

Report on artificial breeding of African Grey Parrot, White Cockatoo, Yellow-headed Amazon and Yellow-crowned Parrot

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Abstract: The Research Department of China Biodiversity Conservation and Green Development Foundation (CBCGDF) received a letter from the Forest Sub-bureau, Police Bureau in Tangshan City of Hebei Province, requesting to confirm whether the four species of parrots are artificially bred and mature, and whether the populations have reached a scale. The parrots involved are mainly: African Grey Parrot (*Psittacus erithacus*), White Cockatoo (*Cacatua alba*), Yellow-crowned Parrot (*Amazona ochrocephala*), and Yellow-headed Amazon (*Amazona oratrix*). The Research Department of CBCGDF conducted research and analysis on the artificial breeding technology and population size status of the four parrot species through literature review, online research, and telephone interviews.

Key words: African Grey Parrot, White Cockatoo, Yellow-crowned Parrot, Yellow-headed Amazon, breeding, survey

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I. Introduction to four species of parrots

The Psittaciformes (Its Chinese name “鸚形目” was renamed “鸚鵡目” from 2021 in China) is typically divided into two families: Cacatuidae and Psittacidae. There is a wide variety of species, comprising 82 genera and 358 species.

The term “鸚鵡” (yingwu) in Chinese can be used to refer to either the Psittacidae or Psittaciformes, with the latter being more common. Parrots primarily feed on grains and fruits, nest in tree hollows, and a few species are ground-dwelling. They have a delayed maturity rate in their offspring. Parrots are typical perching birds with zygodactyl feet (two toes pointing forward and two toes pointing backward) that are well-adapted for grasping. They have strong and powerful beaks capable of cracking nuts. Parrots are distributed across tropical regions worldwide, with the highest species diversity found in Latin America and Oceania, while Africa and Asia have fewer species. However, Africa is home to some well-known species such as the African Grey Parrot and Peony Parrot。

The Forest Sub-bureau, Police Bureau in Tangshan City of Hebei Province, China, has sent a letter requesting assistance in identifying the scale of breeding and the level of technical maturity for four species of parrots: African Grey Parrot (*Psittacus erithacus*), White Cockatoo (*Cacatua alba*), Yellow-crowned Parrot (*Amazona ochrocephala*), and Yellow-headed Amazon (*Amazona oratrix*). The native habitats of these four species are primarily located in West and Central Africa, Indonesia, and Central America. In China, most of these species found in the wild are introduced rather than native. It is worth noting that the Yellow-headed Amazon (*Amazona oratrix*) was



initially classified as a subspecies of the Yellow-crowned Parrot (*Amazona ochrocephala*) but later recognized as a distinct species.

1. African Grey Parrot (*Psittacus erithacus*)

The African Grey Parrot (*Psittacus erithacus*), belongs to the Aves, Psittaciformes, and Psittacidae. It has a short tail, a round head, and a preference for climbing rather than flying. It boasts strong abilities in mimicking human speech and demonstrating intelligence and reasoning skills. Among wild parrots, it is one of a few species that can pass mirror tests. Due to its intelligence, the African Grey Parrot is highly popular in the global pet market.



Source: Wikipedia

The wild populations of African Grey Parrots are primarily distributed in forests, tropical savannas, and mixed forest zones in Central and West Africa. In certain regions of West Africa, such as Ghana, the wild population has experienced a significant decline. The main causes of the rapid decline in wild populations include severe habitat destruction due to logging and agriculture, as well as threats from the pet trade and local hunting.





The distribution of wild populations of African gray parrots.

Source: Wikipedia

In 2016, the wild population of this species was listed as endangered by the International Union for Conservation of Nature (IUCN). In 2017, the wild population of this species was included in Appendix I of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) [1].

2. White Cockatoo (*Cacatua alba*)

The White Cockatoo (*Cacatua alba*), belongs to the Aves, Cacatua, Cockatoo and Psittaciformes. This species is entirely snow-white, with a distinctive white crest on its head. The feathers underneath the wings and tail have a slight yellowish tinge. When the crest is fully extended, it resembles an “umbrella”. The beak and feet are gray in color.



Source: Wikipedia



The wild population of the White Cockatoo primarily inhabits lowland rainforests, mangroves, and areas near farmlands. They are mainly found in the northern Moluccas Islands of Indonesia, including North Maluku Province, as well as Halmahera, Bacan, Ternate, Tidore, Kasiruta, and Mandioli. There is also a stable population formed by escaped individuals in Taiwan, China. The main threats to the wild population include habitat destruction and the pet trade. Since 2007, Indonesia has implemented quotas (limited to breeding purposes) of 10 pairs, but illegal smuggling continues to be a significant issue in the market.

Currently, this species is listed as an endangered species by the International Union for Conservation of Nature (IUCN) and is also included in Appendix II of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES).

3. Yellow-crowned Parrot (*Amazona ochrocephala*)

The Yellow-crowned Parrot (*Amazona ochrocephala*), belongs to the Aves, Amazona, Psittacidae, and Psittaciformes. This species has predominantly green feathers, with a black beak. The yellow color is mainly concentrated on the crown of their heads, resembling a “crown”.



Source: Wikipedia



The Yellow-crowned Parrot, primarily inhabits lowland rainforests, open woodlands, farmlands, mountains, swamps, and the edges of humid forests. Its wild populations are mainly distributed in Central America, the Amazon rainforest region, Guyana, Puerto Rico (introduced), and Germany (introduced). The species faces threats such as habitat destruction, the pet trade, and local consumption.



The distribution of The Yellow-crowned Parrot.

Source: Wikipedia

Currently, it is listed as a species of “Least Concern” on the International Union for Conservation of Nature (IUCN) Red List of Threatened Species, but there is evidence of declining populations in the wild. Additionally, the Yellow-crowned Parrot is also included in Appendix II of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES).

4. Yellow-headed Amazon (*Amazona oratrix*)

The Yellow-headed Amazon (*Amazona oratrix*), belongs to the Aves, Amazona, Psittacidae, and Psittaciformes. Morphologically, this species has a green body, and the head displays varying degrees of yellow feathers as it age. The curved part of the wings has red and yellow feathers. The lower abdomen and thighs also have varying



amounts of yellow feathers. The beak is wax-white, and the eyes have orange-red irises.



Source: Wikipedia

The Yellow-headed Amazon primarily inhabits habitats such as rainforests, coniferous forests, and mangroves. Geographically, this species is mainly found in Belize, Guatemala, Honduras, as well as Germany (introduced), Southern California in the United States (introduced), and Puerto Rico (introduced). Its main survival threats come from habitat destruction caused by agriculture and urbanization, climate change, and human capture. This species is one of the most popular and well-known Amazon parrots and is among the most smuggled parrots in North America. There are very few reports of smuggling incidents involving this species in China.

Currently, the Yellow-headed Amazon is listed as an endangered species on the International Union for Conservation of Nature (IUCN) Red List of Threatened Species. Additionally, this species is included in Appendix I of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES).

II. Situation of breeding parrots in China: 1.93 million artificially bred parrots have obtained legal recognition



The Peony Parrot (*Agapornis*.Sp) is a parrot species with a relatively long history of breeding and mature breeding techniques in China. The Beijing Zoo was the first to breed the Peony Parrot in China. In 1973, the Beijing Zoo imported four species of wild parrots from Tanzania and Zambia, including the *Agapornis fischeri*, *Agapornis nigrigenis*, *Agapornis roseicollis*, and *Agapornis pullarius*. The Beijing Zoo successfully bred a large number of *Agapornis nigrigenis* and *Agapornis fischeri*, which were then distributed to zoos across the country and gradually entered households.

In recent decades, with the improvement of people's living standards and the increasing demand for ornamental birds, the artificial breeding of parrots has gradually emerged. According to public reports, artificial parrot breeding has reached a certain scale in Henan, Hebei, Beijing, Qingdao, and Yunmeng County of Hubei Province. It is reported that there are over 500 professional bird breeders in Yunmeng County, Hubei Province, raising over 100,000 pairs of parrots [2].

In Shandong, a farmer named Shurong ZHENG in Dayinzhuang Village, Nancheng Town, Xiajin County, started breeding parrots in 1997. After several years of exploration and development, the largest parrot breeding facility in the province has been built, with an indoor breeding area of over 3,000 square meters and more than 7,000 pairs of breeding parrots (<https://news.sina.com.cn/o/2006-03-22/14428503064s.shtml>) [3].

In Hebei, in 2018, a villager named Wenbin JIN from Jinqiao Village, Zhaoqiao Town, Wuyi County, learned the techniques of parrot breeding and established the Qingrun Special Breeding Cooperative in Wuyi County. Currently, the cooperative breeds over 2,000 pairs of parrots of different varieties, including the Budgerigar and Cockatiel (https://www.sohu.com/a/408657212_267106) [4].

In Beijing, Guoxin MA from Yanqing District of Beijing, originally a veterinary student, has built a "Parrot Kingdom" through his own efforts (https://www.sohu.com/a/237826741_117373) [5]. He owns nearly 1,000 pairs of



parrots, including 300 breeding pairs and more than 20 different species. He has customers for his parrots in Hebei, Shandong, Guangzhou, Inner Mongolia, Xinjiang, and other regions. Each month, about 400 new chicks are born, and they can be fully sold within the same month.

In Henan, parrot breeding in Shangqiu has a history of several decades. In the mid-1990s, several farmers from Shangqiu introduced 300 parrots from Beijing, including the *Agapornis Fischeri*. They brought the parrots back to Shangqiu by train and started breeding them. Since then, the tradition of parrot breeding has been passed down through generations in Shangqiu, and it has become an industry with a sales channel nationwide. According to statistics, there are nearly 900 breeding households in Shangqiu, with a population of over one million small-sized ornamental parrots, mostly the *Agapornis Fischeri*, accounting for 90% of the national output.

Due to the increasing scale of parrot breeding industry in Henan, on April 2, 2021, the National Forestry and Grassland Administration decided to pilot special identification management for four species of parrots, including the *Agapornis Fischeri*, in Henan Province. After attaching the special identification, which indicates that they are artificially bred and from legal sources, these parrots, including the *Agapornis Fischeri*, *Lorius hypoinochrous*, *Pyrrhura molinae*, and *Myiopsitta monachus*, are allowed to be sold and transported.

According to statistics, as of February 2023, Shangqiu Natural Resources and Planning Bureau in Henan Province has issued artificial breeding permits to a total of 530 breeding households (including cooperatives). They have received and approved four batches of 429 applications for identification, issuing a total of 1,936,800 special identification tags. This means that currently, there are 1.93 million parrots in Shangqiu City, Henan Province, that possess a legal “identification card”. When the parrots are ready for sale, the breeders will attach a special leg ring to them. The barcode on the leg ring carries information about the parrot’s identity, including its unique number, species, photo, and place of origin.



III. Approved breeding of four species of parrots in China: Breeding Grey parrot is relatively prevalent

According to the information obtained from data queries and investigations, here is the breeding situation of African Grey Parrots (*Psittacus erithacus*), Yellow-crowned Parrot (*Amazona ochrocephala*), White Cockatoo (*Cacatua alba*), and Yellow-headed Amazon (*Amazona oratrix*) in China.

It is understood that large-scale parrot breeding is mainly concentrated in Shandong, Henan, Anhui, Hunan, and other provinces. The Research Department of China Biodiversity Conservation and Green Development Foundation collected official correspondence from forestry bureaus, natural resources bureaus, and other relevant government departments in these provinces from 2016 (primarily during 2020-2023) to gather information regarding artificial breeding, sale, and purchase of the four species of parrots (as shown in the table below). According to incomplete statistics, African Grey Parrots (*Psittacus erithacus*) have the highest number of breeding farms, with a total of 59; followed by Yellow-crowned Parrot (*Amazona ochrocephala*) with 35 farms; White Cockatoo (*Cacatua alba*) with 14 farms; and the least is Yellow-headed Amazon (*Amazona oratrix*) with 6 farms.

序号	物种名称	主体名称	审批号/时间
1	非洲灰鹦鹉	商丘市睢阳区爱鸟轩养殖场	豫林护许准(2021)209号
2	<i>Psittacus erithacus</i>	商丘市睢阳区培霞养殖场	豫林护许准(2021)208号
3		商丘市睢阳区石素英养殖场	豫林护许准(2021)218号
4		商丘市睢阳区桂莲养殖场	豫林护许准(2021)282号
5		商丘文奕养殖有限公司	豫林护许准(2021)526号
6		驻马店驿城区永红养殖场	豫林护许准(2022)31号
7		唐县永强养殖场	2021年3月
8		广州欢乐鸟景区管理有限公司	2021年3月
9		鹤山市巴布亚动物园管理有限公司	粤江林许准(2021)32号
10		海南英达动物养殖有限公司	粤江林许准(2021)32号
11		抚宁区榆关镇红利鹦鹉养殖场	冀林草批(2019)
12		茂名市茂南区顺意鹦鹉养殖场	2020年11月



13	易县蓝精灵鹦鹉养殖有限公司	2021年11月
14	宿豫区宏杰鹦鹉驯养繁殖场	2021年11月
15	保定市万祥鹦鹉驯养有限公司	2020年8月
16	隆尧县东范村胜国鹦鹉养殖场	2020年8月
17	山东省爱尔物种保育有限公司	2020年10月
18	安徽铭沐鹦鹉养殖有限公司	林审准(2023)33号
19	安徽雅园旅游开发有限公司	林审准(2023)99号
20	安徽安伽物语宠物养殖有限公司	林审准(2023)106号
21	淮北鸚之花养殖有限责任公司	林审准(2023)28号
22	南陵县大山生态农业科技农场	林审准(2022)391-392号
23	宁陵县博涵鹦鹉宠物养殖畜禽养殖场	林审准(2022)391-392号
24	宿州凤鸣旅游发展有限公司	林审准(2022)324号
25	宿州市埇桥区太阳大马戏动物表演团	林审准(2022)346号
26	亳州市珠雀龟菜生态养殖有限公司	林审准(2022)396号
27	蚌埠海贝海洋乐园有限责任公司	林审准(2022)144号
28	武邑县大亮鹦鹉养殖场	冀林草批(2019)
29	遵化市汤泉村王帅鹦鹉养殖场	冀林草批(2019)
30	行唐县兴武文鸟鹦鹉养殖场	冀林草批(2019)
31	宣化区唯众养殖场	冀林草批(2019)
32	湖南今归生物科技有限公司	湘林护许准(2023)72号
33	福州扬航龟业养殖有限公司	湘林护许准(2023)72号
34	汉寿湘同发野生动物园有限公司	湘林护许准(2023)50号
35	邵东市砂石镇大鸚帝国养殖场	湘林护许准(2023)46号
36	长沙市雨花区万英鸚鸚养殖场	湘林护许准(2022)192号
37	寒亭区大鸚鸚鸚养殖繁育中心	鲁林护许准(2017)6号
38	北京金刚苑商贸有限公司	鲁林护许准(2017)6号
39	沂源县沐淋峰鸚鸚养殖有限公司	鲁林护许准(2017)3号



40		青田威志光学有限公司	鲁林护许准（2017）3号
41		济南宏喜爱鹦鹉养殖有限公司	鲁林护许准（2016）68号
42		贵溪市嘉鹏农业发展有限公司	鲁林护许准（2016）68号
43		临沭县金诚鸟类艺术展演有限公司	鲁林护许准（2016）62号
44		聊城雷扬养殖有限公司	鲁自然资函（2023）312号
45		鱼台凯顺养殖有限公司	鲁自然资函（2023）61号
46		临淄区硕铭养殖场	鲁自然资函（2023）212号
47		济南盛达文化艺术有限公司	鲁自然资函（2023）55号
48		成武县牧丰特种动物农场	鲁自然资函（2023）38号
49		日照嗡嗡乐动物园管理有限公司	鲁自然资函（2023）34号
50		菏泽青年湖动物园管理有限责任公司	鲁自然资函（2022）987号
51		汶上县善岭养殖场	鲁自然资函（2022）879号
52		兰陵县万泉家庭农场	鲁自然资函（2022）631号
53		龙口市诸由忠霖鹦鹉养殖场	鲁自然资函（2022）549号
54		郯城县庙山镇一二养殖场	鲁自然资函（2022）401号
55		菏泽龙池生态动物园有限公司	鲁自然资函（2022）214号
56		肥城市凤鸣宠物养殖中心	鲁自然资函（2022）1号
57		徐水区森尼尔特种动物养殖场	2023年5月
58		中山市民众镇鸚皇鸚鵡繁殖场	2023年5月
59		广东花海欢乐世界旅游发展有限公司	粤江林许准（2021）117号
	合计	59家	
60	白凤头鸚鵡	宿州长森旅游发展有限公司	林审准（2022）318号
61	<i>Cacatua alba</i>	临沭县金诚鸟类艺术展演有限公司	鲁林护许准（2016）62号
62		徐水区森尼尔特种动物养殖场	2023年5月
63		中山市民众镇鸚皇鸚鵡繁殖场	2023年5月
64		广东苏卡达生态观赏有限公司	粤江林许准（2022）25号
65		驻马店驿城区永红养殖场	豫林护许准（2022）31号

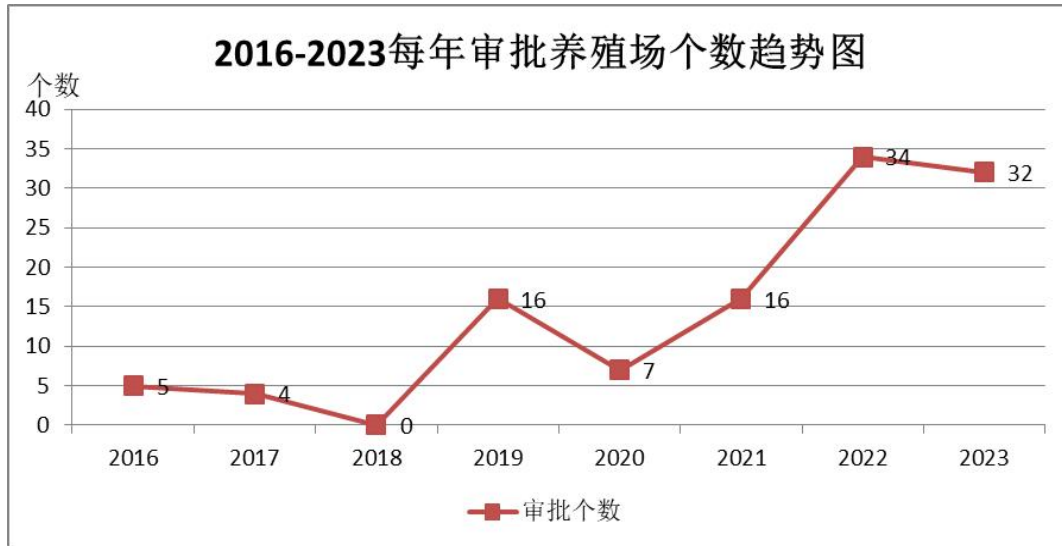


66		抚宁区榆关镇红利鸚鵡养殖场	冀林草批(2019)
67		安徽铭沐鸚鵡养殖有限公司	林审准(2023)33号
68		河北鸿翼养殖有限公司	冀林草批(2019)
60		宣化区唯众养殖场	冀林草批(2019)
70		临沭县金诚鸟类艺术展演有限公司	鲁林护许准(2016)62号
71		莒南合尚禽畜养殖园	鲁自然资函(2023)370号
72		淄博市博客宠物服务有限公司	鲁自然资函(2023)47号
73		济宁若宇养殖有限公司	鲁自然资函(2022)806号
	合计	14家	
74	小黄帽亚马逊鸚鵡 (黄冠亚马逊鸚鵡) <i>Amazona ochrocephala</i>	徐水区森尼尔特种动物养殖场	2023年5月
75		中山市民众镇鸚皇鸚鵡繁殖场	2023年5月
76		驻马店驿城区永红养殖场	豫林护许准(2022)31号
77		茂名市茂南区顺意鸚鵡养殖场	2020年11月
78		抚宁区榆关镇红利鸚鵡养殖场	冀林草批(2019)
79		安徽铭沐鸚鵡养殖有限公司	林审准(2023)33号
80		南陵县大山生态农业科技农场	林审准(2023)144号
81		宁陵县博涵鸚鵡宠物养殖畜禽养殖场	林审准(2023)144号
82		河北鸿翼养殖有限公司	冀林草批(2019)
83		宁远县赵青山养殖场	湘林护许准(2021)51号
84		聊城雷扬养殖有限公司	鲁自然资函(2023)312号
85		鱼台凯顺养殖有限公司	鲁自然资函(2023)61号
86		肥城市凤鸣宠物养殖中心	鲁自然资函(2022)1号
87		菏泽青年湖动物园管理有限责任公司	鲁自然资函(2022)987号
88	五莲县木舟养殖场	鲁自然资函(2022)888号	
89	汶上县善岭养殖场	鲁自然资函(2022)879号	
90	兰陵县万泉家庭农场	鲁自然资函(2022)631号	
91	郯城县庙山镇一二养殖场	鲁自然资函(2022)401号	



92		山东鲁野文化旅游发展有限公司	鲁自然资函(2022)367号
93		潍坊金宝乐园有限公司	鲁自然资函(2022)247号
94		济宁若宇养殖有限公司	鲁自然资函(2022)355号
95		汉寿湘同发野生动物园有限公司	湘林护许准(2023)50号
96		广东苏卡达生态观赏有限公司	粤江林许准(2022)25号
97		驻马店驿城区永红养殖场	豫林护许准(2022)31号
98		保定市千羽鸟舍鹦鹉养殖有限公司	2023年2月
99		易县蓝精灵鹦鹉养殖有限公司	2021年11月
100		宿豫区宏杰鹦鹉驯养繁殖场	2021年11月
101		广东花海欢乐世界旅游发展有限公司	粤江林许准(2021)117号
102		保定市万祥鹦鹉驯养有限公司	2020年8月
103		隆尧县东范村胜国鹦鹉养殖场	2020年8月
104		武邑县大亮鹦鹉养殖场	冀林草批(2019)
105		遵化市汤泉村王帅鹦鹉养殖场	冀林草批(2019)
106		行唐县兴武文鸟鹦鹉养殖场	冀林草批(2019)
107		东光县燕姐鹦鹉养殖场	冀林草批(2019)
108		天门市天圆鹦鹉养殖场	鄂林护许准(2019)107号
	合计	35家	
109	黄顶亚马逊 鹦鹉 (双黄头亚 马逊鹦鹉) <i>Amazona oratrix</i>	广东苏卡达生态观赏有限公司	粤江林许准(2023)15号
110		安徽铭沐鹦鹉养殖有限公司	林审准(2023)33号
111		河北鸿翼养殖有限公司	冀林草批(2019)
112		兰陵县万泉家庭农场	鲁自然资函(2023)33号
113		汶上县善岭养殖场	鲁自然资函(2022)879号
114		济宁若宇养殖有限公司	鲁自然资函(2022)355号
	合计	6家	





Due to the non-public display of breeding farm information approved before 2016, it is not possible to obtain data on domestically approved parrot breeding prior to 2016. During the period from 2016 to 2023, a total of 114 parrot breeding farms that could be consulted for approval were found. Among them, 5 farms were approved in 2016, 4 in 2017, none in 2018, 16 in 2019, 7 in 2020, 16 in 2021, 34 in 2022, and 32 in 2023.

In April 2021, the National Forestry and Grassland Administration issued a letter to the Henan Forestry Administration titled “Letter on Properly Resolving Issues Related to Artificial Breeding of Parrots” [6]. According to the regulations, except for the *Agapornis roseicollis*, *Melopsittacus undulatus*, and *Nymphicus hollandicus*, parrot species listed in the appendices of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) that are introduced from abroad are subject to the management of nationally protected wildlife. Their artificial breeding activities should be legally licensed. The letter also requested the implementation of a special identification management pilot for the *Agapornis Fischeri*, *Lorius hypoinochrous*, *Pyrrhura molinae*, and *Myiopsitta monachus*, which do not have wild natural distribution in China but are artificially bred. With the voluntary consent of the breeders, these parrots can be labeled with special identification for sales and transportation. For legally bred parrots that are allowed to be sold, the prohibition on trading measures should be lifted, but their sales activities must take place in locations determined by local governments and comply with all quarantine and inspection



requirements. Since then, the number of domestically approved breeding farms in China has significantly increased from 2021 to 2023.

IV. Breeding technology of four species of parrots in China: Breeding Grey parrot is relatively mature

According to Bei YAO [7], the maturity of artificial breeding technology and whether it has been scaled up can be assessed by considering the size and stability of the population bred using this technology, as well as whether their survival is entirely independent of wild resources.

Specifically, the following factors can be taken into account: (1) Technological maturity, which means that the technology should have stability characteristics, such as having established standardized operational procedures and predictable outcomes of artificial breeding. (2) The artificial population should be completely independent of the wild population, with no interaction between the two.

Whether artificial breeding has been scaled up mainly refers to the application of a specific artificial breeding technology, which can effectively stabilize or increase the population of wild animals and alleviate pressure on the conservation of wild animal resources. When the population bred using this technology differs significantly from the wild population, it becomes reasonable and necessary to regulate them differently. However, if the application of a certain technology has not been scaled up and is only known or practiced in a small scope, it does not change the precious and endangered nature of the wild animals being bred. Therefore, if a certain artificial breeding technology is treated as a commercial secret and limited to specific areas or specific natural conditions, the artificial population bred using this technology still falls under the category of protected objects.

To understand the breeding techniques for various parrots, the Research Department of China Biodiversity Conservation and Green Development Foundation has searched for “parrots”, “artificial breeding”, and “technology” on nationally recognized technology websites. The parrot species that can be found include the Psittacidae,



Psittacula krameri, *Lorikeet*, *Nymphicus hollandicus*, *Psittacula alexandri*, *Psittacula derbiana*, *Melopsittacus undulatus*, and *Agapornis.sp* (see the figure below). There is also information available on the hand-rearing and training of African Grey Parrots and the breeding techniques for Amazon Parrots.

1	琉璃金剛鸚鵡的饲养与繁殖	段磊 王志永	农家参谋	2019-07-15	期刊	1	121	↓	📄	🌟	🔄
2	刑法中的野生动物人工繁育子代法律身份研究	邓婷尹	浙江大学	2019-06-02	硕士	12	449	↓	📄	🌟	🔄
3	非法收购、出售珍贵、濒危野生动物及其制品罪问题研究	吴山	北京理工大学	2018-06-01	硕士		151	↓	📄	🌟	🔄
4	动物园中提高鸚鵡繁殖率综合措施	许宇霞 王志永	中国畜禽种业	2018-05-15	期刊		112	↓	📄	🌟	🔄
5	破坏野生动物资源犯罪的犯罪对象研究	刘章	中国政法大学	2018-05-01	硕士	31	1219	↓	📄	🌟	🔄
6	里约大冒险		小行星(低年級版)	2014-09-05	期刊		4	↓	📄	🌟	🔄
7	金剛鸚鵡的繁殖行为观察	张国梁 王利涛 曹天海	野生动物	2010-01-10	期刊	3	344	↓	📄	🌟	🔄
8	红领绿鸚鵡的饲养与繁殖	孔凡前 陈仕焯 刘金威 韦启良 胡慧建	中国家畜	2008-11-20	期刊	1	179	↓	📄	🌟	🔄
9	吸蜜鸚鵡的人工饲养繁殖技术	刘容珍 孔令君 陈仕焯 田允波	经济动物学报	2008-06-15	期刊	6	193	↓	📄	🌟	🔄
10	鸡尾鸚鵡的人工养殖技术	李顺才 张坤 刘卫良	黑龙江畜牧兽医	2005-12-10	期刊	1	154	↓	📄	🌟	🔄
11	鸡尾鸚鵡的人工驯养繁殖技术	李顺才 张坤 闫艳青 刘卫良	中国家畜导刊	2005-06-15	期刊		156	↓	📄	🌟	🔄
12	人工饲养下鸚鵡繁殖巢箱的设置	谢高基 黄翠莲 黎根儿	黑龙江动物繁殖	2004-12-15	期刊	9	227	↓	📄	🌟	🔄
13	大绯胸鸚鵡及其保护和利用	周林	野生动物	2004-01-10	期刊		148	↓	📄	🌟	🔄
14	动物怎样度过严冬?	蒋志刚	科学中国人	2001-12-15	期刊		48	↓	📄	🌟	🔄
15	虎皮鸚鵡人工繁殖的研究	钟福生 曾元根 莫小林 马再玉	经济动物学报	2001-06-30	期刊	2	261	↓	📄	🌟	🔄
16	牡丹鸚鵡的品种和饲养繁殖方法	李雷	生物学通报	2000-03-20	期刊	1	232	↓	📄	🌟	🔄
17	人工繁殖大紫胸鸚鵡	王德培 刘斌	华夏星火	2000-02-15	期刊		58	↓	📄	🌟	🔄
18	大紫胸鸚鵡的人工繁殖	江华 陈红卫 王行亮	四川畜牧兽医	2000-01-28	期刊	1	119	↓	📄	🌟	🔄
19	几种笼养鸟的人工繁殖	李雷 李福来	生物学通报	1996-07-20	期刊	1	107	↓	📄	🌟	🔄
20	虎皮鸚鵡在青岛市的繁殖情况及其经济效益调查	李声林 鲁蕃昌	四川动物	1996-02-29	期刊	1	75	↓	📄	🌟	🔄

Source: CNKI (China National Knowledge Infrastructure)

In the article “Artificial Rearing and Training of African Grey Parrots” [8] published in 2016, it is stated that the African Grey Parrot (*Psittacus erithacus*) is listed in Appendix II (should be Appendix I) of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). In China, only a few wildlife parks and city zoos keep African Grey Parrots. This article focuses on the breeding methods and chick-rearing period based on the successful rearing of an African Grey Parrot at Shenyang Zoo.



In the article “Breeding Techniques for Amazon Parrots” [9] published in 2011, it is mentioned that Amazon Parrots can become noisy during the breeding season or before breeding. Pair breeding tends to be more successful, but artificial breeding to adulthood is relatively rare. The chances of breeding wild birds are extremely low, resulting in limited breeding achievements domestically.

At the same time, researchers randomly surveyed approved artificial parrot breeding facilities in China through online inquiries and official website searches. It was found that African Grey Parrot (*Psittacus erithacus*) breeding is relatively common, while Yellow-crowned Parrot (*Amazona ochrocephala*), White Cockatoo (*Cacatua alba*), and Yellow-headed Amazon (*Amazona oratrix*) breeding is rare.

One example is Hainan Yinda Animal Breeding Company, a large-scale breeding facility. According to the official website, it specializes in the introduction of rare animal species worldwide, and scientific research and experimental development, and has a professional team of bird breeding experts and management personnel. It has dedicated caretakers, feeders, medical experts, hatching specialists, international trade commissioners, and legal advisors, with professionals responsible for every stage from “feed-feeding-breeding-hatching-chick rearing-sales”. The company houses thousands of African Grey Parrot (*Psittacus erithacus*), as well as White Cockatoo (*Cacatua alba*) and Yellow-crowned Parrot (*Amazona ochrocephala*), but it does not have Yellow-headed Amazon (*Amazona oratrix*). When asked about breeding techniques, the interviewed staff mentioned that they could provide breeding techniques with a survival rate of up to 99%. In small-scale approved parrot breeding facilities such as Lanjingling Parrot Breeding Company from Yi County and Wanquan Family Farm from Lanling County, there are limited quantities of African Grey Parrots available for sale, but they also indicate that they can provide breeding techniques.

养殖场名称	鹦鹉品种	数量（规模）	养殖技术	备注
武邑县大亮鸚 鸚养殖场				拒接
天门市天圆养 殖专业合作社				暂不搞养殖



茂名市茂南区 顺意鹦鹉养殖场				等国家放开后才考虑。
易县蓝精灵鹦鹉 养殖有限公司	小太阳, 和尚 鹦鹉可以卖。 亚马逊鹦鹉 都没有。	非洲灰鹦鹉几只		
广州欢乐鸟园 景区管理有限 公司	打不通			
山东鲁野文化 旅游发展有限 公司				暂没有鹦鹉
菏泽龙池生态 动物园有限公 司				无人接听
兰陵县万泉家 庭农场	非洲灰鹦鹉	几只	可以提供养殖 技术	
海南英达动物 养殖公司	近万只各类 鹦鹉及三有 鸟类。其中有 非洲灰鹦鹉、 黄冠亚马逊 鹦鹉和白凤 头鹦鹉。	其中非洲灰鹦鹉 近千只。	可以提供养殖 技术, 指导养殖 成活率达99%。	

V. Status of wild populations of four species of parrots: Not optimistic

The African Grey Parrot (*Psittacus erithacus*), Yellow-crowned Parrot (*Amazona ochrocephala*), White Cockatoo (*Cacatua alba*), and Yellow-headed Amazon (*Amazona oratrix*) are not native to China. They are primarily found in tropical regions such as Central and South America, Indonesia, and China's Taiwan. Due to their vibrant colors and high intelligence, these species have become popular pets among



people. In some places, they may also be consumed as food or used for medicinal purposes.

Considering the conservation status of these four species of parrots according to the International Union for Conservation of Nature (IUCN), except for the Yellow-crowned Parrot (*Amazona ochrocephala*), the wild populations of the other three species are endangered and require urgent protection. Furthermore, under the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), the African Grey Parrot (*Psittacus erithacus*) and Yellow-crowned Parrot (*Amazona oratrix*) are listed in Appendix I, while the Yellow-headed Amazon (*Amazona ochrocephala*) and White Cockatoo (*Cacatua alba*) are listed in Appendix II. The main reasons for the endangered status of these four parrot species are the impact of agriculture and logging on their habitats, as well as the significant international trade in illegal pet smuggling.

Looking at the international trade status of these four parrot species, although there is literature indicating that the African Grey Parrot (*Psittacus erithacus*) has a history of over 100 years of artificial breeding and relatively mature breeding techniques (<https://beautyofbirds.com/african-grey-breeding/>) [10], the international trade volume is still substantial. According to statistics from 2018, since 1975, over 1.2 million wild individuals of the African Grey Parrot (*Psittacus erithacus*) have been exported, making it one of the most traded bird species in Africa [11]. The Democratic Republic of the Congo is currently the largest exporter. Data from the CITES trade database also shows that the import of African Grey Parrots (*Psittacus erithacus*) in China peaked in 2015 (1,750 wild individuals and 1,500 captive-bred individuals), but since 2016, the number of wild individuals imported has significantly declined, with zero wild individuals imported in 2018 and 2019. This to some extent validates the rise of domestic breeding techniques for African Grey Parrots (*Psittacus erithacus*) in China.

Domestic parrot breeding institutions have reported that due to inbreeding among African Grey Parrots (*Psittacus erithacus*), genetic degeneration can occur in the second and third generations, prompting many breeders or institutions to introduce



wild individuals from the wild to improve the genetic condition of artificially bred African Grey Parrots (*Psittacus erithacus*). The wild population of African Grey Parrots (*Psittacus erithacus*) in their native habitats has declined significantly, making it the most concerning species among the four parrots under consideration.

The White Cockatoo (*Cacatua alba*) has a strong capacity for artificial breeding among cockatoos, but it also faces the endangered status of its wild population due to large-scale exports as pets. Between 1990 and 1993, approximately 17% of individuals were exported annually from their native habitats, with the United States of America being the primary export destination. Research has shown that this species has relatively strong breeding capabilities in artificial environments compared to other cockatoo species [12]. The wild population of this species has some resistance to large-scale collection, but due to its complex courtship behavior, artificial breeding by individual keepers remains quite challenging. In the United States of America, there are eight states with registered breeding institutions or experts specializing in breeding this species. However, within China, there are relatively a few cases of artificial breeding for this species.

The Yellow-crowned parrot (*Amazona ochrocephala*) is one of the most commonly kept species among all Amazon parrots. From 2005 to 2014, approximately 10,968 live individuals were exported annually from the Amazon region, with Guyana being the main exporting country. Additionally, around 19,297 live individuals of the Yellow-crowned parrot were exported annually from outside their native range, with Oman being the primary importing country. According to data from the CITES trade database [13], the import of wild Yellow-crowned parrots into China has been increasing from 2010 to 2018, reaching its peak in 2018 with 1,028 individuals but rapidly declining to 137 individuals in 2019. However, the number of artificially bred individuals within China is relatively low, with no recorded individuals in 2012, 2013, 2018, and 2019 [14].

In terms of breeding techniques for the Yellow-crowned parrot, they are relatively well-established in North America, with comprehensive guides for captive care and



breeding

(<https://hari.ca/hari/researchfacility/hari-research-papers/the-aquisition-husbandry-and-breeding-of-common-amazons/>). However, even breeders in North America acknowledge that it is not easy for ordinary keepers to breed them [15]. Based on publicly available approval data, artificial breeding of this species is scarce and not conducted on a large scale in China. Additionally, due to factors such as the pet trade, habitat destruction, and local consumption, the wild populations of this species are showing a clear declining trend.

The Yellow-headed Amazon (*Amazona oratrix*) is one of the most popular and well-known species among Amazon parrots in the pet market. It is also one of the most heavily trafficked parrots in North America. In terms of its artificial breeding techniques, North America has relatively mature breeding technologies, and it is considered slightly easier to breed compared to other Amazon parrot species.

The Yellow-headed Amazon (*Amazona oratrix*) is also greatly affected by smuggling and the pet trade. According to statistics from the IUCN, the wild population of this species in its native range may be fewer than 7,000 individuals. The statistics show a 38% reduction in its distribution range, which is primarily caused by illegal pet trade, resulting in a decrease of 576 km². Along the Mexican coast, the distribution range of this species has decreased by 79%. In Belize and Guatemala, the species' habitats are outside protected areas and heavily impacted by human activities. Additionally, some researchers believe that climate change-induced hurricane weather has also contributed to habitat degradation and population decline in the Yellow-headed Amazon.

Therefore, in 1994, this species was nominated as a threatened species by the IUCN (<https://www.iucnredlist.org/species/22686337/179331301>).

VI. Current status and discussion of government management

In 1993, the Notice of the Ministry of Forestry on Approving Some Endangered Wildlife as National Key Protected Wildlife (Lin Hu Tong Zi [1993] No. 48) determined that the African Grey Parrot (*Psittacus erithacus*) and Yellow-headed



Amazon (*Amazona oratrix*) were approved as nationally protected wildlife of the first level. The White Cockatoo (*Cacatua alba*) and Yellow-crowned Parrot (*Amazona ochrocephala*) were approved as nationally protected wildlife of the second level. The management of these wildlife species and their products (including any identifiable parts or derivatives) is implemented according to the current laws, regulations, and rules of the country, just like the nationally protected wildlife species native to China of the first and second levels.

In 2021, the Catalog of Wildlife under Key State Protection was approved by the State Council and implemented on February 1, 2021. According to the latest version of the Catalog of Wildlife under Key State Protection, there are a total of nine native parrot species in China, namely: *Loriculus vernalis*, *Psittinus cyanurus*, *Psittacula eupatria*, *Psittacula krameri*, *Psittacula himalayana*, *Psittacula finschii*, *Psittacula roseata*, *Psittacula derbiana*, and *Psittacula alexandri*. These nine parrot species are all rare and endangered wildlife protected as the second level nationally. The remaining species of parrots, except those listed in Appendix I and Appendix II of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) and approved by the competent authority for the protection of wildlife in China, are no longer nationally protected wildlife.

The African Grey Parrot (*Psittacus erithacus*), White Cockatoo (*Cacatua alba*), Yellow-crowned Parrot (*Amazona ochrocephala*), and Yellow-headed Amazon (*Amazona oratrix*) consulted by Forest Sub-bureau, Police Bureau in Tangshan City are not included in the 2021 edition of the Catalog of Wildlife under Key State Protection. However, in the 1993 document (No. 48) of the former Ministry of Forestry, the African Grey Parrot and Yellow-headed Amazon were approved as nationally protected wildlife of the first level, and White Cockatoo and Yellow-crowned Parrot were approved as nationally protected wildlife of the second level. Meanwhile, these four parrot species are also included in Appendix I and Appendix II of CITES.

On April 2, 2021, in response to the situation where some traditionally captive ornamental birds have been upgraded to nationally protected wildlife after the



implementation of the new version of the Catalog of Wildlife under Key State Protection [16], the National Forestry and Grassland Administration reaffirmed in a reply letter to the Henan Forestry Administration regarding the proper resolution of issues related to the artificial breeding of parrots. According to the regulations, except for the *Agapornis roseicollis*, *Melopsittacus undulatus*, and *Nymphicus hollandicus*, the imported parrot species listed in the Convention's appendices shall be managed as nationally protected wildlife, and their artificial breeding activities shall obtain artificial breeding permits according to the law. It also requires the pilot implementation of special identification management for the *Agapornis fischeri*, *Lorius hypoinochrous*, *Pyrrhura molinae*, and *Myiopsitta monachus*, which do not have wild natural distribution in China but are legally artificially bred. With the consent of the breeders, special identification can be applied to the aforementioned parrots that are genuinely artificially bred and legally sourced, and they can be sold and transported with the identification. For legally artificially bred parrots allowed for sale, the prohibition on trading measures shall be lifted, but their sales activities must be conducted in designated places determined by the local government and comply with quarantine requirements.

This means that except for the *Agapornis roseicollis*, *Melopsittacus undulatus*, and *Nymphicus hollandicus*, all other parrot species, whether in the wild population or artificially bred population, are nationally protected wildlife. Therefore, for breeding and ornamental purposes, it is necessary to apply to the competent wildlife authority at all levels for approval and obtain a National Key Protected Wildlife Artificial Breeding Permit. For commercial use, both the artificial breeding permit and the permit for commercial use are required.

In April 2023, the National Forestry and Grassland Administration released the Special Identification Management of Terrestrial Wildlife and Their Products (draft for comments) and the first batch of species under special identification for public opinions [17]. Among the first batch of pet birds bred artificially, there are 13 parrot species, including the *Agapornis fischeri*, African Grey Parrot (*Psittacus erithacus*), *Cacatua galerita*, and *Pyrrhura molinae*.



陆生野生动物及其制品专用标识范围

(第一批) 一、野生动物活体			
(一) 人工繁育作为宠物的鸟类 (14种)			
序号	物种名	学名	备注
1	费氏牡丹鹦鹉	<i>Agapornis fischeri</i>	*1
2	绿颊锥尾鹦鹉 (小太阳)	<i>Pyrrhura molinae</i>	*1
3	和尚鹦鹉	<i>Myiopsitta monachus</i>	*1
4	彩虹吸蜜鹦鹉	<i>Trichoglossus moluccanus</i>	*1
5	太阳锥尾鹦鹉 (金太阳)	<i>Aratinga solstitialis</i>	*1
6	折衷鹦鹉	<i>Eclectus roratus</i>	*1
7	非洲灰鹦鹉	<i>Psittacus erithacus</i>	*1
8	葵花凤头鹦鹉	<i>Cacatua galerita</i>	*1
9	蓝黄金刚鹦鹉	<i>Ara ararauna</i>	*1
10	黑头凯克鹦鹉	<i>Pionites melanocephalus</i>	*1
11	绯胸鹦鹉	<i>Psittacula alexandri</i>	*2
12	红领绿鹦鹉	<i>Psittacula krameri</i>	*2
13	亚历山大鹦鹉	<i>Psittacula eupatria</i>	*2
14	八哥	<i>Acridotheres cristatellus</i>	*2

Source: National Forestry and Grassland Administration

The Forest Sub-bureau, Police Bureau in Tangshan City has sent a letter requesting assistance in determining the breeding scale and technological maturity of the African Grey Parrot (*Psittacus erithacus*) among the four species of parrots. It can be seen that the State Forestry and Grassland Administration is also concerned about the widespread phenomenon of artificial breeding of parrots as pets. Although the nationally protected level two parrots such as the *Psittacula alexandri*, *Psittacula krameri*, and *Palaeornis eupatria* are listed in the draft list of artificially bred pet birds for soliciting opinions, the White Cockatoo (*Cacatua alba*), Yellow-crowned Parrot (*Amazona ochrocephala*), and Yellow-headed Amazon (*Amazona oratrix*) are not included in this solicitation list.

As of now, the official publication of the Special Identification Management Measures for Terrestrial Wildlife and Their Products and the scope of special identification (first batch) has not been seen in the solicitation list.

VII. Conclusion

Based on the common breeding of parrots in China, the designated breeding of the four species of parrots, the laws and regulations formulated and promulgated by the country,



and the exploration of artificial breeding of parrots as pets in China's domestic pilot implementation, it can be seen that the breeding and breeding technology of the African Grey Parrot (*Psittacus erithacus*) is relatively mature and has a certain scale of breeding. However, due to the critically endangered status of the wild population of African Grey Parrots in their native habitat, it is recommended to strictly regulate the domestic artificial breeding management of African Grey Parrots and simultaneously increase efforts to combat the smuggling of wild populations of this species.

At the same time, the breeding technology of the White Cockatoo (*Cacatua alba*), Yellow-crowned Parrot (*Amazona ochrocephala*), and Yellow-headed Amazon (*Amazona oratrix*) is currently not mature in China. Their conservation levels are determined by their inclusion in Appendix I and Appendix II of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), corresponding to the first and second levels of protected wildlife listed in the Catalog of Wildlife under Key State Protection. Among them, the Yellow-headed Amazon corresponds to and is managed according to the first level of protected wildlife, while the Yellow-crowned Parrot and White Cockatoo correspond to and are managed according to the second level of protected wildlife designated by the country.

(This report was completed in May, 2023.)

References

1. 濒危野生动植物贸易公约附录I附录II和III. 中华人民共和国濒危物种进出口管理办公室, 中华人民共和国濒危物种科学委员会. 2023年2月
2. 李顺才, 徐兴友, 张坤等. 我国鸚鵡资源及其市场开发 [J]. 中国家禽. 2004, 26(21): 51-53.
3. 郑淑荣. 鸚鵡养殖“女状元” [EB/OL]. <https://news.sina.com.cn/o/2006-03-22/14428503064s.shtml>
4. 赵桥镇. 河北武邑: 鸚鵡养殖带动贫困户走上致富路 [EB/OL]. https://www.sohu.com/a/408657212_267106
5. 90后男孩喜欢鸚鵡, 学兽医的他打造了一个鸚鵡王国, 年入20万 [EB/OL]. https://www.sohu.com/a/237826741_117373



6. 国家林业和草原局关于妥善解决人工繁育鹦鹉有关问题的函[EB/OL]. 国家林业和草原局. 2021年4月2日. <http://www.forestry.gov.cn/search/272622>
7. 姚贝. 危害珍贵、濒危野生动物罪之确立与完善[J]. 北京林业大学学报(社会科学版), 2023, 22(01): 80-85.
8. 赵芳菊. 非洲灰鹦鹉的人工育幼及训练[J]. 中国畜牧兽医文摘, 2016, 32(5): 91.
9. 冯爱国, 丁文娟, 张俊艳等. 亚马逊鹦鹉的养殖技术措施[J]. 畜禽业, 2011.
10. TEAM BEAUTY OF BIRDS. Breeding African Greys aka Grey Parrots[EB/OL]. <https://beautyofbirds.com/african-grey-breeding/>
11. Martin, R. O. Grey areas: temporal and geographical dynamics of international trade of Grey and Timneh Parrots (*Psittacus erithacus* and *P. timneh*) under CITES. *Emu - Austral Ornithology*. 2017, 118(1): 113-125.
12. Marelli, S. P., Abdel Sayed, A., Magni, M., Crosta, L., Schnitzer, P., Strillacci, M., Zaniboni, L. Reproductive parameters in some captive-bred cockatoo species (genus *Cacatua* and *Eolophus*)[J]. 2020. doi:10.1136/vetreco-2020-000405
13. Sinovas P, Price B, King E, et al. Wildlife trade in Amazon countries: an analysis of trade in CITES-listed species. 2017.
14. Qingqing Wang, Jianbin Shi, Xinchun Shen, Tian Zhao, Characteristics and patterns of international trade in CITES-listed live birds in China from 2010 to 2019[J]. *Global Ecology and Conservation*, 2021.
15. HARI. The Acquisition, Husbandry and Breeding of Common Amazons[EB/OL]. <https://hari.ca/hari/research-facility/hari-research-papers/the-acquisition-husbandry-and-breeding-of-common-amazons/>
16. 国家重点保护野生动物名录. 国家林业和草原局. 2021年2月5日
17. 关于《陆生野生动物及其制品专用标识管理办法（征求意见稿）》和专用标识范围再次公开征求意见. [EB/OL]. 国家林业和草原局. 2023-04-12. <http://www.forestry.gov.cn/search/363271>



