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Different stopover timing in juvenile and adult Spoonbills during Southward migration

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Introduction

Long-distance migratory waterbirds have an energetically expensive life history, since they travel thousands of kilometres annually, between their breeding and wintering quarters, relying on a few areas for food, mainly intertidal sites (Gill *et al.* 2005; Piersma *et al.* 2005). Although numbers of some species are apparently influenced primarily by conditions in breeding or wintering areas (Newton 2004), much recent work has attempted to clarify the influence of the conditions experienced at stopover sites in population regulation of migratory waterbirds (Drent *et al.* 2003; Newton 2006; Skagen 2006). Here, I show preliminary results of a study dealing with the stopover ecology of the North Atlantic population of Eurasian Spoonbill (*Platalea I. leucorodia*) during fall migration, in a previously identified key area (Navedo 2005). I specially focus on potential differences in stopover timing of yearlings and adults at population level.

Methods

The study was made at Santoña Marshes Natural Park (N Spain), an estuarine area strategically situated along the southward route of the northern fraction of the Atlantic population. In the study area, fall migration begins in mid-August, ending in mid-October, although most of the birds (> 90%) stop through September (Navedo 2005). Typically, 80% of the birds follow the SW route and 20% take the W route, following the Cantabrian Coast (Navedo 2005). To assess the total number of birds that made a stopover in Santoña marshes (Volume), we observed the whole area of the reserve from two little hills (see details in Navedo & González 2002), daily during the whole daylight period through September (1st-28th), from 2002 to 2005 (with the help of trained volunteers; for more details see Navedo 2005). Since we could easily observe flocks leaving the area and the main directions followed (W or SW), I calculate Volume by adding up each of these flocks (see details in Navedo & González 2002). The Length of Stay (LOS) of Spoonbills was calculated by detecting and reading rings of PVC-ringed birds. I have assumed that we could potentially relocate any PVC-ringed bird, therefore LOS of any bird was the number of consecutive days it was resighted (see details in Navedo 2005). For analytical procedures I classified arrival date in four week classes. I have submitted our resightings to the International Spoonbill Working Group Database, thus obtaining the detailed life history of each bird.

Results and discussion

A mean volume of $1,664 \pm 265$ different birds stop in the study area during September, representing a mean of 34% of the total North Atlantic population during the four-year study (Table I). Simultaneously, more than 1,500 resightings resulted in 271 different PVC-ringed individuals being both correctly identified in the database, and considered accurately monitored during their stopover (Table 1). The percentage of PVC-ringed birds in this population is roughly estimated as 14 % (O.Overdijk *pers com.*), thus the PVC-ringed birds monitored in the study area represent 36% of the population. Therefore

I assumed that the PVC-ringed birds monitored constitute a very good representation of the population. 97 of these resightings come from birds located on more than one migration (n=43), made up of 38 adults (+4 years) and 5 subadults (up to 3 years) at the time of their first relocation; none of them were yearlings or 2nd-year birds.

Table I. Summary of results during the four-year study.

Migration	2002	2003	2004	2005
Volume	1402	1727	2006	1519
Total pop (*)	5157	4473	5013	4647
PVC-ringed birds	51	63	119	82
% Volume PVC-ringed	4%	4%	6%	5%

(*) O. Overdijk *pers com.*

Similarly, of the birds located during only one migration (n=228), only 7 and 29 were respectively 2nd- and 3rd-year birds. Since the main proportion of them remain in Africa until the age of their first breeding attempt when they return to Europe (Bauchau *et al.* 1998; de Voogd 2005), in the subsequent analysis we include only data related to yearlings and adults. Mean length of stopover was 2.3 ± 0.2 days (n=286), with adults spending significantly more time than yearlings (Figure 1). As regard dates, 70% of the adults have already used the area when 60% of the yearlings arrive in the last week of September (Figure 2). As the majority of this population coincide both in space and time along the flyway during migration, density-dependent processes could increase intraspecific competition at stopover sites (Newton 2006). Accordingly, adults could adopt this strategy in order to minimize competition with yearlings, especially later in the season.

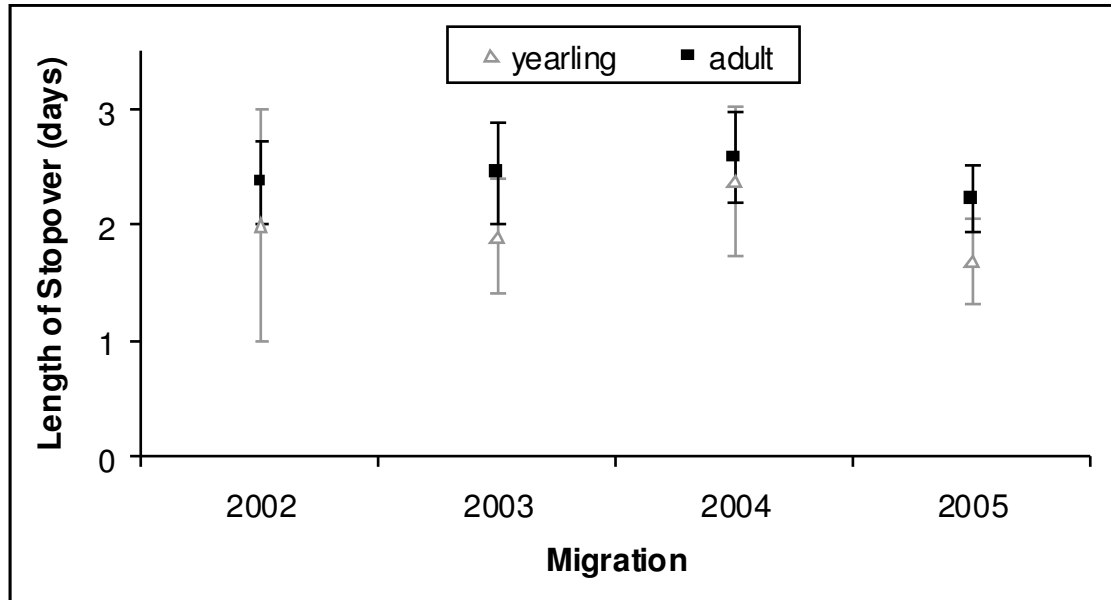


Figure 1: Annual Length of Stopover (means \pm SE) of yearlings and adults at Santoña during a four-year study.

However, for this contribution I pull together data related both to faithful and unfaithful adult birds, and a more adequate statistical analysis is needed to evaluate this question (for example, including the role of the experience of the birds, potential differences within sexes and between birds wintering at different latitudes, the use of wind assistance or the carrying capacity of the site for this population). Nonetheless, since its North Atlantic population is one of the best monitored, I highlight the role that

Spoonbill can act as one of the ‘flagship’ species of the East Atlantic Flyway for developing optimal conservation criteria for migratory waterbirds at the population level.

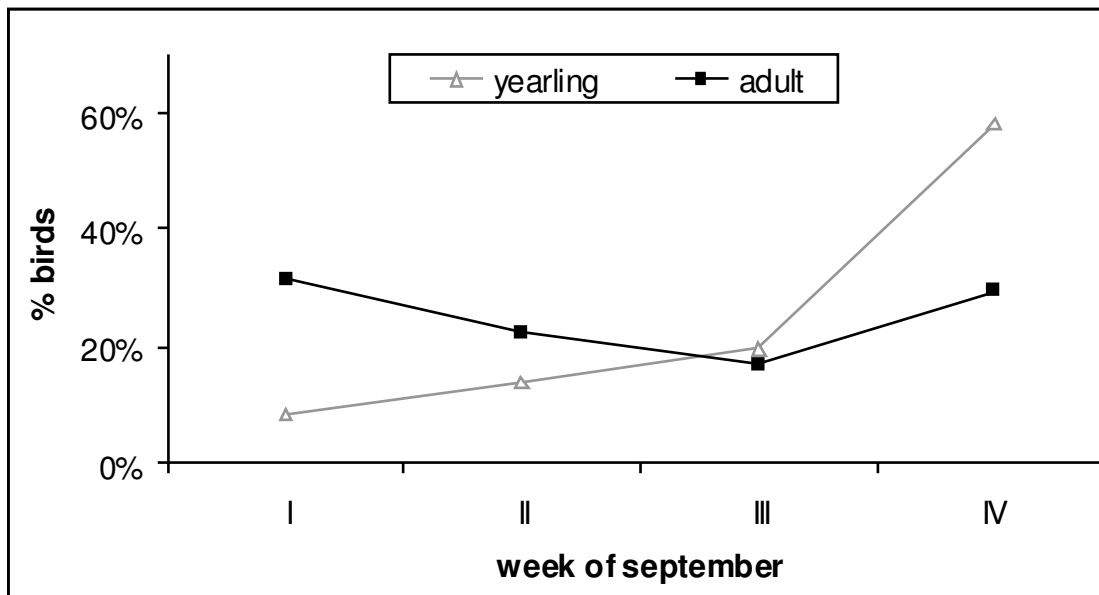


Figure 2: Percentage of yearling and adult birds stopping each week at Santoña throughout September during a four-year study.

Acknowledgements

This contribution was presented in October 2007 at the International Spoonbill Workshop celebrated in Djoudj National Park (Senegal) to develop the AEWA Action Plan for the Conservation of Spoonbills. I am very grateful to Otto Overdijk for his friendly help over many years and to Dr. J.A. Masero for his constructive comments. Á. Bustamante and J.J. Aja helped with daily Spoonbill PVC-readings. Alejandro G. Herrera, Máximo Sánchez, Manuel A. Alcántara and Virginia Iturriaga coordinate more than 400 volunteers helping in monitoring the Spoonbill stopover at Santoña since 2000. SEO/BirdLife provided materials and support needed to carry out the study.

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First colour-ringing of Eurasian Spoonbill *Platalea leucorodia* colony in Extremadura (SW Spain): Opportunities and difficulties

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Introduction and methods

Since Spoonbills began to breed in the Extremadura region in 1999, they have bred in nine different sites (Costillo et al. 2008). In this context, the colony located at Alqueva reservoir was formed in 2006 by seven breeding pairs. The following year, there were nine breeding pairs, four of which reared at least one chick successfully. During the breeding season of 2008 we carried out systematic censuses of the colony. We monitored breeding Spoonbills in a mixed colony of White Stork *Ciconia ciconia* and Grey Heron *Ardea cinerea*, located close to the edge of the reservoir (on the Guadiana River). All nests were situated in trees, as in Doñana (De le Court & Aguilera 1997), five on a single evergreen Holm Oak *Quercus rotundifolia* and the other on a poplar *Populus spp.* (see photo 1).

Results and discussion

Five breeding pairs occupied the colony since early February and the first chick hatched in early May. Of a total of ten nestlings, seven were ringed with metal and colour rings (red, blue, green and yellow, all of them with a lime-green flag, see photo 2); not attempt was made to ring the other nest located in the poplar because it was over the water. The productivity of the colony was 2.0 ± 0.7 fledglings per pair ($n = 5$), with a 100 % survival rate, since there were no death in the colony. Thanks to the colour-ringing we can study their movements among inland wetlands during dispersal as well as philopatry. Comparisons among breeding productivity of other Spoonbill colonies could be used to estimate the quality of different breeding areas (Boulinier & Lemel 1996) that may also lead to differences in reproductive performance. Furthermore breeding opportunities for Spoonbills in Extremadura are high because of the large amount of reservoirs in the region, many of them also being suitable feeding places for the species (Costillo et al. 2008). Finally, monitoring the reproductive parameters of new colonies is a valuable way to understand key issues of population dynamics (Pulliam 1988), particularly in colonial species (Barbraud et al. 2003). Therefore, the collection and analysis of these parameters during the next years can produce several recommendations on research, conservation and management, even for other colonial waterbird populations.

Management implications

During the incubation period the colony was exposed to cutting down of Holm Oaks just a few meters from the nests. Besides the negative effects of disturbances caused by workers, especially

in colonial birds (Rodgers & Smith 1995), it is notable that cutting down these trees could jeopardize the future growth of this new colony (see photo 3), since Spoonbills could experience a lack of suitable sites for nesting, as adults probably come from Doñana area, where they face this problem (Triplet et al. 2008). Furthermore it could be the cause of the observed decline in the number of breeding pairs (from 9 to 5). Therefore, the scheduling and policy of forestry activities should avoid the proximity of the colonies in order to promote the necessary conditions for further growth.

Acknowledgements

We are very grateful to Isa Torija Escribano for helping with colour-ringing. We also thank José Antonio Montero (Forest Ranger of the Junta de Extremadura) for his prompt action to stop cutting down and other works besides the colony and his cooperation during colour-ringing. We wish to express our acknowledgements to Dr. Juan Manuel Sánchez Guzmán for support throughout this study. This research was supported by an agreement between Universidad de Extremadura and Confederación Hidrográfica del Guadiana (Ministerio de Medio Ambiente).

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Spoonbill colony at Alqueva reservoir



Colour-ringed Spoonbill nesting



Holm Oak cut down, just a few meters from the nests

Spoonbill breeding status in Lake Tashk, Bakhtegan National Park, Fars, Iran

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Abstract

Lake Tashk is the most important breeding site for Spoonbill (*Platalea leucorodia*) in Iran. It is located in Bakhtegan National Park. Marking birds by metal rings in this site has been carried out for almost four years. This report will describe the status of the breeding site, the birds and the Spoonbill marking programme during the last four years. Unfortunately in 2008 the lake dried out because of severe drought and we have been unable to follow up our studies there since.

Introduction

Bakhtegan National Park is situated in the North East of Fars province which is located in the South West of Iran. The National Park consists of two large lakes and the high mountains surrounding them. Lakes Tashk and Bakhtegan are two of the most important wetlands of Iran. They are also among the vast Iranian lakes with saline water systems. The area of Lake Tashk is 41,000ha while that of Lake Bakhtegan is 85,000ha, at an altitude of 1,525 a.s.l. The average depth of Lake Bakhtegan is estimated to be 5m and that of Lake Tashk is estimated at 3m.

The most important water source for Tashk and Bakhtegan is the Kor River. The estuary is a massive area covered by Tamarix and *Fragmetis* plant species. Gomban spring is another water supply for Lake Tashk. The annual average input of water to Lake Bakhtegan during the last 10 years has been 784 million m³. Of this, 484 million m³ are provided by the Kor River, 206 million m³ are provided by streams and the remainder by seasonal rainfall. Also the average input of water to Lake Tashk in the last 10 years has been estimated 300 million m³. Gomban spring provides 47 million m³ and temporary streams provide about 218 million m³. Data on the pH of Bakhtegan and Tashk is presented in Table I.

Table I: Maximum and Minimum of pH in Lakes Bakhtegan and Tashk, Fars, Iran.

Lake Bakhtegan pH		Lake Tashk pH	
Max	7.71	Max	8.22
Min	7.28	Min	7.34

There are more than ten islands in Lakes Tashk and Bakhtegan. Each of these islands has unique characteristics which are poorly known to researchers. Among them, two islands are splendid avian breeding sites. The largest one, almost 1ha in area is situated at N 29° 43' 58", E 53°28'2.4" with altitude of 1,580m a.s.l. The area of the smaller island is 0.5ha and it is situated at N 29°43'52.4", E 53° 28'12.4". The breeding sites mentioned are commonly used by following bird species: Slender-billed Gull (*Larus genei*), Spoonbill (*Platalea leucorodia*), Little Egret (*Egretta garzetta*), Rock Dove (*Colomba livia*).

Also a few Dalmatian Pelicans (1-2 pairs) breed some years on the coasts of the larger island. Spoonbill breeding sites are located at N 29° 43'58.5", E 53°28'8.7" on a rocky substratum. Their nests are made from bunch of *Echinops sp* & carefully collected sets of branches of trees (*Pistacia atlantica*). The nests and eggs are covered by salt because of the salty water of the lakes. The nests of Little Egrets are

generally on the bushes (*Ephedra spp.*) and trees (*Pistacia atlantica*) on the islands. Slender-billed Gulls make their nests using their droppings and mud on the gentle northern slope of the larger island. Also the small island is covered by this species' nests. The nests and chicks are almost the same colour as the ground.

Methods

The birds were marked with metal rings one month after hatching. The ring contained a code which individualized each bird. Bird counting was carried out in spring (June) over two days. The first day is devoted to marking Spoonbills and Little Egrets, the second day to marking Slender-billed Gulls. This activity is done by 4-5 persons.

Results

The above group began bird marking in Lake Tashk in 2006. Almost 30 pairs of Spoonbills breed each year on the larger island. In each nest an average of 3-4 white eggs were observed during the study. We wondered if the ringed birds come back to this island every year. But we didn't observe any marked mature birds on the island from previous years. So where are they? It is a question that we are going to investigate. Maybe coloured rings can help us in future.

The birds and their chicks react to the stress of the marking procedure. One of the defensive behaviour observed was vomiting of undigested food. The adult birds usually leave their nests after the approach of the team. The team tried to shorten the procedure period, so as not to harm the chicks and to cause less stress to the populations of birds residing on the islands. Marking the nests and other measurements should be made in forthcoming years. The most important threat for this site is drought. Below normal rainfall and also building of dams on Kor River has led to shortage of water.

Acknowledgements

We would like to thank Mr. H. Zohrabi, Mr. S. Mohammadi, Mr. M.Tahmasbi for supporting us during the mission.

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Table II: The most important Bakhtegan National Park fauna

Wildsheep	<i>Ovis orientalis</i>
Wild Goat	<i>Capra aegaugrus</i>
Caracal	<i>Felis caracal</i>
Houbara Bustard	<i>Chlamydotis undulata</i>
Chukar	<i>Alectoris chukar</i>
Pleske's Ground Jay	<i>Podoces pleskei</i>
Little Owl	<i>Athene noctua</i>
Greater Flamingo	<i>Phoenicopterus roseus</i>
Spoonbill	<i>Platalea leucorodia</i>
Slender-billed Gull	<i>Larus genei</i>
Little Egret	<i>Egretta garzetta</i>
Shelduck	<i>Tadorna tadorna</i>
Ruddy Shelduck	<i>Tadorna ferruginea</i>

Table III: Bird marking in Tashk lake 2004-2007

Species	Scientific name	Number of ringed birds			
		2004	2005	2006	2007
Pelican	<i>Pelicanus crispus</i>	3	4		
Flamingo	<i>Phoenicopterus roseus</i>	108	123	114	111
Spoonbill	<i>Platalea leucorodia</i>	108	123	114	111
Little Egret	<i>Egretta garzetta</i>	92	50	68	126
Slender Billed Gull	<i>Larus genei</i>	95	400	250	500
Total Ringed Bird		305	577	333	737

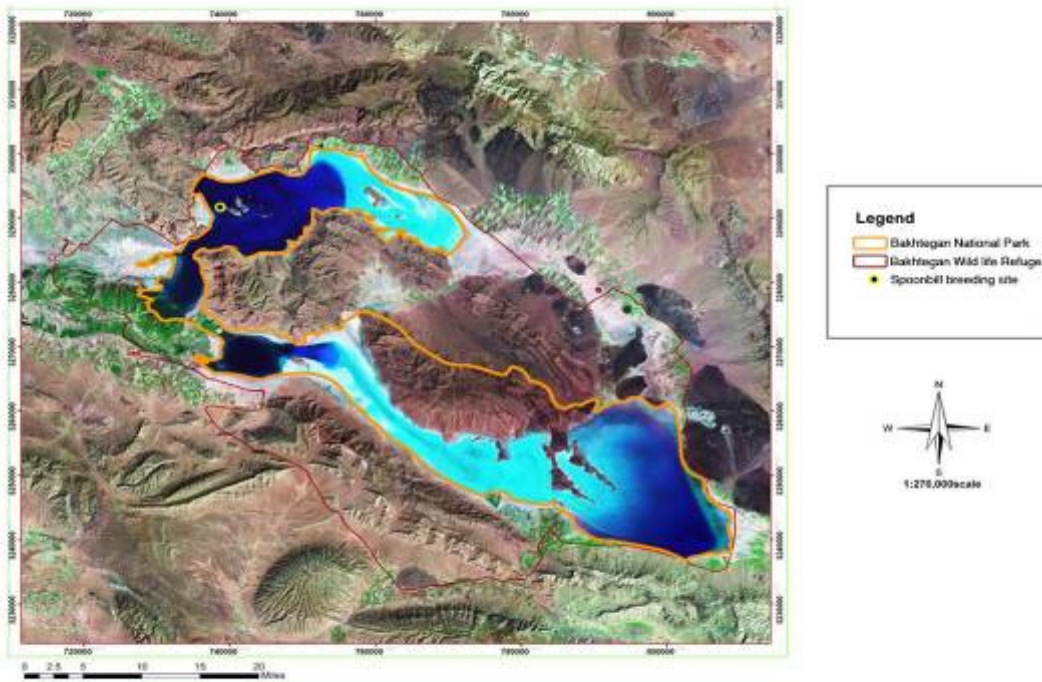


Figure 1: Spoonbill at the nest on the large island. Lake Tashk. -Photo:L. Joolae



Figure 2: Slender-billed Gull, the other breeding species in the island. Lake Tashk . -Photo:L.Joolae

Spoonbill breeding site-Bakhtegan National Park



Breeding of spoonbill in mangrove forests of Hara biosphere reserve-Qeshm Island-Iran-2008

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Introduction

Mangrove Forest (grey mangrove *Avicennia marina* in Persian called Hara) in Hara Protected Area is one of only nine UNESCO Biosphere Reserves (BR) in Iran which is unique among others as it is the only coastal BR in the country. Located on the northern shores of the Persian Gulf, it has 856.86 sq km mass which contains 86 percent of total Mangrove forests of Iran (Danehkar, 2001). The area was designated as "Protected Area" in 1972 with total area of 823.60 sq km, and after four years in 1976 upgraded to "National Park", as well as expanding to its current size. Unfortunately after the 1979 Islamic revolution and re-classification of nature reserves Hara Biosphere Reserve (HBR) was degraded to "Protected Area" again. HBR is located as part of the narrow Khouran strait which is situated between Qeshm Island and Iran mainland consisting of marine and coastal mangrove communities and system of branches of lagoon (Zehzad & Madjnoonian, 1998). This reserve is indeed an International Wetland and a Ramsar Convention site since 1975 and one of Important Bird Areas (IBA) among 105 registered sites of Birdlife International in Iran (Evans, 1994).

Another feature of HBR is its "Critical Marine Area" status which is considered because of its biological diversity, occurrence of Endangered, Vulnerable and Threatened species, and high sensitivity to pollutions and irreplaceable possible damages to its ecological structure.

Mangrove forests of Khouran strait (HBR) host one of the largest breeding colonies of Herons and Egrets in Iran and the Middle East. (Evans, 1994). Unfortunately these days HBR's biodiversity faces severe threats from Marine water pollution (because of petrol smugglers in the area) to massive fishing, various alien species, mangrove harvesting and using bird eggs by local people (Ghadirian, 2007).

Breeding bird species is the Umbrella species in Mangrove forest that conserve them which could lead in protection of the other fauna and flora and in other words the whole ecosystem.

The main objectives of the present study were to monitor the status of breeding spoonbills in the Mangrove forest of HBR and to determine the major threats for this specie.

There is a little information about the place and process of the breeding of spoonbills in Iran.

Hara biosphere reserve is the only place in Iran that the nest building of spoonbill on the trees is observed. This species was breeding, in 70 decade, in islands of Urumiyeh Lake, Parishan Lake and Hamun Lake (Scott 2007).

Spoonbill in Iran and mangrove forests of Hara biosphere reserve

The breeding of **Eurasian Spoonbill** (*Platalea leucorodia*) was only confirmed on islets in Lake Urumiyeh, Azarbaijan (50–100 pairs annually), in reed-beds at Lake Parishan, Fars (40–170 pairs in 1975, 1976 and 1977), and in reed-beds at the Hamoun-i Sabari, Seistan (120 pairs in 1973). However, the species may also have bred in the Helleh Delta, Bushehr in 1974, as 78 adults and 14 immatures were present on 3 June.

There was a large breeding colony in Zarghan Marshes, Fars, in 1965 (E.V. Thompson, *in litt.*), and the species probably bred at Dasht-e Arjan, Fars, in 1968 and 1969 (L. Cornwallis, pers. comm.) and again in 1972 (at least 20 birds in the reed-beds on 9 May). Small flocks of non-breeders were recorded during the summer months at wetlands in Gilan, Mazandaran, Khuzestan, Fars and Hormozegan. The total population was estimated at 210–390 pairs (Scott 2007). There is a non-register record for breeding of Spoonbill in Hara biosphere reserve (Scott 2007) and one register report (Dareshuri & et al. 1998) In mangrove, breeding flocks of spoonbills were seen in feeding condition along the coast of sandbars. In this study we observed two colonies of spoonbills. In first case a small colony and a mixed colony with western reef herons in another case. In first case, nests were on a single tree on a sandbar and observed clearly by human and predators. They were threatened by Steppe Eagle and local people .at last; eggs missed by Steppe Eagle and harvester people. Another colony was built almost 10 days later and far from human access, in a small island with a lot of mangrove trees. It was bigger than the first colony and was inside the forest near the sea. In this study we estimate at least seven pairs of breeding Spoonbills. In the first colony we observed three nests and in second colony there were nine nests of Spoonbills. The average number of eggs in nests was two (max 3 and min 1, n=9). The average of height of nests to ground was 244 cm (n=6). The average of weight of eggs was 68/71 gr (n= 14) and average of length and wide of eggs were 65/92 and 44/63 (n= 14).

Methods

The present study was undertaken during the period march to June 2008. Spoonbills were identified and estimated with the help of Bushnell 10×42 and Nikon 8×36 binoculars .We also find them by direct observation, continuous monitoring for doubtful nests and around the nests and register the points by GPS. The area of study was 10,000 ha. Field activities were every other day or each two days, whit attention to time of the tide during the day. We take pictures form pairs, eggs and cheeks until nestling. We used the motor boat to look around in mangrove creeks and walked around in sandbars and muddy grounds.

The nests of Spoonbills in each tree were counted and marked by plastics tags. In this way, newly built nests were easily identified and added to the previous count to give the total number of nests present and also were identified from nests of other species like Western Reef Herons in one case. Major detrimental factors to the breeding Spoonbills were documented by direct observation or signs of them throughout the study period.

Asking from local people and accompanying and taking part of them in looking around in mangrove forest was effective in finding the place of nests and breeding Spoonbills. These nests were monitored during the time of nest building until fledging of juveniles.

Discussion

In attention to dry the most of wetlands in Iran, conservation of hara biosphere reserve, mangrove forest, and education of locale people due to the conservation of breeder colonies and habitat of this specie is very important.

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PHOTOS BY TAHER GHADIRIAN:







The 2008 breeding season in Netherlands

Otto Overdijk

The 2008 breeding season had no extreme weather conditions - no heavy spells of rain or cold periods and no flooding over saltmarshes – so, the weather was actually very good for breeding Spoonbills and for growing juveniles as well. This resulted in good reproductive success, with a mean of about two fledged juveniles per pair.

The number of breeding pairs was again better than in former years: a total of 1,992 breeding pairs was recorded in the Netherlands, of which 1,262 breeding pairs were in the Wadden Sea region. It is assumed that 3,800 juveniles have fledged. With this cohort added to the Dutch Spoonbill population the size of this population is now estimated at 6,000 individuals.

In Germany an estimated number of 300 breeding pairs were established on the German Wadden Sea islands. It is believed that weather circumstances there were also good for Spoonbills and that around 550 juveniles have fledged. The size of the German population is estimated at 1,250 individuals.

In Denmark and in Belgium around 50 breeding pairs had similar reproductive success. The population size in these two countries together is approximately 180 individuals.

Spoonbills in Verrebroek, Belgium 2008, the only Belgian colony!

Geert Spanoghe (INBO)

After the breeding season of 2007 we expected that the breeding place (cf pictures) would not survive another winter. At least it was possible that it would not be big enough to support the whole colony. During winter 2007/2008, trees were cut on some islands on the neighbouring pond to provide an adequate breeding habitat for this, the only Belgian colony. From March onwards, the Spoonbills changed interests daily between one of these islands and the previous breeding location. This resulted in the first seven pairs nesting in the old location and nine others a week or so later on this island. The first seven produced 21 fledged young (4, 5 * 3 & 1*2), the nine island-breeders only 9! It is strongly suspected that the latter had to cope with a visit by a Red Fox *Vulpes vulpes* around 20 May. As a stress-reaction some of the adults left their nest, resulting in 3 nests with dead pulli, some a few days old (one still in the eggshell) and 1 nest with abandoned eggs. In June three 'new' pairs started breeding at the old location, after most of the young of the first seven nests had left. This resulted in five more fledged young from two of these three pairs. We added these three 'late' nests as new pairs to the total of the colony. This also happened also in 2006 and 2007, when the last fledged young hatched as late as August. There is however a slight possibility of these being pairs from the island, making a second breeding attempt at a safer location. As these birds were rather far advanced in their breeding cycle, we consider this hypothesis as only a minor possibility.

Breeding success	2003	2004	2005	2006	2007	2008
N° nests	1	5	11	14	19	19
N° fledged young	2	11	19	21	44	35
Fledged young / nest	2	2.2	1.7	1.6	2.3	1.8

We conclude that the difference in breeding success between the two locations can be explained by the new location being less secure to visiting predators, in this case probably Red Fox.

Breeding Success	2008	2008
	Old location	Island
N° nests	10	9
N° fledged Young	26	9
Fledged Young / nest	2.6	1

On 5 June seven birds (from the island) were colour-ringed with Mark Hoekstein from the Netherlands. These were the first Spoonbills to be colour-ringed in Belgium. The youngest bird was found dead on a later visit, the six others were seen until they left the area a few weeks after fledging.

Nesting colony in 2007:



Nesting colonies in 2008:

16/05/2008







02/06/2008





4/06/08



12/06/08



A comparison of the spring and autumn migration of the Spoonbill *Platalea leucorodia* in the Seine Estuary.

David Hémerly & Christophe Aulert

Introduction

The Seine Estuary is located on the shores of the Channel, between the North Sea and the Atlantic Ocean, and constitutes one of the most important stopover sites in Europe, especially in France, for migrating Spoonbills. On both spring and autumn migration, numbers indicate that the site is of international importance for Spoonbills (>1% of total numbers).

Monitoring of this species has been carried out in the Seine Estuary since 1982. In 1999, the year of the appointment of a manager of the nature reserve, monitoring became more regular and the observation pressure increased (daily observations at the peak of migration). In 2004, autumn monitoring was improved so that it was carried out in the same way as during spring migration.

Diversity and richness of wetlands (hunting ponds, intertidal mudflats, and reed beds) represent an attractive site providing Spoonbill with feeding areas and roosts. The abundance of food permits the species to build up its energetic resources quickly, and to go on towards the breeding colonies.

During each field observation, the number of birds, their age and activity (resting or feeding) and location are recorded. The observer notes, if possible, the codes of ringed birds. In this way, all the information is recorded in the field, and the life history of each bird makes it possible to determine the characteristics of the Spoonbill population which uses the Seine Estuary on migration. Spring and autumn migration is characterized by specific parameters. Globally, the origin of birds is the same: northern Europe and particularly the Netherlands; all other parameters change in relation to the season.

Spoonbill numbers during migration

On spring migration, Spoonbills are mostly recorded between February and the end of May. Between 1982 and 1996, an average of 497 Spoonbills was counted in spring. Since 1997, this average has increased to 745. Spring numbers fluctuate on a yearly basis. Inter annual variations are quite strong: between 64.5% and +222% (Fig.1).

During autumn migration, Spoonbills are mostly observed between July and the middle to the end of October. Numbers are lower than in spring. Since 2000, numbers have increased with a peak in 2006 (Fig.2). The average is 329 Spoonbills (average of 70 between 2000 and 2003).

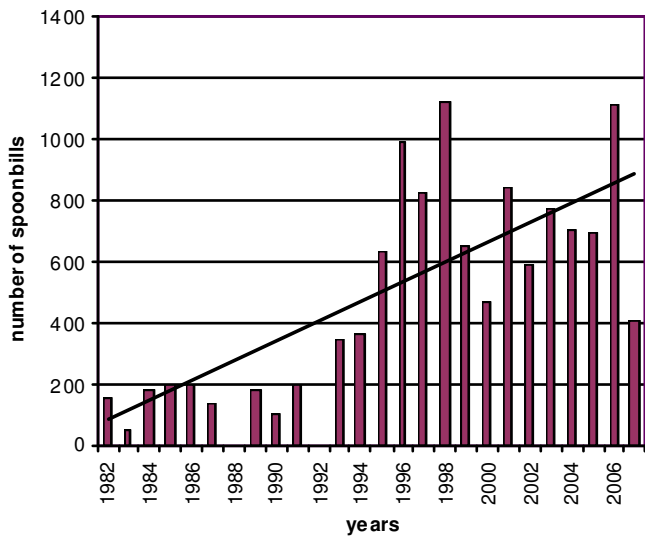


Figure 1: Trend in numbers of Spoonbills during spring stopover, 1982/2007 (Poorter method)

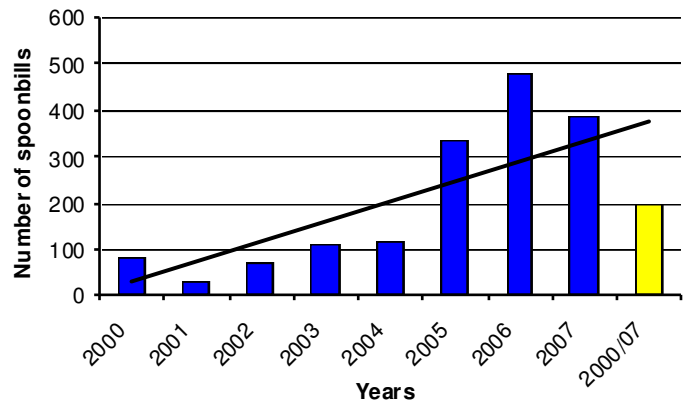


Figure 2: Trend in numbers of Spoonbills during autumn stopover, 2000/2007 (Maillet method)

Length of stay

With this parameter it is possible to establish whether a site is attractive for the species and to determine whether birds meet good conditions during their stopover. The length of stay has been stable since 2000. From 1994 to 2000, this value grew from < two days to six days. During spring migration, birds stay on average three days. Stays of more than five days are rare and relate especially to immature birds. At the beginning and the end of spring migration (February and May) the stays are longest. At the peak of migration (March/April) the length of stay is only one or two days.

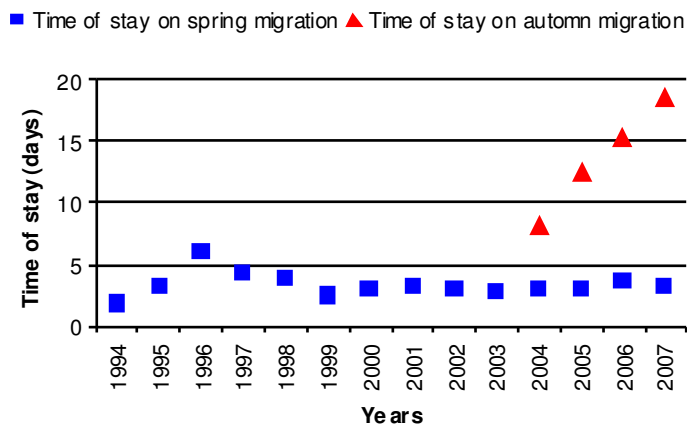


Figure 3: Annual trend of duration of stay during each migration (1994/2007)

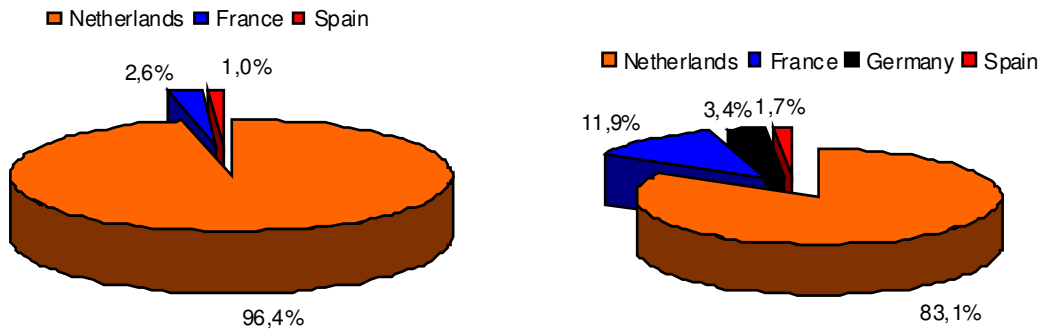
Finally, the length of stay in autumn in the Seine Estuary increases each year (8 to >18 days), but monitoring is too recent to draw a definite conclusion (Hémeryet al., 2007).

During autumn migration the Seine estuary is well adapted for Spoonbills: birds use quiet places without disturbance, but with high quantities of food. The length of stay decreases sharply in September and even more in October with the end of migration. This information shows that birds find enough feeding

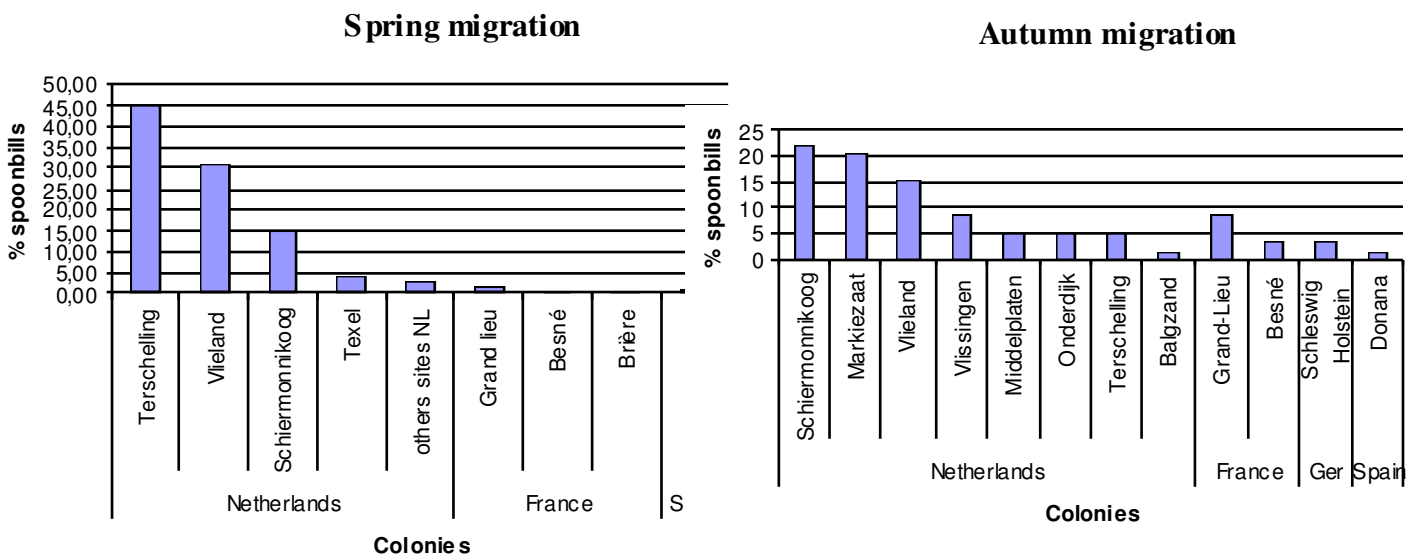
resources in the Seine Estuary and that they stay long enough in good conditions to build up their energy reserves to continue their migration towards wintering areas.

Origin

Globally, birds come from the North West European colonies located along the seashore of the North Sea and the Wadden Sea: the Netherlands, Germany. The percentage of birds from different colonies is not the same on spring and autumn migration. During spring or autumn migration, 94.6% of the birds come from the Netherlands. Few birds ringed in France or Spain are observed in the Seine Estuary (Figs. 5 and 6), in particular during spring migration.



Figures 5 and 6: Main countries of origin for Spoonbills noted in the Seine Estuary during spring and autumn migration, 2000 to 2007



Figures 7 and 8: Main colonies where come from spoonbills watched in the Seine estuary during each migration, 2000/2007

During spring migration birds come from the main colonies in the north of the Netherlands: Terschelling (45%), Vlieland (31.1%), Schiermonnikoog (13%), Texel (3.6%). The other Dutch colonies, located mostly inland, (often recently established and of less importance) represent only 3% of birds, Markiezaat is the most important of them. French colonies constitute a minor part of the birds, 2.6% (Fig. 7).

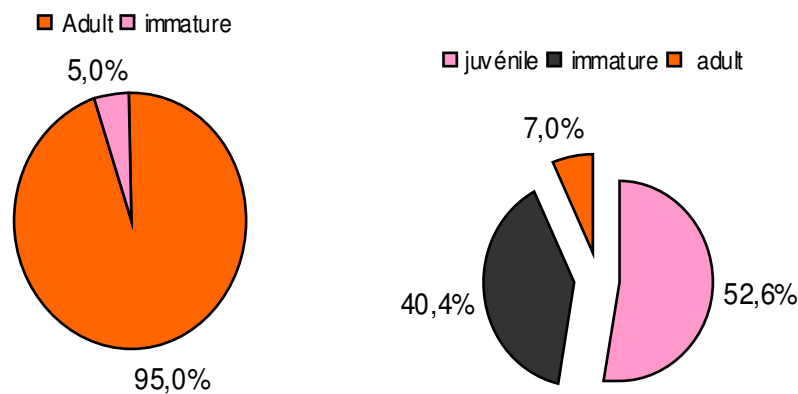
During autumn the majority of birds come from the Netherlands but the hierarchy between colonies is totally different. Schiermonnikoog, third in spring, becomes the first colony in autumn with 22%, followed by Markiezaat (20% against 0.8% at spring migration), then Vlieland (15%) which drops by one place in relation to spring. Terschelling is only 7th with a low value 5% of birds. French colonies account for 11.8% of birds (Grand-Lieu, Brière, Besné) and occupy fourth place (Fig. 8). Their importance has increased considerably (x4.4), whereas the number of Spanish birds is stable (1 bird). Birds from

Germany have only been noted very recently in the Seine Estuary but there are more and more each year.

Age ratio

On spring migration, 95% of the birds are adults (Fig.9). On the other hand, young and immatures represent 93% of birds in autumn (Fig.10).

The difference between each season could be explained by a difference of migration strategies between young and adults. Adults are able to fly longer distances than less experienced young birds, which might choose to make several stopovers before flying to Africa.



Figures 9 and 10: Age ratio of Spoonbills during stopovers in spring and autumn in the Seine Estuary, 2000/2007

Sex ratio

It is difficult to use this parameter. Adults are mainly observed on spring migration. At this time, the sex ratio is dominated by males. In summer and autumn 95.1% of the birds cannot to be sexed (1.6% females et 3.3% males).

Use of the Seine Estuary

During spring migration birds mainly use hunting impoundments (94.31% of birds, Fig. 12). However, at the beginning of the first stopover Spoonbills also use intertidal mudflats to find a quiet site and to find food.

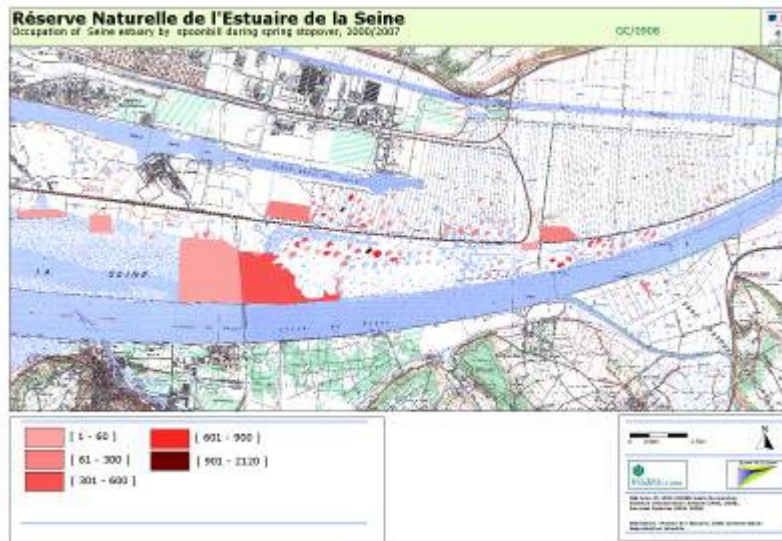


Figure 11: Use of the Seine Estuary by Spoonbills during spring stopover, 2000/2007

Progressively, Spoonbills give up the hunting impoundments for intertidal mudflats (end of May/June)

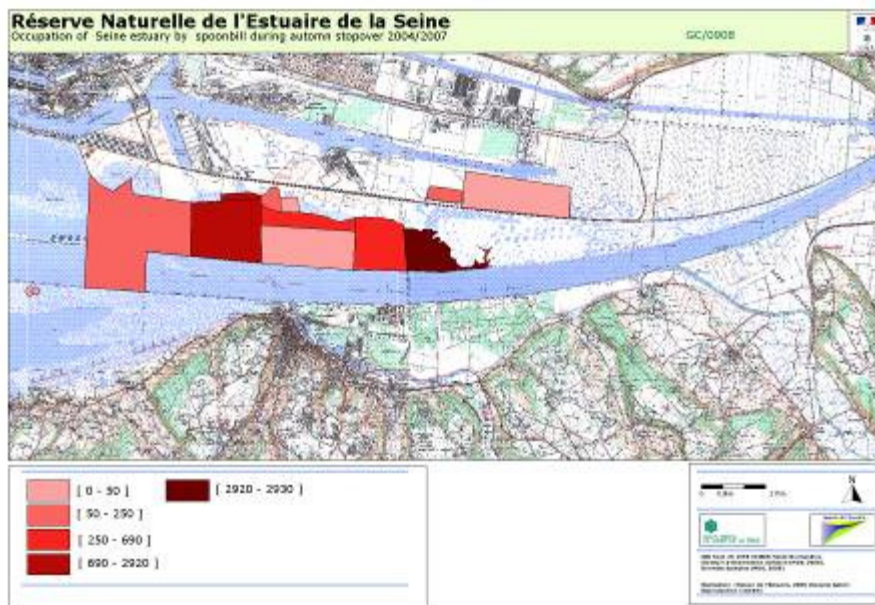


Figure 12: Use of the Seine Estuary by Spoonbills during autumn stopover, 2004/2007

Different parameters could explain this change in the use of the Seine Estuary by Spoonbills. From May onwards, water levels in the reserve go down and hunting pounds are drawn down (naturally or on purpose). After this, there is a decrease in the quantity of food (Hémery et al., 2004; Triplet et al., 2007). To this should be added various sources of disturbance caused by economic and leisure activities. The consequence is that birds can find quiet and food only on mudflats. Spoonbills spend the majority of their time in these areas, and sometimes at sunset it is possible to see Spoonbills flying towards the hunting impoundments.

Feeding ecology of Spoonbills during stopover (cf. newsletter n°5)

During spring migration Spoonbills use inland areas of the Seine Estuary (hunting impoundments and wet fields), whereas in summer more are observed on the sea shore. The particularities of each natural zone

explain the feeding ecology. Use of the estuary, activity rhythms and fishing techniques vary between spring and autumn migration, whereas the diet is quite similar (fishes and crustaceans). On spring migration fishing techniques are dominated by picking: 76% of the observed birds used this kind of fishing. In 15% of the cases this is mixed with sweeping whereas sweeping alone is noted in 9% of the birds (Barachon, 2003). Prey caught is mainly little fishes (Three-spined Stickleback and Ten-spined Stickleback), shrimps and also frogs. In autumn migration, 100% of spoonbills use sweeping alone to fish (cf newsletter n°2).

In spring a first resting phase occurs at the beginning of the day (Fig. 11). Then birds feed for two hours after sunrise, followed by a new resting phase until six hours after sunrise. During the day, the number of feeding birds increases progressively. Feeding rhythm is more important at the end of the day. Some birds feed at sunset at night. (Barachon, 2003).

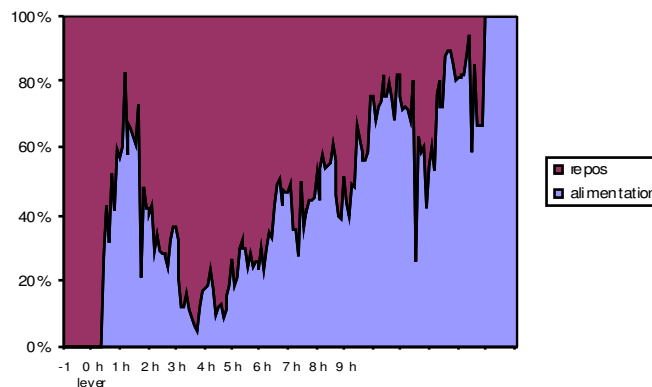


Figure 11: Daily activity rhythms of Spoonbills during spring migration, 2003 (N=5587).

On autumn migration, activity rhythm is closely related to tides. In fact, birds are adapted to this rhythm. Feeding intensity is greatest at sunrise and sunset. During the day, resting dominates activity rhythms. Several successive feeding phases can be observed according to tide (Fig.12).

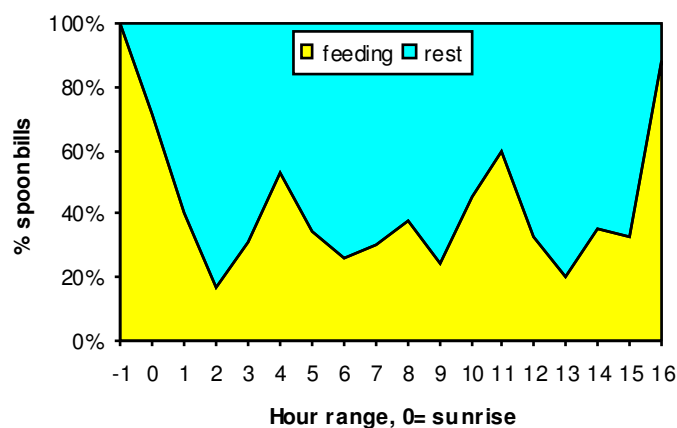


Figure 12: Spoonbill activity rhythms during autumn stopover in the Seine Estuary 2005/2006 (N=5335).

Conclusion

Spoonbill is an adaptable species, using different sites and habitats at different seasons. The species seeks out open fields, an abundance of small prey items and lack of disturbance in a site. When these

conditions are met, Spoonbills are opportunistic. The Seine Estuary provides these conditions on both spring and autumn migration. During autumn migration Spoonbill use more quiet places than on spring migration.

During spring migration most birds are adults, going to Dutch colonies to breed. At this period the species mainly uses inland sectors of the estuary, in particular hunting ponds.

Differences in the structure of the population are due to the ecological cycle of the species (young stay several years in Africa before starting to reproduce). Adults have other needs. They have to breed and for this they need to reconstitute their fat reserves quickly to fly to the colonies in northern Europe. In summer especially, young birds from colonies in the Netherlands, Germany, France and Spain spend most of their time on the intertidal mudflats.

Several parameters explain this important change in the use of the estuary: drainage of wet fields and hunting ponds cause a drop in prey items, and there is a major human presence on the marshes (agricultural activities, work on hunting ponds...). For all these reasons Spoonbills have no other choice than to go closer to the river where there are no people.

The migration route changes between spring and autumn (Poorter 2000 ; Hémerly et al, in press). In autumn, birds, mainly immatures, make shorter stopovers along the coastline than adults (cf life history Spoonbill workgroup). At this period there are not many adult Spoonbills which use the Seine Estuary. It may be assumed that adults choose another migratory strategy with longer distances between each stopover. When Spoonbills are coming back to Europe to breed they use a coastal route.

Acknowledgments

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Breeding Spoonbill in the Somme Estuary, France in 2008

Philippe Carruette

The Eurasian Spoonbill has definitely bred in the Somme Estuary (at the Parc Ornithologique du Marquenterre) since 2000 and probably since 1999, when three breeding pairs were seen and fledglings heard but not seen. Breeding behaviour has been reported since 1993. The birds occupy a mixed colony with Cattle Egrets, Night Herons, Little Egrets, Grey Herons and White Storks, numbering in total about 250 breeding pairs, in pine trees. The number of breeding pairs has increased as immatures recorded in May and June during the first years of the colony reached maturity.

The number of pairs of breeding Spoonbills reached 35 in 2008. Birds re-use the site earlier as they become older: 14 April 2000, 25 March 2003, 10 March 2007. In 2008, the first two birds arrived on 26 February and 56 birds were recorded on 8 March (including 47 adults). First activities at old nests occurred on 5 April. This behaviour varies from pair to pair. Some old ones which come back and breed without modifying their old nests may not be recorded as was the case for three of the six breeding pairs in 2000.

The first occurrence of a fledging bird in 2008 was on 12 June (22 May in 2007, 9 June 2006, 4 June in 2004, 8 June 2002...) but a three year-old breeding pair was still building a nest on 6 June. A minimum of 116 fledglings was observed this year, corresponding to a fledging rate of 3.3 birds per pair, on a basis of 35 pairs. Some nests contained four chicks and only the last one in July gave had broods with a single chick.

Most of the birds are not ringed. Only one Dutch-ringed bird has been breeding for two years. An adult male from Spain bred three times from in the same nest from 2001 to 2003.

Autumn migration of Dutch birds was noted very late this year. On 27 July, when local juveniles and adults mainly departed at the beginning of August, the maximum number was noted at the classical date of 31 August, when 249 birds were seen. At the beginning of October, 56 birds were still present, but on 8 October, 36 fly south.

The European Spoonbill has wintered since 1993. During cold spells, birds feed mainly in the estuary, but most of them grow weaker or have to move south when cold spells occur in December.

A new colony has been established in the south of the estuary in a beech wood for the last three years. The number of breeding pairs were about 10 in 2008 (Stéphan Tillo et Charlotte Allard).

EURO NATUR



ADRIATIC FLYWAY CONFERENCE 2009

WHERE

Ulcinj (Montenegro), Bojana-Buna Delta

WHEN

From the 14th to the 17th April 2009

ORGANISERS

EuroNatur Foundation

Black Mountain

Center for Protection and Research of Birds of Montenegro (CZIP)

Hotel Mediteran Ulcinj



WHO IS ADRIATIC FLYWAY CONFERENCE FOR?

The Adriatic Flyway Conference aims to promote the coastal area from Slovenia to Albania, along the East Coast of the Adriatic, as a unique place for bird preservation and nature based holidays in Europe and world-wide. It will also promote the protection of bird migration over the Mediterranean as a unique natural phenomenon in Europe.

The study of bird migration from Central and Northeast Europe across the Adriatic to Africa and the overall importance of this part of the Central European Flyway had not gained sufficient attention in the past. New results prove the great importance of the preserved sites for many migrating and wintering bird species. Several rare and endangered species depend on resting, feeding and wintering sites along the coast of the Balkan Peninsula. This region offers great potential for bird watching through out the year.

Our aim is to create an information point, a place to bring together experts and amateurs in bird watching, interested managers in the field of conservation and nature tourism, to look into the various opportunities to promote nature based tourism along the Eastern Adriatic Coast. The programme offers ornithologists and conservation experts the space and facilities for networking and collaborative work as well as the possibility for cultural or nature based tourism combined with first hand information on bird migration.

The transboundary Bojana-Buna Delta between Albania and Montenegro with Lake Skadar in the hinterland, is a key site in the system of Important Bird Areas from Slovenia to Albania and an ideal location for the conference. This region is included in the European Green Belt initiative, which promotes the preservation of biodiversity preserved along the area of the former Iron Curtain in Europe. 2009 marks the 20th anniversary of the opening the divide between East and West.

The pre-conference excursions and the visits during the event will offer a unique opportunity to experience a nearly unknown part of Europe. The southern Montenegrin and Albanian coastlines are among the least developed in Europe. Rapid economic growth and unprecedented foreign investment now place this area at a crossroads, with nature based tourism and environmental protection competing against big business to determine its future path.

THE Events of 1st ADRIATIC FLYWAY CONFERENCE

There will be five different types of event at Adriatic Flyway 2009: **opening, plenary presentation, workshops, bird watching excursions and exhibition stands.**

Opening

The opening event will provide an overview of the importance of the Adriatic Flyway and be dedicated to the 20th anniversary of the fall of the Iron Curtain.

Plenary

The plenary presentation will demonstrate the importance of flyway management and link the Adriatic Flyway to other areas along the Central European migration corridors. We will also refer to important topics related to bird migration and nature tourism.

Workshops

A series of theme-based workshops and sessions will strengthen regional cooperation and the exchange of information. Posters and short contributions are welcome. Topics so far defined are:

- 1) birds of prey and diurnal migration,
- 2) wetlands as stop over sites for water birds,
- 3) ringing recoveries
- 4) opportunities for nature-based tourism.

Market Place and Poster Sessions

During the conference, contributors and delegates will be provided with a venue for the sale or exchange of goods and services. Other organisations are also welcome to display their work.

Excursions

A pre-conference excursion program will offer a unique opportunity to experience the cultural and natural heritage along the Eastern Adriatic Coast and its hinterland in Montenegro, Bosnia-Herzegovina and Croatia.

The last day of the conference will be used to visit Lake Skadar and the Bojana-Buna Delta in Albania. During the conference excursions are offered to sites in the near environment of Ulcinj such as Solana Ulcinj, Velika Plaza, Sasko Jezero and Ada Bojana.

Additional guided bird watching excursions are possible before, after and throughout the conference.

Conference Programme

	14. April 2009	15. April 2009	16. April 2009	17. April 2009
a.m.		Plenary	Plenary	Excursion to Albania:
p.m.		Workshops and Excursions	Workshops and Excursions	Lake Skadar and Bojana-Buna Delta
evening	Opening	Side Events	Conclusions	



Bojana-Buna Delta: Ada Island and Velipoja Reserve Drin River below Rosafa Castle - Shkodra

For more information:

Website:

<http://www.adriaticflyway.com>

<http://www.montenegroholiday.com/>

<http://www.euronatur.org/?bojana0>

<http://www.euronatur.org/Euronatur - European Nature Heri.english.0.html>

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The Spoonbill newsletter is edited by the International Spoonbill Working Group, hosted by Eurosite. This newsletter was prepared by Patrick TRIPLET (SMBS), Otto Overdijk and Michael SMART. Please send notes, papers, pictures to Patrick patricktriplet@baiedesomme.org as soon as possible for the next issue (April 2009).