

Understanding Singapore's dynamic parrot trade 'ecosystem'

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SUPPLEMENTARY TABLE 1 Hobbyist groups in which the questionnaire respondents or interviewees participated.

Hobbyist groups	Sale of parrots permitted
Birdies and family sg	Yes
Birdcraze	Yes
Parrots & Family	No
Birdies of SG	No
parrot lovers @ Singapore	Yes
SG Parrots Community	No
WTB/WTS Birdstuff.Sg	No
Singapore Lovebird Community	No
Parrot world Singapore	Yes
Singapore parrot pantry	Yes

SUPPLEMENTARY MATERIAL 1 Questionnaire survey for parrot owners

The questions marked with an asterisk (*) were added during the study based on feedback from certain respondents.

Section I: Reasons for keeping parrots (Please circle accordingly)

1. How many years (in total) have you been keeping parrot(s)?

- a. <1
- b. 1-5
- c. 6-10
- d. 11-15
- e. >15

2. How were you introduced to keeping parrot(s) as pets?

- a. Inherited from parents/family/friends
- b. Influenced by friends
- c. Observed parrot hobbyist group events
- d. Visited bird shops
- e. Social media/parrot forums
- f. YouTube videos/movies
- g. Others:

3. Please rank the factors that motivate you to keep parrot(s), in their order of importance (1-most important, 7-least important). (Only choose the factors that apply to you)

- Companionship
- Free-flight
- Influence from family and/or friends
- Influence from social media
- Interest in keeping pets
- Interest in nature
- Status symbol
- Others -

4. Please rank the factors that have made it possible for you to keep parrot(s) in their order of importance (1- most important, 5-least important). (Only choose the factors that apply to you)

- Knowledge/experience to care for birds
- Help from family members and/or domestic helper

- Money to spend on hobby
- Space to keep parrot(s)
- Time to care for parrot(s)
- Others -

5. Please rank your main considerations when purchasing a parrot, in their order of importance (1- most important, 11 – least important). (Only choose the factors that apply to you)

- Ability to mimic voice
- Colour
- Size
- Flying ability (for free-flight)
- Intelligence
- Trainability
- Lifespan
- Price
- Rarity
- Source
- Parentage
- Others -

* 6. If rarity of your parrot is one of your considerations, how inclined do you think you will be to own a parrot if owning a parrot becomes common?

- 0%
- 20%
- 40%
- 60%
- 80%
- 100%

Section II: Involvement in parrot hobbyist groups

* 1. Are you part of a parrot hobbyist community?

- Yes, please state which hobbyist community:
- No

* 2. If Yes, how often you meet the parrot hobbyist community? (Answer only if you have answered Yes to Q6)

- Once a week or more
- Once every month
- Once every 3 months
- Once every 6 months
- Less than once every 6 months

* 3. Has being part of a parrot hobbyist community encouraged you to want to own more parrots? (Answer only if you have answered Yes to Q6)

- a. Yes
- b. No

Section III: Parrot breeding

* 1. Are you pleased with the number of parrots you own now?

- a. Yes
- b. No, please state how many more parrots you hope to purchase:

* 2. Do you breed parrots?

- a. Yes, please state why:
- b. No

Section IV: Knowledge and views on conservation (Please circle accordingly)

1. The following parrots are commonly found in Singapore, please circle the parrot(s) you think are native to Singapore.

- a. Rose-ringed parakeet
- b. Red-breasted parakeet
- c. Long-tailed parakeet
- d. Blue-rumped parrot
- e. Blue-crowned hanging parrot
- f. Tanibar Corella
- g. Yellow-crested Cockatoo
- h. Sulphur-crested Cockatoo
- i. Salmon-crested Cockatoo

* 2. Do you think that the illegal poaching of parrots from the wild for commercial trade is a problem?

- a. Very concerned that some species may go extinct in the wild
- b. Somewhat a problem
- c. Do not think it is a problem

3. Do you prefer parrots that are acquired from the wild or captive-bred?

- a. Acquired from the wild

<p>* Critically endangered (CR), Endangered (EN), Vulnerable (VU) or Near threatened (NT), Least Concern (LC), or Not sure. ** Acquired from the wild, or Captive bred (Specify if known: one parent foreign/both parent foreign/both parent local & 1st/2nd/≥3rd generation).</p>							

Section VI: Personal particulars

1. Gender

- a. Male
- b. Female

2. Ethnicity

- a. Chinese
- b. Malay
- c. Indian
- d. Eurasian
- e. Others:

3. Religion

- a. Christian
- b. Muslim
- c. Buddhist
- d. Taoist
- e. Hindu
- f. Others

4. Education

- a. Primary
- b. Secondary
- c. Pre-University
- d. Tertiary
- e. Post graduate
- f. Others:

5. Occupation

- a. Business/Executive
- b. Professional/Managerial
- c. Civil Servant
- d. Retired
- e. Housewife
- f. Student
- g. Unemployed
- h. Volunteer work
- i. Others:

6. Monthly income

- a. Less than \$1,000
- b. \$1,000- \$2,499
- c. \$2,500- \$4,999

- d. \$5,000- \$7,499
 - e. \$7,500- \$10,000
 - f. More than \$10,000
7. Age (years)
- a. 0-20
 - b. 21-30
 - c. 31-40
 - d. 41-50
 - e. 51-60
 - f. 60 and above
8. Name & Contact (optional):

Thank you for your time!

Section VII: Terms of use & their explanation

ACRES – Animal Concerns Research and Education Society

AVA – Agri-food and Veterinary Authority of Singapore

Captive-bred – Birds bred in captivity to be sold or exported for commercial purposes.

CITES – Convention on International Trade in Endangered Species of Wild Fauna and Flora. An international agreement to ensure that the trade in specimens of wild animals and plants do not threaten their survival.

F1 - First-generation offspring are specimens produced in a controlled environment from parents at least one of which was conceived in or taken from the wild.

F2 – Offspring of second generation or subsequent generation (F3, F4, etc.) are specimens produced in a controlled environment from parents that were also produced in a controlled environment.

IUCN Red List – The International Union for Conservation of Nature assesses the conservation status of species, to highlight taxa threatened with extinction, and therefore promote their conservation.

IUCN CR - Critically endangered; EN = Endangered, VU = Vulnerable and NT = Near Threatened.

Sustainably Sourced – May be captive bred or wild caught but monitored (by governing authority) to prevent over-harvesting of species.

Unsustainable Trade - The over exploitation of a species (for trade), to the point where its survival hangs in the balance.

Wild Caught - Birds poached from the wild to be sold or exported for commercial purposes.

SUPPLEMENTARY TABLE 2 Independent and dependent variables in the models used to examine respondents' level of awareness of, concern for and willingness to participate in wildlife conservation (n = 134).

Variables		Type	Description
Dependent	Awareness	Numerical	Respondent's knowledge of parrots native to Singapore and the conservation status of the parrot(s) kept, graded on a combined score of 0 (correct answer), 1 (1 correct answer) and 2 (2 correct answers).
	Concern	Numerical	Level of concern towards the illegal hunting of parrots from the wild, graded on a score of 0 (not a problem), 1 (somewhat of a problem) and 2 (Very concerned).
	Willingness	Numerical	Willingness to wait to support the sustainable procurement of parrots was graded on a score of 0 (not willing to wait), 1 (1 week), 2 (2 weeks), 3 (1 month), 4 (3 months), 5 (>3 months). Willingness to pay extra was graded on a score of 0 (not willing to pay extra), 1 (1 – 20% extra), 2 (21 – 30% extra), 3 (31 – 40% extra), 4 (41 – 50% extra), 5 (>50% extra). A combined willingness score was calculated as an average of willingness to wait and willingness to spend an additional amount of money.
Independent	Years of experience	Numerical	Number of years the respondent has been keeping parrots, graded on a score of 1 (<1 year), 2 (1-5 years), 3 (6-10 years), 4 (11-15 years) and 5 (>15 years).
	Education	Numerical	Education level of respondent, graded on a score of 1 (primary), 2 (secondary), 3 (pre-university), 4 (tertiary) and 5 (postgraduate).

SUPPLEMENTARY MATERIAL 2 Semi-structured interview guide.

Section I: Reasons for keeping parrot(s)

1. Please elaborate on your choice for ranking the factors that motivate you to keep parrot(s) based on your response from the questionnaire?
2. Can you please elaborate on your choice for ranking that have made it possible for you to keep parrot(s) in Singapore based on your response from the questionnaire?
3. Can you please elaborate on your choice for ranking your main considerations when purchasing a parrot based on your response from the questionnaire?
4. In your opinion as a parrot owner, why do you think parrots are becoming increasingly popular as pets in Singapore?
5. If you are a member of a parrot hobbyist community, then please elaborate on how you got introduced? *(Please tell me about the type of activities conducted, including free-flying of parrots.)*

Section II: Views on conservation

6. Tell me about your views on wildlife conservation. *(To gauge the level of awareness and stance, any activities/involvement)*
7. Briefly explain your understanding of how and where, pet parrots are sourced for commercial trade.
8. Please elaborate on your preferences towards the source of your parrot(s) based on your response from the questionnaire?
9. Please elaborate on your perception towards various barriers such as cost-% range, delay and additional paperwork etc. to purchase sustainably sourced parrots over unsustainably sourced parrots.
10. In your opinion, what are the measures that can be put in place to reduce the unsustainable trade of parrots in Singapore?

SUPPLEMENTARY TABLE 3 List of illustrative quotes extracted from semi-structured interviews with themes and sub-themes. The number of respondents in each subtheme is indicative of coding frequency.

S.No	Theme & sub-theme	Number of respondents	Representative quote
1	Motivations for keeping parrots		
	Companionship	14	‘My children and grandchildren live on their own, my wife needs something to get attached to.’
	Influence from family and/or friends	6	‘My fiancé was away and I was very lonely so I wanted to get a lovebird’ ‘My colleague had a Ringneck, it looked really colourful and nice, when I saw it I wanted it too.’
	General interest in keeping pets	8	‘When I was young, I went to a quail farm, and that was when I started to like birds’
	Interest in nature	3	‘I have an interest in nature and animals and I enjoy interacting with them.’
	Unique	2	‘They are unique, unlike cats and dogs.’
	By Chance	3	‘My first lovebird flew into my home, and we didn’t want to leave it and it looked so hungry so my mom took it in.’
	Alternative to dogs	2	‘My mom wouldn’t let me keep a dog, parrots are more convenient to keep, and they are interactive like dogs.’
	Sympathy	2	‘I didn’t want him to be stuck in a pet shop, in a not so big cage.’
	Lifespan	1	‘It is hard to deal with the death of a pet, parrots can live for 60-80 years.’
	Influenced by pet shop	2	‘For the fourth parrot, I went to bird shop to buy bird food, I actually had zero intention of getting a bird but then saw one at a bird shop and it looked so cute, so tame.’
	Upgrading	7	‘I had Daffy and then I felt like it would be nice to have company for Duffy. So then I got Penguin’
	Free flying	1	‘I enjoy the free flying of parrots whereby u keep them as pet and enable them to fly freely in the sky and recall back.’
	Mental health	2	‘My parrot has really helped in terms of mental health, I have really bad anxiety, often I will get panic attacks, he will sing and calm me down.’

	Influence from social media	1	‘For my haagromo budgie, I first saw on Facebook, someone posted a picture of it, and I was very keen on getting it’
2	Reasons that enable people to keep parrots		
	Experience to care for birds	7	‘I went online to read information about how to care for parrots, I even joined overseas parrot groups to make sure my parrots will not die’
	Help from family and/or helper	14	‘My dad helps with taking care of birds, when I go on holiday, my family take turns to go on holiday, we don’t go on holiday together to ensure that the parrots are taken care of.’
	Money	6	Caring for parrots can be quite expensive, I need to buy the toys, food, send my parrots for check up, all these things require money on a regular basis.
	Space	8	‘We have a separate room for the parrots, and we keep them in two different cages.’
	Time	7	‘Keeping a parrot is very time consuming, they need a lot of attention more than dogs.’
	Consent	1	‘I had to get parental consent.’
3	Considerations when purchasing a parrot		
	Appearance	8	‘I like bright ones as they make me happy.’
	Affinity	6	‘To me it is not about the tricks that they can do but how they can bond with me. ‘
	Companionship	2	‘We bought the African Grey because of its intelligence and how well it could speak, and possibly because it is very good as a companion.’
	Trainability	5	‘I want parrots who are easy to train that is why I get young birds.’
	Price	4	‘I spend a lot of money on birds, but I feel like not on the bird itself. If I can save I want to save’
	Rarity	2	‘Experienced pet keepers want rare pets, if others have the pet too, what is the point?’
	Source	5	‘I didn’t want to encourage any trade, I done that naively the first time...I feel bad by buying them, I was not helping the bird trade.’
	Noise	4	‘My neighbour tried to shoot marbles at the birds because they were too noisy, and (now) I have to hide them whenever they are too noisy.’
	Age	6	‘Younger birds are easier to bond with’
	Feather plucking issues	1	‘This usually happen for stressed birds, people would avoid purchasing such parrots’
	Character	3	‘What started the craze of conures is really their character, they are very interactive.’

	Ability to speak	2	'I like parrots that can talk'
	Intelligence	1	'Ringnecks are intelligent, speech ability, they are quite good at talking'.
4	Popularity of parrots in Singapore		
	Unique	3	'They are more exotic, and different from dogs which only have few colors.'
	Affluence	5	'Last time caged birds were a sign of how rich a person was, a similar thing is happening now, but since more people are able to do it, it is actually not a special thing anymore.'
	Social status	2	'Some people want to look good by owning an expensive parrot'
	Un-informed	6	'People see only the side that parrots can be fun to keep and play with, but they don't see and realize the amount of care and attention parrots need.'
	Restrictions	2	'There are restrictions on owning dogs and cats in houses in Singapore.'
	Social media	6	'Many interesting stories from parrot owners, some even post video footages online to tell their stories'
	News articles	2	'Recently over the years, there are many different articles on parrot ownership and exotic birds, so people start to get interested in owning birds.'
	Parrot Hobbyist groups	6	'Many people start to join the Facebook group, there is a community to free-fly your parrots and talk about your parrots.'
	Influence from other parrot owners	6	'We like to influence other people to own parrots, we call it 'parrot poisoning', we share our passion about owning parrots with others.'
	Free-fly	3	'Birds, can fly and come back, the thrill of that got people interested, they think it is very cool'
	Pet shop supply	1	'More bird shops are bringing in parrots'
	Ornamental mindset	1	'For dogs or cats, most people only have one, but for birds I feel like they still have an ornamental mindset, it is like fishes, to them adding more than one fish is not much of an opportunity cost.'
	Impulsive buying	1	'Sometimes people impulsively buy when they go into the birdshop, I just want one because it is 'cute' and add to their collection.'
	Lifespan	1	'They have a longer lifespan than dogs and cats'
	Price	2	'It is not very expensive, one can get small lovebird or budgie for less than 100, it is cheaper relative to dogs'

	Upgrading	1	‘Some people think that want to start off with small parrots, to train their ability to care for parrots, they then ‘upgrade’ to bigger parrots after a while, and keep on buying bigger parrots. I think this is very wrong.’
5	Views on conservation		
	Awareness	7	‘Once in awhile, I read articles that pop up on my Facebook feed...other than that I don't know much about conservation.’
	Involvement	9	‘I used to volunteer at the bird park.’
	Neutral/Non-involvement	7	‘I don’t participate in much conservation activities’
	Supportive	12	‘I think that we should do more to ensure that parrots are well taken care of and that people don’t poach parrots from the jungles and instead buy captive bred birds.’
6	Awareness on the bird trade		
	Wild caught	3	‘(They are) poached from the wild illegally by poachers, and then sold in the black market.’
	Captive bred	5	‘I think they come from countries like Thailand, Malaysia, neighboring countries, they usually are bred there’
	Home-bred	5	‘Most of the people I know buy from local breeders, but they are quite silent about it because they are afraid of people finding out. People usually keep their parrots and breed them and sell them online afterwards.’
	Licensed to Unlicensed shops	2	‘Licensed pet shop buy and sell to shops that don’t have a (import) license, they make a profit from there.’
	Trade-in	1	‘Trade-in of parrots, common in pet shop, but must top-up, people want to upgrade to bigger bird. Peer pressure, people want to keep up, or people in group will influence the people.’
	Uncertain about source of parrot	5	‘ I am not too sure, but I trust the local bird shop owner that he gets the parrots from a proper source.’
7	Preference of source of parrot		
	Captive bred	17	‘I won’t feel guilty and don’t want to separate baby birds from their family.’ ‘Captive-breed parrots are used to human touch, it is a lot easier to tame them as compared to a wild bird’

	Wild caught	1	'I don't think that captive bred birds are easier to train, but wild caught may be harder if they can get through stress (in the wild). Captive bred birds may be inbred and so may not be as healthy.'
8	Willingness for sustainable procurement of parrots		
	Willing	8	'Yes I am willing – for the greater good'
	Won't buy	3	'Wouldn't even bother getting bird if there were so many processes involved.'
	Not willing	2	'Not willing'
	Depends	3	'It depends on how much the parrot costs'
9	Measures to reduce unsustainable trade		
	Education	13	'Parrot owners should be well informed on why they shouldn't get birds that are not sustainably sourced.'
	Monitoring	5	'Restrict the purchase of parrot types that are in danger of being endangered'
	Laws	8	'Environmental laws are not stringent enough, people that get caught are given fines that are not substantial- something worth \$100,000s only fined \$10,000 is still worth the risk.'
	Regulations	8	'Have certification to know that people don't keep it illegally or if it is poached.'
	No issue	3	'It is not much of a sustainable problem in Singapore, but rather is how people take care of their birds'
	Adoption	2	'I feel that if you're going to keep a bird then you should push for adopting birds that have no owners versus going out to buy birds and adding to the ongoing issue, which accumulates.'
	Promote win-win instances:	2	'I think that owners must also be able to benefit from this, like more awareness must be done to let them know that having a captive-bred parrot is actually better and safer, otherwise they will not be willing.'
	Join parrot Hobbyist Groups	1	'People should Join proper bird groups for adequate knowledge, bird shop have wrong information, must join correct groups'
	Vets to play a greater role:	2	'Have properly certified vets: Not all vets are truly certified and have aviary bird certification. '
10	Other findings		
	Parrot escaped	2	'My Budgie flew into my house, I passed it to my uncle then it flew out (escaped) again.'

Parrot released	2	‘We didn't have time to take care, and the parrot screamed more and the neighbors were not happy...so we released it in the nature reserve near Upper Pierce reservoir.’
Poaching incidents	2	‘I met a poacher (at a pet shop) buying baby food, he caught Cockatoos from Changi Village... he will go in the middle of the night to catch and take baby birds.’
Parrot breeder	2	‘Breeders help to ensure the survival of species.’
Challenge to conservation	1	‘Ideally none of the birds should be in homes, but not all birds can be living in the wild, the next best thing is to provide a happier home.’
Younger generation more informed	1	‘A lot of information are online for younger generation, but for older generation, many don't place emphasis on welfare of birds.’

SUPPLEMENTARY TABLE 4 Questionnaire survey respondent demographics, income, education and experience with keeping parrots.

Gender (n = 145)	Number of respondents (%)
Male	78 (54%)
Female	67 (46%)
Age (years; n = 145)*	
0 - 30	52 (36%)
31 - 50	74 (51%)
> 50	19 (13%)
Monthly income levels (n= 133)	
0 - \$2499	49 (37%)
\$2500 - 5000	48 (36%)
> \$5000	36 (27%)
Education levels (n = 133)#	
Primary or Secondary	27 (20.3%)
Pre-university	19 (14.3%)
University	87 (65.4%)
Years of experience keeping parrots (n = 133)	
< 1	16 (12%)
1 - 5	65 (49%)
6 - 10	24 (18%)
> 10	28 (21%)

*Median age among Singapore residents is 41.1 years.

#Education level in Singapore among residents (>25 years of age): primary or secondary level (42.7%), pre-university (24.9%) and university (32.4%). Source: SINGSTAT 2020.

SUPPLEMENTARY TABLE 5 Number of parrots owned, by size, across respondents (n = 91 respondents)

Size	Small	Medium	Large	Total
Number of parrots	227	166	162	555
Total (%)	40.90	29.91	29.19	100.00
Median per respondent	2	1	1	3
Average per respondent	2.8	2.13	2.28	4.14

SUPPLEMENTARY TABLE 6 Top five factors that enabled parrot owners to keep parrots (n = 145 respondents).

Enablers	% of respondents
Experience/knowledge to care for parrots	58
Time	54
Space	36
Money	29
Help from family/helper	21

SUPPLEMENTARY TABLE 7 Results of predictor variables explaining survey respondents' level of awareness and concern towards conservation and willingness to support sustainable trade, based on univariate General Linear Models (GLM) with 'poisson' distribution. n = 134 respondents.

Univariate Formula	Coefficient (95% CI)
Awareness ~ Years	0.049 (-0.05, 0.149)
Awareness ~ Education	0.108 (0.015, 0.204) [#]
Concern ~ Years	0.0178 (-0.073, 0.106)
Concern ~ Education	-0.011 (-0.104, 0.083)
Willingness ~ Years	0.144 (-0.12, 0.13)
Willingness ~ Education	0.099 (0.017, 0.183)*
Willingness ~ Awareness	0.18 (0.056, 0.305)**
Willingness ~ Concern	0.044 (-0.103, 0.198)

Values in parentheses correspond to 95% confidence intervals (CI) except for # where 90% of CI is reported. **p < 0.01, *p < 0.05, # p < 0.1

SUPPLEMENTARY TABLE 8 Parrot hobbyist Facebook groups in Singapore classified according to their profiles and membership details (as of 20 April 2020).

S. No.	Facebook group name	Interest category	Number of Members (Apr 2020)	Year Founded	Public or Private Group	Number posts per month (last 30 days)	New members per month (last 30 days)	Facebook Group URL
1	<i>BirdCraze.Sg</i>	Parrot hobbyists	7,950	2012	Closed	838	74	https://www.facebook.com/groups/BirdCraze.sg/
2	Lost & Found Birds SG	Birds lost and found	7,338	2014	Public	336	289	https://www.facebook.com/groups/349113045257552/
3	Singapore Bird Hobbyists	Songbird hobbyists	6,411	2015	Closed	139	30	https://www.facebook.com/groups/922048427841712/
4	Parrots Lovers @ Singapore	Parrot hobbyists	4,993	2013	Closed	207	370	https://www.facebook.com/groups/554367174596893/
5	Singapore Lovebird Community	Lovebird hobbyists	4,118	2013	Closed	383	86	https://www.facebook.com/groups/517811364924204/
6	Parrot World Singapore	Sale of parrots	3,548	2015	Closed	118	179	https://www.facebook.com/groups/966422643379292/
7	<i>Parrots Club SG</i>	Parrot hobbyists	3,345	2013	Public	163	227	https://www.facebook.com/groups/319816298146056/
8	WTS/WTB Singapore Bird Market	Sale of birds	3,209	2015	Closed	267	26	https://www.facebook.com/groups/1431963787100699/
9	Wings Of Parrots (Singapore)	Parrot hobbyists	1,935	2018	Public	74	176	https://www.facebook.com/groups/290490998410177/
10	Singapore Parrot Community	Parrot hobbyists	1,868	2014	Public	87	32	https://www.facebook.com/groups/306712099517028/
11	<i>Birdies and Family Sg</i>	Parrot hobbyists	1,783	2015	Closed	1464	86	https://www.facebook.com/groups/899674403484137/

12	ParrotAlert SG	Parrot lost and found	1,140	2017	Public	2	47	https://www.facebook.com/groups/ParrotAlert.Singapore/
13	ParrotCraziness.Sg	Parrot hobbyists	1,073	2013	Public	5	0	https://www.facebook.com/groups/266218026850282/
14	African Grey SG	African Grey hobbyists	1,021	2017	Closed	37	88	https://www.facebook.com/groups/132345093974307/
15	CAG Singapore (African Grey)	African Grey hobbyists	988	2017	Closed	74	76	https://www.facebook.com/groups/1240246199357787/
16	The Parrot Order (formerly Conure Love SG)	Parrot hobbyists	975	2017	Closed	38	29	https://www.facebook.com/groups/135770150338679/
17	<i>FlockFlyers.sg</i>	Parrot hobbyists	843	2016	Public	49	9	https://www.facebook.com/groups/FlockFlyers.sg
18	Singapore Cockatiel Community	Cockatiel hobbyists	803	2013	Public	81	54	https://www.facebook.com/groups/577475948942494/
19	Freedom of Flight*	Free-flying	771	2017	Public	27	5	https://www.facebook.com/groups/586722084857333/
20	Indian ringneck singapore 新加坡月輪鸚鵡	Indian ringneck hobbyists	754	2017	Public	25	24	https://www.facebook.com/groups/966094563532775/
21	<i>Singapore Freeflying Parrots</i>	Free-flying	511	2017	Public	135	38	https://www.facebook.com/groups/184377688789723/
22	Singapore Conure Community	Conure hobbyists	361	2019	Closed	40	121	https://www.facebook.com/groups/439471190275323/
23	<i>Birdies, Buddies, Kakis</i>	Parrot hobbyists	357	2017	Closed	130	23	https://www.facebook.com/groups/486040831778749/
24	Macaw Owners Singapore	Macaw hobbyists	341	2013	Closed	4	0	https://www.facebook.com/groups/Macawowners/
25	Parrot Lover SG	Parrot hobbyists	327	2015	Public	27	9	https://www.facebook.com/groups/1426263481036059/

26	Singapore Lovebirds Society	Lovebird hobbyists	243	2019	Closed	40	51	https://www.facebook.com/groups/1813942968752232/
27	Parrotlets Singapore (Forpus Coelestis)	Parrotlet hobbyists	241	2016	Public	34	30	https://www.facebook.com/groups/1784088008535305/
28	Amazon Parrots Singapore	Amazon hobbyists	142	2019	Closed	21	2	https://www.facebook.com/groups/287046421997243/
29	Singapore parrot pantry	Parrot hobbyists	137	2015	Public	0	0	https://www.facebook.com/groups/845973428824147/
30	The Happy Bird Singapore	Parrot hobbyists	131	2017	Private	1	11	https://www.facebook.com/groups/485001665216378/
31	Cockatoo Club Singapore	Cockatoo hobbyists	15	2018	Closed	0	5	https://www.facebook.com/groups/449564845554616/

SUPPLEMENTARY TABLE 9 Facebook presence of parrot pet shops and other associated services (supplies and grooming) in Singapore classified according to their profiles and likes and followers (as of 20 April 2020).

S.No.	Page Name	Number of Likes	Number of Followers	Business Type	Online Only	Facebook Page URL
1	Thepro.sg Birds Import & Export (The Pet Research Outpost)	6,600	6,817	Pet Shop	N	https://www.facebook.com/thepetresearchoutpost/
2	Goodwill Birds Trading	6,505	6,917	Pet Shop	N	https://www.facebook.com/Goodwill-Birds-Trading-155413701179353/
3	KS Pets Hub	6,482	6,703	Pet Shop	N	https://www.facebook.com/KSPetsHub/
4	K S Aquatics & Trading Company	5,294	5,367	Pet Shop	N	https://www.facebook.com/AquaticQuotient/posts/10154989274440087
5	Takara Pets	5,274	5,324	Pet Shop	N	https://www.facebook.com/TakaraPets/
6	MINI PET STORE	3,926	4,117	Pet Shop	N	https://www.facebook.com/minipet265/
7	Aik Guan Pet Trading	3,252	3,360	Pet Shop	N	https://www.facebook.com/AikGuanPetTrading/
8	Song Birds Centre	2,266	2,469	Pet Shop	N	https://www.facebook.com/songbirdscentre/
9	PetsManiac - Eunoz	1,313	1,405	Pet Shop	N	https://www.facebook.com/PetsManiac-Eunos-2296588213704838/
10	Parrots Eden	860	862	Pet Shop	N	https://www.facebook.com/parrotseden/
11	218 Pet Shop LLP	767	819	Pet Shop	N	https://www.facebook.com/218PETSHOPLLP/
12	Jungle Little Land	610	617	Pet Shop	N	https://www.facebook.com/pages/Jungle-Little-Land-Jurong-West-St-41/250872628260791

13	ABC Birds Centre	61	-	Pet Shop	N	https://www.facebook.com/pages/Abc-Bird-Shop/198933033490091
14	BirdSprees	1,708	1,714	Parrot Supplies	Y	https://www.facebook.com/birdsprees/
15	Parrot Station 2018	2,136	2,233	Parrot Supplies	N	https://www.facebook.com/parrotstation2018/
16	House of Parrots	1,791	1,879	Parrot Supplies	Y	https://www.facebook.com/pg/houseofparrots/
17	The Happy Bird Singapore	1,118	1,170	Parrot Supplies	Y	https://www.facebook.com/thehappybirdsg/
18	Parrot Kingdom SG	806	812	Parrot Supplies	Y	https://www.facebook.com/ParrotKingdomSG/
19	Eco-Eden Aquatic N Pets	545	575	Parrot Supplies	N	https://www.facebook.com/ecoedenaquatic/
20	Parrot Funhouse	496	521	Parrot Supplies	N	https://www.facebook.com/parrotfunhouse/
21	ST Parrot Supplies & More	587	603	Parrot Supplies	Y	https://www.facebook.com/stparrotsupplies/
22	Fids Wonderland	90	93	Parrot Supplies	Y	https://www.facebook.com/fids.wonderland/
23	PetsManiac	1330	1394	Parrot Grooming	N	https://www.facebook.com/PetsManiac-143192969548064/
24	Shin's Animal Instincts	985	1044	Parrot Grooming, Supplies, Toys	N	https://www.facebook.com/Shins-Animal-Instincts-100636824623274/
25	We Care	748	785	Parrot Grooming	N	https://www.facebook.com/sgwecare/
6	Parrot Angel Lovers Center	689	724	Parrot Grooming, Boarding, Training, toys and Supplies	N	https://www.facebook.com/pg/zaizai696918/
