

## SENEGAL'S TRADE IN CAGE BIRDS, 1979-81<sup>1</sup>

Philippe Ruelle, c/o OCLALAV, B.P. 1066, Dakar, Senegal and Richard L. Bruggers, Denver Wildlife Research Center, U.S. Fish and Wildlife Service, Building 16, Federal Center, Denver, CO 80225

Senegal is one of the world's principal exporters of cage birds. The estimated value to Senegal of this trade is equivalent to U.S. \$500,000 annually. Between 1979 and 1981, over 1 million birds were exported annually to at least 26 countries. During this period, the Government of Senegal proposed some policy guidelines and legislative changes to manage this important industry rationally. The present report updates the exportation figures for these years and indicates some of the proposed legislation.

Senegal has annually exported an average of 1.2 million birds for the cage bird industry since 1955. Bruggers (1982) thoroughly described Senegal's contribution to world commerce in cage birds including analyses of the trappers and their methods, exporter operations, species distribution, quantities trapped, mortality rates, and importing country preferences. The present report updates exportation to 1981 and indicates the concern of the Government of Senegal as shown in legislative changes that have occurred in Senegal since the initial report was completed in 1978. These two bird exportation documents are unusual in that they examine the cage bird industry from the viewpoint of the exporting country.

### METHODS

The present report was prepared from information obtained from the published annual exportation reports and the original files of the Direction des Eaux, Forêts et Chasses of the Ministère du Développement Rural et l'Hydraulique, Dakar, and from discussions and conferences with government officials and exporters. Some of the data previously published in Bruggers (1982) are summarized and included in the tables with the new data for comparisons. Most of the data are presented in pairs of birds as they were recorded in the original exportation files. Scientific and common names of bird species are based on Serle and Morel (1977) and are given in Table 1. Costs are in U.S. dollars but based on African Financial Community Monetary Unit, the CFA Franc—30 = U.S. \$1.

Table 1. Names of the principal birds sold in or exported from Senegal. (From Serle and Morel 1977)

Scientific name	Common name
<b>CICONIIDAE</b>	
<i>Leptoptilos crumeniferus</i>	Marabou stork
<b>GRUIDAE</b>	
<i>Balearica pavonina</i>	Crowned crane
<b>PTEROCLIDIDAE</b>	
<i>Pterocles exustus</i>	Chestnut-bellied sand-grouse
<b>COLUMBIDAE</b>	
<i>Streptopelia decipiens</i>	Mourning dove
<i>Columba guinea</i>	Speckled pigeon
<i>Oena capensis</i>	Namaqua dove
<i>Streptopelia vinacea</i>	Vinaceous dove
<i>Treeron waalia</i>	Bruce's green pigeon
<i>Streptopelia senegalensis</i>	Senegal laughing dove
<b>PSITTACIDAE</b>	
<i>Psittacula krameri</i>	Rose-ringed parakeet
<i>Poicephalus senegalus</i>	Yellow-bellied parrot
<i>Poicephalus robustus</i>	Brown-necked parrot
<i>Psittacus erithacus</i>	Grey parrot
<b>HIRUNDINIDAE</b>	
<i>Hirundo spp.</i>	Swallows
<b>STURNIDAE</b>	
<i>Lamprotornis chalybaeus</i>	Blue-eared glossy starling
<i>Lamprotornis caudatus</i>	Long-tailed glossy starling
<i>Spreo pulcher</i>	Chestnut-bellied starling
<b>FRINGILLIDAE</b>	
<i>Serinus mozambicus</i>	Yellow-fronted canary
<i>Serinus leucopygius</i>	White-rumped seedeater
<b>PLOCEIDAE</b>	
<i>Quelea quelea</i>	Red-billed quelea
<i>Quelea erythropis</i>	Red-headed quelea
<i>Euplectes orix</i>	Red bishop
<i>Euplectes hordeaceus</i>	Fire-crowned bishop
<i>Euplectes afer</i>	Yellow-crowned bishop
<i>Vidua chalybeata</i>	Village combassou
<i>Vidua macroura</i>	Pin-tailed whydah
<i>Vidua orientalis</i>	Broad-tailed paradise whydah
<i>Ploceus cucullatus</i>	Village weaver
<i>Ploceus melanocephalus</i>	Black-headed weaver
<i>Passer luteus</i>	Golden sparrow
<i>Passer griseus</i>	Grey-headed sparrow
<b>ESTRILDIDAE</b>	
<i>Amadina fasciata</i>	Cut-throat finch
<i>Amandava subflava</i>	Zebra waxbill
<i>Estrilda caerulescens</i>	Lavender fire-finch
<i>Estrilda troglodytes</i>	Black-rumped waxbill
<i>Estrilda bengala</i>	Red-cheeked cordon-bleu
<i>Lagonosticta senegala</i>	Red-billed fire finch
<i>Estrilda melopoda</i>	Orange-cheeked waxbill
<i>Pytilia phoenicoptera</i>	Red-winged pytilia
<i>Lonchura malabarica</i>	Warbling silverbill
<i>Lonchura cucullata</i>	Bronze mannikin

<sup>1</sup> Originally published as U.S. Fish and Wildlife Service Wildlife Leaflet 515, 11 pp. 1983.

## RESULTS AND DISCUSSION

Senegal continued to export between 1.00 and 1.25 million birds annually between 1979 and 1981, as it did between 1972 and 1978. However, the importance of the exporters shifted (Table 2). Oisellerie Diallo and Viv-anim dropped from constituting more than 70% of the market during the earlier years to between 46% and 62% in 1979-81. The importance of Afrique Ocean also seems to be slightly diminishing from peaks in 1973 and 1975. In contrast, Grand Oisellerie, Faune Senegalaise, and Oisellerie du Senegal increased from 19% before 1979 to about 33% of the trade between 1979 and 1981. Two new establishments, Africazoo and Nosexport, began operations in 1981 and captured 9% of that year's market.

Of the 36 countries that received birds directly from Senegal between 1972 and 1978, 29 again imported cage birds in 1979-1981 (Table 3). Most exporters continued to export principally to European countries (Table 4); however, unlike previous years when France, Belgium, Italy, West Germany, Holland, and Spain accounted for more than 84% of the market, between 1979 and 1981 these countries imported only 61%. In fact, during both 1980 and 1981, the United States replaced France as the principal importer of birds from Senegal, accounting for 23-18% of the trade, or 160,247-102,980 pairs of birds, respectively. As in the past, the peak export periods each year generally continued to be March-June and August-September (Fig. 1).

Unfortunately, the disparity between the numbers of birds registered for export from Senegal and the number imported into the United States continues. For example, during 1979 and 1980, 133,900 and 320,494 birds were registered in Senegal for exportation to the

United States (Table 5). However, during 1979 either slightly more than 60,000 birds (tabulated from Appendix; Nilsson 1981) or 113,314 birds (noted from text Table 5, page 13; Nilsson 1981) were imported by the United States; during 1980 only about 160,000 birds were recorded as imported. Discrepancies in the number of individuals of several species also exist, most notably, during 1980 for yellow-bellied parrots, yellow-fronted canaries, lavender fire-finches, black-rumped waxbills, and red bishops. Misidentification or improper registration also seems to be a problem. Nilsson (1981) listed at least 11 species of birds (Table 6) as coming to the United States from Senegal which are not registered as being exported from Senegal and which are not even recorded on the checklist of birds for the country (Morel 1972). These kinds of inconsistencies demonstrate the confusion that exists in the bird importation industry and undermines the serious and conscientious efforts of the individuals and organizations that are trying to understand and monitor the industry's impact on bird species of the world.

Species of the family Estrildidae continued to represent more than half of the total number of birds exported (Table 7). Cut-throat finches, orange-cheeked waxbills, black-rumped waxbills, and red-cheeked cordon-bleus accounted for about 70% of these birds during 1981. However, yellow-fronted canaries were the most requested species during both 1980 and 1981, when between 99,872 and 88,824 pairs, respectively, were exported. Cut-throat finches also accounted for 178,319 pairs during these 2 years.

The 1979-81 exportation rates of the principal bird pests to African Agriculture (quelea, Ploceus weavers, bishops, and sparrows) accounted for between 12% and 14.9% of the total exportation, a percentage comparable with most previous years (Table 8). Specifically

Table 2. Number of pairs of birds exported from Senegal by different export establishments between 1973 and 1981.

Exporter	Establishment	1973-1978				1979		1980		1981	
		No. yrs exported	No. pairs (average)	% (avg.)	Range	No. pairs	%	No. pairs	%	No. pairs	%
A. Diallo	Oisellerie Diallo, Thiaroye	6	304,252	40	115,403-436,330	213,427	33	183,004	26	153,850	26
A. Diba	Grand Oisellerie Touba, M'Backe	6	59,839	9	45,000-92,990	62,864	10	84,079	12	83,784	14
L. Masfrand	Afrique Ocean, Kaolack	6	77,970	11	50,000 <sup>a</sup> -107,500	50,000 <sup>a</sup>	8	31,964	5	58,681	10
P. Mbaye	Oisellerie du Senegal, Thiaroye	6	17,808	3	906-38,641	42,011	7	85,343	12	50,390	9
Mr. Cisse	Viv-anim, Dakar <sup>b</sup>	6	223,292	31	210,712-255,095	185,842	29	225,315	33	117,053	20
B. Wade	Faune Senegalaise, Thiaroye	6	46,371	7	30,000-82,158	74,585	12	69,357	10	55,475	10
C. Fall	Esportateur, Rufisque	1	2,500	0	began 1978	9,150	1	15,765	2	5,621	1
M. Ndiaye	Africazoo, Dakar	0	0	0	began 1981	0	0	0	0	5,527	1
M. Diop	Nosexport, Dakar	0	0	0	began 1981	0	0	0	0	44,667	8
Unidentified <sup>c</sup>						604	0			7,036	1
<b>TOTALS OR AVERAGES</b>			732,032	100		638,483	100	694,827	100	582,084	100

<sup>a</sup> Data estimated.

<sup>b</sup> Viv-anim was operated by a different owner between 1973 and 1978.

<sup>c</sup> Unidentified: exporter's name not legible or missing from registration book.

Table 3. Range (1972-1978) and number (1979-1981) of pairs of birds imported from Senegal annually by different countries.

Country	1972-1978		Year of importation		
	No. years of importation	Range	1979 <sup>a</sup>	1980	1981
Argentina	2	600-3,190	1,750	9,605	6,250
Australia	1	400	-	-	-
Austria	7	400-5,275	3,385	2,408	4,669
Belgium	7	41,241-133,682	58,665	61,654	51,675
Benin	0	0	2	-	-
Canada	1	1,000	-	100	-
Denmark	7	4,690-11,375	15,030	11,250	8,646
El Salvador	0	0	-	725	-
England	7	11,745-76,042	35,645	34,115	31,410
Finland	1	400	-	-	-
France	7	102,115-235,136	112,165	111,250	91,030
Gabon	1	84	-	-	-
Greece	5	75-810	650	1,000	1,013
Guadeloupe	1	24	150	-	-
Holland	7	63,105-130,241	60,450	61,548	73,359
Hong Kong	3	700-1,835	1,250	11,800	-
Iran	4	150-650	-	-	-
Israel	1	100	-	-	-
Italy	7	48,494-94,581	39,908	56,485	57,008
Ivory Coast	1	690	-	-	90
Japan	7	15,395-38,987	26,047	24,050	34,275
Kuwait	1	1,100	-	-	-
Lebanon	1	340	-	-	-
Malaysia	2	700-1,320	-	-	-
Mali	0	0	900	1,260	225
Malta	1	526	755	250	1,467
Mauritania	2	10-100	-	-	-
Morocco	3	160-180	-	1,500	2
Portugal	2	300-2,635	4,500	4,372	6,629
Reunion	3	400-1,376	150	-	-
Saudi Arabia	1	675	-	-	3,334
Singapore	0	0	870	-	200
South Afrika	3	2,050-3,525	-	-	-
Spain and Las Palmas	7	31,099-59,397	58,327	40,423	21,015
Swaziland	0	0	-	3,275	-
Sweden	7	45-1,600	1,530	55	3,200
Switzerland	6	580-4,125	3,700	5,095	3,985
Syria	1	1	-	-	-
Togo	0	0	15	-	-
United Arab Emirates	3	250-435	120	-	530
United States	7	1,810-64,910	66,950	160,247	102,980
Uruguay	4	200-8,920	560	-	-
Venezuela	2	535-1,835	-	-	-
Vietnam	1	500	-	-	-
West Germany	7	111,395-161,932	87,054	88,155	78,042
Unidentified			7,995	4,205	1,050
<b>TOTALS</b>			<b>588,483</b>	<b>694,827</b>	<b>582,084</b>

<sup>a</sup> Afrique Ocean data are not included.

## CONCLUSIONS

the number of golden sparrows, Ploceus weavers, and red-billed quelea exported increased either twofold or threefold, whereas the number of bishops decreased about 20%. As in the past, about 20,000 individuals of these species were exported to the United States during 1980 and 1981. Fortunately, none of these species are listed by Nilsson (1981) as having become established in the continental United States or Canada.

The cage bird industry is continuing to thrive in Senegal. The estimated annual value of this industry to Senegal is equivalent to U.S. \$500,000 (Anonymous 1981). Since the original report by Bruggers (1982), government officials, exporters, and resident scientists have met on several occasions to establish policy guidelines. As a result, a major effort is being made to protect species by improving conditions of capture, transport, storage, and exportation of the birds. This objective has led to more stringent proposed legislation

Table 4. Number of pairs of birds exported to each country by each export establishment during 1981.

Country	Oisellerie Diallo	Grand Oisellerie Touba	Export-ateur	Afrique Ocean	Oisellerie du Senegal	Nos- e'xport	Africazoo	Viv-anim	Faune Senegalaise	Uniden- tified <sup>a</sup>	Total
Argentina	0	0	0	0	1,800	700	0	3,750	0	0	6,250
Austria	0	3,899	0	0	400	0	0	0	370	0	4,699
Belgium	8,585	5,600	0	1,320	9,630	700	200	4,035	21,605	0	51,675
Denmark	275	430	0	0	600	2,200	1,362	3,479	0	300	8,646
France	40,615	3,820	0	14,299	10,870	3,897	0	14,239	0	3,290	91,030
Great Britain	1,525	6,565	0	3,925	0	0	0	17,240	2,155	0	31,410
Greece	0	0	0	0	0	0	0	1,013	0	0	1,013
Holland	22,075	7,570	0	6,835	8,000	9,800	1,500	12,254	4,325	1,000	73,359
Italy	15,755	25,740	0	6,630	0	0	0	1,715	5,075	2,093	57,008
Ivory Coast	0	0	0	0	0	0	0	90	0	0	90
Japan	750	4,270	600	17,400	0	1,400	0	9,255	600	0	34,275
Mali	225	0	0	0	0	0	0	0	0	0	225
Malta	0	0	0	1,132	0	0	0	0	0	335	1,467
Morocco	0	0	0	0	0	0	0	0	2	0	2
Portugal	4,271	300	300	0	0	0	0	1,758	0	0	6,629
Saudi Arabia	0	0	0	904	400	2,030	0	0	0	0	3,334
Singapore	0	0	0	0	0	0	0	200	0	0	200
Spain	16,294	0	4,721	0	0	0	0	0	0	0	21,015
Sweden	0	1,200	0	700	0	0	0	0	1,300	0	3,200
Switzerland	0	0	0	0	1,900	600	665	820	0	0	3,985
United Arab Emirates	0	0	0	0	0	0	0	530	0	0	530
United States	33,100	5,360	0	0	4,760	19,300	0	31,300	9,160	0	102,980
West Germany	10,380	18,980	0	5,536	11,030	4,040	1,800	15,375	10,883	18	78,042
Unidentified <sup>a</sup>	0	50	0	0	1,000	0	0	0	0	0	1,050
<b>TOTALS</b>	<b>153,850</b>	<b>83,784</b>	<b>5,621</b>	<b>58,681</b>	<b>50,390</b>	<b>44,667</b>	<b>5,527</b>	<b>117,053</b>	<b>55,475</b>	<b>7,036</b>	<b>582,084</b>

<sup>a</sup> Unidentified: exporter's name or country of destination not legible or missing from registration book.

in these areas and to establishing some species export quotas (Table 7; Anonymous 1981).

Specifically, the proposed goals and regulations include the following:

1. Maintaining the bird exportation trade without adversely affecting the populations of the species.
2. Reinforcing control measures over exporters by
  - a. requiring certificates of origin for species and shipments
  - b. establishing annual exportation quotas on the number of individuals of each species
  - c. requiring veterinary examinations before shipment.
3. Redistributing more equally the revenues obtained from the commerce by
  - a. increasing the cost paid to the Eaux et Forêts for collection permits
  - b. increasing by 75% the amount of money collected by the Government for each pair exported.

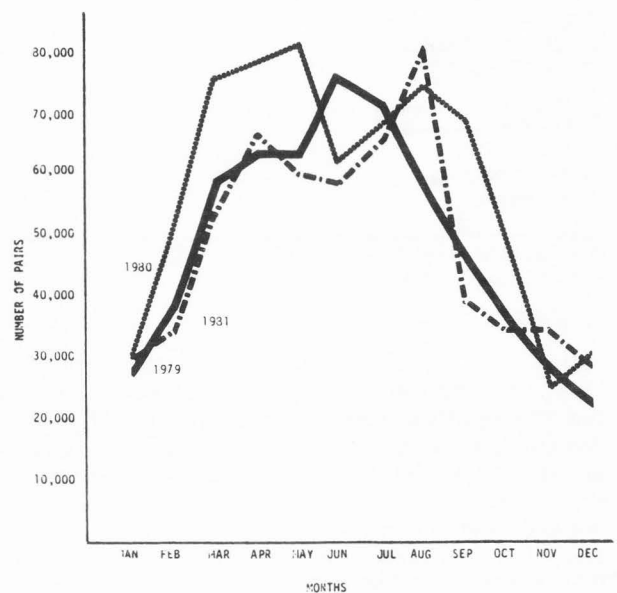


Figure 1. Number of pairs of birds exported monthly from Senegal during 1979, 1980, and 1981.

Table 5. Number of birds exported to the United States from Senegal between 1979 and 1981, and numbers published by Nilsson (1981) for 1979 and 1980 as having arrived in the United States and as dying during shipment or quarantine.

Species	1979			1980			1981
	Exported <sup>a</sup>	Imported <sup>b</sup>	Dead <sup>c</sup>	Exported <sup>a</sup>	Imported <sup>b</sup>	Dead <sup>c</sup>	Exported <sup>a</sup>
<b>PTEROCLIDIDAE</b>							
<i>Pterocles exustus</i>	- <sup>d</sup>	-	-	-	-	-	100
<b>COLUMBIDAE</b>							
<i>Columba</i> spp.; <i>Streptopelia</i> spp.	-	-	-	300	300	0	-
<b>PSITTACIDAE</b>							
<i>Psittacus erithacus</i> and <i>Poicephalus robustus</i>	800	70	0	1,416	-	-	3,890
<i>Poicephalus meyeri</i>	-	75	1	-	26	1	-
<i>P. senegalus</i>	2,700	4,323	825	13,314	2,584	171	9,120
<i>Agapornis fischeri</i>	-	180	7	-	-	-	-
<i>A. personata</i>	-	180	31	-	-	-	-
<i>Agapornis</i> sp.	-	-	-	-	2,483	98	-
<i>Psittacula alexandri</i>	-	-	-	-	850	-	-
<i>P. krameri</i>	250	600	183	5,378	1,887	194	2,160
<b>BUCEROTIDAE</b>							
<i>Tockus erythrorhynchus</i>	-	-	-	-	7	7	-
<b>STURNIDAE</b>							
<i>Lamprotornis</i> spp.	-	-	-	300	-	-	100
<b>FRINGILLIDAE</b>							
<i>Serinus leucopygius</i>	-	90	2	1,756	360	11	2,700
<i>S. mozambicus</i>	5,000	6,971	1,527	42,704	4,415	481	29,480
<b>PLOCEIDAE</b>							
<i>Vidua chalybeata</i>	-	1,160	150	5,186	554	246	2,480
<i>V. macroura</i>	-	178	8	2,124	-	-	3,920
<i>V. paradisaea</i>	-	176	14	-	870	36	-
<i>Passer luteus</i>	6,000	3,299	709	4,136	1,345	232	8,080
<i>Ploceus</i> spp.	-	1,200	155	5,620	517	120	1,600
<i>Euplectes afer</i>	-	340	17	-	840	89	2,000
<i>E. orix</i>	-	240	31	11,110	-	-	6,650
<b>ESTRILDIDAE</b>							
<i>Pytilia melba</i>	-	28	0	-	-	-	-
<i>P. phoenicoptera</i>	-	-	-	2,400	1	1	50
<i>Lagonosticta</i> spp.	-	446	17	-	1,156	1,241	-
<i>L. rhodopareia</i>	-	12	9	-	-	-	-
<i>L. senegala</i>	3,700	1,586	446	36,236	-	-	11,280
<i>Estrilda bengala</i>	14,200	1,758	143	60,496	-	-	22,440
<i>E. cyanocephala</i>	-	300	1	-	-	-	-
<i>E. granatina</i>	-	38	14	-	-	-	-
<i>E. caerulescens</i>	4,000	1,135	86	25,474	1,215	530	5,800
<i>E. melpoda</i>	22,110	7,030	21	13,960	2,901	333	15,320
<i>E. troglodytes</i> and <i>E. astrild</i>	31,150	9,220	4,052	29,384	3,552	587	14,540
<i>Amandava subflava</i>	2,400	1,320	131	14,004	714	75	11,060
<i>Ortygospiza</i> sp.	-	-	-	-	3	3	-
<i>Erythrura prasina</i>	-	-	-	-	690	148	-
<i>Lonchura caniceps</i>	-	20	0	-	-	-	-
<i>L. cucullata</i>	2,600	5,430	1,187	11,224	3,660	424	8,320
<i>L. malabarica</i>	8,800	4,475	340	14,000	3,430	596	14,380
<i>Amadina fasciata</i>	17,250	12,949	154	16,652	3,700	1,553	30,380
Misc. ESTRILDIDAE	-	-	-	-	119,065	21,036	-
Unidentified	-	-	-	1,320	-	-	200
Collection <sup>e</sup>	12,940	-	-	2,000	-	-	-
<b>TOTALS</b>	<b>133,900</b>	<b>64,829</b>	<b>10,261</b>	<b>320,494</b>	<b>158,125</b>	<b>28,213</b>	<b>205,960</b>

<sup>a</sup> Based on Senegal exportation figures. <sup>b</sup> Based on U. S. importation figures (after Nilsson 1981). <sup>c</sup> Dead on arrival or in quarantine (after Nilsson 1981). <sup>d</sup> No data available or reported. <sup>e</sup> "Collection" species: weavers; sparrows; mannikins; cordon-bleus; cut-throat and fire-finches.

Table 6. Some of the species listed by Nilsson (1981) as being imported into the U. S. from Senegal that have not been recorded in the checklist of birds by Morel (1972) for Senegal.

Scientific name	Common name
<i>Agapornis fischeri</i>	Fisher's lovebird
<i>Agapornis personata</i>	Masked lovebird
<i>Psittacula alexandri</i>	Moustached parakeet
<i>Poicephalus meyeri</i>	Meyer's parrot
<i>Uraeginthus (Estrilda) cyanocephala</i>	Blue-capped cordon bleu
<i>Estrilda granatina</i>	Violet-eared cordon bleu
<i>Erythrura prasina</i>	Long-tailed munia
<i>Vidua paradisaea</i>	Paradise whydah
<i>Lonchura caniceps</i>	Grey-headed mannikin
<i>Ploceus aurantius</i>	Orange weaver
<i>Ploceus intermedius</i>	Masked weaver

Table 8. Percent of total annual exportation of species considered pests to cereal crops.

Species	Range 1974-1978	Year of exportation			
		1979	1980	1981	Avg.
<i>Golden sparrow</i>	1.3-2.4	0.9	1.3	2.4	1.7
<i>Ploceus</i> spp.	0.6-2.6	1.1	2.6	1.7	1.9
<i>Yellow-crowned bishop</i>	0.3-1.4	1.3	1.5	1.7	1.1
<i>Red bishop</i>	7.8-9.7	7.1	5.2	6.0	7.7
<i>Red-billed quelea</i>	1.5-2.3	1.7	2.2	3.1	2.1
TOTALS	13.6-17.7	12.1	12.8	14.9	14.5

Table 7. Number of pairs of birds exported from Senegal between 1974 and 1981. Data based on original exportation records. Underlined numbers exceed proposed annual quotas.

Species	Years				Proposed annual quota
	1974-1978	1979 <sup>a</sup>	1980	1981	
COLUMBIDAE (total)	2,501-3,955	2,805	2,690	<u>3,292</u>	3,000
<i>Columba</i> spp.: <i>Streptopelia</i> spp.	2,501-3,955	2,805	2,690	<u>3,292</u>	3,000
PSITTACIDAE (total)	6,764-10,987	11,601	24,075	17,829	<u>b</u>
<i>Poicephalus senegalus</i>	5,220-9,090	7,940	<u>16,486</u>	11,118	13,000
<i>Psittacula krameri</i>	667-2,083	1,657	5,385	3,575	6,000
<i>Psittacus erithacus</i> and <i>Poicephalus robustus</i> <sup>c</sup>	36-1,629	2,004	2,204	3,136	4,000
BUCEROTIDAE ( <i>Tockus</i> spp.)	62-200	25	0	0	-
STURNIDAE (total)	416-5,113	3,353	4,870	3,706	6,000
<i>Lamprolornis</i> spp.	416-5,113	3,353	4,870	3,706	6,000
FRINGILLIDAE (total)	81,480-99,655	67,595	106,860	98,609	-
<i>Serinus mozambicus</i>	79,055-90,330	65,890	99,872	88,824	100,000
<i>S. leucopygius</i>	2,425-9,325	1,705	<u>6,988</u>	<u>9,785</u>	3,000
PLOCEIDAE (total)	110,395-135,327	77,475	116,402	107,580	-
<i>Passer luteus</i>	7,650-16,900	5,530	8,813	13,819	unlimited
<i>Ploceus</i> spp.	3,595-19,125	6,670	17,735	10,020	unlimited
<i>Euplectes afer</i>	1,875-7,935	7,745	10,060	10,158	30,000
<i>E. orix</i> and <i>E. hordeaceus</i>	52,840-60,250	41,800	36,110	35,090	60,000
<i>Vidua chalybeata</i>	6,791-11,455	3,305	10,993	8,395	10,000
<i>Vidua</i> spp.	6,775-18,425	2,555	17,096	11,828	16,000
<i>Quelea quelea</i>	11,914-13,825	9,870	15,595	18,270	unlimited
ESTRILDIDAE (total)	334,698-502,024	386,339	436,400	349,569	-
<i>Amadina fasciata</i>	76,293-128,000	81,655	94,611	83,708	100,000
<i>Amandava subflava</i>	1,505-12,960	<u>15,645</u>	<u>17,461</u>	<u>28,228</u>	12,000
<i>Estrilda melpoda</i>	47,432-71,330	75,630	62,925	50,466	80,000
<i>E. bengala</i>	38,935-75,000	44,159	70,577	53,019	90,000
<i>E. troglodytes</i> and <i>E. astrild</i>	75,050-168,995	112,380	93,794	61,868	175,000
<i>Lagonosticta senegala</i>	5,475-9,825	8,860	<u>29,093</u>	<u>15,408</u>	10,000
<i>L. caerulescens</i>	5,933-15,955	9,910	<u>24,177</u>	<u>14,138</u>	12,000
<i>Lonchura cucullata</i>	13,200-25,675	21,080	19,397	19,040	25,000
<i>L. malabarica</i>	8,975-17,150	16,920	22,865	23,062	50,000
<i>Pytilia phoenicoptera</i>	200-1,750	100	1,500	632	2,000
Collection, <sup>d</sup> Others, unidentified	0-43,255	39,290	3,530	1,499 <sup>e</sup>	-
TOTALS	548,596-830,126	588,483	694,827	582,084	-

<sup>a</sup> Afrique Ocean data are not included.

<sup>b</sup> Quotas were not established for these species.

<sup>c</sup> 95% *Psittacus erithacus*.

<sup>d</sup> "collection" species: weavers; sparrows; mannikins; cordon-bleus; cut-throat and fire-finches.

<sup>e</sup> Includes 50 sand-grouse, 100 marabou storks, 34 swifts and swallows, and 50 crowned cranes.

4 In general, better enforcing the regulations that guide the industry.

None of these specific propositions have yet been ratified into law; it still "rests with the individual exporters and importers and the participating countries to try to manage themselves and the industry in a rational manner" (Bruggers 1982).

Unlike the situation in many exporting countries, progress is being made in Senegal.

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#### REFERENCES

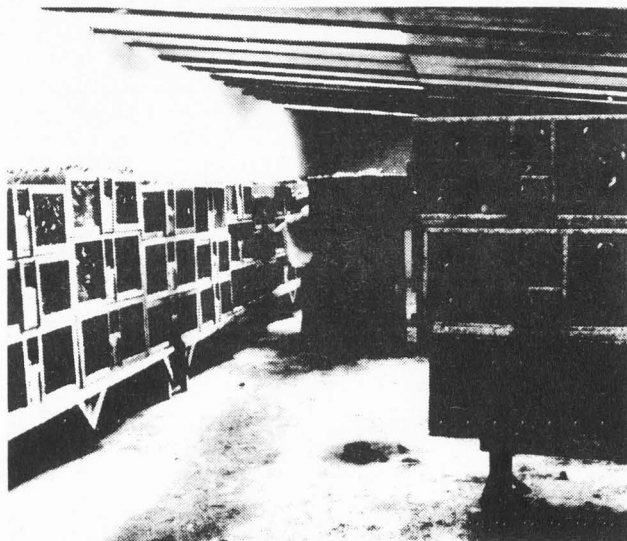
Anonymous. 1981. Commerce des oiseaux: Rapport final. Groupe de Travail, Ministère du Développement Rural, Secrétariat d'Etat aux Eaux et Forêts, Dakar, Senegal. 13 pp. (mimeo).

Bruggers, R.L. 1982. The exportation of cage birds from Senegal. *Traffic Bull.* IV(2):12-22. Wildlife Trade Monitoring Unit, IUCN Conservation Monitoring Centre, Cambridge, United Kingdom.

Morel, G.J. 1972. Liste commentée des oiseaux du Sénégal et de la Gambie. Office de la Recherche Scientifique et Technique Outre-Mer Centre ORSTOM, Dakar, Senegal. 139 pp.

Nilsson, G. 1981. The bird business—a study of the commercial cage bird trade. Animal Welfare Institute, Washington, D.C. 121 pp.

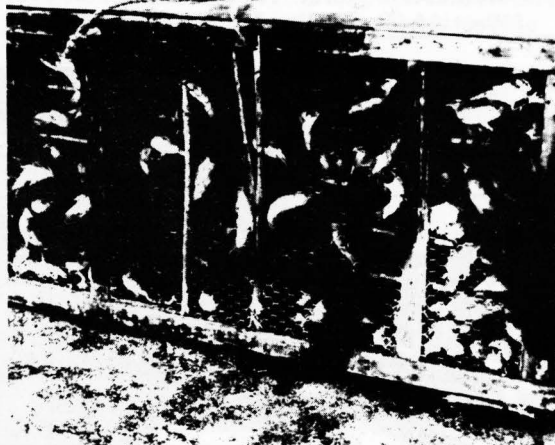
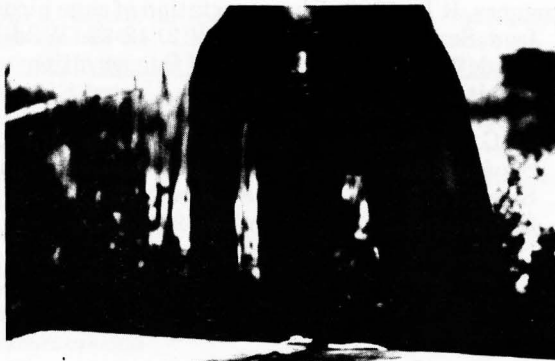
Serle, W. and G.J. Morel. 1977. A field guide to birds of West Africa. Collins Ltd., London. 351 pp.



*Normally, newly acquired birds are removed from their crowded transport cages and placed in holding cages inside buildings where they remain until they are sold.*



*Most birds are captured using clap nets, with water and grain as bait and stuffed or sun-dried birds as decoys.*



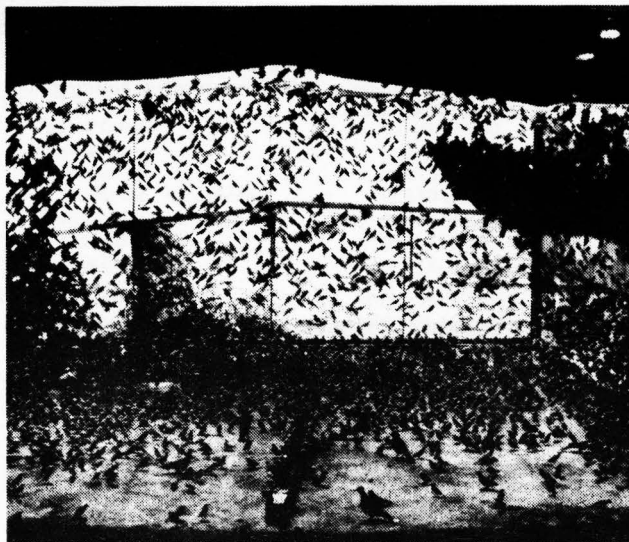
*Trappers take birds to collection centers where they are picked up by the exporter or sent to Dakar by train or taxi.*



*Birds are provided millet (*Pennisetum typhoides*) and canary-grass (*Phalaris canariensis*) seed, water, and antibiotics until sold.*



*Most birds are exported in wooden boxes which, for passerines, measure 30x60x15 cm. Between 150 and 250 birds are shipped in each cage.*



*One exporter has a 5x20x3-m outdoor flight pen into which newly acquired birds are released.*



*Several vendors sell birds (and seed) daily to residents and tourists in local markets of Dakar. Prices are subject to bargaining.*