	4	4		4	4	₿	
Manage competing species if necessary and appropriate.		4	4	4		6	6	6	
Reduce disturbance through information, education and surveillance and visitor management.	2	4	0	4	0	0	0	2	0
Determine and monitor breeding success and calculate the value necessary to meet the target in relation to survival rate.	0	4	0	4	0	0	0	0	0
Determine and monitor survival rate necessary to achieve the desired		4	0	4		2	0	0	
population growth through colour ringing and satellite telemetry.									
Identify limiting factors for each breeding sub-population with a view to promoting further expansion of the breeding range and to creating an early warning system against potential threats.		4	2	4		2	2	2	
Identify additional wintering and stop-over areas along the flyways.			0		0		2	2	0
Identify any potential age and gender differences in use of stop-over and			€		€		€	€	€
wintering sites.									
Determine migratory status and the migratory flyways (Study movements	€	4	€	4	€	€	€	2	₿
during non-breeding season using colour-ringing and satellite tracking).									
Study the sensitivity of spoonbill to disease and toxins.	•	4	6	0	•	8	0	0	
Identify key mortality factors and hot spots.	0	4	0	4	0	0	0	0	0
Study the feeding ecology of the species.	€	4	€	4	€	€	₿	€	₿

P. I. leucorodia (Continental)

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Libya	0					0
Jordan	0	0	9	0	0	0
Israel	0	0	9	0	0	©
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Ukraine	0	0		0		0
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Slovakia	0	0		0	0	0
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	Designate and maintain key feeding and stop-over sites as Special Protection Areas and/or Ramsar sites.	Restore former feeding areas and breeding sites and maintain the sites in good ecological conditions (esp. in favourable hydrological conditions and water quality).	Prevent overgrowth of feeding areas by management vegetational succession and/or invasive plants.	Take measures to limit activities which may reduce the availability of food (e.g. overfishing, disturbance (including bird disturbing at fishponds, shellfish collection), constructions which may limit movement of prey species, wind farms, gravel mining, intensive fish farms, human settlements, infrastructures, regulation of rivers).	Maintain the area of extensively managed fishponds and adjust their management to the needs of the species.	Develop management plans for key feeding and stop-over sites addressing off-site threats at basin-level (e.g. pollution, water regime).

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	Reduce mortality caused by collisions with overhead power lines.	Reduce direct mortality caused by poaching.	Reduce direct mortality caused by toxins.	Restore wetlands for breeding, maintain adequate water level at colonies and create water supply systems.	Protect colonies threatened by flooding of fishponds, either by managing them solely for conservation or through integrated management of fishponds.	Preserve colonies from burning and cutting of reed through avoiding such activities around colonies.	Take measures to protect colonies against predation.	Manage competing species if necessary and appropriate.	Reduce disturbance through information, education and surveillance and visitor management.	Determine and monitor breeding success and calculate the value necessary to meet the target in relation to survival rate at key colonies and/or at post breeding gathering sites.

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	Determine and monitor survival rate through colour ringing and satellite telemetry.	Identify limiting factors for each breeding sub-population with a view to promoting further expansion of the breeding range and to creating an early warning system against potential threats.	Identify additional wintering and stopover areas along the flyways.	Identify any potential age and gender differences in use of stop-over and wintering sites.	Determine migratory status and the migratory flyways (study movements during non-breeding season using colour-ringing and satellite tracking).	Complete full survey of breeding areas.	Identify key mortality factors and hot spots.	Collect and analyse genetic samples.	Study the feeding ecology of the species.	Organise regional meeting in North Africa, Montenegro

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	Determine and monitor survival rate through colour ringing and satellite telemetry.	Identify limiting factors for each breeding sub-population with a view to promoting further expansion of the breeding range and to creating an early warning system against potential threats.	Identify additional wintering and stopover areas along the flyways.	Identify any potential age and gender differences in use of stop-over and wintering sites.	Determine migratory status and the migratory flyways (study movements during non-breeding season using colouringing and satellite tracking).	Complete full survey of breeding areas.	Identify key mortality factors and hot spots.	Collect and analyse genetic samples.	Study the feeding ecology of the species.	Organise regional meeting in North Africa, Montenegro.

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	Djibouti	Egypt	Eritrea	Saudi Arabia	Somalia	Sudan	Yemen	Mauritania
Grant the species, and in particular the subspecies, with legal protection in	0	0	0		0			
all its range states.								
Maintain the integrity of the coastal ecosystem at Banc d'Arguin.								2
Designate and maintain key feeding and stop-over sites as European Union Special Protection Areas (if appropriate) and/or Ramsar sites.	0	0	0	0	0	0	0	
Restore former feeding areas and maintain the sites in good ecological conditions (esp. in favourable hydrological conditions and water quality).	0	0			0	0		2
Take measures to limit activities which may reduce the availability of food (e.g. overfishing, disturbance (including bird disturbing at fishponds, shellfish collection), constructions which may limit movement of prey species, wind farms, gravel mining, intensive fish farms, human settlements, infrastructures).	2	0						②
Develop management plans for key feeding and stop-over sites addressing off-site threats at basin-level (e.g. pollution, water regime).	0	0	0		0	0		
Reduce direct mortality caused by poaching.	0	0	0	0	0	0	0	
Reduce direct mortality caused by toxins.	€	0	0					2
Phase out organochlorins (especially DDT) along the entire flyways.	4	0	0					2
Protect colonies threatened by flooding.	6	6						0
Take measures to protect threatened colonies against excessive predation.	0	4						0
Manage competing species if necessary and appropriate.	0	6						0
Protect nesting colonies from disturbance by restricted/prohibited access or by visitor management.	0	0	2					4
Determine and monitor breeding success and calculate the value	6	0	0					0
necessary to meet the targeted survival rate.								
Determine and monitor survival rate through colour ringing and satellite telemetry.	4		0					0
Identify additional wintering sites.	0	0	0	0	0	0	0	2
Study movements during non-breeding season using colour-ringing and	4	0	0	0	0	0	2	0
satellite tracking.								
Improve a national census of the species during the breeding season and the winter period.	0	2	2	2	2	2	2	0
Identify key mortality and hot spots.	0	0	0			0	Ħ	2
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7. Annexes

Annex 1. Breeding and non-breeding population estimates in range states

All data come from the 2007 enquiry, except for breeding pairs in Russia (Burfield & van Bommel 2004), but the real year of investigation is noted in the table.

Trends: F =fluctuating, - =negative trend, + =positive trend, 0 =no trend, ? =trend unknown, n.d. =no data, n.a. =not applicable

P. l. leucorodia (Atlantic)

Country	No breeding	No of colonies	Breeding success	Year	Trend	Wintering numbers	Year	Trend
Belgium	18	1	2.5	2007	+	0-2	>2000	0
Denmark	57	4	2.1	2008	008 + 0		2007	n.a.
France	142	7	2.47	2005	+	430	2007	+
Germany	220	9	1.3-2.2	2007	+	0	2007	n.a.
Morocco	20	1	n.d.	2004	+	349	1995- 2005	0/+
Netherlands	1890	29	1.9	2007	+	0-2	2007	n.a.
Portugal	92-99	10	n.d.	2002	+	900-1200	2004- 2006	+
Spain	1631	12	1.2-1.8 (in 4 colonies in 2007) but highly variable among years & colonies	2007	+	1,500 in Andalusia; more than 270 rest of Spain	2002- 2006	+
United Kingdom	1-7		n.d.	99- 00	N	12	2004- 2005	0
Gambia	n.d.	n.d.	n.d.	n.d.	n.d.	<30	1998- 2006	0
Mali	n.d.	n.d.	n.d.	n.d.	n.d.	55	2007	0
Mauritania	n.d.	n.d.	n.d.	n.d.	n.d.	10,000	>2000	F
Senegal	n.d.	n.d.	n.d.	n.d.	n.d.	112-3735	1989- 2007	F

P. l. leucorodia (Continental)

Country	No breed- ing	No of colonies	Breeding success	Year	Trend	Winter- ing num- bers	Year	Trend
Albania	Not re- cently	n.a.	n.a.	2005	-	3-24	1995- 2002	F
Austria	38	1	n.d.	2006	0	0		n.a.
Bosnia	Not re- cently	n.a.	n.a.	>200	-	0		n.a.
Bulgaria	55-150	7	n.d.	2007	0	0-5	1991- 2007	F
Croatia	154-275	3	n.d.	2006- 2007	0	16-120	1998- 2004	F
Czech Republic	3	1	1.0	2007	+	0		n.a.
Greece	223	4	n.d.	2003	F	284 - 355	1999- 2003	+
Hungary	1100- 1200	16	n.d.	2007	F	0-20	2007	+
Italy	105-110	3-5	n.d.	2007	+	580	2000	+
Moldova	5-20	1	n.d.	90-00	0	0		n.a.
Monte- negro	33	1	n.d.	2007	+	0-90	1999- 2007	+
Romania	1400- 1600	17	n.d.	2006	0	64	2006	+
Serbia	190-240	5	n.d.	2007	0	30-150	1990- 2007	+
Slovakia	10-35		n.d.	80-99	F	0		n.a.
Turkey	500-700	11	n.d.	2006	?	166- 1320	1999- 2005	+

Ukraine	1000- 1500	14	n.d.	2000	?	0		n.a.
Cyprus	-	-	-	-	-	10	>2000	0
Algeria	-	-	-	-	-	<100	>2000	0
Camer- oon	-	-	-	-	-	253	1997	0
Chad	-	-	-	-	-	2	2003	n.d.
Israel	-	-	-	-	-	267-907	2005- 2002	0
Jordan	-	-	-	-	-	9-75	>2000	0
Libya	-	-	-	-	-	90	2005- 2007	+
Mali	-	-	-	-	-	55	2007	0
Niger	-	-	-	-	-	100-200	>2000	0
Nigeria	-	-	-	-	-	2-18	1980- 2007	0
Tunisia	-	-	-	-	-	3000- 5000	>2000	+

P. l. major

Country	No breed- ing	No of colo- nies	Year	Trend	Wintering num- bers	Year	Trend
Armenia	1-3	1	2003-2005	-	Single individuals.	2001- 2007	?
Azerbaijan	800	2	2006	0	n.d.		n.a.
Iran	420-770		1977 – 2006	0	367-494	2002- 2007	0
Iraq	15	3	2007	0	110	2000- 2007	0
Kazakhstan	400-650	3	1996-2000	-	<10	>2000	0
Kuwait	65	5-10	2007	0	110	>2000	?
Russia	2500-3000		1990-2000	-	n.d.		n.a.
Syria	50-100	1	2005	0	42	2004	0
Tajikistan	n.d.	n.d.	n.d.	n.a.	n.d.		n.a.
Turkmenistan	1-2	1	>2000	n.a.	n.d.		n.a.
Uzbekistan	250	1	>2000	-	n.d.		n.a.
Georgia	n.d.	n.d.		n.a.	22-225	1981- 2003	?
Oman	n.d.	n.d.	n.d.	n.a.	875	2005	?
United Arab Emirates	n.d.	n.d.	n.d.	n.a.	80	2007	?

P. l. archeri

Countries	No breeding	No of colonies	Year	Trend	Wintering numbers	Year	Trend
Djibouti	4 (17-1987)	1	>2000	-	81	2001	?
Egypt	100	0	>2000	-	700	>2000	?
Eritrea	250	20	2007	0	500	2006	0
Saudi Arabia	110-250	22	1996	?	350	>2000	?
Somalia	200		2006	?	n.d.		n.a.
Sudan	200-500			?	175	2007	?
Yemen	30-40	4	>2001	?	n.d.		n.a.

P. l. balsaci

Countries	No breeding	No of colo- nies	Year	Trend	Wintering numbers	Year	Trend
Mauritania	750	3	2007	- 1	3,100	2007	-

Annex 2. Threats encountered by each population/subspecies in the different stages of the life

- **0.** 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;
- **O 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.

P. l. leucorodia (Atlantic)

THREATS		I									
THREATS		п	ark	47	Germany	003	į.	gal		<u>.</u>	 -
		Belgium	Denmark	France	rms	roc	the	rtug	Spain	Gambia	ega
		Bel	Del	Fr	Ge	\mathbf{M}_{0}	Net	Portugal	$\mathbf{Sp}_{\mathbf{p}}$	Ga	Senegal
Habitat Loss/Degradation (human in-											
duced)											
Agriculture abandonment				0			<u>[5]</u>	5			5
Marine aquaculture				0		6	5		4		5
Freshwater aquaculture							5				5
Abandoning of land management in non-			<u>[]</u>	4			<u>[]</u>	4			
agricultural areas											
Change of management /water regime				<u>5</u>			5	B	6		
Fisheries					8		5	8			4
Infrastructure development /Industry		2		4			5	4			5
Human settlement				4		2	©	4	②		6
Tourism/recreation			5	4	4	4	6	4	2		6
Transport – water				4		4	8				<u>(5)</u>
Dams				5		5					2
Telecommunications				0			<u>[]</u>	6			6
Power lines		0		5			8	₿	5		<u>(5)</u>
Invasive alien species (directly impacting				4					3		4
habitat)											
Change in native species dynamics (directly				4			<u></u>				
impacting habitat)											
Invasive alien species (directly affecting the	e species)										
Competitors				0							6
Predators			5	0			8		₿		<u>5</u>
Pathogens/parasites/toxins				0				0	₿		
Accidental mortality											
Bycatch	Hooking							<u>5</u>			4
	Netting							5	5		4
	Poisoning			0			<u>[5]</u>	5			
	Shooting			<u>5</u>		5	5	<u>5</u>	5	5	
	Pest control						4				
Collision	Pylon and building collision	0	5	0			5	5			
	Vehicle collision						<u>[5]</u>	<u></u>			

Pollution (affecting habitat and/or spe-										
cies)										
Water pollution	Agricultural		4	5	5	3	8	3	8	6
	Domestic			0	0	8	B	6		5
	Commer-			0	5		6	8	8	
	cial/Industrial	<u> </u>								
	Non-agricultural			4	0		<u>5</u>	<u>5</u>		
	Thermal pollution				0		<u>5</u>	<u>(5)</u>		
	Oil spills	5			0			<u>5</u>		
	Sediment	2		<u>5</u>				5		
	Sewage					4		5		5
	Solid waste					4		6		
Noise pollution				4		0		<u>5</u>		
Natural disasters										
Drought				0	0	6			8	6
Storms/flooding			8	5	4		4		2	6
Temperature extremes				0					8	
Changes in native species dynamics										
Competition for nests				0	0			0		
Predators		2		0	0			0		5
Prey/food base				0	0			<u>5</u>	6	
Pathogens/parasites				0	0			5		
Intrinsic Factors										
Limited dispersal				0						
Poor recruitment/reproduction				0				0		
High juvenile mortality				5				0	4	
Inbreeding				5				0		
Low densities				5				5		
Skewed sex ratios				0				0		
Slow growth rates				0				0		
Population fluctuations				0				4		4
Restricted range		4		0		2		<u>5</u>		
Human disturbance										
Recreation/tourism			<u>[]</u>	[]	<u>[]</u>	4	B	8	4	4
Research				0	5		4			6
Hunting				5		4		<u>5</u>		6
Transport				4						6
Others										
Wind farms					5					
Reedbed cutting				4						
Nesting trees cutting and tree mortality				6					2	
Drought at staging sites in Spain							<u></u>		3	

P. l. leucorodia (Continental, breeding countries)

THREATS																	
			<u>.</u>	R	_	Bulgaria	а	ده	Hungary		Moldova	Montene-	Romania		ia	y	ue
			ani	štri	nia	gaı	ati	ခြင့်	nga	ia	ldo	nte	na	bia	vak	ke	raii
			Albania	Austria	Bosnia	Bul	Cr	Greece	Hu	Italia	Mo	Mo	<u> </u>	Serbia	Slovakia	Turkey	Ukraine
II-1:4-4 I/D							_	<u> </u>							<u> </u>	`	
Habitat Loss/Deg		an induced)	4	4			4		6		<u> </u>	4					
Agriculture aband			2	4			4		6		5	4	5				
Marine aquacultur			4		•	B			4					•	_		
Freshwater aquacu		<u> </u>	4		2	9	2		4				4	2	2		
Abandoning of lar agricultural areas	id management	ın non-	4				4										
Change of manage	ment regime						2	6	4		6		2				G
Fisheries	ment regime		6	4		6	6	Ť				0	6				
Fish farming			8		2	€			4					2	2		
Infrastructure de	velonment				•	•								•	_		
Industry	velopment			4		2			4				6	<u> </u>		8	
Human settlement	-		8			2		 	4				8	6	-		
Tourism/recreation			2	-		2	2	 	4	4		0	2	2	-		G
Transport – water	11					2	6		4		<u>(5)</u>	0	6	_			
Dams							2		8				6			8	
Telecommunication	one									4			0				
Power lines	7113		4			4			6				0				
Oil pipeline (prod	uction)					2					0						
Invasive alien spe		mnacting hahi.	<u> </u>				2		B	<u></u>							
tat)	icles (directly i	inpacting nabi-															
Change in native s	species dynamic	s (directly im-	t				B		2	<u></u>			0	<u></u>		<u>[]</u>	
pacting habitat)	.F	(
Invasive alien spe	ecies (directly a	ffecting the															
species)																	
Predators									5		0			5			
Accidental morta	lity																
Bycatch		Fisheries-										0					
		related															
		Shooting	2			4	4		5	5			0	4			
		Poisoning								5							
		Pest control					4										
Persecution																	
Pest control													<u>5</u>	4			
Pollution (affecti	ng habitat and/																
Water pollution		Agricultural	0	4				2	B		0	0	0	4		8	6
		Domestic					5	2			0		0			4	
		Commer-				8	8	6	8		0		0	4		8	<u>5</u>
		cial/Industrial															
		Other non-											0	5			
		agricultural				•					•						
		Oil slicks	-	_		6					0		_		_		
NT 1 11 11		Sewage						2			0		_			B	
Noise pollution			6										0	5			
Natural disasters						•	_				_				_		
Drought				6		6	4		2	5	4		8	5		4	
Storms/flooding			<u> </u>			2	<u>5</u>		4	4			8	8		4	

Temperature extremes						4		0	4						
Fires					4			<u>(5)</u>							
Salinity and water level		1						2							
Changes in native species dynar	nics														
Competitors						<u></u>	€	<u>[]</u>						<u></u>	
Predators					4	<u>[]</u>		<u>[]</u>	6	0	0	6	<u></u>	<u>5</u>	
Prey/food base			2			6		4	<u>[3</u>			0	€	0	
Pathogens/parasites						<u>[3</u>		<u>[]</u>		0		0			
Intrinsic Factors															
High juvenile mortality								4	4	0		0		0	
Low densities						5									
Population fluctuations					6	5		8		0		6			
Restricted range					2			4					5		
Human disturbance															
Recreation/tourism		2	4		6	4		6	6	6	0	6	B		5
Research						4		<u>[5]</u>	(5)			4	4		
War/civil unrest/ exercices by				2				4							
military aircraft															
Hunting		2		2	6	4			6	6	0	6	6		
Transport								4			0	6			
Logging, disturbance by managen cial fishponds	nent of commer-	2		0	2			5							
Others															
Reedbed management (cutting, fin	re)	2													<u>5</u>
Nesting trees cutting					2										
Negative effects (especially ground	dwater levels)							3		0					
of regulation of rivers															
Negative effects (especially reduc	tion of dropping							5		5					
groundwater levels) of creating m															
around breeding and feeding grou	nd														

P. l. leucorodia (Continental, non breeding countries)

THREATS			Algeria	Cameroon	Chad	Cyprus	Israel	Jordan	Kenya	Libya	Mace-	Mali	Malta	Niger	Tunisia
Habitat Loss/Degrad	ation (human ir	nduced)							4						
Agriculture abandonm	nent													8	
Land management of agricultural areas	non-								4						
Change of managemen	nt regime							6						6	3
Fisheries				5										6	
Industry									4						4
Human settlement										8	0				8
Tourism/recreation								4		4	0				0
Dams				2				2				5			

Invasive alien specie habitat)	es (directly imp	acting								6	
Accidental mortality	Bycatch	Hooking	8					5			
_		Netting	8								
		Poisoning	2								
		Shooting	5		6		0	5	5		0
Pollution (affecting l	habitat and/or	species)									
Water pollution	Agricultural		0		6			6			0
Sewage					6						
Natural disasters											
Drought					0		0	6		8	8
Temperature extreme	S		0								0
Fires			0								
Changes in native sp	ecies dynamic	s									
Intrinsic Factors											
Limited dispersal			0					4			
Human disturbance											
Recreation/tourism					3		0				0
Research							0				
Hunting			8		8			5	<u>5</u>		8

Prey/food base	0	0	2						
Poor recruitment/reproduction	0		2						
High juvenile mortality			2						
Low densities	2		8						
Human disturbance									
Recreation/tourism	2	2	4	<u>[5]</u>		2			2
Research	2	4	4						
War/civil unrest			2						
Hunting	2	4	2	5	4	2	2		
Visits to colonies			2					2	

THREATS									
						Ę.			nia
			Djibouti	.	ea	Saudi Ara-	Somalia	u	Mauritania
			jibo	Egypt	Eritrea	pnı	ma	Sudan	anı
			ĵ	豆	豆	Sa	\mathbf{S}_0	Sı	Z
Habitat Loss/Degrada	tion (human induce	d)							
Agriculture	Abandonment							2	
Marine aquaculture						6		0	
Land management of	Change of manager	ment regime	2	6		8			
non-agricultural areas		_							
Fisheries			?		5	2	3	0	4
Infrastructure develop	ment				0			2	2
Human settlement				2	8	2		8	8
Tourism/recreation			2	2	<u>5</u>	6		0	
Transport – water					<u>5</u>	4		5	
Dams					<u>5</u>			0	
Invasive alien species (0		0	8			
Invasive alien species (directly affecting th	e species)							
Competitors			0		0				
Predators	_	_	0		0	₿			
Accidental mortality	Bycatch	Shooting	0	6					
		Netting				6			
		Pest control				6			
Water pollution	Agricultural			8	5				
	Domestic				0	2			
	Commercial/Indust				0	2			
	Other non-agricultu	ıral			5				
	Thermal pollution				5				
	Oil slicks		0			8			
	Sediment		0		0				
	Sewage		0		5	2			6
NT 1 11 11	Solid waste		0	8	5				
Noise pollution	G C					8			
Changes in native	Competitors		0		0				8
species dynamics	Duadataus		0		0	₿			
Intuingia Esstare	Predators Low densities		0		0	9			0
Intrinsic Factors		olity	U	2	9	8			•
Human disturbanca	High juvenile mort	anty	-	•		9			
Human disturbance Recreation/tourism	<u> </u>		0	2	<u> </u>	B		8	
Nest photography and permanent disturbance of the colony			0	•	7	4		•	
War/civil unrest			0			•		<u>(5)</u>	
Hunting			0	6				-	
пиннів			U	Ð					

Annex 3. Membership of states in international conservation conventions and agreements

Y: party of the convention, N: not yet, blank: not applicable

Range States	Convention on Interna- tional Trade in Endan- gered Spe- cies of Wild Flora and Fauna (CITES)	Convention on the Con- servation of Migratory Species (CMS)	Convention on the Con- servation of European Wildlife and Natural Habi- tats (Bern Convention)	African-Eurasian Migratory Waterbird Agreement (AEWA)	European Union Bird Directive	Ramsar Convention
Belgium	Y	Y	Y	Y	Y	Y
Denmark	Y	Y	Y	Y	Y	Y
France	Y	Y	Y	Y	Y	Y
Germany	Y	Y	Y	Y	Y	Y
Morocco	Y	Y	Y	Y	Y	Y
Netherlands	Y	Y	Y	Y	Y	Y
Portugal	Y	Y	Y	Y	Y	Y
Spain	Y	Y	Y	Y	Y	Y
United King- dom	Y	Y	Y	Y	Y	Y
Cape Verde	Y	Y		N		Y
Dem. Rep.	Y	Y		N		Y
Congo	1	1		11		1
Gambia	Y	Y		Y		Y
Luxemburg	Y	Y	Y	Y	Y	Y
Senegal	Y	Y	Y	Y		Y
Sweden	Y	Y	Y	Y	Y	Y
A 11 ·	X 7	37	37	Y		X 7
Albania	Y	Y	Y		**	Y
Austria	Y	Y	Y	N	Y	Y
Bosnia &	N	N		N		Y
Herzegovina Bulgaria	Y	Y	Y	Y	Y	Y
Croatia	Y	Y	Y	Y	I	Y
Czech Re- public	Y	Y	Y	Y	Y	Y
Greece	Y	Y	Y	Y	Y	Y
Hungary	Y	Y	Y	Y	Y	Y
Italy	Y	Y	Y	Y	Y	Y
Moldova	Y	Y	Y	Y		Y
Montenegro	Y	N		N		Y
Romania	Y	Y	Y	Y	Y	Y
Serbia	Y	N		N		Y
Slovakia	Y	Y	Y	Y	Y	Y
Turkey	Y	Y	Y	N		Y
Ukraine	Y	Y	Y	Y		Y
Algeria	Y	Y		Y		Y

Burkina Faso	Y	Y	Y	N		Y
Cameroon	Y	Y	1	N		Y
Chad	Y	Y		N		Y
Cyprus	Y	Y	Y	N	Y	Y
Israel	Y	Y	1	Y	1	Y
Jordan	Y	Y		Y		Y
Kenya	Y	Y		Y		Y
Lebanon	N	N		Y		N
Libya	N	Y		Y		Y
Macedonia	N	Y	Y	Y		Y
FYR	11	1	1	1		•
Mali	Y	Y		Y		Y
Malta	Y	Y	Y	N	Y	Y
Niger	Y	Y	_	Y		Y
Nigeria	Y	Y		Y		Y
Poland	Y	Y	Y	N	Y	Y
Slovenia	Y	Y	Y	Y	Y	Y
Switzerland	Y	Y	Y	Y	1	Y
Tunisia	Y	Y	Y	Y		Y
Uganda	Y	Y		Y		Y
- 8		I				
Armenia	N	N	Y	N		Y
Azerbaijan	Y	N	Y	N		Y
Iran	Y	N		N		Y
Iraq	N	N		N		Y
Kazakhstan	Y	Y		N		Y
Kuwait	Y	N		N		N
Russia	Y	N		N		Y
Syria	Y	Y		Y		Y
Turkmenistan	N	N		N		Y
United Arab	Y	N		N		Y
Emirates						
Uzbekistan	Y	Y		Y		Y
Bahrain	N	N		N		Y
Belarus	Y	Y		N		N
Georgia	Y	Y		Y		Y
Oman	N	N		N		N
Qatar	Y	N		N		N
Tajikistan	Y	Y				Y
Djibouti	Y	Y		Y		Y
Eritrea	Y	Y		N		N
Egypt	Y	Y				Y
Saudi Arabia	Y	Y		N		N
Somalia	Y	Y		N		N
Sudan	Y			Y		Y
Yemen	Y	Y		N		N
Ethiopia	Y	N		N		Y
		T	,		· · · · · · · · · · · · · · · · · · ·	
Mauritania	Y	Y		N		Y

Annex 4. Spoonbill conservation and protection status

P. l. leucorodia (Atlantic)

Country	National Red Data Book	National protection status	Under what law is the spe- cies protected	Is Spoon- bill legally protected from being deliber- ately killed?	Is Spoon- bill le- gally pro- tected from egg harvest?	Is Spoonbill legally pro- tected from nest de- struction?			alties for?	Who is the highest national authority for protection of birds?
							Illegal killing	Egg harvest	Nest destruc- tion	
Belgium	Y	Y	Royal decree bird protection (1981)	Y	Y	Y		?		Ministry of Environment
Denmark	Y	Y	The game act	Y	Y	Y				Ministry of Environment
France	Y	Y	National Law (1976)	Y	Y	Y	Max find	e 9000 €+ 1	6 months	Ministry of Environment
Germany	Y	Y	National frame- work and Länder legisla- tion	Y	Y	Y				Ministries in charge of Nature protection of Lower Saxonia and Schleswig-Holstein
Morocco	In preparation	Y	Decree of the Minister of Ag- riculture (3 No- vember 1962) dealing with permanent hunt- ing code	Y	Y	Y		14000 dirh		Haut Commissarait aux Eaux et Forêts et à la Lutte Contre la Désertification

Netherlands	N	Y	Natuurbeschermingswet 1998	Y	Y	Y	Fine	Ministry of Agriculture, Nature and Food Quality		
Portugal	Y	Y	Decret-Law 140/99	Y	Y	Y		ICNB		
Spain	Y	Y	National: Law 42/2007 for Nature Heritage and Biodiversity in Spain Andalucía: Law 8/2003 for fauna and flora	Y	Y	Y	Fine of between 601,02 and 60.101,21 euros	Ministry of Environment Regional Ministeries of environment		
United Kingdom	N	Y	Wildlife & Countryside Act, 1981	Y	Y	Y	£5,000	Laws are passed by Parliament		
Gambia		Y	Biodiversity /wildlife Act 2003	Y	Y	Y	Fine or 1 year imprisonment	Department of Parks and Wildlife Management		
Luxembourg	Y	Y	Nature protection law 2004	Y	Y	Y	Imprisonment from 8 days to 6 months and fine of 251 to 750,000 Euros, or one of these only	Ministry of Environnement		
Senegal	N	Y	Law on Nature Protection	Y	N	N		Ministry of Environnement		

P. l. leucorodia (Continental)

Country	National Red Data Book	National protection status	Under what law is the species pro- tected	Is Spoon- bill le- gally pro- tected from being deliber- ately killed?	Is Spoon- bill le- gally pro- tected from egg harvest?	Is Spoon- bill legally protected from nest destruc- tion?	the	at an pena for?	ıl-	Who is the highest national authority for protection of birds?
Albania	Y	Y	hunting and wildlife pro- tection (1994)	Y	Y	Y				Ministry of Environment, Forests and Water Admini- stration
Austria	Y	Y	Nature con- servation leg- islation	Y	Y	Y				
Bosnia & Herzegovina	In progress	Y		Y	N	N				
Bulgaria	Y	Y	Bulgarian Bio- diversity Law	Y	Y	Y				Ministry of environment and waters
Croatia	Y	Y	Nature Protection Act, Official Gazette 70/2005	Y	Y	Y		100 K (ca)0 eu		Ministry of culture, Dpt for Nature Protec- tion
Czech Republic	Y	Y	Nature Conservation Act No. 114/1992	Y	Y	Y	lion crov	x. 1 n Cze wns (35.00 os)	ech i.e.	Ministry of Environment
Greece	Y	Y	EU 79/409 Bird Directive	Y	Y	Y	on the sion up to count sion occa	he on and o the ort decentration. No assion with u	is ci-	Ministry of Rural Devel- opment and Food

Hungary Italia	Y	Y	13/2001. (V.9.)	Y.	Y	Y	Money penalty (500, 000 HUF= 2,000 Euros) per individual and prison.	Ministry of Environment and Water. Ministry of
Ttania .	•	1	157 11/02/1992 so called "Hunt- ing law"				r char det	Agriculture, Ministry of the Environment
Moldova	Y	Y	Law for protected state of natural territory (Annex 3).	Y	Y	Y		Ministry for Protection of Environment and Natural Ressourses
Montenegro	N	Y	Law for protected rare and endangered plant and animal species (1981 and 2006)	Y	Y	Y	Money pen- alty and prison	National Insti- tute for Protec- tion of Nature and Ministry for environ- ment of MNE
Romania	Y	Y	HG457/2007	Y	Y	Y	Fine to be paid for disturbance and deliberate killing, but not a cumulative penalty, ca. 135 euro/case.	Ministry of Environment and Rural De- velopment
Serbia	N	Y	Decree on Protection of Natural Rari- ties 1993; Law on Hunting 1993	Y	Y	Y	60000 Serbian dinars (750 EUR)	Ministry of Protection of Environment
Slovakia	Y	Y	543/2002 Z.z.	Y	Y	Y	100000 Sk/ 1 ind.	Ministry of Environment

Turkey	Y	Y	The Hunting Law (4915), The Regula- tion on Con- servation Wet- land		Y			The Ministry of Environment and Forestry (The General Directorate of Nature Protection & National Parks).
Ukraine	Y	Y	Law on the Red Data Book of Ukraine	Y	Y	Y	23000 HRN (2600 \$US) for killing 1 individual.	Ministry for Environment and Nature Protection

Country	Na- tional Red Data Book	Na- tional protec- tion status	Under what law is the species protected	Is Spoon- bill legally protected from being deliber- ately killed?	Is Spoonbill legally pro- tected from egg har- vest?	Is Spoonbill legally protected from nest destruction?	What are the penalties for?			Who is the highest national authority for protection of birds?
							Illegal Egg har- Nest de- killing vest struction			
Algeria	N	Y	Décret n° 83-509 du 20 Août 1983 relatif aux espèces animales non domestiques pro- tégées.	Y	Y	Y	10 000 à 100 000 Dinars			Direction Générale des ForêtsMi- nistère de l'Agriculture et du Déve- loppement durable (MADR)
			loi n°04-07 du 14 Août 2004 relative à la chasse, article n° 93							
Cameroon	N	N								Ministry of Forestry and Wildlife
Chad		N								
Cyprus	N	Y	Law 152(1) 2003, Annex VI	Y	Y	Y	2 years in prison and/or 3,400 Euros			Ministry of Interior
Israel	Y	Y	the law of Wildlife protection which cover all species of terrestrial vertebrates	Y, all species in Israel, but the pests	Y, all species in Israel, but the pests	Y, all species in Israel, but the pests				Israel Nature & Parks Authority (NPA) – "Rashut HaTeva Ve- Haganim"

Jordan	N	Y	All wild birds are protected	Y	N	N	N	N	N.	Ministry of Agriculture, Royal Society for the Conservation of Nature
Kenya	N	Y	Kenya Wildlife Act	Y			Fine and in refer to the	nprisonment-	for specifics	Kenya Wildlife Service
Lebanon	N	N		N	N N N N			Ministry of Environment		
Libya	N	Y	Law No 15/2003 on protection and improvement of the Environment.	Y	n.a.	n.a. N Paying a fee on each individual Environm EGA		Environment General Authority EGA		
			Law No 8 of 1968 on hunting of wild ani- mals							
Macedonia FYR	N	Y	Law on hunting	Y	Y	Y				Ministry of Environment and Physical Planning of RM
Mali	N	N	N	N	N					
Malta	N	Y	National and EU	Y	n.a.	n.a.	etc offence	n whether it is e. Penalties no to act as a dete	ot currently	MEPA
Niger	N	Y	Law 98/07							Ministère des Eaux et Forêts
Nigeria	N	Y								
Poland	N	Y								
Slovenia	N	Y								

Tunisia	Z	Y	Ministry of Agriculture and Water Resources Law of 24 August 2006 on the organisation of hunting in the 2006/2007 hunting season (Ministerial Decree renewed each year, which always mentions the Spoonbill as a protected species).	Y			Law N° 2005-13 of 26 January 2005, omplements the Forestry Code, states: Imprisonment for 6 to 16 months. Fine from 500 to 5000 Tunisian dinars.	n.a.	n.a.	Ministry of Agriculture and Water Resources – General Direction of Forest. The National Agency for Protection of the Environment (ANPE) and the Agency for Protection and Management of the Coastline (APAL), both of which come under the Ministry of the Environment.
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P. l. major

Country	National Red Data Book	National protec- tion status	Under what law is the species protected	Is Spoonbill legally pro- tected from being delib- erately killed?	Is Spoonbill legally pro- tected from egg har- vest?	Is Spoonbill legally pro- tected from nest de- struction?	What are the	What are the penalties for?		Who is the highest national authority for protection of birds?
							Illegal killing	Egg harvest	Nest de- struction	
Armenia	Y	Y	Fundamentals of Republic of Armenia Legislation on Nature Protection, adopted by the Supreme Council of the Republic of Armenia on April 25, 1996.	Y	Y	Y	damages to flo of violation of	aw on penalties for compensation of amages to flora and fauna as a result f violation of environmental legislaon. 3 May, 2005 100,000 AMD (210 ur)		Ministry of Nature Protection of the Republic of Arme- nia
Azerbaijan	Y	Y	Law on Protection of Animals; Law on Pro- tected Areas	Y	Y	Y	300 convention (New Azeri M per individual	anatas, abo	out 176USD)	Ministry of Ecology and Natural Resources
Iran	N	Y	DoE's Hunting and Capturing legislation	Y	Y	Y	13 \$	to the nur	d according mber of dam- s (4.3 \$ per	DOE
Iraq		N	No law	N	N	N	N	N	N	Ministry of Environment Ministry of Higher Education and Scientific Research Some local authorities

Kazakhstan	Y	Y	The law on protection, reproduction and use of wildlife	Y	Y	Y	about USD 1800	USD 900 per one egg	USD 90 per one nest (without eggs, and for eggs – separately)	Committee of Forestry and hunting of Ministry of Agriculture of Republic of Kazakhstan
Kuwait	N	Y	Anti-Shooting Law	Y	N	N	Fine/Imprison	ment		Ministry of Interior (enforcement of anti-shooting law)
Russia	Y	Y	Federal Act on Wild- life; Decision of the Government of the Russian Federation on Red Data Book	Y	Y	Y	21,600 Rus Ro	oubles		Ministry of Natural Resources
Syria	In progress	Y								
Turkmenistan	RDB 1st edition (1985), 2 edition (1999) was not in- cluded	Y	The Regulation "On Hunting and Hunting Facilities Maintaining" (1995)	Y	Unknown	Unknown				Ministry of Nature Protection of Turkmenistan
Uzbekistan	Y	Y	Law of Republic of Uzbekistan on protec- tion and use of fauna (1997)	Y	Y	Y	150 minimal rate of salary for residents or 1898 US \$ and 3,000 US \$ for foreign people	50% of birds cost per each egg	450 minimal rate of salary per each nest or 5694 US \$	State Committee for Nature protec- tion

Country	National Red Data Book	National protection status	Under what law is the species pro- tected?	Is Spoonbill legally pro- tected from being deliber- ately killed?	Is Spoonbill legally pro- tected from egg harvest?	Is Spoon- bill legally protected from nest destruc- tion?	What are t	he penalties	for?	Who is the highest national authority for protection of birds?
							Illegal killing	Egg harvest	Nest de- struction	
Belarus	N	N	Wild animals protection Law							Ministry of Nature
Georgia	N	Y	There is no special protection for the species, except the general protection under the Law of Georgia on Wildlife.	Hunting is prohibited. In Georgia hunting species (species allowed for hunting) are listed in the Order N512	All bird species, except the hunting species, as well as their egg harvesting are under protection of the Law of Georgia on Wildlife and Order N512 of the Minister of Environment on "Taking off the Wildlife Objects		Code Georg	ode and Admigia define penng: 50 – 500 US	alties for GL (ap-	Ministry of Environment Protection and Natural re- sources
Oman	?	Y	?	Y	n.a.	n.a.				
Tajikistan	N	Y	Law "On protection and use of the animal world" (1994)	Yes. However, enforcement of this law is close to in- existent.						
United Arab Emirates	N	Not pro- tected	N	N	N	N				EAD

Country	National Red Data Book	National protection status	Under what law is the species pro- tected?	Is Spoon- bill legally protected from being deliberately killed?	Is Spoonbill legally protected from egg harvest?	Is Spoonbill legally protected from nest destruc- tion?			enal-	Who is the highest na- tional author- ity for protec- tion of birds?
							Illegal killing	Egg harvest	Nest de- struc tion	
Djibouti		N		N	N	N	Indefined		Ministère de l'Habitat, de l'Urbanisme, de l'environnement et de l'Aménagement du Territoire	
Eritrea	N	N	there is a Proclamation by Ministry of Fisheries	N	N	N	N	N	N	Ministry of Agriculture, Forestry & Wildlife Dept.
Egypt	N	Y	Law 102 for 1983, Law 4 for 1994.	Y	Y	N	According technical equation which calculate the international price of Bird, multiplied by number of possible chicks in life time of birds + costs for raising in captivity. But this is not clearly stated. In the law it mentioned penalty of min. 1000 LE and max. 5000 LE for any of these violations. The decision will be according to The Judge view.		The Egyptian Stat Ministry of Environmental Affair, Egyptian Environmental Affairs Agency.	
Saudi Arabia	N	Y		Y	Y	Y			National Commission for Wildlife Conservation & Development	
Somalia	N	Y	N	N	N	N				No Ministry
Sudan	N	Y	Wildlife law	Y	Y	N				Wildlife Ad- ministration
Mauritania	No na- tional red list	Y	Loi 2000- 024 du 19 /01/2000	Loi 2000- 024 du 19 /01/2000	Loi 2000- 024 du 19 /01/2000	Loi 2000- 024 du 19 /01/2000	Fine	Fine	Fine	President of RIM

Annex 5. Spoonbill research, conservation and attitude towards the species in the different countries

P. l. leucorodia (Atlantic)

Countries	What research has been conducted on the Spoonbill over the past 10 years?	What conservation efforts have there been for the Spoonbill over the past 10 years?	What is the gen- eral atti- tude ofthe public toward the Spoonbill?	What is the general attitude of the conservation authorities toward the Spoonbill?
Belgium	Census and monitoring breeding populations.	N	Unknown	Positive
Denmark	Census and monitoring breeding population	No specific action, but all sites are protected as wildlife reserves with no public access. All four breeding sites are also designated as Natura 2000 and Ramsar sites	Positive (though most people probably don't know this bird).	Positive
France	 Annual monitoring of the national breeding population, population dynamics at Grand Lieu and Brière, migration (colour ringing, satellite transmitter). Studies on the stop over (period, duration, origin of birds, ecology and choise of site), studies on the feeding ecology and ecology of prey species. 	 No disturbance in the pioneer colony of Grand Lieu. Dike restoration and hydraulic management. Creation of hunting reserve. Management of ponds and islands and management of the water level in the Moëze-Oleron nature reserve. 	Good	Good but water level conflicts in wetlands did not really take Spoonbills into account (ex Grand- Lieu, Brière).
Germany	Monitoring of Breeding Population and breeding success and colour-ringing of nestlings.	Protecting breeding sites.	Good	Good
Morocco	Monitoring of numbers on two sites: Merja zerga and Sidi Moussa-Walidia Lagunas. Winter census.	No specific action but all the sites used by the species are designated as Ramsar sites (2005).	In general the public does not know this species, with the exception of the few naturalists in the country, or of school-children with whom enlightened teachers have made educational campaigns.	The authorities concerned (the High Commission for Water and Forests and for the Fight against Desertification) are conscious of the threats faced by many species including Spoon-

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				bill. Their conservation strategy is based on preparation and implementation of management plans for a number of sites identified as protected areas.
Netherlands	Survival rate. Feeding ecology. Use of feeding areas.	Breeding sites protected. Water purification.	Highly beloved	Highly beloved
Portugal	N	Establishment of protected areas	Good	Good
Spain	In Andalusia (=98% of the population) conservation and management Plan. Coordinated monthly censuses (also aerial), monitoring all breeding colonies, ringing. Study of survival, feeding and reproductive ecology, migration and dispersion, wintering, stopover ecology, study of contaminants, evaluation of sanitary state and mortality. In other areas: monitoring of breeding colonies, International Waterbird count in January and Regular National censuses, Feeding ecology, reproduction biology, effects of pollutants on reproduction, migration biology.	UE sentence for protection of Santoña Marshes, Protection of nearly all main wetlands in the country as SPA, Saving nest from floods, Monitoring migration in principal stopover sites Avoid disturbances in wetlands, stablish quite areas inside Santoña marshes, improve roosting at resting areas during hide tide, educational work and media promotion of the spoonbills. Protection of wetlands. Reinforcement of the legislation. Management and restoration in breeding colonies, restoration of feeding sites, captive breeding and release of young birds. Web page dedicated to spoonbills observations (by ornithologist volunteers).	(only within people who loves nature; not too much people in Spain) It's known as very sensible and endangered species. As any other (not common) species, Spanish society didn't know it. This bird is especially emblematico of Doñana, but for sure part of the Spanish society does no know it as it occurs also with lynx or flamingos.	It's known as a species with not too large populations, very concentrated and very sensitive to habitat alteration. There are several examples of wetlands that are used by spoonbills in last decade which have improved its social value because of this species using (Urdaibai, Los Canchales, O Grove, Cádiz Bay) In Andalusia: there is a high concern for this vulnerable species, which has lead the govenement to carry out a specific

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	None that JNCC is aware of.	The species benefits from high levels of pro-	Positive	conservation and monitoring effort every year since 1990. The species is considered as vulnerable but not enough endangered and too localised to require a national conservation strategy. Positive
United Kingdom		tection of most UK Estuaries (most major sites are EU Special protection Areas and Ramsar sites). See: http://www.jncc.gov.uk/page-1417 .		
Gambia	African Water Bird Census but not focused on the species.	Part of the overall biodiversity conservation efforts.	No known negative attitude.	Form part overall national species protection efforts.
Senegal	African Waterbird Census.	Site protection.	The public respects laws in general and the culture for nature.	They apply laws and look after the natural resources.

P. l. leucorodia (Continental)

Countries	What research has been conducted on the Spoonbill over the past 10 years?	What conservation efforts have there been for the Spoonbill over the past 10 years?	What is the general attitude ofthe public toward the Spoonbill?	What is the general attitude of the conservation authorities toward the Spoonbill?
Albania	Inventory of breeding birds. Midwinter census.	Designation of key sites as Protected Areas.	Indifferent	Indifferent
Austria	Surveys of breeding pairs only.		Positive	Positive
Bosnia & Herzegovina	Monitoring of Karst Poljes as Livanjsko Polje by Euronatur since 2002.			
Bulgaria	Monitoring of numbers of two of the colonies(Poda and Srebarna).	two of the colo- es(Poda and Sreba- barna Reserve management positive		Neglected by most conservation authorities except BSPB.
Croatia	Colour ringing programme is running since 2003 – 344 birds CR ringed. Monitoring in Krapje Dol and Nature Park Lonjsko Polje.	Water management of the main Spoonbill colony each year, buffer zone management and enlargement (ECONET – Euronatur), establishment of extensive grazing scheme (Podolci Cows).	Generally positive, cooperation between the ZOO Zürich, Lonjsko Polje and Euronatur to promote the species.	Generally positive, Symbol of the Nature Park Lonjsko Polje and flag-ship species.
Czech Republic	Ringing of juveniles in nests.			
Greece	None	Not something especially for this species. Other actions such as the reflooding of the drained Drana lake in the Evros Delta probably affect positively this species among many others.	he tive	
Hungary	Colour-ringing project from 2003 and Cs. Pig- niczki has studied eco- logical parameters from 2006.	Wetland restoration and maintenance, consultation with the local fish farm owners.	Positive, no public conflict. Spoonbill will be the Bird of the year 2008.	It is a highly protected bird in Hungary. It is regarded as a flagship species in wetland protection.

	Colony site selection of the Spoonbill in the Hortobágy NP (in: Végvári 2003: PhD Thesis).			
Italy	Colony census, colour ringing & reading at the 2 major colonies.	Nothing different to other colonial waterbirds.	Positive	Positive, but not different to other colonial waterbirds.
Moldova	Surveys of breeding pairs only	Creation of scientific re- serve "Lower Prut"	Positive	Positive
Montenegro	Monitoring of wet- lands, special pro- gramme in Bojana Delta (Center for Pro- tection and Research of Birds of Montenegro, Euronatur).	Colony site and feeding places identified as EMER-ALD sites, proposed for protection in draft Physical Plan.		
Romania	Colony surveys, Colour-ringing for migration studies, wintering bird surveys.	Designating the colonies as protected areas (16 colonies proposed, 13 designated).	Positive	Indifferent
Serbia	the species distribution, breeding numbers, most important site during movements (by colour migration. Intensive comtents) of Tamis River valley, the most important site during specie thetical		Positive: people recognize the species and aesthetically it is very attractive.	Very positive.
Slovakia	Basic monitoring of population, access to breeding sites is limited from year 2000, because the sites are in private property.	In 2003 a Special Protected Area was declared (not legally approved by government yet). Limits in land use due to being a part of SPA; ban on aerial spraying of reedbeds. Fishery-environmental schemes were prepared for Iňačovce fishponds (not accepted by fishpond-managers yet). Habitat restoration activities at meadow Ostrovík in SPA Senné – Spoonbills now utilise the site for feeding.	For majority of population the bird is unknown, no negative attitude was found.	Generally accepted as rare species, but no special protection programs were implemented yet.
Turkey	The only breeding population monitoring studies were carried out on Manyas and Bolluk Lakes, furthermore some individual short-		Positive	General tendency of the authorities is for protection of the spe- cies and improve their nesting sites.

	term studies were done to determine the breeding population.			
Ukraine	N	N	Positive	Indifferent
Algeria	Some University studies.	N	Indifferent	Indifferent
Belarus	N	N	Indifferent	Indifferent
Cameroon	N	N	Indifferent	Indifferent
Israel			Positive	Full protection
Jordania	N	N	Mostly unknown	N
Kenya	N	Most of the sites where the Eurasian spoonbill has been recorded are protected le- gally.	Indifferent	Positive
Libyia	The species was included in results of the winter census of waterbirds 2005-2007 and ongoing likely for the next years.	Several sites harbouring the species are either Protected areas or proposed sites for protection.		Indifferent
Mali	Wintering waterfowl census : WIS 98- 2007- ONCFS : DOEA	Wetland restoration.	Tolerance from fishermen.	Confusion with the African Spoonbill which is protected. This explains the non protection with it.
Macedonia FYR	N	N	Unknown	Not a priority
Malta	N	BirdLife Malta continues to work to protect all bird spe- cies from illegal hunting pressures.	ird spe- lic is interested in are still not	
Niger	N	N	Unkown	Indifferent
Tunisia	Census, population monitoring, contribu- tion to studies of migra- tions of the species' populations (ring read- ing).	Biggest concentrations in Tunisia are in sites declared as IBAs, sites protected by Tunisian legislation and/or proposed Ramsar sites.		

P.l. major

Countries	What research has been conducted on the Spoonbill over the past 10 years?	What conservation efforts have there been for the Spoonbill over the past 10 years?	What is the general attitude of the public toward the Spoonbill?	What is the general attitude of the conservation authorities toward the Spoonbill?
Armenia	None	N	Variable: from ignorant (little familiar species) to negative as a "fish pest" together with herons and cormorants; potentially an attractive taxidermy trophy.	Low to medium interest/attention.
Azerbaijan	Some researches have been conducted under the leadership of E.H. Sultanov in 1997-2000. Special researches on Ciconiiformes have been conducted by E.H. Sultanov and A.F. Jabbarova (2006).	Creation of Aggol and Shirvan Na- tional Parks.	Relation quite neutral but in some regions they estimate very high the quality of meat so this species is damaged from illegal hunting.	Medium to high interest/attention.
Iran	No specific research; instead general studies like mid-winter census, site observation and ring- ing programme applied for all migratory species.	General conserva- tion schemes ap- plied for all migra- tory species like, Protected Areas legislation, Site Management Plan- ning.	There are no specific public awareness schemes; instead general awareness raising on migratory species, like poster, site brochures.	
Iraq	Ornithological activities are very few.	The species interred to the IBA, KBA surveys that were held by Nature Iraq NI in 2005-2006-2007.	Indifferent	Indifférent
Kazakhstan	N	Ramsar convention.	Nothing special; generally positive or public don't know the species Nothing special; as any protected rare cies.	
Kuwait	N	General protection by Coastguard.	Unknown Positive	
Russia	Monitoring of the breeding colonies and ringing of chicks since 2004 by the staff of Chernyye Zemli NR.	No special efforts. Chernyye Zemli NR is a strictly pro- tected area.	Positive	Positive

Syria	N	N	Unknown	Limited awareness
Tajikistan	N	N.		
Turkmenistan	This species was counted and was included into the monitoring programme of reservation.	N	Positive Migratory individe are conserved und the Khazar, Amud Reservations and Sarykamyshskiy greserve of Gaplang	
Uzbekistan	N	Y	Positive	Positive
Georgia	N	N	Unknown Protection	
Oman	N	N	Unknown	Protection
United Arab Emirates	N	N	Positive	Inconnue

Countries	What research has been conducted on the Spoonbill over the past 10 years?	What conservation efforts have there been for the Spoonbill over the past 10 years?	What is the general attitude of the public toward the Spoonbill?	What is the general attitude of the conservation authorities toward the Spoonbill?
Djibouti	Winter census.	N	Indifferent	Indifferent
Egypt	N	N	Positive	Positive
Eritrea	Study on the number of breeding pairs and wintering over the last three years.	There has been little effort. There is a hope for the near future some sites will be declared as MPA.	Unknown to indifferent	Positive
Saudi Ara- bia	N	Important sites are now included in the revised protected areas.	Little known.	It should be protected.
Somalia	N	N	Indifferent	Indifferent
Sudan	N	N	Not studied	Indifferent
Mauritania	Winter counts. Ringing started in 2002. Project NM/ RuG/ International Spoonbill Working Group.	Creation of the nature reserve in the Chatt Boul.	Indifferent	A wish for a better monitoring of the spe- cies.

Annex 6. Spoonbill national action plan, census and monitoring in the different countries

P. l. leucorodia (Atlantic)

Countries	Is there a national Spoonbill action plan?	Is there a national Spoonbill working group?	Is there a national and specific census?	Is there a monitoring programme in protected areas?	Are there rou- tines for in- forming the responsible authorities regarding nest- ing areas and nest sites?
Belgium	N	N	Y	Y	Y
Denmark	N	N	BirdLife Denmark has appointed a vol- unteer species coor- dinator (Jan Skriver) who is performing a yearly census.	There is a general state monitoring programme covering a number of species including spoonbill.	Relevant authorities are informed when new sites are detected.
France	N	N	N	N	N
Germany	N	N	N	Y	Y
Morocco	N	There is a project to create a working group with the training of two students and the implication of searchers working on waterbirds in Morocco.	Census during mid- January counts. These counts are coordinated by the Centre for the Study of Bird Migration (CEMO) at the Sci- entific Institute in Rabat.	A study is in progress at the Science University of Casablanca. This monitoring is being carried out in the wetland complex of the Lower Loukkos near the city of Larache in north-west Morocco. Monitoring at Merja Zerga.	N
Netherlands	Y	Y	N	Y	Y
Portugal	N	N	Y	Y	Y
Spain	There is no national conservation plan but a regional one, in Andalusia where most of the population is found (breeding and wintering).	In Andalusia	Y (volunteers; not official). In Andalusia: every month, Also in some important places like Urdaibai, Santoña and O Grove.	Y	In Andalusia: yes.

United Kingdom	N	N	No specific census but in the breeding season, the species is monitored by the Rare Breeding Birds Panel (RBBP) and in the non-breeding season the species is included in the national Wetland Bird Survey (WeBS).	Generally through WeBS.	Y, through national reporting of RBBP and WeBS.
Gambia	N	N	N	N	N
Senegal	N	Y	Y	Y	N

P. l. leucorodia (Continental)

Countries	Is there a national Spoonbill action plan?	Is there a national Spoonbill working group?	Is there a national and specific census?	Is there a monitoring programme in protected areas?	Are there routines for informing the responsible authorities regarding nesting areas and nest sites?
Albania	N	N	Part of the water- bird census.	N	N
Austria	N	N	Y	Y	Y
Bosnia & Herzegovina	N	N	Generally no but sometimes census of the species made with other species.	With other species.	N
Bulgaria	N	N	N	Only at Poda Protected Site.	N
Croatia	N	N	Y	Y (Kopački rit, Lonjsko polje, Jelas fishponds).	Y
Czech Republic	N	N	N	Y, monitoring programme for existing and pro- posed SPAs.	Y
Greece	N	N	N	Y. It is carried out by the Hel- lenic Ornitho- logical Society.	Y
Hungary	Not yet	Y	Y	Y	Y
Italy	N	N	N	Partial	N
Moldova	N	N	N	N	N
Montenegro	N	N	Y	Y	N
Romania	N	Y	N	N	N
Serbia	N	Y	Y	N	N
Slovakia	N	N	N	N	Y

Turkey	Not yet	Not yet	Regularly Mid-winter waterfowl counts carried out coordinated by the Nature Society and supported by Ministry of Environment & Forestry.	With other species	Y
Ukraine	N	N	N	More or less regularly counted in Lebyazhi Islands (a nature protected area).	N
Algeria	N	N	N	Y	N
Belarus	N	N	N		
Cameroon	N	N	N	N	N
Chad	N	N	N		
Israel	N	N	Y	Partly	Y but no relevant.
Jordan	N	N	N	Y, for birds in general.	
Kenya	N	N	N	Y for all species.	Y
Libyia	N	N	Y	Y	N
Macedonia FYR	N	N	N	Partly, Prespa Lake.	N
Mali	N	Y but not func- tional.	With other census ONCFS/ WIS.	Y	N
Malta	N	N	N	N	N
Niger	N	N	N	N	N
Tunisia	N	N	With other species	Y, there is a monitoring programme of IBAs.	N

P. l. major

Countries	Is there a national Spoonbill action plan?	Is there a national Spoonbill working group?	Is there a national and specific cen- sus?	Is there a monitoring programme in protected areas?	Are there routines for informing the responsible authori- ties regarding nesting areas and nest sites?
Armenia	N	N	Midwinter waterbird count.	Y, Basic monitoring.	N
Azerbaijan	N	N	N	Y, for all bird species.	N
Iraq	N	N	N	N	N
Iran	N	N	No, but mid- winter cen- sus.	N	Y
Kazakhstan	N	N	N	Y, for all bird species.	N
Russia	N	N	N	Y	Y
Syria	N	N	N	N	N
Turkmenistan	N	N	N	General Monitoring programme "Letopis Prirody" is conducted in Khazar, Amudarya and Gaplangyr Reserves.	N
Uzbekistan	N	N	N	Y. Only for Zapoved-nik.	N
Kuwait	N	N	N	N	N
Georgia	N	N	N	N	N
Oman	N	N	N	Y, for all bird species.	N
Tajikistan	N	N			
United Arab Emirates	N	N		N	Y

Countries	Is there a national Spoonbill action plan?	Is there a national Spoonbill working group?	Is there a national and specific cen- sus?	Is there a monitor- ing programme in protected areas?	Are there routines for informing the responsible authorities regarding nesting areas and nest sites?
Djibouti	N	N	N	N	N
Egypt	N	N	N	Y, for all bird species.	N
Eritrea	N	N	N	N	N
Saudi Ara- bia	N	N	N	N	Y
Somalia	N	N	N	N	N
Sudan	N	N	N	N	Y
Mauritania	N	N	Y	Y	N

Annex 7. Knowledge of habitat and diet, and occurrence of the Spoonbill in Protected Areas, BirdLife Important Bird Areas and Ramsar sites.

Protected areas include national parks and reserves, regional parks and reserves, and private reserves.

Staging and wintering

P. l. leucorodia (Atlantic population)

Countries	Site	Numbers	Water quality	Prey species	Feeding period	Legal status	IBA	Ramsar Site	Conservation problems
Belgium	'Blokkersdijk' at Antwerpen	10-30 staging				Nature reserve	Y	N	-
	'Gentse Kanaalzone' near Gent	10- 30(max. 60-70), during the last years < 10 (stag- ing)				Industrial development	Y	N	Suitable feeding habitats largely disappeared.
	'Zwin area' at Knokke	0-2 (10- 50, dur- ing the last years max. 10- 15, stag- ing)	Mainly brackish	Probably small fish	?	Nature reserve	Y	Y	Suitable feeding habitats largely disappeared.
	'IJzermonding' at Nieuwpoort	0-1 (3-8, staging)				Nature reserve	Y	N	-
Denmark	Vejlerne	(2-10, 2007)				Protected	Y	Y	
	Ulvedybet	(1-3, 2007)				Protected	Y	Y	
	Skjern Å	(2-10, 2007)				Protected	Y	Y	
	Vadehavet	(1-5, 2007)				Protected	Y	Y	Summer floodings.
France	Moeze Oleron	7 (2006)	Fresh, brackish and sea water	Palaemontes varians, Gas- terosteus acu- leateus, Gam- busia affinis, Cyprinus car- pio	Night and early in the morn- ing	Nature Reserve	Y	N	Quality of the fresh water; disturbance.

	Ile de Ré	12-18 (2006- 2007)				Private + Nature Re- serve (SPA and N2000 area)	Y	Y	Human distur- bance.
	Baie de Somme	12-21 (2006- 2007)	Fresh and brackish water	Palaemonetes varians	Night and early morning	Nature Reserve	Y	Y	
	Camargue (Tour du Valt, Vigueirat)	175 (2007)	Brackish, fresh and sea water	Fishes, shrimps	Night, day	Protected	Y	Y	
	Seine Estuary	2 (2007)	Fresh and brackish water	Palaemonetes varians, Stick- lebacks	Night, day	Nature Reserve	Y	N	Sediment, disturbance, pollution, industry.
	Reserve duer Sarzeau	55 (2006)	Brackish water	Palaemonetes varians, fishes	Day and probably night	Regional protection	N	N	
	Réserve Naturelle des Marais de Séné	32-37 (2006- 2007)	Brackish and sea water	Palaemonetes varians, Gasterosteus aculeatus, Anguilla an- guilla (mar- ginal), flatfish (marginal)	Probably both day and night feeding, low tide feeding in estuary	Nature Reserve	Y	Y	Hydraulic management, disturbance. Need new estimation of food resource.
	Marais de Pen en Toul/ Lar- mor-Baden	29 (2006)	Brackish	Palaemonetes varians and small fishes	Probably both day and night feeding		Z	N	Small area (20 ha), habitat quality (food accessibility) depending on water level. Effect of hunting disturbance nearby not well estimated.
	Rivière Pont L'Abbé	23-55 (2002- 2006)	Salt water	Palaemon serratus, P. elegans, Aphia minuta, Go- biusculus fla- vescens, Car- cinus maenas, Syngnatus lumbriciformis		Nature Reserve	N	N	Human disturbance.
	Domaine de Certes/ Bassin d'Arcachon	151-162 (2006- 2007)	Brackish	Palaemonetes varians, Stick- lebacks	According to the tide	Regional protection	N	N	Tourism.

	Marais d'Olonne, St Denis du Payré	4 (2006- 2007)	Brackish, Freshwater	Shrimps, Small fishes		Nature re- serve (par- tially)	Y	N	Tourism, over-fishing?
Commonwe	Hauke-H- Koog	160 (staging)	Sea water	Crangon, stickle-backs, other fishes	Day, night		Y	N	
Germany	Meldorfer K, Süd	60 (stag-ing)	Sea water	Crangon, stickle-backs, other fishes?			N	N	
Morocco	Tahaddart		Brackish water				N	N	Breeding during one year only.
	Merja Bargha	47 (1995- 2005)				Nature Reserve	Y	N	Intensive agriculture and cattle rearing. Water exploitation from lakes, pollution and eutrophication, habitat lost through cultures near lake. Cutting vegetation. Wildfowl hunting.
	Sidi Moussa- Oualidia La- gunas	63 (1995- 2005)				Nature Reserve	Y	Y	Intensive agriculture, cutting vegetation and overgrazing. Salt exploitation. Oyster farming. Shellfishing. Poaching. Human settlement.
	Khnifiss laguna	62 (1995- 2005)				Nature Reserve	Y	Y	Waste increase and disturbance due to many activities: salt exploitation, tourism activity, fishery and aquaculture.
	Embouchure de l'Oued Loukkos	32 (1995- 2005)				Nature Reserve	N	Y	Disturbance, hunting and salt exploitation.

Merja Zerga	33 (1995- 2005)		Nature Reserve	Y	Y	Agriculture, Vegetation cut- ting and over- grazing. Poaching. Overfishering, overshellfishing.
Marais du Bas Loukkos	20 (1995- 2005)		Nature Reserve	N	Y	Draining of wet- lands, pollution. Waterfowl hunt- ing.
Baie d'Ad- Dakhla	22 (1995- 2005)		Nature Reserve	Y	N	Increase of fishery and tourism activities, urban and industrial settlement, and bird disturbance within the breeding season.
Marais de I'wad Smir	17 (1995- 2005)			Y	N	Drainage, grazing and plant cutting for commercial use (juncus, typha, phragmites); Development of the town M'diq and of tourism structures; Reject of polluted water without treatment; Increase of wastes. Building of a dam and of a pleasure harbor near the mouth of the Oued Smir, which will limit freshwater arrival and increase marine water

Merja de Sidi Bou Ghaba	11 (1995- 2005)		Nature Reserve	Y	Y	Bird disturbance; Eutrophication and pollution of the borders by solid wastes; Decrease of the surface of the lake due to silt deposit and increase of the vegetation.
Embouchure de l'wad Souss	11 (1995- 2005)		National Park	Y	Y	Urban pollution of the oued Souss. Bird disturbance within the year and destruction of the habitat.

Countries	Site	Numbers	Water quality	Prey species	Feeding period	Legal status	IBA	Ramsar Site	Conserva- tion prob- lems
	All freshwa- tersites			Sticklebacks	Day & night	Pro- tected			Pollution by agriculture.
Nether-	Tidal areas			Shrimps	Day & night	Pro- tected			Overfishing shrimps.
lands	farmland			Sticklebacks	Day	Not pro- tected			Agro- disturbance, Maintaining ditches Pollution by agriculture.
	Lagoa dos Salgados	10-50	Freshwa- ter			Not pro-tected	N	N	Golf course, water pollu- tion.
	Tejo estuary	150-300	Sea and freshwa- ter	Shrimps, fish		Pro- tected	Y	Y	Human pressure Lisbon 2 million inhabitants, rice fields and cattle grazing.
	Sado estuary	50-150	Sea and freshwa- ter	Shrimps, fish			Y	Y	
Portugal	Estuario do Arade	10-50					N	N	
	Taipal marsh	4-10	Freshwa- ter	Crawfish (<i>Procamburus clarkia</i>), shrimps	?	Pro- tected	Y	Y	
	Paul do Boquilobo	(25 bp- 2006)	Freshwa- ter	Crawfish (<i>Procamburus clar-kia</i>), shrimps			Y	Y	House building. Water management.
	Ria Formosa	300-500	Brackish				Y	Y	
	Castro Marim	50-150	Saltpans Former saltmar- hes	Fish, shrimps	Day & night	Partly pro- tected	Y	Y	Tourism. Farming activities.

Spain	Donãna	2200 (passing autumn 2006) 500-1000 (winter- ing)	Fresh and brackish	Crawfish (<i>Procamburus clar-kia</i>), Shrimps	During the breeding period, both day and night; otherless mainly dusk/dawn and night	National & Natu- ral Parks	Y	Y	Drought
	Marismas de Santona y Noja	27 ± 12 (1585 ± 618 (au- tumn) 247 ± 35 (spring))	Brackish and ma- rine water	Pomatochistus, Crangon	Both, at least dur- ing migra- tion	Natural Park, SPA	Y	Y	Recreational shellfishing, moderate-high level of human disturbances during the length of the stopover in autumn. Boats and the local 'fiestas' in September. Significant reduction in the amount of fresh water input by the main river from june till august.
	Isla Cristina Marshes	80 (passing autumn 2006) 50-150 (wintering)	Brackish and salt water	Fishes and shrimps	During the breeding period, both day and night; otherless mainly dusk/dawn and night, depending on the tidal schedule	Pro- tected area (Paraje Natural)	Y	Y	Disturbance. Land transformation for urbanistic purposes.

Ensena O Grov		50-150	Mainly marine (salt) water	Palaemon se- rratus, Carci- nus maenas, Gobidae (Po- matochistus)	Tidal area (both)	SPA; Pro- tected wetland (re- gional protec- tion cate- gory)	Y	Y	Disturbance. Land trans- formation for urbanistic purposes.
Odiel n	narshes	520 (passing autumn 2006) 300-500 (winter- ing)	Brackish and salt water	Small fishes (Fundulus, Pomatoschistus, atherina) Shrimps (Palaemonetes sp.)	During the breeding period, both day and night; otherless mainly dusk/dawn and night, depending on the tidal schedule	Protected area (Paraje Natural)	Y	Y	Industrial activity (contamination). Human infrastructures. Tourism. Decreasing food quality and availability.
Cadiz I	Bay	500-1000 (wintering)	Brackish and salt water		During the breeding period, both day and night; otherless mainly dusk/dawn and night, depending on the tidal schedule	Natural Park	Y	Y	Disturbance. Industrial activity. Land trans- formation for urbanistic purposes.
Urdaiba	ai	300 – 500 birds (au- tumn)				SPA	Y	Y	High level of human disturbances during the length of the stopover in autumn. Mainly boats.

	Los Canchales Dam (Guadiana river)	5 (40-80 birds (regularly sep) 10-30 birds (reg. feb- mar)	Freshwa- ter		Daylight, preferring sunshine and sunset	Not pro- tected	N	N	Changing levels of water depending on 'drinking' water needings of Badajoz population (150,000 people).
	Bahia de Santander	3					Y	N	Disturbance.
	Embalse del Ebro	0 (25 staging)				SPA	Y	N	Disturbance.
	Delta del Ebro	10-50				SPA	Y	Y	
	Salinas de San Pedro del Pi- natar	10-50				SPA	N	N	
	Salinas de Santa Pola	10-50				SPA	Y	Y	
	Oyambre	6 (4-8, staging)					Y	N	Disturbance.
	Boabolon Wetland Re- serve	10-15 (1998- 2007)	Brackish and freshwa- ter during raining season		Daylight	National Pro- tected Area	Y	Y	Inadequate data for spe- cies protec- tion/conserv ation.
Gambia	Tanbi Wet- land Complex	10-12 (1998- 2007)				National Pro- tected Area	Y	Y	
	Allahien River Mouth,	10-15 (1998- 2007)				Not pro- tected	Y	N	
Senegal	Djoudj Na- tional Park	103-921 (1999- 2007)	Fresh and brackish water	Fish	Morning, evening	National Park	Y	Y	Invasive plant species.

Saint-Louis Lagoons	51-2395 (1999- 2007)	Brackish and sea water	Fish	Night, morning	Reserve (par- tially)	Y	Y	Water level fluctuations on the feed- ing sites and on the rest- ing site (Re- serve de Guembeul.
Trois Marig- ots	27-35 (1999- 2007)	Freshwa- ter	Fish	Morning, evening	Not pro- tected	Y	N	Lack of water during some years, developpement of the vegetation.

P. l. leucorodia (Continental)

Countries	Site	Numbers	Water quality	Prey species	Feeding period	Legal status	IBA	Ramsar Site	Conservation problems
Albania	Karavasta	3-24	Brackish		Day	National Park	Y	Y	Illegal hunting.
Aibailia	Butrint	2-17	Brackish			National Park	Y	Y	Disturbance.
	Bardača	15-50 (2003- 2007) stag- ing	Freshwater		Day		Y	Y	This site is private fish farm and this is problem for conservation (conflict of interests).
Bosnia & Herzegovina	Hutovo blato	18 (2000) staging					Y	Y	Not available management plan, illegal hunting.
	Mostarsko polje	21 (2007) staging					N	N	Illegal hunt- ing & degra- dation of bio- topes.
	Livanjsko polje	33 (2007) staging					N	N	Illegal hunting & degradation of biotopes (drainage canals).
Bulgaria	Atanasovsko lake(salina)	1991-2007 : 0-5				Nature reserve (partly)	Y	Y	
Croatia	Donji Mihol- jac fishponds	3-38 (2002-2007) 19-55 (staging)	Freshwater	Fish, amphibians	Day	No protected	Y	N	Hunting.
	Lonjsko Polje Sava Wet- lands	Up to 400 staging / postbreeding (1986 – 1988)		Fish, amphibians, crustacea (?)		Nature Park, (but not the fish farms!)	Y	Y	River regulation for Navigation (dredging), fish farms not protected.

	Kopacki rit – Podunavlje fishponds	4-12 (2001-2002) 100-700 staging/ post breeding.	Freshwater	Fish, amphibians	Day	Protected as Nature park	Y	Y	Fish production ceased in 2005.
	Delta of Neretva river	118 (2003- 2006) stop- over	Brachish/sea- water	Fish, amphibians	Day	Partly protected	Y	Y	Hunting and disturbance. Enlargement of the Port of Ploce.
	Nasicka Breznica fish- ponds	4-33 (2006-2007) 120 staging	Freshwater	Fish, amphibians	Day	Not protected	Y	N	Hunting, fish production abandoned on one third of the site.
	Poljana fish- ponds	2004 104 staging	Freshwater	Fish, amphibians	Day	Not pro- tected	N	N	Hunting and disturbance.
	Jelas fish- ponds	16 (2007)	Freshwater	Fish, amphibians	Day	Protected	Y	N	Hunting and disturbance.
	Grudnjak fish- ponds	2005 7 staging	Freshwater	Fish, amphibians	Day	Not protected	Y	N	Hunting and disturbance.
	Island of Pag	> 40 staging				Partly protected	N	N	Poaching and disturbance.
	Vransko Jez- ero	37 (2004 – 2005) stag- ing				Nature Park	Y	N	Disturbance.
	Kninsko Polje	23 staging (2007)				Not protected		N	Disturbance.
	Axios delta	32-35	Brackish wa- ter		Partly tidal	SPA	Y	Y	Pollution.
Greece	Lake Kerkini		artificial, Freshwater			Not protected, SPA.	Y	Y	
Gitte	Messolonghi lagoon	166-219 (1999-2005)	Brackish wa- ter			SPA	Y	Y	
	Kalamas Delta	86-101 (1999-2006)	Brackish wa- ter			SPA	Y	N	
Hungary	Büdös-szék, Pusztaszer	200-300 (staging)	Alkali lake	Frog, inverte- brates, fish	Day	Protected	Y	Y	Dryness.
	Péteri-tó	1200 (2007) (staging)	Former fish- pond	Fish was seen	Day	Protected	Y	N	Dryness.

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	Szeged Feher to	500 (staging)	Artificial lake	Fish, frog, invertebrates	Day	Protected	N	Y	Fish farming.
	NP Hortobagy	1700 (2006) staging	Lakes, wet- lands	Frog, fish, invertebrates	Day	Protected	Y	Y	Recreation.
	Porto Corallo	10 (2000)					N	N	
	Stagno di Cagliari	83 (2000)				Protected	Y	Y	Pollution, disturbance, free ranging dogs.
	Biviere di Gela	16 (2000)				Partially protected	Y	Y	
	Biviere di Lentini	56 (2000)				Partially protected	N	N	
	Augusta	8 (2000)					N	N	
	Saline di Tra- pani	37 (2000)				Protected	N	N	
	Saline di Mar- sala	121 (2000)				Protected	N	N	
	Laguna di Venezia	22 (2000)				Partially protected	Y	Y	Hunting.
Italy	Saline di Tar- quinia	9 (2000)				Protected	N	N	
	Valli di Ar- genta	8 (2000)	Fresh water	Procambarus clarkia	Day	Protected	Y	N	
	Saline Margherita di Savoia	116 (2000)				Protected	N	Y	
	Orbetello e Burano	83 (2000)				Protected	N	N	
	Lago di San Giuliano-	5 (2000)					N	N	
	Oristano e Sinis	6 (2000)				Mostly protected (Marine reserve, SPA)	N	N	Disturbance, hunting, cor- morant shoot- ing.
	Ravenna coastal marsh- lands	150-200 (2007) stag- ing	Freshwater	Procambarus clarkia	Day	Protected	N	N	Hunting on surrounding areas.

	Solila Tivat	7 (2004 – 2007) – stop over site	Sea water	Day	Protected	Y	Partly	Disturbance.
Montenegro	Bojana Delta – Sltpans Ulcinj	112 (2203 – 2007) (staging, summering)				Part ly		Hunting, poaching, disturbance.
	Medzi- bodrožie		Freshwater		SPA	Y	N	Lesser threat, but lack of suitable breeding sites.
Slovakia	Senné		Freshwater	all the day, espe- cially in morning	SPA	Y	N	Disturbance, loss and deg- radation of shallow water bodies.
	Medzi- bodrožie		Freshwater		SPA	Y	N	Lesser threat, but lack of suitable breeding sites.
	Danube Delta	337 (staging)				Y	Y	
Ukraine	Eastern Sivash	1-117 (staging)				N	N	
	Central Sivash	8-128 (staging)				N	N	

Countries	Site	Numbers	Water quality	Prey species	Feeding period	Legal status	IBA	Ramsar Site	Conservation problems
	Marais de la Mekhada	14-59 (1999- 2007)	Freshwater		Day		Y	Y	Reject of wasted do- mestic waters. Silting in of water sup- plies.
	Garaat El Haoues	8-35 (2006- 2007)					N	Y	
Algeria	Chott Ech Chergui	2- 11(2002 - 2003)					N	Y	Sanding inthe wetland due to desertification, poaching.
	Garaet El Tarf	2002 : 2					N	Y	Reject of wasted do- mestic waters, poaching.
	Lac Fetzara	2001 : 12					Y	Y	Reject of wasted waters. Drainage of the lake.
	Lac Tonga	32-46 (1999- 2000)				National Park	Y	Y	Poaching.
Cameroon	Plaine d'inondation du Logone	2-3				Not protected	Y	N	Dryness of the plan. Poaching, water pollution.
	Wasa	253 (1997)				National Park	Y	Y	
	Larnaca					SPA	Y	Y	Sewage work
Cyprus	Akrotiri		Salt lake				Y	Y	
Jordan	Azraq	(1-5)				Partly protected	Y	Y	Drought & overpumping.
	Aqaba sewage plant	(2-10)				Partly managed as observatory	Y	N	Disturbance.
	River Jordan	(5-50)				Partly protected	N	N	Habitat loss, overpumping.

	Al-Karamah Dam (Jordan Valley)	(1-10)			Not pro- tected	N	N	Disturbance, hunting.
	Farwa Lagoon to Ras Ajdir	60-70 (2005- 2007)	Marine (tidal)		Not protected.	N	N	Possible pollution from nearby petrochemical site; encroachment of nearby town.
	Wadi Zaret Dam	1-2	Freshwater			N	N	Water storage reservoir
	Wadis mouths east of Tripoli	2005 : 1	Mainly freshwater, brackish nearer sea.		National Park.	N	N	Uncontrolled human visitors cause distur- bance and leave litter.
Libya	Taourgha springs	5-9 (2005- 2007)	Spring is fresh water, but large neighbouring salt lake is brackish		Not protected.	N	N	Merits Ramsar designation.
	Al Hisha springs	2-6	Spring is fresh water, but large neighbouring salt lake is brackish.		Nature Reserve of 160,000 ha. with strictly controlled access de- clared in 1984	N	N	
	Benghazi/Al Thama/Ain Azziana	2-22 (2005- 2007)	Brackish; linked to sea but much inflow of waste water.		Not protected	Y	N	Heavy urbanization pressure (situated in mid Benghazi); great potential for public awareness raising; merits Ramsar designation.
Niger	Tabalak	23 (2007)				N	Y	Disturbance: edges of wet- land (2000 ha wetland) 90% converted to market gar- dens; in 1994

								only 10-20%; fishing has also increased; the wetland dries out occasionally now, which it never used to do. Lack of integrated management of wetland, for agriculture, pastoralism, fisheries, collection of natural products and biodiversity.
Tunisia	Kneïss Islands	1013- 1513 (2003- 2007)			Natural reserve	Y	Y	
	Oued El Maltine	111 (2006) 142 (2007)	Sea water			N	Y	
	Island of Djerba	60-1257 (1998- 2007)	Sea water		Hunting reserve	N	Y	City develop- ment, expan- sion of tourist facilities.
	Gulf of Boughrara	268 (2006)	Sea water		Hunting reserve	Y		
	Thyna salt- pans	82-480 (1998- 2007)	Sea water		Hunting reserve	Y	Y	Disturbance by visitors.
	Kerkennah Islands	222-392 (2002- 2007)	Sea water		Hunting reserve	Y	N	
	Bahiret el Bibane	66 (2006) 94 (2007)	Sea water		Hunting reserve	Y	Y	
	Gourine	600 (2006) 110 (2007)	Sea water		Hunting reserve	Y	N	
	Sebkhet Dreïaa	41-178 (2003- (2007)	Sea water		Hunting reserve	Y	N	1 1/111

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Oued Akarit	15 (2003) 3 (2006)	Freshwater		inting serve	N	N	
Monastir salt- pans	55 (2003)	Sea water		inting serve	Y	N	
Sebkhet Halk el Menzel	17-88 (2003- 2007)	Brackish		inting serve	Y	N	
Oued Sed	58 (2003)	Freswater			Y	N	
Lebna reservoir	150 (2001) 11(2006)	Freshwater			Y	Y	Disturbance from hunting of other spe- cies.
Korba La- goons	11 (2005)	Brackish		inting serve	Y	Y	
Oued el Hajjar reser- voir	14 (2003) 3 (2006)	Freshwater			Y		Disturbance from hunting of other spe- cies.
Sebkhet Kelbia	640 (1976) 800 (1997)	Freshwater		ature eserve	Y	Y	
Ichkeul Na- tional Park	61-130 (1998- 2006)	Freshwater in winter, brackish in Summer	Par We	ational rk, orld eritage	Y	Y	Conflicts over use of lake water (reduce inflow because of filling of dams on tributaries appear to have been resolved the Government has accepted that Ichkeul is a net water consumer; site removed from World Heritage in Dang List, 2006.
Sidi El Barrak reservoir	75 (2002)	Freshwater			N	N	
Lake of Tunis	12 (2002)	Lagoon, sea water		inting serve	Y	N	Major area o the southern lake has been

								changed in connected with city de- velopment projects.
	Oued Rmal reservoir	40 (2002) 13 (2006)	Freshwater		Hunting reserve	N	N	
	El Haouareb reservoir	2 (2003) 1 (2007)	Freshwater			Y	N	
	Zarate & Chott El Aouamer	40 (2007)	Sea water			N	N	
	El Makhadha	3 (2007)	Freshwater		Hunting reserve	N	N	
	Oued El Maleh	2 (2006)	Freshwater			N	N	
	Oued Tmoula	13 (2006)	Freshwater			N	N	
	Oued Gabès	3 (2006)	Freshwater			N	N	
Turkey	Tuzla Lake Mediterranean	1000 (2007) staging	Salt Lake			N	N	Water regime intervention.
	Ceyhan Delta, Mediterranean	300 (1999) staging	Salt, Fresh and Sea Wa- ter		Nature Reserve	N	Y	Intensive agricultural usage, thermal plants, industrial plants.
	Akyatan Lake Mediterranean	1350 (2005)	Brackish		Wildlife refuge	N	Y	Intensive agri- cultural usage, pollution.
	Yumurtalık Lagoon Medi- terranean	919 (2006)	Brackish			Y	Y	Intensive agri- cultural usage, unplanning development.
	Göksu Delta Mediterranean	400 (2006)	Freshwater, Seawater, Brackish		SPA	Y	Y	Water regime intervention, intensive agriculture, second houses, pollution, and dam construction.
	Palas Lake Central Ana-	680 (2005)	Freshwater and Salt		Natural site area	Y	N	Water regime intervention.

tolia		Lake					
Kızılırmak Delta -Black Sea	1210 (2002) Staging	Freshwater and Sea wa- ter			Y	Y	Water regime intervention, pollution, sec- ond houses.
Bosphorus	310 (2006)	Seawater			Y	N	
Sultan marshes Cen- tral Anatolia	930 (2006)	Freshwater and Salt lake		Nature reserve	Y	Y	Water regime intervention, pollution.
Kulu Lake Central Ana- tolia	339 (2004) Staging	Brackish		SPA	Y	N	Pollution, human disturbance.
Manyas Lake, Marmara Re- gion	21 (2007)	Freshwater lake		National Park	Y	Y	Pollution. The lake is changed to a reservoir by construction embankment for agricultural purposes.
Mogan Lake - Central Ana- tolia	38 (2004)	Freshwater lake		SPA	Y	N	Pollution, second houses, and recreational activities.
Gavur Lake, South-East Anatolia	590 (2005) staging	Freshwater Lake			Y	N	Water regime intervention.
Hatay-Belen Plain, South- East Anatolia	126 (2005) staging	Freshwater			N	N	-
Tuz Lake, Central Ana- tolia	42 (2005) staging	Salt lake		SPA	Y	N	Water regime intervention, pollution.
Meriç Delta, Marmara Region	391 (2003) staging	Freshwater, Brackish water	Day	National Park	Y	Y	Pollution, water regime intervention. Intensive agriculture.

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Countries	Site	Numbers	Water quality	Feeding period	Legal status	IBA	Ramsar Site	Conserva- tion prob- lems
	Lake Sevan	1-7 (2000- 2007)	Freshwater	Day, Night	National Park	Y	Y	Hunting, fishing, disturbance.
Armenia	Armash	1-7 (2000- 2007)	Freshwater	Day, Night	Not protected	Y	N	Hunting, fishing, other disturbance sources.
	Metsamor River System (Araks Valley)	1-2 (2000- 2006)	Fresh and brackish water	Day	Not protected	Y	N	Hunting, fishing, agriculture, drainage of channels.
	Divichi liman (Lake Akzibir)	300-400 (staging)	Sea water	Day	Not pro- tected	Y	N	Overhunting, water level.
	Lake Sarisu		Freshwater	Day		Y	N	Overhunting, water level.
	Lake Ak-Gel	244 (2006)	Freshwater	Day	National Park	Y	Y	Overhunting, water level.
Azerbaijan	Kura river Delta	141 (2000)	Sea water	Day	Not protected	Y	N	Overhunting, water level.
	Lake Makhmudchala	6 (2000)	Freshwater	Day	Not protected	Y	N	Overhunting, water level.
	Varvara w.r.		Freshwater	Day	Not protected	Y	N	Overhunting, water level.
	Kizil Agach reserve	559 (2006)	Sea water, Fresh wa- ter	Day	State Na- ture Re- serve	Y	Y	Overhunting, water level.
	Miankaleh Peninsula and Gorgan bay					Y	Y	Tourism, illegal fishery.
Iran	Khouran Straits					Y	Y	Harbour construction, tourism development, (oil) pollution.
	Hilleh river delta					Y	N	

Kazakhstan	Irgys-Turgay Lakes	403 (2005) staging				Y	Y	
Kuwait	Bubiyan Island	100 (2000- 2007)			Protected	N	N	
	Jahra Bay	10 (2000- 2007)			Not pro- tected	N	N	Some shooting.
Syria	Sabkhat al- Jabbul	390 (2005) staging			Nature reserve	Y	Y	Change in hydrologic management.
Tajikistan	None identified with certainty. Potentially Tigrovaya Balka in Jilikul district and Rybkhoz of Ghozimalik.	no data available			Tigrovaya Balka is a zapoved- nik. Rybkhoz of Ghozi- malik has no formal protection.	On national list of potential IBAs.	N	Illegal hunt- ing.
Turkmenistan	Sudochye lakes system (to the south from Aral Sea).	4 (2000) staging	Salty water	Day	IV category of IUCN PA	N	N	Deficit of water resources and regular drying up of the lakes. Burning out of reed beds. Regular pass of cattle.
	Kagan Fish Farm	25-350 (2006)	Freshwater	Day	Not protected	N	N	Overfishing and bad fish- ing manage- ment.
	Balikchi Fish- Farm	270 (2006)	Freshwater		Not pro- tected	N	N	Human per- secution, changes in hydrology.

	Javakheti Lakes	almost every year a small number detected	Planned National Park	N	N	Human en- croachment, mowing.
Georgia	Kolkheti Low- land		National Park	Y	Y	Human en- croachment, poaching, tree-cutting.
	Ktsia- Tabatskuri		Planned Sanctuary	Y	N	Human encroachment, mowing.
	Masirah	50 (1990) 100 stag- ing	Not protected	Y	N	None.
	Khawr Ghawi	100 (1995) 120 stag- ing	Not protected	Y	N	None.
	Barr al Hikman	600 (2005) 600 stag- ing	Proposed nature reserve	Y	N	None.
Oman	Duqm	200 (2005) 220 stag- ing	Not protected	N	N	None.
	Sur	24 (2005) 24 stag- ing	Not protected	N	N	None.
	Khawr Dirif	10 (2005) 31 stag- ing	Not protected	N	N	None.
	Salalah khawrs	30 (2007) 50 stag- ing	Some areas protected	N	N	None.

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Countries	Site	Numbers	Water quality	Feeding period	Legal status	IBA	Ramsar Site	Conservation problems
	Ile Musha	38 (2005)			Protected	N	N	
Djibouti	Doralé- Loyada	27 (2004)			Not protected	N	N	
	Egyptian Coastal Shoreline and Northern Lakes	(10-20 staging)	Sea Water and brack- ish water in northern lakes.	Day	Protected	N	N	Hunting, habitat change, pollu- tion, settlement establishing and development extension.
Egypt	Aswan Reserve	No esti- mate of winter population (10-20 staging)	Freshwrater	Day	Protected	Y	N	Hunting, habitat change, development extension.
	Wadi El Ra- yan Lakes	200	Brackish water	Day	Protected	Y	N	Habitat change, decreasing water level.
	Qaroun Lake	500	Brackish water	Day	Protected	N	N	Habitat change, Hunting, pollution.
Eritrea	Around Mas- sawa	60 (2005)			Not protected	Y	N	Will be declared as MPA in near future.
	Anfile Bay	200 (2006)			Not protected	N	N	
	Around Berasole	>250 (2006)			Not protected	N	N	
	Nahleg	45 (2006)			Not protected	N	N	
	Berite	16 (2007)			Not protected	N	N	
	Hirgigo	12 (2005)	Sea water	Day	Protected	N	N	
	Sheik Seid Island	32 (2005)	Sea water	Day	Protected	N	N	

	Dessie Island	5 (2005)	Sea water	Day		N	N	Tourist site.
	Isratu Island	2 (2005)	Sea water	Day	Not protected	N	N	
	Gurgusum	2 (2005)	Sea water	Day		N	N	Tourist site.
	Sheik Seid Island	2 (2004)			Protected	N	N	
	Mai Aron	2 (2004)	Freshwater	Day		N	N	Farming.
Saudi Arabia	Jiddah South Corniche and Central	300 (2000)			Not protected	Y	N	Both sites are heavily visited by people, and disturbance to birds must occur. The threat of oil spills is ever present.
	Khawr 'Amiq	20 (2000)			Not protected	Y	N	Grazing by camel is causing extensive damage, and small-scale mangrove cutting also threatens the site.
	Jizan Bay	30 (2000)			Not protected	Y	N	The site is much disturbed and faces a multitude of threats: Human disturbance, pollution by oil, sewage effluent and rubbish and extensive land reclamation for further urbanization, the later reducing the area of inter-tidal flats available for feeding water-birds.

	Malaki Dam	?				Y	N	Intensive cultivation continues to increase as the local human population expands Development projects came up, insecticide & pesticide spraying.
Somalia	Jannaale	Not recently				N	N	Cutting trees in the past. No re- cent prospect due to insecurity.
	Khartoum bird sanctu- ary (KBS)	69 (2006)			Protected	N	N	No real conservation measures.
	Saggay Island	100 (2007)				N	N	Fishing, grazing.
	Dungunab marine park	8 (2007)			Protected	N	N	Fishing.
	Red Sea shore at Port Sudan	15 (2007)				N	N	Human disturbance.
	Dinder Na- tional Park	35 (2007)			Protected	Y	Y	Poaching; grazing; fire.
Sudan	Um Gar Is- land	1 (2007)				N	N	Cultivation, grazing, fishing.
	Sinnar dam	11 (2007)				N	N	Hydroelectric power, heavy traffic.
	Gladema	5 (2007)				N	N	Irrigation canals.
	White Nile at Sunt+ Umm Shugeira Is- land	1-200 (1999- 2003	Freshwater	Day		N	N	Major develop- ment of the river bank with con- trol of inunda- tion, construction of golf course and office and residential ac- commodation.
Yemen	Aden	170 (1993)	Salty water			N	N	Land claim, disturbance.

Countries	Site	Numbers	Water quality	Prey species*	Feeding period	Legal status	IBA	Ramsar Site	Conservation problems
	Banc d'Argu in Na- tional Park		Sea wa- ter	Shrimps, small fish	Day, night	National Park	Y	Y	Industrial fishing, Mechanical cockle dredging in the future. Oil exporation, Upcoming tourism.
Mauritania	Baie d l'Etoile		Seawater	Shrimps, fish	Day, night	Not pro- tected	Y	Y	House building along the bay.
	Diawl- ing		Sea & fresh water	Shrimps, fish	Day, night	National Park	Y	Y	Invasive water- plants, Dia- madam?
	Aftout/ Chatt Boul		Inland lake	Fish	Day, night	National Park	Y	Y	Cattle grazing.

Breeding sites

Ardea cinerea *A.c.*, Ardea purpurea *A. p.*, Egretta garzetta *E. g*, Egretta alba *E. a.*, Egretta gularis *E. gu.*, Nycticorax nycticorax *N. n.*, Bubulcus ibis *B. i.*, Ardeola ralloides *A. r.*, Plegadis falcinellus *P. f.*, Ciconia ciconia *C. c.*, Phalacrocorax pygmeus *P. p.*, Phalacrocorax carbo *P. c.*, Larus argentatus *L. a.*, Threskiornis aethiopicus *T. a.*, L. ridibundus *L. r.*, Larus michaelis/cachinnans *L.m.*; Podiceps ruficollis *P.r.*, Anser anser *A.a.*; Larus ridibundus *L.r.*; Larus fuscus *L.f.*

P. l. leucorodia (Atlantic)

Co un- trie s	Colony	Year of first breed- ing	Number Breed ing Pairs (min- max)	Habitat	Wa- ter	Prey species	Feed- ing period	Breeding among colony of?	Breed ing suc- cess (n fledg- ings/ BP)	Legal status of the site	IB A	Ra msa r Site	Conservation problem
	Verre- broekse Blikken at Ver- rebroek	2003	1-18	Harbour area with sandy areas, shallow waters, remnants of pol- ders and creeks; The colony itself is found on an small island of dead trees and branches.	Brac kish	Probably small fish	Day, Eve- ning	L. r., P.r.	1.6 – 2.5	SPA	Y	N	Breeding site will disappear as a result of industrial development. Full compensation (with alternative breeding site) is planned.
Belgium	Zwin area at Knokke	1999	1-2	Brackish coastal 'lagoon', tidal marshes and adjacent polder area's with creeks and ditches; The colony itself is found in old pine trees.	Main ly brack ish	Probably small fish	?	A.c., E.g., N.n., P.c.	?	SPA, nature reserve	Y	Y	As a result of external factors (e.g. sand deposits on the beach of Knokke-Heist), a gradually increasing siltation of the creeks, mudflats and saltmarshes occurred. This caused less frequent flooding of the reserve by high tides and a decrease in the ornithological importance (mainly as a feeding area).
Denmark	3 separate colonies Ulvedybet og Nibe Brednin g; Ringløbi ng Fjord; Vadehav and Byghol Velje	1996		Small islands with reed	Salty to brac kish	Small fish, etc.		P. c., Larus sp		Nature Reserve	Y	Y	Northermost breeding colony. Illegally persecution of cormorants. In some years foxes are present at the beginning of breeding season.
France	Grand- Lieu	1973	1-51	Floating forest	Fresh water	Shrimps , cray- fishin- sects, fish		T. a., A.c., E. g,	2.45	National reserve	Y	Y	
	Brière	1992	2-119	Salix, rarely reedbeds	Fresh water	Shrimps , cray- fish		T. a., A.c., E. g,	2.83	Not pro- tected	Y	Y	Water level, human and cattle disturbance.

	Edre	1994	3-26	Salix, Alnus				A.c.,	?	Not pro-	Y	N	Water level.
										tected			
	Orx	1997	0-6	Salix, Pinus				A.c.,		Nature reserve	Y	N	Water level, invasive plants (<i>Ludwigia</i>).
	Baie de Somme North	2000	6-28	Pinus				A.c., E. g, C. c.,	1.8	Nature Reserve	Y	Y	
	Baie de Somme South	2007	3	Beech				A.c; E.g, E.a.		Private site	N	N	
	Camargue (Banas- ton)	1998	2-36	Salicornia, Halimione, Sueda sp.				L.m., T.a.		Depart- ment reserve	Y	Y	Yellow-legged-Gull and Sacred ibis? (risks of predation on nests and of competition for space).
	Camargue (Bessons)	2005	1-7	Salicornia, Halimione,Sueda sp				L.m., T.a.		Depart- ment reserve	Y	Y	Yellow-legged-Gull, Horse riding.
	Guérande	2000	6-25	Oak				A.c., E.g,		Regional protection	Y	N	
	Dombes	2006	5-6	Salix				A.c., E.g,	2	Not pro- tected	Y	N	Water level, human disturbance.
	La Grip- perie - Saint- Sym- phorien	2006	1-8	(Alnus glutinosus, Fraxinus sp., Salix sp. and Quercus pedun- culata)				A.c., E g, B i., N.n.,	0.6	Private site	N	N	Cut of trees and human disturbance (colony at 300 m of the road and 500 m of village).
	Mem- mert	>1990	117	Saltmarsh	Salt- water	Shrimps	Night, Day	L. a.	1.7	Protected	N	N	Tourism, overfishing.
	Mellum	>1990	40	Saltmarsh	Salt- water	Shrimps	Night, Day	L. a,	1.5	Protected	N	N	Tourism, overfishing.
	Nor- deney	2000	21	Saltmarsh	Salt- water	Shrimps	Night, Day	L. a,	1.1	Protected	N	N	Tourism, overfishing.
Germany	Trischen	2002	2-14	Saltmarsh, dunes	Salt- water	Shrimps	Night, Day	L.a.,L.f.	1.6 - 1.7	National Park	N	N	Tide flood, overfishing.
	Borkum	1999	6	Saltmarsh	Salt- water	Shrimps	Night, Day	L.a.,	2.0	Protected	N	N	Tourism, overfishing.
	Oland	1999	2-28	Saltmarsh	Salt- water	Shrimps	Night, Day	L.a., A.a.		National Park	Y	N	Tide flood, overfishing.
	Föhr	2007	2	Saltmarsh				L.a., L.f.		National Park		N	
Morocco	Smirt	1994	1-20	Dunes with Ta- marix, Genévrier rouge et Lentis- que.	Brac kish water			E. g, B.i.,, N.n.,		Domaine maritime	N	N	Apparently no problem, close to a royal property so no disturbance.
Mo	Tahad- dart	1967	13	Sarcocornia marshes				None	0		N	N	First and last breeding, nests destroyed by cattle, no protection.

	Zwanen water	<1650	120	Freshwater, dune slack			P.c.	Ca. 1.3	Protected	Y	Y	High human pressure Access of foxes. Competition with Cor- morants. Polluted feeding ground by agriculture (Tulips).
	Oost- vaarder- splassen	>1972	320	Artificial polder, reedbeds			A.a., E.a.,	Stron gly fluc- tuat- ing	Protected	Y	Y	Waterlevels and access of foxes.
	Texel, de Geul	1980	250	Dune slack with reedbeds and willow trees	Brac kish water		P.c.	Ca 1.0	Protected	Y	Y	Competition with Cormorants.
	Texel, de Muy	<1900	30	Dune slack	Brac kish water		P.c.	Ca 1.0	Protected	Y	Y	Human pressure.
	Texel, De Schorren	1982	65	Saltmarsh	Salt water	Shrimps	L. a.	fluc- tuat- ing	Protected	Y	Y	Summer floods.
	Vlieland	1983	220	Dune and polder	Salt water	Shrimps	L. a.	Ca 1.1	Protected	Y	Y	
	Ameland	1994	40	Saltmarsh	Salt water	Shrimps	L. a.	Ca 1.2	Protected	Y	Y	Summer floods.
	Schier- mon- nikoog	>1992	240	Saltmarsh			L. a.	Ca. 1.2	Protected	Y	N	Flooding by seawater.
Netherlands	Rottum Oog & plaat	Ca 1998	50	Saltmarsh	Salt water	Shrimps	L.a.	Ca 1.3	Protected	Y	Y	Summer floods.
	Ter- schelling	>1960	220	Saltmarsh			L. a.	Ca. 0.8	Protected	Y	N	Flooding by seawater.
	Haarlem Buitenlie de	2004	9	Woodland (Al- nus)	Fresh water	Small fish	A. c.	Ca 1.8	Not pro- tected	N	N	Human disturbance.
	Balgzan d	2000	80	Saltmarsh	Salt water	Shrimps	L. a.	Ca 1.2	Protected	N	N	Human disturbance, areoplanes.
	Onder- dijk	2001	55	Artificial island in freshwater lake	Fresh water		Sterna hirundo, L.r.	Ca 1.1	Protected	N	N	Some years, botulism.
	Bies- bosch Sassen- plaat	1999	84	Former sea arm	Brac kish water	Small fish	A.c.	Ca 1.2	Protected	N	N	Human disturbance.
	De Wieden	2003	25	Woodland (Alnus)	Fresh water	Small fish	A.c., E.a.	Ca 1.2	Protected	N	N	High human pressure.
	Botshol	1998	26	Marshland	Fresh water	Small fish	T.a.	Ca 1.3	Protected	N	N	High human pressure, Foxes.
	Markiez aat	2000	38	Reedbeds	Brac kish water	Small fish	L.a., L.f.	Ca 1.2	Protected	N	N	Foxes.
	Mid- delplaten	1997	18	Island in former sea arm	Brac kish water	Small fish	L.a.	Ca 1.2	Protected	N	N	Foxes.
	Quack- jeswater	1989	200	Duneslack	Salt water	Shrimps	E.g.	Ca 1.1	Protected	N	N	High human pressure.

		200-	2.5				T.	G				
	Vlissin- gen	2002	25	Industry area			L. a.	Ca 1.6	Not pro- tected	N	N	Human disturbance.
	Ria Formosa Algarve	1989	13 (2005)	Saltmarshes	Salt water				Protected	Y	Y	
Portugal	Monte do Álamo	1998	20-25 (2007)	Pinus pinea	Fresh water		A.c., E.g., C.c., B.i.		Private land, not protected	N	N	Tree mortality, Habitat transformations.
Por	Esca- roupim	2003	20-25 (2007)	Salix, Populus	Fresh water		E.g., A.c., B.i., N.n.		Not pro- tected	N	N	Human disturbance (nautical sport).
	Paul do Bo- quilobo	1988	50-60 (2005)	Salix, Populus	Fresh water				Nature Reserve	Y	Y	Contamination by agriculture.
	Odiel Marshes	1960	271 (191- 364)	Spartina densiflo- ra, Suaeda vera, Halimione portu- lacoides, Arth- rocnemum ma- crosthachyum		Fun- dulus sp (71%), Palae- monetes varians (19%)	A.c., E. g, B.i., A.p.	0,94 (0,5- 1,4)	Paraje Natural	Y	Y	Drought, pesticides, parasites. Nest flooding during spring tides. Contamination by heavy metals and pesticides. Human infrastructures. Decreasing food quality and availability.
	Pajarera de Doñana	1959	910 (0- 2091)	Old trees Quer- cus suber, Popu- lus alba, Salix atrocinerea	Fresh water	Pro- cambu- rus clarkia, fishes, Shrimps	E. g, A.c., C. c.,N. n., B. i., A.r.		National Park	Y	Y	Oak mortality (loss of breeding site), drought. Toxins (botulism and cyanobacterias). Invasive plant species (Azolla fuliculoides).
	Huerto de los Zorros	2002	32 (1- 94)	Eucaliptus	Fresh wa- ter, Brac kish wáter	Pro- cambu- rus clarkia, fishes, Shrimps	E. g, A.c., C. c.,N. n., Bi,.A. r.,		National Park	Y	Y	Drought. Toxins (botulism and cyanobacterias). Invasive plant species (Azolla fuliculoides). Tree mortality (loss of breeding site).
Spain	Casa Neves	2000	102 (12- 177)	Eucaliptus, Fres- nus	Fresh water	Pro- cambu- rus clarkia fishes Shrimps	E. g, A.c., C. c.,N. n.,B.i.	1,5 (1,2- 1,8)	Natural Park	Y	Y	Tree mortality (loss of breeding site).
	Isla Cristina marshes	1997	98 (0- 163)	Spartina densiflo- ra, Suaeda vera, Halimione portu- lacoides, Arth- rocnemum ma- crosthachyum	Salty wáter	Palae- monetes sp.	E. g, B.i.	1,10 (0,4- 1,6)	Paraje Natural	Y	Y	Disturbance. Predation (feral dogs). Land destruction for urbanistic projects. Drought.
	Cadiz Bay	1996	77 (62- 116)	Arthrocnemum and Sarcocornia	Salty wáter		L.m.	1,16 (0,2- 1,65)	Natural Park	Y	Y	Human disturbance. Salina abandonment. Drought.
	Bornos	1994	11 (7- 12)	Tamarix tamarix	Fresh water		A.c., E.g, B.i., A.r, N.n.		Protected (Paraje Natural)	Y	N	Water level management.
	Cabra- hígos	1999	18 (10- 30)	Olea europaea	Fresh water		A.c., E.g, B.i.,N.n.		Private land, not protected	N	N	Tree mortality (loss of breeding site).

Veta de Adalí	2001	34 en 2004	Eucaliptus	Fresh water	A.c., E.g, C.c	Private land, not protected	N	N	Abandoned since 2004 because presence of Imperial Eagle. Human disturbance (agriculture, cattle).
Olivillos	2003	4 en 2004	Salix,Populus	Fresh water	A.c., E.g,	Private land, not protected	N	N	Abandonned since 2004 because human disturbance (agriculture, cattle).
Extre- madura (1-6 sites)	1999	4 (1- 15)	Oak, woodland	Fresh water		Not protected	N	N	Disturbance. Land destruction for urbanistic projects.
Other (2 sites)	2005	3-6	Trees	Fresh water		Not protected	N	N	Disturbance. Land destruction for urbanistic projects.

P. l. leucorodia (Continental)

Co un tri es	Colony	Year of first breed ing	Num- ber Breed ing Pairs	Habitat	Water	Feed-ing	Breeding among colony of?	Breed ing suc- cess	Legal status of the site	I B A	Ram- sar Site	Conservation Problem
iia	Kune	1960		Riverine forest surrounded by marshes	Brack- ish		P. p., P. c., A.c., E. a., E. g., P. f., N. n.,		Nature Man- aged Reserve	Y	N	Illegal logging, hunting, disturbance, nesting habitat alteration.
Albania	Velipoja	Pre 1970		Riverine forest surrounded by marshes	Brack- ish		P. p., P. c., A.c., E. a., E. g., P. f., N. n.		Land- scape Pro- tected Area	Y	N	Illegal logging, hunting, disturbance, nesting habitat alteration.
Austria	Lake Neusiedl	Pre 1900	38-81	Reedbeds	Fresh- water		A. c., E. a.		National Park	Y	Y	Water level.
Bosnia & Herzegovina	Bardača	1973	??	biotope of reed, bulrush and rush						Y	Y	This site is private fish farm and this is prob- lem for conservation (conflict of interests).
Bosnia &	Livan- jsko polje	1888- 1904	9-30		Fresh- water	Day				N	N	Illegal hunting & degradation of biotopes.
	Poda	1964	10-50	Bogs and marshes; Shallow saline pools	Fresh- water		P. c., P.p., N. n, A. r, E. g., E. a., A. c, A. p., P. f.		Pro- tected area	N	Y	Agricultural intensifica- tion – expansion, aqua- culture and fisheries, recreation and tourism, unsustainable exploita- tion, infrastructure, extraction industry, industrialization and urbanization, natural events.
Bulgaria	Lake Srebarna	1890	5-70	Bogs and marshes and Temperate riverine			P. c., P. p., N. n, A. r., E. g., E. a., A. p., P. f.		Nature Reserve Bio- sphere Reserve UNESC O Site	Y	Y	Agricultural intensification – expansion, aquaculture and fisheries, recreation and tourism, infrastructure, extraction industry, construction of dykes, natural events, flooding, pigs, disturbance.
	Belene island	1968	0-22	Bogs and marshes and Temperate riverine			P. p., N. n., A. r., E. g., E. a., A. p., P. f.		Natural Park with Strict Nature Reserve & Natural Monument	Y	Y	Selective logging, intensified forest management, afforestation, commercial deforestation, aquaculture and fisheries, drainage, burning of vegetation, disturbance to birds.
	Vardim island	1975	9-20	Temperate riverine			P. c., P. p., N. n., E. g., E. a.		Pro- tected	Y	N	Selective logging, in- tensified forest man- agement, commercial deforestation, unsus- tainable exploitation, drainage.

	Ibisha island	1997	10	Temperate riverine			P. p., N. n., E. g., A. p.		Man- aged Nature Reserve	Y	Y	Selective logging, agri- cultural intensification – expansion, intensified forest management, afforestation, commer- cial deforestation, un- sustainable exploitation.
	Krapje Đol	1949- 2007	3-180	Rarely in Typha sp., reedbeds (2 years only 1988, 2007), normally on willows in the water	Fresh- water		A. r., E. g., N.n., A. p, P.p., A.c., E.a		Special ornitho- logical reserve	N	Y	Artificial water level maintenance in the oxbow; execution of mitigation schemes, abandonment of fish production on fish-ponds. Succession and alien species.
	Jelas Fish- ponds	1990	2-200	carp fish- ponds/ reedbeds (Typha and Phragmites)	Fresh- water		A. r., E. g., N.n., A. p., E. a., P. p, P. f.			N	N	Water level mainte- nance, dying of typha stands.
Croatia	Našice fish- ponds	1993	0-60	carp fish- ponds/ reedbeds (<i>Typha</i> and <i>Phragmites</i>)	Fresh- water		A. r., E. g., N.n., A. c.		Not pro- tected, hunting ground	N	N	Water level mainte- nance, disturbance by fisherman /cormorant depredation activities/ and photographers, abandonment of fish production on fish- ponds.
	Donji Mihol- jac fish- ponds	1995	2-11	carp fish- ponds/ reedbeds (<i>Typha</i> and <i>Phragmites</i>)			A. r., E. g., N.n., A. c.		Not pro- tected, hunting ground	Y	N	Water level mainte- nance, disturbance by fisherman /cormorant depredation activities.
	Grudnja k fish- ponds	2003	9-30	Carp fish- ponds/willows			A. r., E. g., N.n., A. c.		Not pro- tected, hunting ground	Y	N	Water level mainte- nance, disturbance by fisherman /cormorant depredation activities/ abandonment of fish production on fish- ponds.
	Kopački rit Na- ture park*	1953	3-11	Typha sp., reedbeds			A. r., E. g., N.n., A. c., E. a.		Pro- tected as Nature park	N	Y	Abandonment of fish production on fishponds drainage of former flood plain, lack of pasturing.
Czech Re- public	Zliv	1984	1 - 11	Fishpond islets	Fresh- water	Day	N. n.,	1,0 – 3,75	pro- posed SPA	N	N	Slow abrasion of breeding islets.
Greece	Kerkini Lake		125	Lake	Fresh- water		E.g., N.n., A r., A c., A p. P c., P p., P f.		SPA	Y	N	Increase of water level of the artificial lake which may destroy nests during the breed- ing season.
9	Axios Delta		26	River Delta			E.g., N n., A r, P c., P. p., P f.		SPA	Y	Y	

	Gallikos River	2006	2	River		E. g., N.n., A. r., P. p., P. f.		Y	Y	Pollution.
	Amvra- kikos		70	Marsh	Fresh- water	E. g., N. n., A. r., P. f.	SPA	Y	Y	Disturbance?
	Kolon- tó	Tradi- tional breed- ing site	30- 120	Reedbed	Fresh water	A.c., A. p., A. r., N. n., E. a., E. g,	National Park,(SP A, pSCI)	Y	Y	Wild boars in dry year.
	Péteri-tó	?	0-250	Fishpond with reedbed	Fresh- water	A. p., A. r., N. n., E. a., E. g, P. f.,	Nature conser- vation site	N	N	Sometimes there is no water in the ponds because of climatic problems.
	Csaj-tó	?	150- 250	Fishpond	Fresh- water	A. p., A. r., N. n., E. a., E. g, P. f., P. p.,	Nature conser- vation site, (SPA, pSCI)	N	N	Sometimes, dryness.
	Szeged, Fehér-tó	?	50- 150	Fishpond	Fresh- water	N. n., E. a., E. g,	Nature conser- vation site, (SPA, pSCI	N	N	
Hungary	Tiszaalp ár	?	0-140	Flooded area of river Tisza	Fresh- water	A.c., A. p., A. r., N. n., E. a., E. g, P. f., P. p.,	National Park, (SPA, pSCI)	Y	N	Sometimes the water destroys the nests. Some years ago it was dry, and there was no Spoonbill in those years.
Hu	Nyirkai- hany, Bősárká ny	2005	0-15	Habitat reconstruction	Fresh- water	Alone	Pro- tected	Y	Y	Dryness on feeding area, collapse of reedbed in breeding site.
	Derzsi- 10	2002	Min: 225, max: 520	Fishpond	Fresh- water	E. a., E. g, A. p., A.c., A. r., N. n., P. p., P. f.,	National park	N	N	Fishing activities.
	Halastó- 7	1985	Min: 112, max: 300	Fishpond	Fresh- water	E. a., E. g, A. p., A.c., A. r., N. n., P. p., P. f.,	National park	N	N	
	Kunkáp olnás	1980	Min: 20, max: 180	Marshland	Fresh- water	E. a., E. g, A. p., A.c., A. r., N. n., P. p.,	National park	N	N	
	Német- sziget	2000	Min= max: 40	Marshland	Fresh- water	E. a., E. g, A. p., A.c., A. r., N. n., P. p.,	National park	N	N	
	Meg- gyes- lapos	2002	Min= max: 10	Marshland	Fresh- water		National park	N	N	

	Comac-	1989,	2-95	Lagoon	Brack-		L. cachin-	1.7	Pro-	N	N	Eggs/nesltings preda-
	chio lagoons	1989, 1991- 2007	2-93	Lagoon	ish		nas	±0.6 during 1989- 2002	tected (re- gional park, SPA)	N	IN	tion by gulls and rats; human disturbance (photographers), heavy rains and cold spells during the nestling stage.
	Ravenna coastal marsh- lands	1990, 1998, 2004- 2007	1-85	Marsh	Fresh- water		A.c., A. p., N.n., E.g., E. a., B. i., A. r., Ple- gadis fal- cinellus, P. f, P. p.) for 1500-2500 bp		Protected (regional park, SPA)	N	N	Loss of bushes and other aquatic plants due to heavy decrease of water quality (salt input and high nutrient levels) also affecting local grazer food web and prey availability, heavy rains and cold spells during the nestling stage.
	Bologna ponds (Malal- bergo)	1999- 2003	1-7	Marsh	Fresh- water		A. c., N. n., E. g.		Pro- tected (reserve, SPA)	N	N	
>.	Sarti- rana lake	2003, 2007	2-3	Lake	Fresh- water		A. c., A. p., N., n., E. g., B.I., A. r.		Pro- tected	N	N	
Italy	Cava- nata lagoon	1997	2	Lagoon	Brack- ish		?	3 young (0 + 3 each nest)	Protected (regional park, SPA)	N	N	Human disturbance; heavy rains and cold spells during the nes- tling stage.
	Isonzo river mouth (Isola della Cona)	1998	At- tempt (nest aban- doned)	Marsh	Fresh- water		?		Protected (regional park, SPA)	Y	N	Heavy rains and cold spells during the nestling stage.
	Lagoon of Ven- ice	1998	1-5	Lagoon	Brack- ish		A. c., A. p., N. n., E. g., B. i., A. r.		SPA	Y	Y	Heavy rains and cold spells during the nestling stage.
	Sesia river	1990- 1991	2-4	River			A. c., A. p., Nycticorax n., E. g., B. i., A. r.		Protected (regional park, SPA)	N	N	
	Bando ponds	1991- 1993	1-3	Marsh	Fresh- water		A. c., A. p., N. n., E. g		Protected (natural reserve, SPA)	N	N	
Moldova	Beleu Scien- tific Reserve ("Lower Prut")		5-20 pairs (2002)	Reedbeds, Floodland, Forest	fresh- water	Day	A. c., N. n., E. g., A.r.		Reserve	Y	Y	Lack of nesting places, Water regime, illegal hunting and degradation of biotopes.

	Paratuk	1997- 2007	Max 33	Alluvial forest – island in the Bojana River			P. p, P. c., N. n.,A.c., E. g., E.a., Ar., P.f.	Non protec.	N	N	Tourism disturbance and boat traffic (in- creasing), lack of bor- der control, proposed regulation of river.
Montenegro	Ada Bojana	Until 2004	Max 18	Flooded wood			P. p, P. c., N. n., A.c., E. g,	Non protec.	N	N	Tourism disturbance and boat traffic, lack of border control, huge tourism project pro- posed.
	Sasko lake/ex colony	197	Max 32						N	N	
	Skadar Lake, Ulcinj	2004	20		Salty water	Day		N	N	N	Hunting disturbance.
	Bistret		120- 166	Fishpond, extensive use			E. g, E. a.,	SPA, ornitho- logical reserve	N	N	Fisheries management, water level fluctuations, disturbance.
	Braţul Borcea		144- 160	Wetlandcom- plex	Fresh- water		E. g, N. n., P. f., A. r., A.c., P. p.,		N	N	Illegal hunting. More than one colony in the site.
	Dunare Os- troave		144- 160	Wetland complex	Fresh- water		E. g, N. n., P. p., P. f., A.c.,	SPA	N	N	Forestry interventions, disturbance. More than one colony in the site.
	Suhaia		160- 200	Fishpond, extensive use			E. g, N. n.,	SPA	N	N	Fisheries management, water level fluctuations, disturbance, illegal hunting.
Romania	Gârla Mare- Gruia- Iz- voarele		254- 280	Wetland complex	Fresh- water		E. g, N. n., P. p., P. f., A.c.,	SPA	Y	N	Human disturbance. More than one colony in the site.
¥	Eleşteiel e Jijiei şi Mi- letinului		26 - 40	Fishpond, extensive use			E. g, N. n.,	SPA	N	N	Fisheries management, water level fluctuations, disturbance.
	Delta Dunarii (Danube Delta)		360- 440	Wetland complex	Fresh- water		E. a., E. g, N. n., P. p., P. c., P. f., A. c., B. i.,	MAB Reserve National Park, Scien- tific reserve	Y	Y	water level fluctuations, human disturbance, predation, desease. More than one colony in the site.
	Balta Vederoa sa		40-50	Wetland complex	Fresh- water		E. g, N. n., P. p., P. p., P. f., A. c.	SPA	N	N	Illegal hunting, disturbance.
	Balta Alba Amara Jirlau		40-52		Mixed fresh- water and alkali lakes		E. g, E. a., A. c.	SPA, scien- tific reserve,	Y	N	Infrastructure development, water level fluctuations, disturbance.

Lunca Siretului Inferior		5-6	Wetland complex	Fresh- water	E. g, N. n., A. p.,		N	N	Infrastructure develo ment, water level flu- tuations.
Iazurile de pe valea Ibanesei Baseului Podrigai		5-20	Fishpond, extensive use		E. g, A. c.		N	N	Fisheries management water level fluctuation
Blahnita		54-68	Wetland complex	Fresh- water	E. g, N. n., P. p., A. p., E. a.,	SPA	N	N	Human disturbance.
Lunca Prutului Vlădești Fru- mușița		12-45	Wetland complex	Fresh- water	E. g, N. n., A. p.,	Natural Park, SPA	N	N	Fisheries managemer water level fluctuation
Insula Mica a Brailei		80- 120	Wetland complex	Fresh- water	E. g, N. n., P. p., P. f., A. c.	National Park, SPA	Y	N	
Bečej fish farm	1991	70- 100 in 2007	Reedbed	Fresh- water	A.c., N. n., A. r., E. g., E. a., A. p., P. p.,	Not pro- tected	N	N	Disturbance, poachir during post-breeding season, Increase of water level, Privatiza tion of fishpond.
Jazovo fish farm	Late 1980ć s	50-70 in 2007	Dense Reed- mace	Fresh- water, Brack- ish	E. a., A. p., A.c.,	Not pro- tected	N	N	Disturbance, poachir during post-breeding season.
Kapetan ski Rit Fish Farm	2004	0 in 2007	Reedbed		E. a., A. p.,	Not pro- tected	Y	N	Disturbance, poachin during post-breeding season, burning of de reed prior to the bree ing season.

Co un tri es	Colony	Year of first breed ing	Number Breed ing Pairs	Habitat	Breeding among colony of?	Breeding success (n fledgings/B P)	Legal status of the site	IB A	Ra msa r Site	Conservation problem
	Baranda Fish Farm	2005	Ca 50 in 2007	Reedbed	N. n., A. r., E. g, E. a., A. p., A.c., A.c., P. p., P. f.,		Not pro- tected	N	N	Possible transformation of the breeding site into the tourist site.
	Perleska Bara	The first written data from 1950	Ca 20 in 2007	Reedbed	N. n., A. r., E. g, E. a., A. p., A.c.,		Special Nature Reserve	N	N	No obvious threats.
Serbia	produc- tive fishpond "CH6", Iňa- čovce fishpond system	2002	1-35, in 2005 12-20 pairs	Typha in 60-80 cm water level.	A.c., A. p., some nests of Marsh Harrier found nearby, too		Not pro- tected	N	N	Intensive fish production connected with reduction of Typha and Phragmites grow and disturbance. From 2003 it is a part of SPA, but still is not declared by government.
	productive fishpond "CH7", Iňa- čovce fishpond system	from 2006	2-3 pairs	Typha and Phragmites in 60-80 cm water level	A.c		Not pro- tected	N	N	Intensive fish production connected with reduction of Typha and Phragmites grow and disturbance. From 2003 it is a part of SPA, but still is not declared by government.
	produc- tive fishpond "CH5"	1997- 2001	0-35	Typha latifolia	A.c., A. p.,	3- 4 eggs, 1- 4 pulli.	Not pro- tected	N	N	Intensive fish production connected with reduction of Typha and Phragmites grow and disturbance. Commercial fish-pond, in year 2002 was the cause of the Phragmites growth completely destroyed by fishpond-managers.

	Colony	Year of first breed ing	Number Breed ing Pairs	Habitat	Water	Feed-ing	Breeding among colony of?	Breed- ing success (n fledg- ings/B P)	Legal status of the site	IB A	Ram sar Site	Conservation problem
	Haçli Lake, Eastern Anatolia	2000	12 (2000)						Not pro- tected	Y	N	Over grazing.
Turkey	Bolluk Lake, Central Anatolia	1995 (30 BP)	21-54 (1996- 2006)	The species breeds on two small islets.	Highly saline lakes	Day	E. g., Med. Gull, Slender Billed Gull and Gull- billed Tern colonies.		SPA	Y	N	The species bred at the lake; however it fed on surrounding freshwater & brackish lakes. Some of the lakes are not protected. In addition, drought period is effected on freshwater resources last years.
Tu	Manyas (Kus) Lake Mar- mara Region	First record comes from 1930' s.	29- 200 (1990- 2007)	Trees, scarcely on reedbeds.	Fresh- water lake	Day, Night (?)	A. c., cormorant, E. g., N. n., A. r., P. f.			Y	Y	Pollution. The lake has changed to a reservoir by construction embankment for agricultural purposes. The population figure is not clarified. 500 pairs in 1950's (E. Schüz), 835 pairs in 1966 (R.Porter).
	Meriç Lake, Delta- Marmar a Region	1995 ? (40 BP	40-75 (2002- 2003)	Reedbeds.	Fresh- water lake	Day	E. g., P. f., A. p., A. c., N. n.,		Na- tional Park	Y	N	Pollution, water regime intervention, intensive agriculture.
	Kulu Lake, Central Anatolia	1998	2-5 (1998- 99)	Breeds on small island.	Brack- ish	Day	E. g.		SPA	Y	N	Pollution, human disturbance.

	Tuz Lake Central Anatolia	1998	3 pairs (1998)	Breeds on the island.	Saline	Day	White Pelican		SPA	N	N	Water regime intervention, pollution, agricultural usage. All eggs & chicks destroyed by <i>Larus armenicus</i> .
	Kızılır- mak Delta, Black Sea	1992	76 (1992)	Reedbeds.	Fresh water		A. c., A. p.	Mean Clutch size 3.66		Y	Y	Water regime intervention, pollution, second houses.
	Akşehir & Eber Lake, Central Anatolia	?	15 (?)	Reedbeds.	Fresh- water				Natural Pro- tected Area	Y	N	Water regime intervention, pollution.
	Ereğli Plain, Central Anatolia	1969 (70 pairs)	10-20 (1998)	Saltmarshes					Natural Pro- tected Area	Y	N	Water regime intervention, pollution, agricultural usage.
Turkey	Seyfe Lake, Central Anatolia	?	50 (1996)	Reedbeds.	Salty				Natural Pro- tected Area	Y	Y	Water regime intervention, intensive agriculture.
	Sultan- Marshes , Central Anatolia	1994	10 (1994)	Reedbeds.	Fresh- water				Wild- life pro- tected Area	Y	Y	Water regime intervention.
	Kocaçay Delta, Mar- mara Region.	2005	5?	Rreedbeds.	Salty				Wild- life Pro- tected Area	Y	N	Pollution.
	Uluabat Lake, Mar- mara Region.	1998	48 (1998)	Reedbeds and Salix trees.	Fresh- water					Y	Y	Water regime intervention, intensive agriculture, pollution, dam construction.
	Bafa Lake, Aegean R.	?	5-10 ?		Fresh- water				Nature Park	Y	N	Recreational activities.
	Dniester delta		2-70 (1983- 2004							Y	Y	
Ukraine	Eastern Sivash		1-128 (1983- 2004)							N	N	
Uk	Le- byazhi Islands		2-116 (1992- 2003)							N	N	
	Danube delta		160 (1986)							Y	Y	

Co un tri es	Colony	Year of first breed ing	Number Breed ing Pairs	Habitat	Wa- ter	Feed- ing	Breeding among colony of	Legal status of the site	I B A	Ram- sar Site	Conservation Problem
	Armash Fish Farm (Arax River Valley)	2003	1-3	Fish farming ponds in semidesert habi- tat at c 800 m asl; ponds fringed with reeds, reedbeds in the middle of some ponds support mixed breeding colonies.	Fresh water	Day	P.p, N. n, B i., E. g., A. r., A. p., P. f.s	Privately managed fish farm.	Y	N	Lack of conservation activities; hunting; disturbance of the breeding colony by researchers/photographers. Water pollution.
Armenia	Arax River Valley (in general)	Re- ported breed- ing in early 20^{th} cen- tury	Com mon to very com- mon	Natural marshlands	Fresh water		P. p., N. n., B. i., E. g., A. r., A. p., P. f.		N	N	Lack of conservation activities; hunting; poaching; disturbance, habitat change and fragmentation, extensive agriculture, water pollution.
	Lake Gilli (in Lake Sevan basin)	Throu ghout 1920s – late 1940s		Highland lake (1900m asl) over- grown with reeds, peat bogs	Fresh water		P. c., N. n., E. g., A. r., A. p.,P. f.	National Park,	Y	Y	No suitable breeding sites exist at present. Poor man- agement of the Sevan National Park. High level of distur- bance year around. Uncon- trolled tourism and Recrea- tion. Lake Gilli drained. The area is under agricultural use.
	Kizil Agach State Reserve	1950	800 pairs(1950- 1995)	Extensive stands of reeds and flooded tamaris as well	Sea- water, fresh	Day, night	P. p., N.n., A.r., E.g., B.i., E.a., A.c., A.p., P.f.	State Nature Reserve	Y	Y	Agriculture change, disturbance, hunting.
	Lake Agzibir	1990		Extensive reed- beds, Tamaris	Sea water	Day, night	Herons, egrets and P.f.				Agriculture change, disturbance, hunting.
Azerbaijan	Ak-Gel Lake	1960	600- 2200 pairs (1960- 90)	Reedbeds, Tamaris	Fresh	Day, night	P.p., N.n., A.r., B.i., E.g., A.p., P.f.	National Park	Y	Y	Agriculture change, disturbance, hunting.
	Mak- chmud- chala		200- 360 pairs (1988- 91)	Shallow lake, 50% is covered with reed and flooded tamaris too	Fresh	Day, night	Ph.pygmeus, N.n., Ixb.m., A.r., E.g., B.i., P.f.		Y	N	Agriculture change, disturbance, hunting.
	Kura delta	1980 years	5-10 pairs (1988- 90)	Reeds and tamaris	Sea- water	Day, night	Ph.pygmeus, B.st., Ixb.m., A.r., E.a., E.g., A.p.		Y	N	Drought (Building Dams).
Iran	Tashk lake		200	rocky island, reed- beds	Salty		Slender billed gull, A. g.	National park	Y	Y	Drought (Building Dams).

	Parishan lake		50- 400 (1977)	Reed bed,	fresh water lake		Cormorans, A. c., E. g,	Protected Area; Biosphere reserve	Y	Y	Tourism, illegal fishery and fish introduction, poaching.
	Lake Uromi- yeh		50 (1977)		Fresh and brack- ish			National Park, Biosphere reserve	Y	Y	Urban pollution, agriculture pollution, drought, salinisation, loss of food resources.
	Hamoun -I Sa- bari, Hamoun -I Hir- mand		120 (1977)	Reedbeds				Protected area	Y	Y	Human exploitation, fish introduction.
	Arjan & Hirm				Fresh water			Protected partially	N	N	Illegall shooting, agriculture, overpopulation, climate change.
	Miankal eh Pen- insula , Gorgan Bay				Bracki sh			National Park, Biosphere reserve	Y	Y	Road?
	Khouran Straits				Salt water			Nature reserve, Biosphere Reserve	Y	Y	Urban pollution, agriculture pollution, drought, salinisation, loss of food resources.
	Hilleh river delta				Fresh water			Protected area	N	N	
	3 colonies In Haur Al-Hawizeh	2007	15	Reedbeds	*	Day	P. p., Sacred Ibis, African Darter, N. n. E. g., P. f., A. r.		Y	N	There is no protection law for the observations sites, no legal applications on conservation, observation activities could be mention.
Iraq	1 colony in Haur Al- Hawizeh Marshes	2005	22	Marshland	*	Day	P. p., T. a. E. g., African Darter		Y	N	Unsecure areas with huge risk for birding and Scientific researches. *Caraceous caraceous, Liza abo, Bellamya bengalinisis, Melanopsis modosa, Physa acuta, Sectarma boulangari, Amphibians
hstan	Shoshka kol Lake		204 (2001)	Reedbeds	В			Y	N	N	Fire, disturbance.
Kazakhstan	Kor- galzhyn		41					Y	Y	Y	
	Volga Delta		250- 350	Wetland complex				Nature Reserve	Y	Y	Hydro-electrical installations, pesticides, waste water release.
Russia	Ma- nych- Gudilo	1980 th	65- 120 (2004- 2007)	Islands	Salty		A. c.	State Nature Reserve	Y	Y	Flooding and wave erosion of islands.
Syria	Sabkhat al- Jabbul	2005	50- 100	Freshwater lake			E.a., E.g.	Nature Reserve	Y	Y	Change in hydrologic management

						l			
	Tudakul lake	29- 120	1	Island with reed- bed	Bracki sh	P. p., P.f., E.g.		N	
	Tudakul lake	100 (2003)	1		Bracki sh			N	
	Sudo- chye Lakes system	120- 140			Salty			N	
	Kungrad lakes (Kara- jar)	100- 120 (1990 s)			Salty	P. p., N.n., P.f., E.g., A.c., Cormorant, A.r.		N	
	Toguz- ture	200- 240 (1990 s)			Salty			N	
Uzbekistan	Tuzkan lake (Aydar Arnasay lakes system)	9-43 (1990 s)	1		Salty			N	
	Alan floods (Kashka darya region)	4 (1991)	4		Salty	Cormorant, P.p., A. c, E.g., N.n.		N	
	Cape Akkala (Aral Sea,	300 (1969)			Sea water	Herons, cormorants and gulls		N	
	Lake Shom- kekul	32 (1960 s)			Salty			N	
	Lake Balanay dyn	10 (1970 s)			Salty	Herons, cormorants, A.r. and gulls		N	
	Lake Koraho- jabah	12 (1970 s)			Salty	Herons, cormorants, A.r. and gulls		N	

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Cou ntrie s	Col- ony	Year of first breed ing	Number Breed ing Pairs	Habitat	Breeding among colony of?	Legal status of the site	IBA	Ra ms ar Sit e	Conservation Problem
Dji- bouti	Ile Mush a		1-20	Ile	4 spe- cies	Pro- tected	N	N	Disturbance, habitat destruction.
Eritrea	Dar- ma- chia	?	30-40	In mangrove (Avicenna marina)	E. gu	Not pro- tected	N	N	The site is not protected from any threat.
	Ku- tambil Island	?	50-70	Coast	Terns	Not pro- tected, pro- posed	Y	N	Eggs and young of the breeding spoonbills were taken by humans, exploitation of the seabird species may occur.
Saudi Arabia	Jizan Bay	?	Now none, late 1990s (20- 40)	Coast mud- flats	Terns	Not pro- tected	Y	N	The site is much disturbed and faces a multitude of threats. Pollution by oil, sewage effluent and rubbish and extensive land reclamation for further urbanization, the later is reducing the area of inter-tidal flats available for feeding waterbirds. Human disturbance to birds using the area is high. Further landfill and urbanization and harbour through the middle of mudflats.
	Farasa n Island	?	40-70	Island, shore	Terns	Na- tional Park	Y	N	Development of the naval base could have disastrous consequences for the terrestrial and marine wildlife of the area, especially shorebirds. Uncontrolled and intensive fishing causes considerable damage to reefs, from anchors and threatens the viability of the traditional artisanal fishery. Some time, sea birds eggs are collected for sale and personal consumption. Reintroduced predators: domestic cats and rats.
	Hu- mar Island		6 (1979)				Y		
Yemen	Islet near Kama ran		10 (2002)				Y		
r	Badi Island Ho- deidah marsh es		18 (2002) Y (2002)				Y		

Annex 8: Measures per site

	Designate the site as protected area and as Ramsar site.	Conduct strategic and pro- ject level Environ- mental Impact Assess- ment and audit of existing operation.	Develop and implement integrated (catchments/coasta l zone) management plans for the site.	Identify management needs of habitat and implement necessary management actions to maintain the site in good ecological condition.	Adopt a new way to manage fish ponds.	Ensure that pollu- tion guide- lines/legisl ation are developed and en- forced.	Prevent disturbance through legislation, planning, zoning and through enforcement of these rules as appropri- ate.	Enhance the habitat on the site (e.g. creation of breeding sites, rehabilitate/create wetlands) where necessary.
Belgium				Zwin area				
France	Seine Estuary							
Spain	Veta Adalí, Extrema- dura		Santoña, Ayamonte, Los Cancha- les Dam	Los Cancha- les Dam, Santoña Odiel mars- jes, Isla Cris- tina marshes, Cádiz Bay Ensenada de O Grove			Odiel mars- hes, Doñana marshes, Cadiz Bay, Isla Cristina, Ensenada de O Grove	Odiel marshes, Doñana marshes
Mo- rocco	Smirt		Marais de Smir, Merja Zerga, La Moussa-Oualidi Khnifiss	igunes de Sidi			Marais de Smir, Bas Loukkos, Merja Zerga, Lagunes de Sidi Moussa- Oualidia et Lagune de Khnifiss	Lower Loukkos (near Larache): establishement of a breeding site Marais de Smir; Lagune de Khni- fiss
Gambia	Baobo- lonTanbi, Tanji							
Senegal	Senegal Delta		St Louis, Trois Marig- ots	St Louis				

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Bos- nia & Her- zego- vina	3 sites, plus Karst poljes as Livan- jsko and fish farms			Restoration of drained peat pog in Livan- jsko Polje, preservation of wet Karts Poljes				
Croatia	Freshwater cyprinid fishpond, floodplain marshes along large rivers (Drava, Sava, Da- nube), atop over sites at the Adria wetlands on Pag Island)		Delta of Neretva river, Kolansko, M. and V. Blato (Pag island), basin plan for Sava and Drava has to provide pro- tection to alluvial feed- ing sites.	Freshwater cyprinid fishponds, floodplain marshes along large rivers (Drava, Sava, Danube), freshwater supply for Neretva Delta and staging zones, coastal wetlands (e.g. Island of Pag).				Freshwater cyprinid fishponds
Czech Re- public				Zliv				Zliv
Greec e				Kerkini		Axios, Gallikos		
Hun- gary				Kiskunság, Hortobágy, Körös-Maros, Fertő-Hanság NP	Csaj-tó, Szeged, Hortobágy, Biharugra, Begécs, Apaj, Akasztó, Szakmár, Rétszilas			Csaj-tó, Natron lakes of Kiskunság, Tiszaalpár, Kolon-tó, Szeged, Gátér Fehér-tó, Apaj
Italy			Piallasse e Valli Comacchio e M					
Libyia	Farwa, Taourgha		Farwa, Taourgha					Benghazi
Ma- cedo- nia FYR	Dojran Lake		Dojran Lake	Dojran Lake, Prespa Lake				Dojran Lake, Prespa Lake
Mol- dova				Beleu Scien- tific Reserve			Beleu Scien- tific Reserve	

Mon- tene- gro	Bojana Delta	agement plan for Bojana goon River includ- ing Lake Delta Skadar taine saltp	aining of La- system ojana a, main- nce of ans So- Ulcinj		
Serbia	Bečej Fish Farm, Jazovo Fish Farm, Kapetanski Rit Fish Farm, Tamiš River Val- ley (includ- ing also Baranda Fish Farm)	Bečej Fish Farm, Jazo ski Rit Fish Farm, Tan includes also Baranda		Bečej Fish Farm, Jazovo Fish Farm, Kapetanski Rit Fish Farm, Tamiš River Valley (that includes also Baranda Fish Farm)	Bečej Fish Farm
Slo- vakia		SPA Senné	SPA Senné, SPA Medzi- bodrožie	SPA	A Senné
Tuni- sia		New Ramsar sites			
Tur- key	Manyas L., Meriç D.	agement Plan apply for Tuz, Bolluk & Man Natio Kulu Lakes man by Specially Plan Protected Meri Areas. Au- thority under the Ministry of Environ-	agement for yas Lake, onal Park agement for ç Delta ed by General ctorate of re Con- ation & onal		Manyas L.

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Arme- nia	Armash							
Azerbai- jan	Kura river Delta, Lake Agzybir, Lake Makch- mudcha- la, Lake Sarisu		bir, Lake Mal Lake Sarisu, Varvara w.r., G	ta, Lake Agzy- kchmudchala, Lake Ak-Gel, iizilagach reser- e		zybir, Lake M Lake Sarisu, Varvara w.	elta, Lake Ag- Iakchmudchala, Lake Ak-Gel, r., Gizilagach serve	
Georgia	Kolkheti Lowland							
Iran	Tashk, Parishan, Khour Khuran		Tashk-Parishan	, Khour Khuran		Tas	hk, Parishan, Kho	our Khuran
Jordan	River Jordan & Al- Karamah Dam			River Jordan & Al- Karamah Dam				
Kuweit	Bubiyan Island		Bubiyan Island					
Russia		Manych-Gudi	lo					
Tajikis- tan			Tigrovaya Balka Rybkhoz Ghozimalik	Tigrovaya Balka				
Uzbekis- tan	Tudakul lake		Tudakul lake	Tudakul lake			Tudakul lake	

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Djibouti	Aire Protégée Marine Musha Maskali		Aire Protégée M –Maskali »	Iarine « Musha			Aire Protégée Marine « Musha – Maskali »	Aire Protégée Marine « Musha – Maskali »
Sudan	Dinder Park		Red Sea	Marwi dam				Dinder Park

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