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Summary

This newsletter contains mostly information appertaining to the year 2001 and covering all species of flamingos. A new section has been introduced 'Latest news' which gives very brief information of more recent events which will be mentioned in greater detail in the Annual report for 2002 (to which you are all presently invited to contribute!).

The Greater Flamingo continues to colonise new sites around the Mediterranean and some pairs may have bred for the first time in Cyprus. There are reports of breeding by around 50,000 pairs in 10 colonies in 2001, and a late report of successful breeding in Abu Dhabi in 1998. Banding schemes continue in the western Mediterranean, and radio or satellite telemetry studies of the movements of some Greater Flamingos have been undertaken in Botswana, Spain and Kenya. There are reports of breeding by Lesser Flamingos in Tanzania and Botswana, and the movements of some Lesser Flamingos are also being tracked by satellite in southern and East Africa. During the IWC of January 2001 more than 233,000 Greater Flamingos and 1,216,000 Lesser Flamingos were recorded, with gaps in coverage particularly in Asia. The death of large numbers of these birds at L. Bogoria (Kenya) has given rise to much concern, and we refer you to the article in the New Scientist which attributes this unusual mortality to cyanotoxins (see [Bug suspected in bird death](#), p5)

In the New World there are reports of breeding by Caribbean Flamingos in Mexico and Venezuela and pursuit of the PVC banding program begun in 1999. One of the Flamingo marked in Mexico has recently been sighted in Florida. Cuba will soon join this Caribbean Flamingo network by the help of a team of Mexican and Venezuelan experts who trained Cuban biologists to implement such a banding scheme in the forthcoming years. In the southern cone, efforts have been focused at characterizing lakes suitable for the three species of flamingos, namely the Andean, Chilean and James Flamingos coupled with monitoring of population size. This will help Bolivia, Chile and Argentina to implement an international agreement for the conservation of these species.

Acknowledgements

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Figure 1: First steps of the Mediterranean Flamingo Network : C. Germain (right), database manager, and C. Barbraud (left) leader of the Flamingo project at Tour du Valat, present the database structure to their Spanish partners (from left to right : Charina Cañas, Manuel Rendón Martos, Juan Aguilar Amat and Manuel Mañez).

News from the regions 2001

(with some observations from 1998-2000 not mentioned in Newsletter 10)

Old World

Compiled by Alan Johnson

EAST AFRICA

DJIBOUTI

In Feb. 2001, 94 Greater and 18 Lesser Flamingos were counted (from Welch, G., Welch, H. & Rayelah, H.A. *in* Dodman, T. & Diagana, C.H. 2003).

ERITREA

30 Greater Flamingos were counted during the IWC in Jan. 2000, and 32 Lesser Flamingos during the IWC in Jan. 2001 (Tiwari, J. & Kahsai, D. *in* Dodman, T. & Diagana, C.H. 2003).

ETHIOPIA

Around 25 wetlands in northern, central and south Ethiopia were counted during the IWC of Wetlands International. The numbers of flamingos censused are given below (Wondafrash, M. & Woldemariam, T. *in* Dodman, T. & Diagana, C.H. 2003).

	Jan. 1999	Jan. 2000	Jan. 2001
Greater Flamingo	3632	1488	3604
Lesser Flamingo	42,524	58,032	8206

UGANDA

The following numbers of Lesser Flamingos were counted during the IWC of Wetlands International: Jan.1999; 14,103, July 1999; 62,788, Jan. 2000; 21,035, Jan. 2001; 15,001. (Byaruhanga, A. & Nantongo, P. *in* Dodman, T. & Diagana, C.H. 2003).

KENYA

Six waterbird counts (the IWC of Wetlands International) were carried out between July 1998 and January 2001. The numbers of flamingos censused are given below (from Oyugi, J., Owino, A & Nasirwa, O *in* Dodman, T. & Diagana, C.H. 2003).

	July 1998	Jan. 1999	July 1999	Jan. 2000	July 2000	Jan. 2001
Greater Flamingo	1665	7876	1345	19,115	861	22,288
Lesser Flamingo	1447	1,124,375	14,815	1,318,198	695,292	1,159,064

Some counts from the more important flamingo sites in Kenya:

Lake Nakuru: Flamingo numbers were low in July 1998, Jan 1999 (11,900), July 1999 (5810), Jan.2000 (18,430), July 2000 (693,123), Jan.2001 (617,052).

Lake Bogoria: Jan. 1999 (1,070,000), Jan. 2000 (689,015), Jan.2001 (510,512).

Lake Elmenteita : Jan. 1999 (only 996), Jan. 2000 (590,033), Jan.2001 (41,546).

Lake Magadi: Jan. 1999 (40,583), Jan. 2000 (21,798), Jan.2001 (11,475).

In Jan.2001, both ground and aerial flamingo counts were conducted concurrently at Lakes Bogoria and Magadi. Abandoned nests were seen at Lakes Bogoria, Nakuru, Elmenteita and Magadi.

Bug suspect in bird deaths (reprinted from New Scientist 9 November 2002) *Jenny Hogan*.

The sight of millions of flamboyant pink Lesser Flamingos congregating on the lakes of East Africa is one of the most impressive in nature. But every few years, a mysterious killer wipes out thousands of the birds, and leaves their corpses littering the shorelines.

Pollution and infectious diseases have been fingered as potential culprits. But researchers say they have a new suspect. While it is too early to close the case just yet, they say there is strong evidence that the birds are being poisoned by a naturally occurring toxic cyanobacterium.

Two years ago, up to 50,000 birds died inexplicably at Lake Bogoria in Kenya, and in 1995 thousands of flamingos also dropped dead at Lake Nakuru.. Heavy-metal poisoning was blamed at the time of the last outbreak but experts are sceptical.

It's yet another pressure on the species. Despite their apparent abundance, the birds' natural habitat is dwindling and they are close to being listed as threatened.

Now Geoffrey Codd, at the University of Dundee, says that it is likely that the flamingos were poisoned by their food. A Lesser Flamingo eats with its head upside down and underwater, filtering bacteria through its bill. Usually they feast on a particular species of cyanobacteria called *Arthrospira fusiformis*. But samples from Lake Bogoria revealed two further species of cyanobacteria, *Anabaena* and *Anabaenopsis*, which produce toxins that can kill cattle, sheep and water birds. If the flamingos had been eating the toxic species, it would explain why they had died.

Lothar Krienitz of the Leibniz Institute of Freshwater Ecology and Inland Fisheries in Berlin first raised the alarm. After visiting the lake to observe the dead and dying birds, he contacted Codd earlier this year (2002). Krienitz had recognised the symptoms of poisoning by cyanotoxins: the affected flamingos staggered and convulsed before dying with their necks snapped backwards.

Krienitz had collected tissue samples from the dead birds in 2000, which he sent to his colleague Stephan Pflugmacher in Berlin and to Codd for tests. Both found the tissues contained cyanotoxins at concentrations high enough to have killed a flamingo.

The researchers gathered at the 10th International Conference on Harmful Algae in St Pete Beach in Florida last month to present the evidence. They say populations of cyanobacteria in the lake must now be closely studied to see if the toxic species flourish at the same time as the Lesser Flamingos perish.

Ecologist David Harper of the University of Leicester, who leads Earthwatch expeditions to Lake Bogoria four times a year, is negotiating to get funding for Kenyan scientists to monitor the lake each month to determine if, and why, the balance of bacterial species changes. The Earthwatch teams will also check whether the birds are suffering from avian tuberculosis, an endemic disease in flamingos that could flare up and cause widespread death in a population already weakened by environmental stress.

TANZANIA

The IWC of Wetlands International does not cover the major sites for flamingos.

Lesser Flamingos were reported breeding in the Momella lakes, where nests and flightless young were seen in February 2002 by E. Waser (inf. A. Studer).

A long-term ringing program for Lesser Flamingos has been started by Leicester University, U.K., The Wildfowl & Wetlands Trust, U.K. and the National Museums of Kenya, supported by The Earthwatch Institute, at Lake Bogoria National Reserve, Kenya, under the auspices of William Kimosop, Warden. The primary purposes of this program are to collect up-to-date biometrics on the species and to study their migratory patterns. To date (June 2001), 37 birds have had metal rings placed on their right legs and large orange PVC (Darvic) bands on their left legs, both above the tibia-tarsus joint (see [ringing information](#)). Inf. Brooks Childress, University of Leicester, Leicester, U.K. Email: brooks@leics.u-net.com.

Forty-nine Lesser Flamingos were PVC-banded in August at Lake Bogoria (codes AA-CU) during another occurrence of the cyclical epizootic which affects these birds in East Africa.

SOUTHERN AFRICA

ANGOLA

In Jan. 1999 (the IWC of Wetlands International) there were 359 Lesser Flamingos reported from the extreme SW of the country (from Simmons, R. *in* Dodman, T. & Diagana, C.H. 2003).

BOTSWANA

In sharp contrast to the previous wet season, rainfall in 2000-2001 was low. However, with water remaining in the pan from the previous season, Lesser Flamingos began to breed again in November 2000. Approximately 10,000-12,000 pairs of Lessers bred in the south of the pan, and their chicks had to contend with a dry pan for most of their adult-dependant lives. The rains arrived late, but in early March the chicks were saved from drought by an inundation of water which once more covered most of the pan. Most of the Lesser Flamingo chicks managed to fledge and join the adults on the feeding grounds. Some, however, perished on the dry pan in the early part of the season and fell prey to Lappet-faced Vultures. Following the inundation of the pans in March, some 500-1000 pairs of Greater flamingos also bred in the south. Their chances of successful breeding depend on how quickly the pans dry up and the possibility of further rainfall on Sua before the end of the season. Satellite transmitters were placed on 5 Lesser and 3 Greater Flamingos in July 2001 (inf. Graham McCulloch).

Six waterbird counts (the IWC of Wetlands International) were carried out in Botswana between July 1998 and January 2001. The numbers of flamingos censused are given below (from Tyler, S. *in* Dodman, T. & Diagana, C.H. 2003). The counts do not cover the flamingo breeding colonies in the south of Sua Pan in the Makgadikgadi system where there were tens of thousands of Lesser Flamingos in July 2000.

	July 1998	Jan. 1999	July 1999	Jan. 2000	July 2000	Jan. 2001
Greater Flamingo	119	1044	349	1287	7291	2327
Lesser Flamingo	11	84	64	166	2145	2303

MALAWI

Six waterbird counts (the IWC of Wetlands International) were carried out between July 1998 and January 2001. The numbers of flamingos censused are given below (from Haugaard, J. *in* Dodman, T. & Diagana, C.H. 2003).

	July 1998	Jan. 1999	July 1999	Jan. 2000	July 2000	Jan. 2001
Greater Flamingo	42	48	31	-	-	-
Lesser Flamingo	-	13	11	1	1	1

NAMIBIA

Five waterbird counts (the IWC of Wetlands International) were carried out between July 1998 and January 2001. The numbers of flamingos censused are given below (from Tyler, S. *in* Dodman, T. & Diagana, C.H. 2003).

	July 1998	Jan. 1999	Jan. 2000	July 2000	Jan.2001
Greater Flamingo	41,963	24,946	304	11,313	40,397
Lesser Flamingo	27,294	9296	4514	8378	15,137

SOUTH AFRICA

Six waterbird counts (the IWC of Wetlands International) were carried out between July 1998 and January 2001 on over 200 wetlands. The numbers of flamingos censused are given below (from Harebottle, D. *in* Dodman, T. & Diagana, C.H. 2003).

	July 1998	Jan. 1999	July 1999	Jan. 2000	July 2000	Jan. 2001
Greater Flamingo	7183	9833	14,232	5340	2156	20,937
Lesser Flamingo	1960	8467	36,418	3617	2402	4665

ZAMBIA

In Jan. 2001, 6 Greater Flamingos were censused during the IWC of Wetlands International (from Van Daele, P. *in* Dodman, T. & Diagana, C.H. 2003).

WEST AFRICA

NIGER

During the IWC (Wetland International), 26 and 32 Greater Flamingos were counted in January 2000 and January 2001, respectively (from Issa, A. M. et al. *in* Dodman, T. & Diagana, C.H. 2003).

NIGERIA

In Jan 1999, two Lesser Flamingos and 253 Flamingos *spp* were censused during the IWC of Wetlands International (from Dutse, I. S. et al. *in* Dodman, T. & Diagana, C.H. 2003)

GUINEA

Three waterbird counts (the IWC of Wetlands International) were carried out in Jan. 1999, Jan. 2000 and Dec. 2000. The numbers of flamingos censused are given below (from Trolliet, B., Fouquet, M. & Keita, N. *in* Dodman, T. & Diagana, C.H. 2003).

	Jan. 1999	Jan. 2000	Dec. 2000
Greater Flamingo	100	125	600
Lesser Flamingo	1600	1300	10,900

Flamingos occur mainly on the mudflats at Khonibenki and Yongo Sale

GUINEA-BISSAU

During the IWC (Wetlands International) 51, 98 and 902 Greater Flamingos were counted in Jan. 1999, Jan. 2000 and Jan. 2001 respectively (from Sa, J., et al. *in* Dodman, T. & Diagana, C.H. 2003).

SENEGAL

Three waterbird counts (the IWC of Wetlands International) were carried out in Jan. 1999, Jan. 2000 and Jan. 2001. The numbers of flamingos censused are given below (from Diouf, S. et al. *in* Dodman, T. & Diagana, C.H. 2003).

	Jan. 1999	Jan. 2000	Jan. 2001
Greater Flamingo	17,564	30,336	21,435
Lesser Flamingo	1480	1922	228

MAURITANIA

Three waterbird counts (the IWC of Wetlands International) were carried out in Jan. 1999, Jan. 2000 and Jan. 2001. The numbers of flamingos censused are given below (from Ould Messaoud, B. et al. *in* Dodman, T. & Diagana, C.H. 2003).

	Jan. 1999	Jan. 2000	Jan. 2001
Greater Flamingo	17,165	72,408	60,467
Lesser Flamingo	437	2260	862

On the Banc d'Arguin, flamingos were censused by B. Lamarche during 5 aerial surveys of the Park in 2001. Jan. 8: 14,457, Jan. 26: 16,600, Feb. 1: 16,200, March 15: 16,000 May 18: 12,800 (inf. B. Lamarche). On Jan. 15, 200 Greater Flamingos were at Aftout and 4,100 at Diawling.

Breeding started at **Kiaone Ouest** about March 7. On March 15, there were 6,000 birds on top of this island, and 3,000 on the scree at the usual site. On May 18, there were 2,000 chicks on top of the island, and 1000 on the scree and the beach below. On July 2, there were 5,500 chicks on top of Kiaone Ouest and 1,500 on the scree (inf. B. Lamarche). The total count of Greater Flamingos on the Banc d'Arguin on 2 July was 22,000 (not including the young of the year). To summarise: c.9,000 pairs of flamingos bred on Grande Kiaone in 2001 and raised c.7,000 chicks. Egg-laying started in the first ten days of March.

Ilot des Flamants: birds began colonising the island but then abandoned the attempt, because the island is too low and flooded during high spring tides.

WESTERN MEDITERRANEAN

SPAIN

Laguna Larga de Villacañas (Toledo). A maximum of 1120 flamingos occurred at this wetland on 2 July 2000, and 19 nests were built, counted on 4 September when abandoned (D.F. Perea, F.J. Ruiz-Tapiador & J. Ruiz-Tapiador *in* de la Puente, J & Lorenzo J.A. 2001).

Doñana: Flamingos started to occupy a small island in **Veta la Palma** at the beginning of April with up to 500 birds by mid-April, some of them sitting on the ground, but no nests or eggs were seen. On 17 April, flamingos began to settle at the site where they bred in the Marismas in recent years, at **Veta Castellana**, within the N.P., but the birds were disturbed by wild boars. Some egg shells were seen (F.I.) and although the birds returned after the disturbance this site was also eventually abandoned. A later breeding attempt took place at **Vetones del Burro** in the Marismas de Hinojos where 2,539 nests were built. This colony was surrounded by *Scirpus lacustris* and there were many Purple Gallinules, herons, Whiskered Terns etc in the area. Birds marked at Fuente de Piedra and in the Camargue were identified as breeding. Unfortunately, however, this site also dried. Attempts were made to move the 900 chicks closer to water (on 27 June), but by 31 July 500 had died, and only 290 of them finally survived to fledging (inf. J. Amat, F. Ibañez, M. Mañez).

Flamingos colonised the breeding island at **Fuente de Piedra** on 25 February 2001. Although the level of this lagoon was not exceptionally high in spring, elsewhere in Andalucía heavy winter rains fully flooded wetlands throughout the region, providing good feeding conditions for flamingos. The first chick was seen on 27 March, confirming that egg-laying began rather early, on 26 February. A total of 17,700 pairs of flamingos bred, and raised 11,911 chicks (inf. M. Rendón-Martos, J.M. Ramírez, A. Garrido (C.M.A. Andalucía), J. Amat. On 20 July, 1000 chicks were captured and ringed (see [ringing information](#)).

Six of the 8 flamingos marked with transmitters in July 2000, and also PVC-banded, were resighted at the lagoon in April 2001. A further 10 birds were captured in early July and equipped with conventional radio transmitters for tracking movements in Andalucía (inf. J. Amat).

Laguna Petrola: No breeding at this site in 2001, probably because of the low water level. (inf. Marcial Yuste Blasco, M. Rendón-Martos).

Alicante: Over 400 pairs of flamingos bred in the Salinas de Bras del Port at Santa Pola in 2001, probably for the second year in succession. Most pairs hatched a chick, but there was heavy predation by Yellow-legged Gulls and it is not known how many chicks eventually fledged (inf. M. Cuervo - Director of Salinas, M. Rendón-Martos, T. Salathé).

Ebro delta: breeding was attempted in the Salinas at Punta de la Banya, with c.1,500 pairs at the beginning of April. In the second week of April most birds abandoned the colony because of the low water level. An aerial survey was made on 4 May, when there were only c. 250 birds in the colony. Chicks were first seen on 7 May, and on 19 May there were an estimated 70-80 in the creche, but only 38 of these fledged. (inf. Jordi Roi, Francesc Vidal Esquerré, Ferran Blanch (Parc Natural del Delta de l'Ebre), M. Rendón-Martos).

FRANCE

The IWC revealed a total of 31,822 flamingos wintering in January 2001 along the Mediterranean coast of France, from the Salins d'Hyères (Var) west to the lagoons of Roussillon (Pyr.Orientales), and a further 19 birds in Corsica. These counts are summarised below.

Region	Number of flamingos	Observer(s)
Hyères (Var)	579	CEEP ⁽¹⁾
Berre (Bouches-du-Rhône)	881	CEEP ⁽¹⁾
Plan du Bourg	1039	CEEP ⁽¹⁾ , A. Tamisier CNRS
Ile de Camargue	8097	Tour du Valat, A. Tamisier CNRS
Petite Camargue (B. du Rh.-Gard)	7495	Tour du Valat, A. Tamisier CNRS
Languedoc (Hérault)	10050	GRIVE ⁽²⁾
Languedoc-Roussillon (Aude-Pyr.Or)	3681	LPO ⁽³⁾ Aude
Corsica	19	J.-P. Canterra
Total	31841	

- (1) Centre d'Etudes des Ecosystèmes de Provence
- (2) Groupe de Recherches et d'Informations sur les Vertébrés
- (3) Ligue pour la Protection des Oiseaux

Following a very mild and wet winter, flamingos began breeding on Flamingo Island at the Etang du Fangassier at the end of March. The first chick was seen on 27 April, confirming egg-laying starting on 29 March and continuing through to c.25 May. An aerial photograph of 7 May revealed 9,706 pairs on the island. Later breeders on the dyke were photographed on 23 May, revealing a further 2,443 pairs. Many of the nests on the island, freed by the chicks of earlier breeders when they moved into the creche, were reoccupied by later breeders. Observations of banded parents with chicks showed that 32% of the chicks hatched from clutches laid after 10 May. It is thought that the true number of nesting pairs in the Camargue in 2001, was on the order of 15,300.

The mid-May census in S. France revealed a total of c.50,000 Greater Flamingos.

The colony was wardened throughout the incubation period by the PNRC, LPO, and WWF in partnership with Les Salins and Tour du Valat. Regrettably, on the night of 10 May vandals burned the warden's house, fortunately unoccupied, on the shore of the Fangassier lagoon. This Camargue-style building was a gift from the "Société Carrefour" to the WWF in 1991, and is managed by the PNRC. It

had been much appreciated as a visitor centre and house for the warden and his volunteer assistants over the past decade.

About 7,500 chicks fledged in 2001. On 18 July, 800 of these were captured; they were banded (see [ringing information](#)) measured, weighed and blood samples were taken for sexing and for studies of West Nile disease.

ITALY

The IWC national total for January 2001 amounted to 24,200 flamingos (N. Baccetti), and represents by far the highest midwinter count on record (cf Baccetti *et al.* 2002 for a 10-year overview). One month earlier, on 2-3 December 2000, the number recorded was even greater (25,791 birds counted by A. Atzeni, N. Baccetti, L. Melega). During the 2001 breeding season, only the Comacchio colony was really successful.

Sardinia: flamingos began visiting the breeding island at **Molentargius-Quartu** at the end of March and the first eggs were seen on 18 April 2001. Regrettably, however, in mid-May dogs entered the colony and 2,392 eggs were lost, putting an end to this breeding attempt (inf. A. Atzeni, S. Nissardi, V. Tiana).

In June, following the Molentargius failure, some tens of pairs of flamingos built nests at **s'Ena Arrubia**, and another c.10 pairs from a flock of c.1500 also attempted to breed at **Pauli e'Sali** (at least one egg was laid at this latter site on 10 July), on the Gulf of Oristano. Both of these late breeding attempts failed because the breeding sites were accessible to terrestrial predators (inf. S. Nissardi, N. Baccetti).

Comacchio: 186 sitting birds were counted on 5 April, and the first 2–3 eggs could be seen on 10 April 2001. On 11 May there were 70 chicks c. 5-days old and 123 sitting adults (eggs or hatchlings). On 14 May there were 40-50 chicks in a creche in the water, 30-40 on land and some adults still incubating. During a visit to the nest site in mid-July 332 nests could be counted. Many mounds had been trampled almost flat and it is estimated that a total of c. 400 pairs of flamingos bred at this site in 2001 and successfully raised 310-320 young (inf. G. Arveda, N. Baccetti)

On 10 July, 116 of the chicks were captured and banded, while most of the others were already capable of flight (see [ringing information](#)).

Margherita di Savoia: no precise details but c.1300 flamingos were present during the Spring-Summer, of which c.150 pairs attempted breeding in repeated bouts (asynchronous breeding). A few of these attempts in early July (the water level was previously too high for breeding) were perhaps successful, with 9 chicks hatching c. 1 August, of which 8 survived to at least the end of the month (inf. G. Albanese, N. Baccetti).

Orbetello: no breeding in 2001, but some tens of nest mounds were reported from the nearby **Diaccia Botrona** marshes. However, this breeding attempt was not successful (inf. N. Baccetti).

Sicily: Flamingos built about 50 nests in Spring 2000, and at least one egg was laid at **Pantano di Vendicari**, near Siracusa, but the nests were abandoned when the wetland dried out (inf. R. Ientile, N. Baccetti).

TUNISIA

This was again a year of low rainfall in the centre and south of Tunisia. At the end of April 2001, both Sebkhet Sidi Mansour and a part of Chott El Djerid (both former flamingo breeding sites) were completely dry. In the Salinas of Thyna, where every year flamingos begin to build nests which they

later abandon, there were 6-7,000 flamingos in mid-June (inf. Habib Dlensi, A.A.O. Sfax, Hichem Azafzaf).

EASTERN MEDITERRANEAN

GREECE

Lesbos: During the winter of 2000-2001, flamingos again occurred at the two saltpans on the island, with a maximum of 1150 birds at Alykes Kalloni on 9 Feb. 2001.

Lake Koronia (Macedonia): Thousands of flamingos were present in May and June with c. 4,500 counted on the west shore and others in the south on 14 June 2001 (inf. Pier Luigi Beraudo).

CYPRUS

The IWC mid-January survey revealed 2,090 flamingos at Akrotiri on 20 Jan. 2001 (inf. Edel McGurk COS57), 1000 at Larnaca and 150 at Paralimni (inf. John Sanders).

Thousands of flamingos stayed at Akrotiri Salt Lake until the end of March, and Larnaca Salt Lake maintained a high water level throughout the summer, which is quite exceptional. Just as exceptional was the fact that some flamingos possibly bred at Larnaca. During a visit on 19 August, MC, M. Lambertini and T. Parker saw 4 juveniles which did not fly when the adults took wing, and they believe they were raised at the lake. They discovered c. 40 nests (not checked for egg-shells). This would be the first breeding of flamingos ever reported on Cyprus (inf. Melis Charalambides).

TURKEY

Tuz Gölü Basin declared an SPA. In November 2000, the Turkish Ministry of Environment declared a new Special Protected Area, the Tuz Gölü Basin. This region, which covers 650,000 ha, is easily the largest protected area in Turkey, and comprises a range of open-country habitats, as well as five Important Bird Areas (IBA's). The boundaries of the SPA were designed in accordance with a Dogal Hayati Koruma Dernegi (DHKD) survey performed in spring/summer 1999. The area supports important populations of several species, including the Greater Flamingos (extract from BirdLife in Europe 6 (1): 5).

Camalti Tuzlazi. A breeding attempt failed due to fox depredation. A total of 958 nests were counted (inf Mehmet Sıkı & Özge Balkiz).

KAZAKHSTAN

Lake Tengiz. Flamingos are reported to have bred at this site in 2001 (inf. Tour du Valat mission report Johnson & Van der Ven)

ISRAEL

380 Greater Flamingos were observed at the northern saltpans of Eilat on 29 January 2001 (inf. Nir Sapir, Ben-Gurion Univ.of the Negev *via J. Shergalin*).

ASIA

IRAN

Lake Bakhtegan: The attempt to save some thousands of Greater Flamingo chicks from starvation reported in the 2000 Annual Report (Newsletter 10), had to be called off because of the swampiness of the part of the lagoon where the chicks were located. It is not known if any birds survived.

Lake Uromiyeh: Artemia-fishing activities, which were started in 2000 in this National Park, were resumed in Spring 2001. 24,000 flamingos were censused on L.Uromiyeh in 2001 but the birds are reported not to have bred here for the second year in succession (inf. M.Moser).

INDIA

Greater Flamingos have recently been observed feeding in rice-fields in Rajasthan shortly after sowing. Birds visit the fields in the evening and stay overnight, just as reported in France since 1978 and Spain since the mid 1990s, and they feed on the grain itself. 2000 was a particularly bad year for the farmers in Rajasthan who reported crop losses of up to 10%. Inf. Prof. Dr. S.P. Bhatnagar, Wildlife Conservation Society of India - Flamingo Newsletter vol. 2, No 5, May 2001).

SUMMARY OF THE BREEDING OF THE GREATER FLAMINGO IN 2001

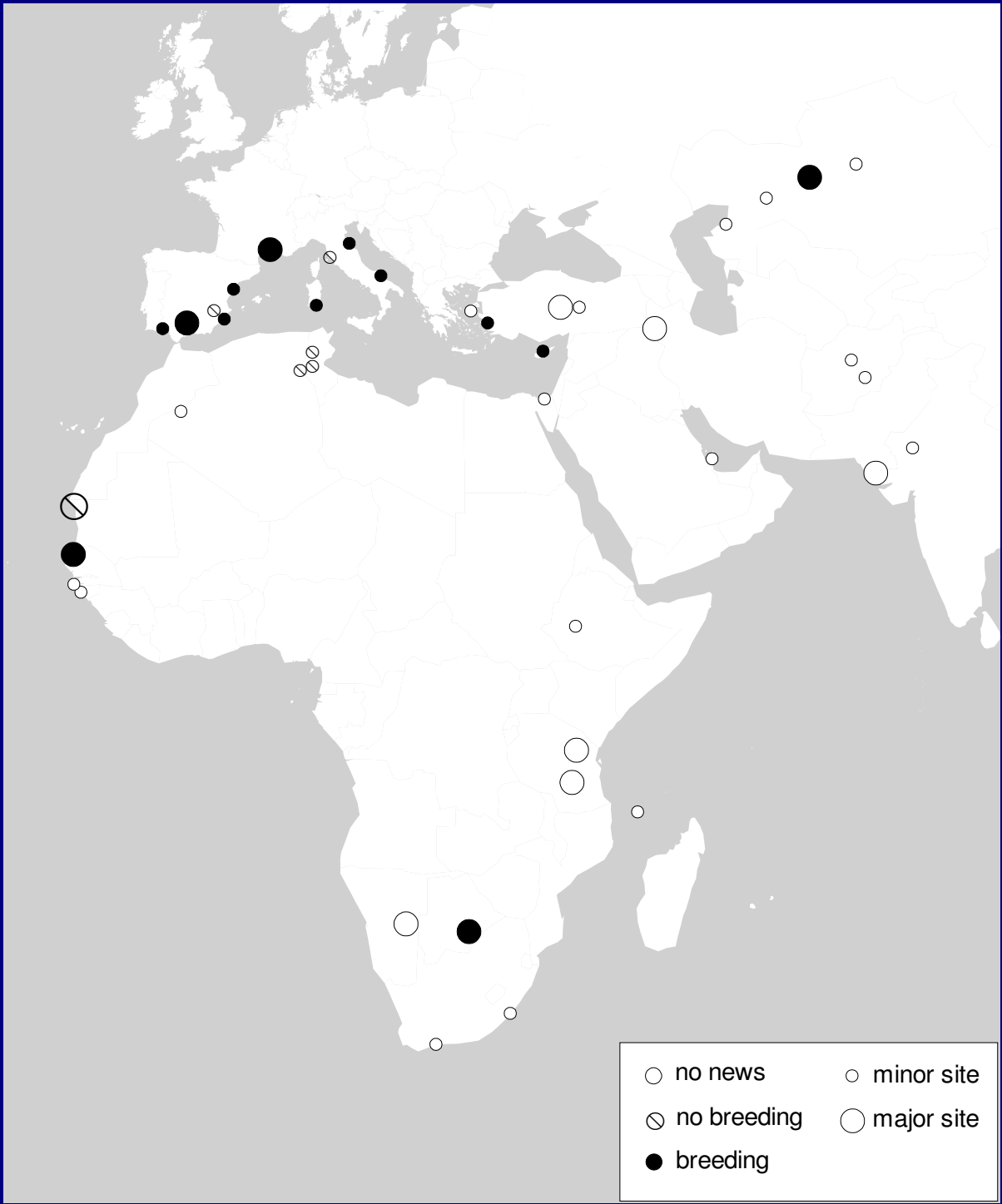


Figure 2. The map above shows all sites at which the Greater Flamingo has been reported breeding since 1940. The larger circles are the major sites, the smaller ones those colonised less frequently and/or by fewer birds.

FERAL FLAMINGOS

GERMANY-HOLLAND

A mixed group of Greater, Caribbean and Chilean Flamingos, probably escaped from captivity, has bred successfully again at Zwillbrocker Venn in Germany for the first time since 1995. Six chicks were raised (inf. Joop Treep, [see ringing information](#)).

New World

Compiled by Felicity Arengo & Alan Johnson

MEXICO

Caribbean Flamingos bred in 2001 at Ria Lagartos, Yucatan. However, almost 8000 eggs were lost through flooding of the nesting area, and only 183 fledglings were raised. The first of these hatched on 2 June, and all were caught and banded on August 11. Blood samples were taken from all, and crop samples from 12 chicks. (inf. Rodrigo Migoya, Chris Brown).

CARIBBEAN

A team of experts from Venezuela and Mexico went to Cuba in 2001, and trained local biologists in trapping and banding techniques so that Cuba can initiate a banding and movement monitoring program.

GALAPAGOS

As part of the monitoring program for threatened bird species, the Galapagos National Park and the Charles Darwin Research Station carry out annual censuses of Caribbean Flamingos. In 2000, a simultaneous census was conducted on 15 January, at 15 of the most important lagoons on 5 different islands. A total of 394 adults was counted, 17 juveniles, 24 of unknown age, and 0 chicks. Compared to numbers registered in 1999 (403 total) and 1998 (423 total), the flamingo population in Galapagos appears to be stable. (inf. Hernán Vargas)

VENEZUELA

In 2000, 1,900 Caribbean Flamingo chicks hatched at the Los Olivitos Refuge colony on the Caribbean coast of Venezuela, and 131 were banded. In 2001, 2,700 chicks hatched and 120 were banded. Thanks to the work being carried out since 1995 in the framework of the "Integrated Management and Conservation of Wetlands in Venezuela", coordinated by the Ministry of Environment and Natural Resources (MARN), a new reserve, the Reserva de Fauna Rio Tucurera, was declared in 2001 that will officially protect flamingo habitat. (inf. Frank Espinoza).

SOUTHERN CONE

REGIONAL

The GCFA (Grupo para la Conservación de Flamencos Altoandinos), composed of conservationists from Peru, Bolivia, Argentina and Chile, has compiled a 4-year database for more than 220 lakes in the high Andes. This data base includes geographic information, biotic and abiotic characteristics, and flamingo population estimates. Maps suitable for publication have also been produced. From 2-6 September 2001, the GCFA held a workshop in Payogasta, Argentina, on Strategic Planning for Protected Areas. The workshop was sponsored by the Ramsar Convention and Wetlands for the Future. During this meeting, Peru was included in the trinational agreement already in place between Bolivia, Chile and Argentina, for the collaborative conservation of wetlands in the high Andes. The four member countries are now reviewing an agreement for the conservation of the three flamingo species.

ARGENTINA

A new park is being proposed in Catamarca Province that will officially protect 2,000,000 ha of habitat in the high Andes, including several lakes that are important for flamingos. The protected area

is a combination of National Park, National Monument, Provincial Park, and other reserve categories. The new law declaring the park has been written but needs to be ratified. The proposal was developed and presented thanks to efforts of the GCFA focal points in Argentina, based on over 4 years of fieldwork and research. (inf. GCFA)

Caziani, Boyle, and Whaltermire have produced a habitat classification for wetlands in the high Andes based on LANDSAT TM imagery. A paper is in revision in *Wetland Ecology and Management* and maps will be posted on a website.

PERU

In September 2001, Asociacion Peru Verde organized the first workshop on the Conservation of Flamingos in the High Andes. Thirty people attended, including biologists, protected areas staff, students, etc. Conclusions and recommendations from the workshop included the need to investigate conservation status of different flamingo habitats, comparative studies among the 3 species, and the need to strengthen protection of wetlands, especially in southern Peru where mining projects are threatening flamingo habitat. (inf. David Ricalde)

CHILE

As part of a project on incubation and artificial feeding of flamingo chicks conducted by Minera Escondida, 7 chicks were hand-reared and released in Salar de Atacama. (inf. Mario Parada)

Flamingo marking schemes 2001

also see

www.cr-birdring.be

http://www.tourduvalat.org/news_694.htm

Old World

LESSER FLAMINGOS

KENYA

Locality: At Lake Bogoria National Reserve 37 birds have had metal rings placed on their right legs and large orange Darvic (PVC) bands on their left legs, both above the tibia-tarsus joint. Observations to be sent to: Ornithology Department, NMK, Box 40658, Nairobi, Kenya; kbirds@africaonline.co.ke. If you find a dead Lesser Flamingo with one of these rings, please send the Department the ring number and finding information."Comments and questions to: Dr. Brooks Childress, University of Leicester, Leicester, UK; brooks@leics.u-net.com.

A further 49 were marked in August but with coded bands AA to CU.

GREATER FLAMINGOS

ITALY

Locality: Comacchio salt pans (Emilia Romagna) - 116 chicks were marked on the left tibia with blue PVC bands engraved with codes (white letters) from IJA to IXK, and with a metal BOLOGNA ring on the right tibia, on 10 July 2001 (inf. N. Baccetti).

FRANCE

Locality: Etang du Fangassier, Camargue, Bouches-du-Rhône - 800 chicks were marked on the left tibia with PARIS MUSEUM stainless steel rings (codes X 1120 – X 1919), and on the right tibia with yellow PVC leg-bands engraved with four-letter codes commencing with DV--, DX--, DZ-- or FA--, on 18 July 2001 (inf. Station Biologique, La Tour du Valat).

SPAIN

Locality: Fuente de Piedra Reserve, Malaga - 1000 chicks were marked on the right tibia with ICONA metal rings, and on the left tibia with white PVC leg-bands engraved with four digits. "0" or "1", followed by a black line engraved completely around the band, followed by 3-letter codes: from 0/XAA to 0/ZZZ, and from 1/AAA to 1/BJV, on 21 July 2001 (inf. M. Rendón Martos (C.M.A. Andalucía) and J.J. Chans (E.B.D.).

FERAL FLAMINGOS

GERMANY

Locality: Zwillbrocker Venn. Six flamingo chicks were marked on the right tibia with a red PVC band and on the left tibia with a Vogelwarte Hiddensee ring on 20 July 2001. The PVC bands coded ZV09, ZV10, ZV11 and ZV13 were placed on **Chilean Flamingos**, ZV12 on a **Greater Flamingo** and ZV17 on a hybrid **Caribbean x Greater Flamingo**.

New World

MEXICO

Locality: Ria Lagartos. Yucatan - 183 chicks were marked on the right tibia with yellow PVC leg-bands engraved (in black) with a 4-letter code beginning with HF--, HX-- or HZ--, on 11 August 2002 (inf. Rodrigo Migoya).

VENEZUELA

Locality: Refugio Los Olivitos - 120 chicks were banded with white leg-bands engraved (in black) with a 3-letter code (inf. Frank Espinoza). A second metal band carries the inscription Avisar MARN Apdo. 184 Maracay, Venezuela.

Some band recoveries and resightings

Caribbean Flamingo

A single adult Caribbean Flamingo has been present on the Great Salt Pond in St.Kitts, Lesser Antilles, West Indies since at least early 2001 according to the St.Christopher Heritage Society. It was seen again on June 27 2002. It is banded only on the right tibia with a greenish metallic (?) band. The band has black numbering with two numerals: '98' (the ring is bordered top and bottom with a thin black line. The bird's origins are unknown but may be an escapee from the St. Kitts zoo (Reported by Edward Massiah).

A Caribbean Flamingo banded as a chick in August 2000 at the Rio Lagartos colony, Yucatan, Mexico (code DFJV) was observed (and photographed) in the Everglades National Park, Florida, USA in October 2002 (inf. Roy Wood- Everglades National Park, Rodrigo Migoya.).

Flamingos and the West Nile virus

In the autumn of 2000, an outbreak of West Nile virus occurred among the horses of the Camargue. This illness is caused by an arbovirus, genus Flavivirus. The virus, which affects both horses and humans, is transmitted by mosquitoes.

Birds are the vectors of this disease, and although no unusual deaths of wild birds have been recorded in the Camargue, a preliminary exploration has begun into their possible infection. In the summer of 2001, during the annual ringing operation, serological samples were taken from 108 juvenile Greater Flamingos. These were analysed by the Institut Pasteur in Paris, and were all found to be negative (inf. Michel Gauthier-Clerc, Station Biologique, La Tour du Valat, Le Sambuc, 13200 ARLES, France)

Latest News

News items referred to below will be reported in the 2002 Annual report.

Camargue (France): The salt company 'Les Salins', owners of the salt pans at Salin de Giraud and Aigues-Mortes, have refused to allow researchers from the Tour du Valat into the salt pans. After 35 years of close partnership between the two organisations, this decision by the general director is surprising and has not been clearly explained. This has meant that no observations could be made in 2002 of the flamingos breeding at the Etang du Fangassier, for the first time since 1983, and none of the chicks fledged could be banded, bringing to a halt a programme which began just 25 years ago (Alan Johnson).

Switzerland: Flamingo code DCJT was one of 6 juvenile Greater Flamingos to visit Switzerland in 1998. After a brief stop on the Lake of Geneva the flock moved the following day to Lake Neuchâtel where the birds stayed from September to early November. This is 500 km to the north of the Mediterranean coast, the species' normal range, and the first resighting in the country of a wild, banded flamingo. Quite surprisingly, the banded individual returned to Lake of Neuchâtel, this time alone, in October 2001, and has again returned to the lake in September-October 2002, once more alone. The bird presumably returns to the Mediterranean region where it has only been resighted once following its first venture to the north (D. Landenbergue, A. Johnson).

Also in Switzerland: the two veteran Greater Flamingos in the Basel Zoo were still alive and well in 2002, aged at least 64 years. These birds arrived at the zoo in either 1932 or 1938, and were in adult plumage, meaning that they are probably at least 68 years old and possibly 74 years old! (A. Studer-Thiersch).

Radio and satellite tracking of flamingos: Flamingo movements are presently being tracked in Europe and Africa by satellite and radio telemetry. Graham McCulloch is recording the movements in southern Africa of 3 Lesser and 2 Greater Flamingos fitted with satellite transmitters on the Makgadikgadi Pans, **Botswana** in 2001. Neil and Liz Baker fitted 3 Greater Flamingos with satellite transmitters at two localities in Northern **Tanzania** in 2002 and an international team headed by Brooks Childress has equipped 4 Lesser Flamingos with satellite transmitters at Lake Bogoria, **Kenya**, in 2002. Following on from his studies of the movements of Greater Flamingos from the Fuente de Piedra lagoon, **Spain**, begun in 2000, Juan Amat and colleagues have marked 5 more birds in June 2002 with radio conventional transmitters for tracking movements within the country.

Waterbird Population Estimates: The 3rd edition of this Wetlands International publication appeared in autumn 2002 (Wetlands International 2002. Global Series 12). The FSG provided data calling for some changes in the numbers of flamingos from previous estimates: the world population of **Greater Flamingos** has been revised down from 730,000 to 530-552,000 birds in the light of improved knowledge rather than a decrease in numbers. In the Western Mediterranean the species has increased from 80,000 to 100,000 birds. **Caribbean Flamingo** numbers have more than doubled from a previous rather vague estimate of a maximum of 150,000 birds to a present estimate of 324,000, this increase being due to an increase in the numbers of birds, particularly in Cuba. **Lesser Flamingo** numbers are notoriously difficult to estimate and the most recent data refer to a world population in the order of 2,220,000 - 4,230,000 birds, less than previously reported (around 5,000,000 birds)! In South America, **Chilean Flamingo** numbers have been revised down from 500,000 to 200,000 birds, the **Andean** from <50,000 to a more precise figure of 34,000 and **James's** or **Puna Flamingo** from 50,000 to 64,000 birds.

Breeding of Greater Flamingo in Abu Dhabi, UAE.

Abdullhakim M. Abdi & Salim Javed

Terrestrial Environmental Research Center, Environmental Research and Wildlife Development Agency, PO Box 45553, Abu Dhabi, United Arab Emirates

For the first time in over 75 years, Greater Flamingos (*Phoenicopterus ruber roseus*) bred in 1998 in Abu Dhabi, United Arab Emirates. The last time the species bred on the Arabian Peninsula was in Kuwait in 1922 (Ticehurst 1926).

On 7 June 1993, Aspinall & Hellyer (1999) observed 571 flamingos and 15 nests with 6 incubating birds and 2 eggs at Al Wathba Wetland Reserve (then called Al Ghar Lake) lying 40 km SE of the City of Abu Dhabi in Abu Dhabi Emirate. By 10 June 1993, there were 22 completed nests and on 6 July there were 4 newly hatched chicks. However, by 9 July the colony had deserted and an inspection on 11 July revealed that all eggs except one had been removed. Also found was a dead chick in the middle of the nesting area containing 79 nests, some complete and some partially complete.

Ever since that initial attempt in 1993, flocks of flamingos have occurred at Al Wathba WR throughout the year, with numbers averaging over 200 birds, and the largest flock comprising over 1500 birds.

On 27 Nov 1998, there were over 1500 birds and 89 nests, and by 11 Jan 1999 at least 12 contained eggs. Two days later, 44 nests were active. Unfortunately, an unplanned flow of treated wastewater entered the lake on 17 Jan which, together with strong W winds, caused many nests to be destroyed. However, on 10 Feb., 10 chicks were observed in a creche and these fledged in April, resulting in the first recorded successful breeding of Greater Flamingo in the Arabian peninsula in 75 years.

Al Wathba WR is managed by the Environmental Research and Wildlife Development Agency (ERWDA) of Abu Dhabi. The wetland itself is man-made, albeit not intentionally, and lies adjacent to the main sewage treatment plant for the City of Abu Dhabi, the Mafraq Water Treatment Plant operated by the Abu Dhabi Municipality. This plant collaborates in the management of the reserve by supplying both salt water and freshwater to maintain water levels in the wetland. The wetland environments include a range of water salinity from fresh to hyper-saline and associated fauna and flora. Recognizing the importance of this site for breeding flamingos and as a nesting, roosting and foraging area for other species, ERWDA began monitoring the functional nature of the lake and its environs. With these studies and the resulting effective management, ERWDA hopes to encourage future breeding by flamingos and maintain and increase the diversity of living organisms that are drawn to this unique area in the deserts of the Arabian Peninsula.

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An overview of the Conservation of the Caribbean Flamingos *Phoenicopterus ruber ruber* in Mexico.

Christopher Brown¹ & Jeanette Boylan²

¹Curator of Birds, ²Bird Research Technician,
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The only flamingo that occurs naturally in North America is the Caribbean flamingo. Its current range includes sites throughout the Caribbean, Mexico's Yucatan Peninsula, and small populations in the Galapagos and Florida (del Hoyo, et al., 1992). Non-breeding flocks of American flamingos commonly occurred in Florida before 1900 (Allen, 1956). Even though American flamingos are locally widespread in coastal areas they are highly vulnerable to disturbance. Currently only four primary areas for nesting are used (Allen, 1956; del Hoyo, et al., 1992; Baldassarre and Arengo, 2000) and several historical nesting sites have been abandoned.

The Caribbean flamingo is not endangered, but aspects of its biology make it vulnerable and a candidate for conservation measures. This vulnerability is acknowledged by its 'threatened' designation by the Mexican Government (INE-SEMARNAP, 1999), and its listing in Appendix II by the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). Its range has declined significantly since the 1800s, and currently there are only four major breeding areas; The Bahamas, Mexico, Cuba, and Bonaire (del Hoyo, et al, 1992; Ogilvie and Ogilvie, 1986). Flamingos have abandoned several feeding and breeding sites due to disturbance (Allen, 1956; Baldassarre and Arengo, 2000) and locating new sites is becoming increasingly difficult due to human encroachment.

Disturbance at the primary breeding site in Mexico, Reserva de la Biosfera Ria Lagartos, has resulted in a high variability in reproductive success from year to year. The site has been monitored since the 1970s (Baldassarre and Arengo, 2000), protected by the Mexican Government since 1979, and most recently designated as a globally important RAMSAR Site (INE-SEMARNAP, 1999). In 1988, after hurricane Gilbert crossed the Yucatan Peninsula and destroyed the historical nest site at Ria Lagartos, flamingos were documented through 1996 nesting in small colonies in non-traditional sites on the west coast. These occurrences were short-lived with little reported reproduction. In 1998, breeding did not occur due to the widespread burning of cropland (Migoya von Bertrab, pers. com.). Depredation by jaguars or flooding has also resulted in little or no reproduction in 1982, 1983, 1992, 2000, 2001, and 2002 (Baldassarre and Arengo, 2000; Migoya von Bertrab, pers. com.). Hurricanes and flooding appear to be important factors in whether or not the flamingos have success during the nesting season. Between the years 1975 and 2001, the successful nesting percentage at the site was 46% (56,712 chicks hatched and fledged out of 119,797 eggs laid). The principal cause of egg loss was flooding of the nest site (Migoya von Bertrab, pers. com.). Sustained research may confirm whether continued reductions in reproductive success due to disturbances at nesting sites will be disastrous for the species in the future.

Much research has been conducted at other sites within the Yucatan Peninsula, but has focused on identifying and monitoring where Caribbean flamingos occur, so that breeding sites and feeding sites are well-known (Baldassarre and Arengo, 2000). Recent research concentrated on how aspects of the birds' feeding ecology related to their conservation (Baldassarre and Arengo, 2000). A study on basic life history parameters (e.g. survival, longevity, movements, age at first breeding, breeding frequency) would provide information necessary for developing sound conservation strategies for this population and for the entire species.

The activities in Mexico are coordinated by Rodrigo Migoya von Bertrab, Ph.D., Director of Niños y Crias, and field manager Melgar Tabasco. Niños y Crias is an NGO dedicated to conservation of the Caribbean flamingos and their habitats, education of children about their native wildlife and habitat preservation, and pollution control through recycling. The Dallas Zoo has joined Niños y Crias to

promote and assist in the conservation and research of the Caribbean flamingo in Mexico. This is one of the goals of the strategic plan which Niños y Crias is developing. To achieve this particular goal a three-part strategy is being implemented. First, to reduce the impact of predators and flooding. Second, to increase public awareness through education. Third, to increase scientific knowledge about the natural history of the flamingo.

The staff of Ria Lagartos Reserve is dedicated to protecting the breeding colony from predators, such as jaguars and feral dogs, and flooding. In 2000, a jaguar repeatedly harassed the nesting colony, causing the abandonment of thousands of eggs. The staff rescued hundreds of eggs and successfully hand-raised over one hundred chicks. Each year since then, the staff has built a blind near the colony for 24-hour monitoring. The presence of the staff is enough to discourage predators. Flooding, however, is not so easily controlled. In an effort to prevent flooding, Niños y Crias is soliciting funding to restructure the nesting island, modeled after a similar project that is successful in the Camargue, France. All of these projects combined will reduce the negative impacts of predators and flooding.

The educational program is a joint effort between Niños y Crias, Ria Lagartos Reserve, the Dallas Zoo, and Xcaret. The program will be initiated in local schools to increase public awareness of flamingos, their conservation, and wetlands preservation. In cooperation with Niños y Crias and the staff of Ria Lagartos Reserve, the Dallas Zoo is completing a Spanish language children's activities book that will be distributed to students in the surrounding region to increase their awareness of the flamingos and the species' value as a natural resource. In 2001, a workshop for teachers of local schools to demonstrate the usefulness of the book was well received.

The research program is a collaborative effort of Niños y Crias, Reserva de la Biosfera Ria Lagartos, Dallas Zoo, University of North Texas, and the Fort Worth Zoo. Guidance from Alan Johnson, Ph.D., Coordinator of the Flamingo Specialist's Group, and Felicity Arengo, Ph.D., of the Wildlife Conservation Society, is most appreciated. The program's focus is on determining important natural history parameters. Researchers will band, weigh and measure approximately 500 juvenile flamingos annually. The gender of these birds will be determined by DNA analyses through the University of North Texas. Re-sightings will be used to determine many demographic parameters, such as age at first breeding, longevity, migration pathways and natal dispersal. Additional studies at the breeding colony will investigate individual behavior to determine incubation patterns, parental behavior, and gender-specific roles. In addition, investigations of nutrition aspects and hematological-related pathology are being conducted.

The final product of the research program will be a sub-population of individually identifiable flamingos with known birth dates and genders. Our goal is to band at least 10% of the Mexican population, or 2,800 individuals. This will allow various studies (e.g. dispersal, migration, longevity, immigration/emigration, sex differences, reproductive success/failure) that were previously impossible. The ultimate goal of the project is to determine important life-history parameters.

Sustained support from a variety of international agencies and institutions for the past three years has presented a solid foundation for continued structured research. Biologists and managers can then use what is learned to develop viable long-term conservation strategies for Caribbean flamingos in the future.

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Población de tres especies de flamencos en los lagos Poopó y Uru Uru, Oruro – Bolivia.

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Los colindantes lagos Poopó y Uru Uru se constituyen en el sitio de mayor concentración para tres especies de flamencos (*Phoenicoparrus jamesi*, *Phoenicoparrus andinus* y *Phoenicopterus chilensis*) en la estación invernal (mayo – agosto) para el Altiplano de Bolivia y probablemente también para toda la región altoandina de Sudamérica donde habitan.

Ambos lagos están ubicados en el departamento de Oruro (18° 21' – 19° 10' S y 66° 50' – 60°24' W) y pertenecen al sistema fluvio-lacustre del Altiplano boliviano. Se encuentran a una altura promedio de 3.686 msnm y en conjunto tienen una superficie media de 3.084 km² (ALT 1999), que varía en función de su recarga en el período de lluvias (diciembre – marzo). La profundidad de los lagos es variable y está comprendida entre los 0.5 y 2.0 m. La salinidad es alta (250 g/l) lo cual influye en gran manera a la distribución de la vegetación.

Los máximos conteos para *Phoenicopterus chilensis* son de 100.000 individuos en enero de 1972 y de 75.000 individuos en febrero de 1973 en el Lago Poopó y también se estimó 18.000 *Phoenicoparrus andinus* en el Lago Uru Uru en diciembre de 1972 (Kahl 1975, Ogilvie & Ogilvie 1986). Estimaciones similares para *P. chilensis* de 66.000 individuos en febrero de 1975 y de 100.000 flamencos en 1987 se reportan en Mar Chiquita, Córdoba - Argentina (Bucher 1992, Bucher *et al.* 2000).

En los años 1999, 2001 hasta el presente, en los Lagos Poopó y Uru Uru, un grupo de investigadores de Wildlife Conservation Society y el Museo Nacional de Historia Natural de La Paz, en coordinación con la Dirección General de Biodiversidad y el auspicio de la Convención sobre Humedales (Ramsar), vienen realizando un monitoreo sistemático de la abundancia de las aves acuáticas con énfasis en las tres especies de flamencos, en el marco del proyecto “Diagnóstico de la situación actual de los recursos naturales del Lago Poopó para su declaración como Sitio Ramsar”.

Como resultado de siete censos terrestres se contabilizó un total de 125.580 flamencos adultos de las tres especies, donde la especie más abundante es el flamenco austral (*Phoenicopterus chilensis*) con el 69 % del total de las tres especies, con registros que llegan hasta 18.809 individuos. El flamenco andino (*Phoenicoparrus andinus*) es la segunda especie más abundante con el 19% del total y con un registro extraordinario de 9829 individuos en verano (septiembre) de 2001, constituyéndose el registro actual más numeroso de esta especie en un solo humedal. El flamenco de James (*Phoenicoparrus jamesi*) es la especie menos abundante con un 12% del total de las tres especies de flamencos (Tabla 1). La presencia de juveniles es constante, con una media de 971 individuos por cada censo.

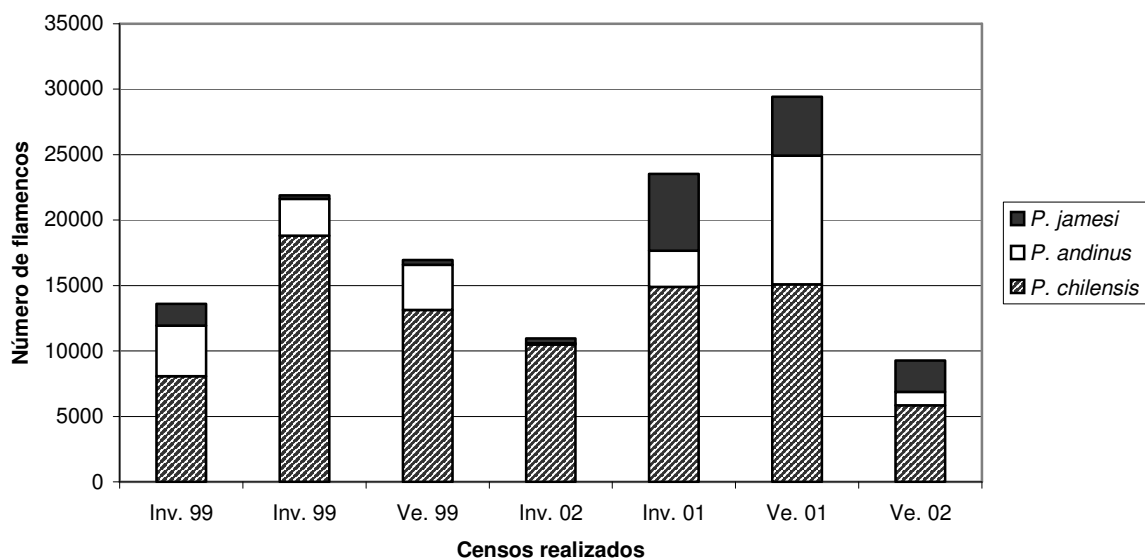


Tabla 1. Abundancia de tres especies de flamencos en los Lagos Poopó y Uru Uru, Altiplano central de Bolivia, 1999 al 2002.

No se evidencia mucha diferencia de la abundancia poblacional de flamencos entre las estaciones de invierno y verano como en otros humedales del suroeste del Altiplano de Bolivia, donde las fluctuaciones estacionales son bien acentuadas.

En julio de 1997 y 1999 se realizaron dos censos aéreos en el Lago Poopó y Uru Uru donde se registraron 120.000 y 75.000 individuos respectivamente del total de las tres especies de flamencos. Por lo tanto, se puede considerar que ambos cuerpos de agua son el hábitat con mayor concentración de flamencos, en la estación invernal, en el Altiplano de Bolivia y probablemente también lo sea a nivel regional.

Debido a la gran extensión de estos humedales, sin duda, los censos aéreos son los que reflejan las estimaciones más aproximadas, sin embargo, no permiten la distinción de especies, por lo cual se deben complementar con censos terrestres. El monitoreo a largo plazo de la abundancia de flamencos en estos humedales nos presentará una mejor interpretación de las poblaciones reales.

Aunque no se pudo cuantificar, se ha encontrado indicios de nidificación de *Phoenicopterus chilensis* y *Phoenicoparrus andinus* en el Lago Poopó. Los flamencos no están seriamente amenazados, sin embargo, en algunos sectores en ambos humedales se han detectado impactos como la contaminación producto de la actividad minera intensiva, petrolera y desechos urbanos provenientes de poblaciones aledañas.

Summary

Lakes Poopó and Uru Uru together represent one of the most important areas for the 3 species of South American flamingo wintering (May-Aug) in the Bolivian Altiplano and in the whole of the Andes. These lakes lie at an altitude of 3686 m asl and cover an area of 3084 km², the extent of water depending on rainfall (Dec-March). Water depth varies between 50 cm and 2 m, and salinity is high (250 g/l). Flamingo censuses from the past have revealed the following maximum figures: **Chilean:** 100,000 (Jan 1972), 75,000 (Feb.1973) and 66,000 (Feb.1975) on L. Poopó. **Andean:** 18,000 (Dec.1972) on Uru Uru. More recently (1999, 2001) seven censuses have been carried out and these revealed a total of 125,580 flamingos of all 3 species, of which 69% were Chilean (=86,650), 19%

Andean (=23,860) and 12% James's (=15,069). In July 1997 and 1999 aerial censuses were made of these lakes and these revealed totals of 120,000 and 75,000 flamingos respectively.

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Flight speeds of Greater Flamingos

(extracted from Bruderer & Boldt (2001) *Ibis* 143: 178-204).

The averages of 15.9/15.2 m/s (57.2/54.7 km/h) are realistic migratory speeds of Greater Flamingos. Two small flocks (four and five individuals) migrating at heights of 1020 and 1290 m above ground in southern Israel flew at air speeds of 19.1 and 14.9 m/s (68.8 and 53.6 km/h), respectively. A group of four birds was tracked on a non-migratory flight 100 m above the Salinas of Mallorca (Balearic Islands, Spain) at a speed of 13.7 m/s (49.3 km/h). All birds were continuously flapping.

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The International Flamingo Foundation

This charitable organisation is as yet still not quite fully fledged. However, during 2001, funds were made available to cover some of the costs involved in continuing the banding of flamingo chicks at the **Ria Lagartos Biosphere Reserve in Yucatan, Mexico**, and towards providing a suitable nesting site in the reserve where breeding birds will not be threatened by Jaguar predation or rising water levels. (Inf. Bill Hunt, President/Director).

Announcements...

Global Flyway Conference



A global review of the conservation, management and research of the world's major flyways

3-8 April 2004 in Edinburgh, UK

CONSERVATION BIOLOGY OF FLAMINGOS **Waterbirds 23 Special Publication (1) 2000** **edited by G.A. Baldassarre, F. Arengo, and K. Bildstein**

These are the Proceedings of the 2nd Flamingo Specialist Group Symposium held in Miami in October 1998. It is a collection of 29 papers divided into six sections (Europe and the Mediterranean, Africa, The Caribbean, South America, Captivity, Summary and Future Directions), and undoubtedly constitutes the most significant contribution to flamingo literature in 3 decades - since the 1st 1973 symposium. If ordering from North, Central and South America, copies are available from: Felicity Arengo, Wildlife Conservation Society, 2300 Southern Blvd., Bronx, NY 10460, USA. TEL: 718-220-5276, FAX 718-364-4275, EMAIL: farengo@wcs.org. Price US\$15.00 includes shipping and handling. (payments must be in US dollars, checks must be drafted on US accounts. Please make checks or money orders out to Wildlife Conservation Society).

If ordering from Europe, Asia, Africa or Australia, copies are available from Alan Johnson, Fondation Tour du Valat, Le Sambuc, 13200 Arles, France. TEL (33) 4-90-97-20-13, FAX (33) 4-90-97-20-19. EMAIL: johnson@tour-du-valat.com Payment (FF 105 includes shipping and handling) must be made by money transfer to Fondation Tour du Valat, Account at Société Générale Bank No. 30003, Agency 00120, Account No. 00037260680, code 73, at 31 rue de la République, 13200 Arles.

Annual Report 2002

News items should be sent to the editor by February 2004 for circulation of the Flamingo Specialist Group Newsletter No 12 in March 2004

Request for sightings of banded flamingos

Since 1977, over 20,000 Greater Flamingo (*Phoenicopterus ruber roseus*) chicks have been marked in the western Mediterranean with coded plastic leg bands. These are engraved in black or white with alpha-numerical codes of 3 or 4 digits. French rings (yellow or white) from the Camargue are placed on the right tibia, Spanish (orange or white) bands from Fuente de Piedra (Malaga) on the left tibia and Italian (blue or red) on the left tibia. The black line engraved between the first two digits of the Spanish rings must be recorded to avoid confusion with other codes. These birds may be encountered in all Mediterranean countries, in Western Asia and in West Africa. All sightings will be acknowledged with a report of the bird's life history.

Recoveries and resightings of Greater Flamingos (*Phoenicopterus ruber roseus*) should be addressed to:

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Recoveries and resightings of Caribbean Flamingos (*Phoenicopterus ruber ruber*) banded in Venezuela and Mexico should be addressed to :

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