AFA Members Contribute to Success of TRAFFIC USA's 1990 Psittacine Captive Breeding Survey

by Catherine Allen and Kurt A. Johnson TRAFFIC USA (All rights reserved, 1991)

Here is what some of the 1,221 respondents had to say about the TRAFFIC USA 1990 Psittacine Captive Breeding Survey (CBS): "Think it is great! I am a strong advocate of census and information gathering. The results benefit all, especially the birds." "Excellent idea! Similar questionnaries should be done for finches and softbilled birds as well. This (survey) makes me wish I had done better record keeping." "Thank you for the survey. I learned things about my collection I didn't realize before. I plan to keep better records as a result."

This unprecedented response marks the first time such large numbers of private aviculturists in the United States have responded to a comprehensive national survey of captive breeding. This article summarizes the results of the census portion of the CBS. They show that aviculturists are successfully breeding many psittacines, and have begun to demonstrate their potential to meet the pet industry's growing demand for captive-bred birds.

Background

TRAFFIC USA's involvement in assessing private aviculture's role in breeding psittacines for the pet industry emerged from deliberations of the Cooperative Working Group on Bird Trade (CWGBT). The CWGBT, a diverse group of representatives from the pet industry, animal welfare organizations, aviculture, avian veterinary practitioners, conservation organizations and the zoological community, was convened by World Wildlife Fund - U.S. (WWF) in 1988 to address the problems associated with the international trade in wild-caught birds. After two years of intense research and discussion, the CWGBT recommended that U.S. imports of wild-caught birds for the pet trade be phased out over a five year period, with the goal that they be replaced by captive-bred birds, both foreign and domestic. Where imports of wildcaught birds would continue to be allowed for captive breeding purposes, the CWGBT recommended that federal import controls be strengthened and streamlined (CWGBT, 1990).

The CWGBT realized that quantitative information on captive breeding by private aviculturists in the U.S. was virtually non-existent. To address the information void, TRAFFIC USA, WWF's international wildlife trade monitoring program, initiated a survey to: 1) assess the current and potential ability of private aviculture in the U.S. to fulfill the pet bird industry's demand for captive-bred birds; and 2) determine what factors are inhibiting or contributing to the growth of private aviculture in the U.S.

A pilot survey of aviculturists was distributed at the American Federation of Aviculture (AFA) annual convention in 1989. The purpose of the pilot survey was to determine whether aviculturists might participate in a more comprehensive survey of psittacine captive breeding. Although only 135 aviculturists participated in the pilot survey, over 18,000 birds were documented. More importantly, over 85% of the respondents indicated they would be willing to participate in a more comprehensive psittacine captive breeding survev. The success of the 1989 effort, published in AFA Watchbird (Allen et al., 1990, inspired the larger, more comprehensive 1990 CBS.

Methods

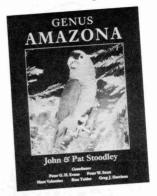
The CBS was limited to psittacines (order Psittaciformes) because they are commonly imported for the pet trade, and because harvest for the pet trade threatens many wild populations. Except for two questions specific to them, budgerigars (Melopsittacus undulatas) and cockatiels (Nymphicas bollandicus) were specifically excluded from the CBS because they are well established in captivity and their husbandry is well known.

The CBS consisted of a two-part survey form: a questionnaire and a

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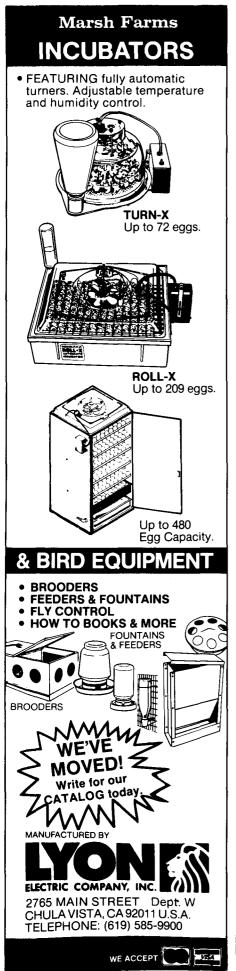
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census. The questionnaire had 32 questions divided into sections on collection inventory, avicultural practices, avian health care, selling and trading, and background information about the respondents. The census was a list of 130 species divided into nine categories: Amazons, Cockatoos, Macaws, Parrots of Primarily African and Pacific Region Origin, Conures, Lories, Pionus, Parrotlets and Lovebirds. An "other" category allowed respondents to add species not listed. Mixed breeding pairs (also referred to as hybrid pairs) were to be listed in a "mixed pairs" category. For each species, information was requested on total number of birds held, origin of the birds, and 1989 breeding information.

The CBS was distributed in May 1990 by the American Federation of Aviculture (AFA) to its 5,700 individual members by mail. In addition, the AFA asked each of its affiliated bird clubs around the country to distribute survey forms to their club membership. Bird World magazine also helped distribute the CBS by publishing the survey form as an insert in the May/June 1990 issue. Despite overlap of distribution between AFA members and Bird World readers, we estimate that the CBS reached approximately 15,000 to 20,000 people.

Results and Discussion

TRAFFIC USA received 1,221 completed survey forms. Assuming that the survey form reached 15,000 to 20,000 people, the return rate was 6 to 8%. Considering the varied means by which the survey form was distri-

buted and the unknown number of aviculturists in this country, the return rate was positive for a first psittacine captive breeding survey.

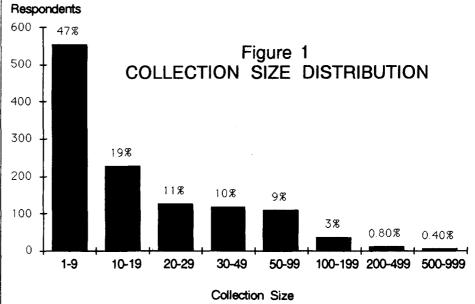
Over 80 percent of the completed surveys were submitted by AFA individual members responding to the survey form they received in the mail. Three percent of the surveys were returned from AFA affiliated clubs.

Responses to the CBS came from all 50 states, Puerto Rico, the U.S. Virgin Islands and even two foreign countries (Note: information from the two foreign countries was not included in the results presented here). State totals ranged from 1 to 254 respondents. California and Florida had the most respondents with 254 and 132 respectively. Arizona and New York had 64 respondents each, while Texas and Pennsylvania had 47 and 46 respectively. In the Northwest, Washington had 54 respondents and Illinois led the Midwest with 39.

The questionnaire portion of the survey was designed to gather information on modern avicultural practices involving psittacines and the aviculturists who keep them. The results of the questionnaire are summarized in the TRAFFIC USA report, from which this article was excerpted. This article summarizes only the results of the census.

Census

Readers are cautioned to remember that the questionnaire and census results represent *only* those aviculturists who responded to this CBS. This sample of aviculturists may or may not be representative of the entire



population of aviculturists in the U.S. It must also be noted that the census numbers presented here represent a minimum figure for the number of species and number of birds in U.S. private aviculture today. Therefore, any generalizations based on census data must be viewed with caution. And because we do not know the total number of aviculturists in the U.S., we cannot extrapolate the numbers obtained in this census to the U.S. as a whole.

Collection sizes varied from 1 to 951 psittacines. Over 40% of all collections contained less than ten birds. Not surprisingly, 75% of the respondents with fewer than ten birds described themselves as pet owners. Owners of larger collections were primarily breeders and commercial breeders.

In terms of both the total number of species and the total number of birds recorded, the 1990 Psittacine Captive Breeding Survey represents the most comprehensive data set gathered to date on captive breeding of psittacines. The census recorded 31,008 birds from 183 species in 1,183 collections. Table 1 presents important totals from the census.

Table 3. The 25 Most Abundant Species in the Captive Breeding Census

	Total Birds In Census	Number of Participants With Species	Source of Birds Wild- Captive			1989 Breeding Information Breeding		
			Caught	Bred	Unknown	Pairs	Hatched	Weaned
Agapornis roseicollis Peach-faced lovebird	2,454	246	47	2,221	186	836	4,049	3,746
Psittacus erithacus African grey parrot	1,923	428	1,460	295	168	725	799	676
Ara ararauna Blue and gold macaw	1,217	355	731	365	121	397	630	581
Cacatua moluccensis Moluccan cockatoo	820	239	645	93	81	317	158	120
Cacatua alba White (umbrella) cockatoo	798	217	604	136	59	318	441	380
Amazona o. oratrix Double-yellow headed amazo	779 n	232	439	187	152	290	218	196
Poicephalus senegalus Senegal parrot	747	183	560	135	52	290	338	303
Cacatua goffini Goffin's cockatoo	711	215	602	42	67	297	7 7	668
Myiopsitta monachus Monk parakeet	710	91	508	156	45	256	634	521
Amazona aestiva Blue-fronted amazon	692	261	554	98	41	229	127	98
Psittacula krameri Ringneck parakeet	677	127	102	507	68	223	443	387
Aratinga solstitialis Sun conure	630	142	68	493	69	215	491	41
<i>Ara macao</i> Scarlet macaw	592	154	309	186	99	176	147	113
Ara chloroptera Green-winged macaw	583	200	430	91	62	195	119	99
Agapornis personata Masked lovebird	579	96	19	463	97	202	510	508
Eclectus roratus Eclectus parrot	488	121	67	358	63	198	300	223
Nandayus nenday Nanday conure	482	78	268	148	66	180	394	30
Agapornis fischeri Fischer's lovebird	416	74	44	313	59	132	315	274
Cacatua sulphurea Sulphur-crested cockatoo	410	133	305	69	36	151	78	69
Neophema bourki Bourke's parakeet	397	68	1	367	23	131	309	294
Pyrrhura molinae Green-cheeked conure	391	78	84	289	18	148	490	444
Neophema splendida Scarlet-chested parakeet	353	57	1	348	4	134	281	239
Amazona viridigenalis Green-cheeked amazon	345	128	239	47	59	114	57	47
Amazona ochrocephala Yellow-crowned amazon	331	112	213	57	61	106	62	58
Psephotus haematonotus Red-rumped parakeet	324	90	19	269	35	122	208	187

Table 1 — Census Totals

Census Category	Totals
Total species in census	183
Total birds in the census	31,008
Total wild-caught birds	15,196
Total captive-bred birds	12,595
Total unknown origin birds	3,191
Total taxa producing offspring (species and subspecies)	192
Total set-up breeding pairs	11,259
Total eggs hatched in 1989	17,277
Total chicks weaned in 1989	14,887

The number of chicks weaned is 2,400 lower than the number of eggs hatched. This does not necessarily mean that those birds died. They simply might have left the breeders' collections prior to weaning. Any future census should ask for the number of weaned and unweaned birds that left the collection for the pet or breeder market. This would give a more accurate picture of the numbers of captive-bred psittacines that are entering the U.S. market.

Table 2 shows that six of the nine species groups in the census were fairly evenly represented, the exceptions being lories, pionus and parrotlets.

Table 2 — Numbers of Birds in the Census, by Species Group

Genus	No. of Species	Total Birds		
Amazons	23	3,900		
Macaws	14	4,100		
Conures	27	4,300		
Parrotlets	3	300		
Pionus	7	650		
Cockatoos	16	4,000		
Lories	21	780		
Lovebirds	7	3,500		
Parrots	30	6,000		
Others	35	3,470		

Table 3 lists the 25 most abundant species in the census, along with the number of respondents holding each species, the source of the birds and each species' 1989 reproduction.

Import data show that 12 of the 25 most abundant census species were also among the top 20 import species (Mulliken and Thomsen, 1990). In fact, 8 of the top 10 census species were among the top 15 imports. One obvious conclusion of these comparisons is that there may be many more wild-caught birds of these species in this country than appear in the census. Thus, there is probably a large gene pool available to aviculturists interested in breeding these species.

The top six species in the census (Peach-faced Lovebird, Agapornis roseicollis; African Grey Parrot, Psittacus erithacus; Blue and Gold Macaws, Ara ararauna; Moluccan Cockatoos, Cacatua moluccensis; White Cockatoos, Cacatua alba; and Double Yellow-headed Amazons, Amazona ochrocephala oratrix) represent a broad range of geographic origin, size, color, vocalization ability and price, but have one trait in common — they are all popular pet birds.

The No. 1 species in the census (Peach-faced Lovebird) was not among the top 20 imports. Only 13,042 Peach-faced Lovebirds were reported imported during 1984 -1988, a yearly average of 2,608. A high percentage of the Peach-faced Lovebirds documented by the census were captive-bred (91%). Breeding data for 1989 show that 4,049 total young were hatched (4.8 young per breeding pair). Thus, it seems logical to conclude that aviculture has been breeding the Peach-faced Lovebird for some time (at least the last five years), and that captive breeding may be providing a substantial segment of the pet trade's demand for this species.

The No. 2 species in the census (African Grey Parrot) is the No. 3 import. Interestingly, most birds in the census originated in the wild (76%). The species' 1989 breeding data show that 799 total young were hatched (1.1 young hatched per breeding pair). A conclusion perhaps warranted from these data is that the African Grey Parrot is a popular species in the pet trade but aviculturists only recently have begun breeding it for the commercial trade. Thus, the majority of the demand is still being filled by wild-caught birds.

The No. 3 species in the census (Blue and Gold Macaw) was also not among the top 20 imports. Some 8,167 Blue and Gold Macaws were imported during 1984 - 1988, a yearly average of 1,633. About 30% of the birds documented by the census were captive-bred and 1989 breeding data show that 630 total young were hatched (1.6 young per breeding pair). Thus, it appears that aviculture has been breeding Blue and Gold Macaws for some time and that captive breeding is providing an increasing segment of the pet trade's demand for these species.

The No. 4, 5 and 6 species in the census rank in the second ten on the imported species list. The Moluccan Cockatoo and the Double Yellowheaded Amazon, although present in many collections, do not appear to be bred in great numbers (.5 young hatched per breeding pair of Moluc-

Table 4. CITES Appendix I and ESA Listed Species in the Captive Breeding Census

	Birds In Census	Number of Participants With Species	Source of Birds			1989 Breeding Information-		
			Wild- Caught	Captive- Bred	Unknown	Breeding Pairs	Hatched	Weaned
Amazons								
Amazona barbadensis Yellow shouldered amazon	15	5	3	8	4	4	2	2
Amazona brasiliensis* Red-tailed amazon	2	1	0	0	2	1	0	0
Amazona leucocephala* Cuban amazon	10	5	5	4	1	2	4	4
Amazona petrei Red spectacled amazon*	1	1	0	0	1	0	0	0
Amazona tucumana Tucuman amazon	134	36	116	5	14	46	16	13
Amazona vinacea* Vinaceous amazon	20	7	3	15	2	9	6	0
<u>Macaws</u>								
<i>Ara ambigua</i> Buffon's macaw	64	11	42	21	1	19	16	8
Ara glaucogularis Caninde macaw	84	7	57	27	0	35	10	11
<i>Ara macao</i> Scarlet macaw	592	154	309	186	99	176	147	113
<i>Ara maracana</i> Illiger's macaw	24	. 14	9	14	1	8	7	0
<i>Ara militaris</i> Military macaw	302	112	199	65	38	105	75	62
Ara rubrogenys Red-fronted macaw	163	35	80	66	10	60	54	45
Anodorhynchus hyacinthinus Hyacinth macaw	236	64	139	72	23	93	41	39
Conures .								
Aratinga guarouba* Golden conure	43	10	0	37	6	12	19	18
Parrot/parrotlets								
Pionopsitta pileata* Pileated parrot	15	6	0	15	0	7	7	7
Neophema pulchella* Turquoise parakeet	112	31	1	99	12	39	59	51
Neophema splendida** Scarlet-chested parakeet	353	57	1	348	4	134	281	239
Rhynchopsitta pachrhyncha* Thick-billed parrot	23	3	0	7	16	10	6	6
Cyanoramphus novaezelandiae Red-fronted (kakariki) parakee		14	2	33	2	14	61	52
Cockatoos								
Cacatua moluccensis Moluccan cockatoo	820	239	645	93	81	317	158	120
Probosciger aterrimus	109	11	89	15	5	42	17	10

^{*}Indicates species listed on both the U.S. List of Endangered and Threatened Wildlife and CTTES Appendix I.

can Cockatoos, .75 young hatched per breeding pair of Double Yellowheaded Amazons). In fact, less than half the Moluccan Cockatoos and Double Yellowheaded Amazons in the census were in breeding pairs. This could be attributed to the relatively large number of respondents who held these species as pets.

Palm cockatoo

Two additional factors may be contributing to the lower reproductive success of Moluccan Cockatoos and Double Yellow-headed Amazons. First, the reproductive needs of these two species are not widely understood by aviculturists, resulting in

greater breeding failure among the pairs that are set up for breeding. A second factor could be that the large number and lower cost of wild-caught birds imported for the pet trade has discouraged aviculturists from working with these species (including smuggled birds like the Double Yellow-headed Amazon). If these two species are to remain available for the pet trade, aviculturists will have to improve and increase their captive breeding.

Unlike the Moluccan Cockatoo, the White (Umbrella) Cockatoo had relatively higher breeding (1.4 young

^{**}Indicates species listed only on the U.S. List of Endangered and Threatened Wildlife.

hatched per breeding pair). Aviculturists note that this species produces young consistently and that many pairs are being bred in order to help fulfill the strong demand for these birds in the pet trade.

It is interesting to note that 8 of the top 20 imported species (Mulliken and Thomsen, 1990) are not represented among the top 25 census species. Apparently these species, Mitred Conure (Aratinga mitrata), Blue-crowned Conure (Aratinga acuticaudata), Grey-cheeked Parakeet (Brotogeris pyrrhopterus), Redmasked Conure (Aratinga erythrogenys), Orange-winged Amazon (Amazona amazonica), Canarywinged Parakeet (Brotogeris versicolurus), Peach-fronted Conure (Aratinga aurea), and Red-lored Amazon (Amazona autumnalis), are not as abundant in aviculture as other psittacines (that is, if census results are an accurate reflection of U.S. aviculture). Possible explanations for why these commonly imported species are not more abundant in the census are: 1) they are difficult to breed, 2) legally and illegally imported wild-caught birds are so cheap that there is little incentive to breed the species in captivity, or a combination of 1 and 2.

Table 4 provides census data on 21 species which are listed on Appendix I of CITES, seven of which are also listed as either threatened or endangered under the U.S. Endangered Species Act (ESA). Similar to Table 3, the species with the greatest numbers of individuals and highest overall 1989 production of young are those species considered popular both among aviculturists and in the pet trade: the Scarlet Macaw (Ara macao), Military Macaw (Ara militaris), Hyacinth Macaw, and Moluccan Cockatoo. High census numbers for some of these species can be attributed to their relatively recent inclusion in Appendix I; wild-caught imports have been available until rather recently (e.g., Moluccan Cockatoo added to Appendix I in 1990). Other species appear to be abundant in the census because they are relatively easy to breed in captivity (e.g., Scarlet Macaw).

The relatively few ESA and Appendix I species (21 of a potential 52 species) in the census suggests several possibilities. First, some respondents may not have included information on their ESA and Appendix I species in the census. Second, many of the

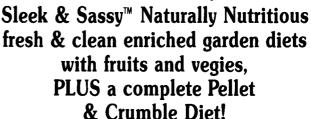
species could have very small populations in captivity. There may be relatively few coordinated breeding programs for these species, and where they do exist, few aviculturists may participate in them. Third, these species are not popular as pets.

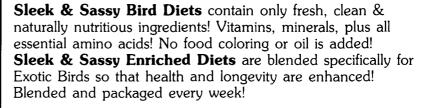
Census data appear to show that demand from the pet market determines which ESA and Appendix I species are being captive-bred in good numbers. However, this could be due to the poor availability of these species rather than any lack of interest in breeding them or keeping them as pets. An important contribution aviculturists can make at this time is to increase the production of ESA and Appendix I species that are popular in the pet and breeder trade.

Conclusions

The 1,221 completed survey forms received by TRAFFIC USA represents what can only be described as an unprecedented response. In terms of both total number of species (183) and total number of birds recorded (31,008), the 1990 Psittacine Captive Breeding Survey represents the most







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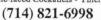
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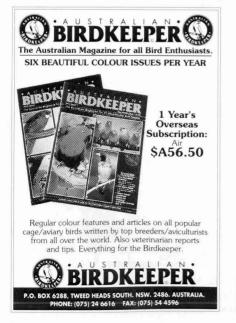
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comprehensive data set ever gathered on captive byreeding of psittacines.

The results of the census confirm that U.S. aviculturists maintain a wide variety of species in their collections. from very common to very rare, and that aviculturists are breeding many species quite successfully. The breeding information further indicates that the species being bred most commonly are those that are popular as pets and have been imported in large numbers in the last five years. Uncommon or rare birds in captivity are generally held by breeders and collectors who have an interest in the genus as a whole. These species are more accurately known as avicultural birds because they are most popular among aviculturists and not pet owners.

It appears that as long as a species remains popular in the pet trade, its survival in captivity seems assured. Continued and, in many cases, increased captive breeding of birds by private aviculturists to supply the demands of both the pet and breeder trades is important. Threats to many wild populations can be reduced by lowering the demand for wild-caught birds in the pet trade.

The census suggests that at least eight popular pet species are not being bred in large numbers in captivity (remember that the census is a minimum estimate!). It will be important for aviculture to increase its production of these species, especially if wild-caught imports for the pet trade are gradually phased out.

What is to be the future of unpopular or uncommon species in aviculture? If the variety of psittacine species present in this census is going to be maintained in captivity, aviculturists will have to become better coordinated to *share* the limited genetic material available in the rare birds. Breeding rare or endangered species has little value for the survival or viability of captive populations unless that breeding is part of a well-managed, coordinated, captive breeding program.

The fate of many psittacine species in the wild, such as the Hyacinth Macaw and the Green-cheeked Amazon, will be decided in the coming decade. Aviculturists will play a critical role in that fate, and it is up to individual aviculturists to help ensure that the fate is survival. Now is the time for aviculturists to take constructive actions toward ensuring the survival of psittacines in the wild and

in captivity. Keeping good collection and breeding records and participating in regular captive breeding surveys will help provide aviculturists with the necessary information to more effectively breed birds and take the necessary actions toward maintaining species in captivity.

TRAFFIC USA wishes to thank all the AFA members who participated in this precedent-setting 1990 Psittacine Captive Breeding Survey. While the CBS has provided important new information for the avicultural and conservation communities alike, it represents just one season of breeding results and therefore has limited usefulness in assessing trends in aviculture and the pet bird industry. Additional CBSs are needed to better understand the status of captive breeding by U.S. aviculturists. Accordingly, TRAFFIC USA is planning to conduct a 1991 Psittacine Captive Breeding Survey using a revised survey form based on the many valuable comments submitted by this year's respondents.

TRAFFIC USA depends, however, on continued support from the aviculture community to make the 1991 CBS a success (85% of the respondents indicated a willingness to participate in future CBSs). The continued support of those people is crucial, both in completing another survey form and encouraging others to do so as well. It is our hope that aviculturists breeding psittacines will make a second national captive breeding survey even more successful than the first!

Editor's note: This article has been excerpted from a TRAFFIC USA report, "Results of the 1990 Psittacine Captive Breeding Survey." Copies of the full report are available from TRAFFIC USA. If you would like a copy of the report and have not already requested a copy, please write: TRAFFIC USA/World Wildlife Fund; 1250 Twenty-fourth Street, NW; Washington, DC 20037; Attention: Catherine Allen.

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