***That's Wild* Season 2**

Wings of the City | Urban Birds in Singapore

Elliott: Hi everyone and welcome to *That's Wild*, a podcast series brought to you by the National Parks Board. I'm Elliott and I'll be your host for this series, where we'll be talking to special guests from the nature community about topics surrounding biodiversity conservation in our City in Nature. In today's episode, we'll be talking about urban birds in Singapore.

So we see these birds almost every day here, near our homes, in gardens, in parks, in our schools, in the places where we eat, you know, food courts and hawker centres. Some encounters with these birds are great, some are not as good. So how do we then manage our interactions with them? Why are they so common in our urban spaces? And what can we do to minimise the less enjoyable encounters we have with them? So to answer all these questions we have Malcolm and Keita here with me today. Welcome to the podcast Malcolm and Keita.

Malcolm: Hi, my name is Malcolm. I'm a wildlife researcher with the National Parks Board of Singapore.

Keita: Hi, I'm Keita. For my day job, I do research at the National University of Singapore. Separately, I'm also leading the Bird Society of Singapore, a team that focuses on conservation, research and outreach regarding birds in the region.

Elliott: Thanks for joining us here today, guys, on the podcast. To kick us off, maybe you could let me know a bit more about your most fascinating or memorable experience with a bird.

Keita: Okay, so maybe I'll start. For me, I think this story, some of you might actually judge me for it. But it's about my encounter with this bird called the Asian Koel. Some of you might know what it's like, but it's this big, crow-sized bird with almost demonic-looking red eyes. So the first time I actually saw it was on my day one of birdwatching.

I was just out walking around West Coast Park when I saw this loud bird going, *oo woo*! *Oo woo*! And so I took some time and I managed to find the bird and I saw this, you know, huge black bird with very scary looking red eyes. And the moment I saw this bird, it kind of reminded me of this scene in the movie *Ratatouille*, where the food critic Anton Ego has a flashback of his childhood days upon eating the ratatouille. It kind of reminded me of hearing this bird from my mom's room back in Choa Chu Kang when I was young. So it was this very special moment and I realised that this bird that I've been hearing the whole time, I'm actually finally seeing it.

Malcolm: For me, there are many encounters, but the more memorable one would be when I was doing mist-netting in Fraser's Hill as part of my Master's project to assess the impact of habitat degradation on forest birds. This was an encounter with a Collared Owlet. A Collared Owlet is a really small owl. It's one of the smallest owls in the world, about the size of a coffee mug. One of the ways in which I do my surveys is to set up these mist nets – and mist nets are really fine nets which are used by researchers to capture, measure and release birds. So, when I had this Collared Owlet caught in the mist net, I was trying to remove it. Then suddenly it started to rain, and then some of the raindrops fell on its large face because, you know, the owl's eyes are so large, right? Inevitably, some of the raindrops fell on its eyes. So, when it fell on the right eye, it closed on the right side, fell on the left side, closed on the left, so it constantly was winking at me. So, it was a very comical and very memorable experience for me.

Elliott: Very cute also, I might add, I think I'm just visualising that in my head. Very fascinating stories from the both of you. Yeah, Fraser's Hill is one of the most amazing places for wildlife I have ever been to. I really would like to go back, not just for birdwatching, but for wildlife watching in general also.

I think Keita brought up something very interesting also. I think birds are a nature enthusiast's first foray into the natural world, for a lot of us, right; and for a layperson, they are everywhere so, very easily observable, quite easy to learn about ecology and how to identify different species when you're looking at the birds around us.

With birds, there are some species that are a lot more observable and a lot more obvious than others, and that brings us to the topic of today's discussion – which are urban birds, right? Those would be like your mynas, your pigeons… But I was wondering if there are some other species people wouldn't so easily associate with urban environments, some more interesting species that you guys have come across.

Keita: For many people in Singapore, when we think of urban birds, the first thing that might come to your mind is, you know, Javan Mynas, House Crows. But there are actually a lot of native species that can be found in the urban area too. These are usually edge species, so birds that are not so forest-dependent and not as sensitive to disturbances.

So one of the very prime examples is this Olive-backed Sunbird. Many of you probably have seen this bird before and many of you might actually mistake it for the hummingbird, but it's actually not a hummingbird. So those can only be found in the Americas – over here in Asia, we have sunbirds. It's this very yellowish-olive bird, the males have an almost blue, glossy throat. And this bird is very common in Singapore's urban spaces. Some of them have even been observed nesting in people's underwears in HDB estates. So that's one of the residents that

you can find in Singapore. But apart from that, a lot of migrants can also be found here, and a very prominent example that I can remember is the Redstarts.

There's this particular canal in Pasir Panjang, where for some reason, this very rare species, the first one that was in Singapore actually, called the Black Redstart, this small sparrow-sized bird that's kind of greyish, it kind of just showed up one day in Pasir Panjang. And then the next morning, you have literally 100 people over there trying to look for this bird.

And what was so surprising about this canal is that the next year, another similar species called the Daurian Redstart, also probably the fifth or sixth record in Singapore, somehow showed up at the same drain. So urban spaces in Singapore really host a lot of these resident and migrant species.

Malcolm: Yeah for me, as long as the birds find suitable habitats for foraging, roosting, or nesting, then they will occur in these spaces.

Like Keita was saying, while the feral pigeons, the House Crows, and the Javan Mynas are the more commonly encountered urban birds, there's also a wide variety of different attractive birds that you can see in our urban spaces. For example, the Oriental Magpie is this very attractive-looking black and white bird. A very melodious call that you might have heard.

And then there's also, for me, I quite like watching the Pied Imperial Pigeon. It's this very large, predominantly white pigeon that forages on fruit. And then you might also hear this Blue-crowned Hanging Parrot. It's very, very small. And to me, it's seemed to have done really well in the last couple of decades. I think this is largely due to the abundance of trees and shrubs that have been incorporated into our urban environment, as long as it provides food, shelter, opportunities for nesting, the birds would do well.

So right in the CBD, we have this Peregrine Falcon, a very handsome predator that was recently documented to breed at the OCBC Centre. But unfortunately, the eggs were abandoned… we think that's partially due to an unsuitable substrate for them to lay their eggs on. We've worked with OCBC to put up a nesting tray with loose gravel, which is a bit more of an appropriate nesting substrate. So hopefully we see some Peregrine chicks in the coming breeding season.

Elliott: Nice, nice.

Keita: That'll be cool.

Malcolm: Yeah.

Elliott: That's really crazy to me, actually, that you can find Peregrine Falcons here in Singapore. I think you always hear about them in big cities like London, but nice to know that we have them in Singapore.

Nature Nuggets (Recommendations segment)

It's time for Nature Nuggets! In the spirit of our podcast title, *That's Wild*, we wanted to ask our guests to recommend something wild that they've come across or enjoyed and that you can check out yourself too.

Keita: So maybe I'll begin. One of them is called this board game called *Wingspan*. It's this super cool board game. It features a lot of different species of birds. And basically the way the game works is that you put your bird cards on different kinds of habitats they can live in and the way you score points is by putting, for example, more eggs, or having a lot of species in a certain habitat, and you basically compete with your friends up to, I think, four to six players can play. And what you want to do is essentially to fill up your board with as many birds as possible that have different powers.

Malcolm: Yeah, I can also introduce a board game. This is *Fly-A-Way*. It was a game that was actually produced by Singaporeans, but the first time I played the game was when I was in Switzerland. So it's actually quite strange, someone from Switzerland introduced this game to me. But anyways, the game was good fun. It's a game to help birds navigate the dangers of habitat loss, poaching and pollution during their arduous migration. The really nice thing is that it features birds in our region, so it's a good board game. I recommend.

Keita: Another one that I would like to recommend to our listeners is this movie called *The Big Year.* So a 'big year' is basically when a birdwatcher goes around either in your nation or regionally or even the whole world, and you try to see as many species as possible. So it's kind of like a race between different birders. So this movie is based on a true story about certain birders in America competing in a big year. And it basically showcases how different birdwatchers are competing to see as many birds as they can. It shows you a little bit more about the competitive side of birdwatching. Also a bit more about the toxic side of birdwatching – and maybe you can watch this to figure out the crazy things that go around in the minds of us birdwatchers.

Elliott: This is the one with Jack Black, right?

Keita: Yeah.

Elliott: And they're looking for like a goose or pink-footed goose or something.

Malcolm: Pink-headed— a pink-footed goose I think?

Elliott: Pink-footed goose, yeah.

Keita: In the middle of Colorado, which makes no sense.

Elliott: Yeah. Highly recommend though. Great movie.

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Elliott: You guys have both talked about a very wide range of different birds, and I wasn't really thinking about drains and canals either, but now that you mention it, a lot of water birds or birds associated with ponds and lakes can also be found in our drains and canals.

Would you say that this is something special to Singapore, or do you think urban environments around the world also have a good mix of these different species? Or have we done something in Singapore that kind of encourages them to inhabit our urban environments a bit more?

Keita: I think it's common to see many birds in urban areas around the world, but what Singapore does specially is that there are a lot of fruiting trees that I think attract many of these birds, and also the presence of many more trees probably relative to many other big cities around the world that allows the environment here to host more species.

Malcolm: Even though we get species that do very well in Singapore, and they're very attractive looking ones or species that have a very melodious call or song, we also have, of course, the crows, mynas, and feral pigeons, which are very abundant.

They result in several disamenities. Crows and mynas, for instance, they can form very large roosts. And if you live close to the roost of a crow and myna, they can disturb residents, and then their droppings also soil the environment. Breeding crows during the nesting season may also attack people if they're walking close to their nests.

And then feral pigeons also soil the environment. The droppings can be unhygienic, and if you frequently come into exposure with these droppings, you could potentially get sick. So the conflicts with pigeons are more likely to arise when people are feeding them. It's essentially

because their flocks get larger and other disamenities in which pigeons could possibly cause is when they nest in the aircon ledges.

Elliott: How do we make sure that people don't have too many negative encounters with these species? They are part of our natural world even though they're introduced. So how do we coexist alongside them? What are some things that people can do to make sure that we can have the best relationship with them? And also any management strategies, especially on the NParks side of things, Malcolm?

Malcolm: So it's a multi-pronged approach. The first one is really food source reduction, and we emphasise this quite a bit. This includes enforcement against feeding, management of food waste at food establishments, and we do this in collaboration with NEA as well. Besides this, we also do direct population control. We trap pigeons, and then we also put them down using a humane method with carbon dioxide gas. Other methods in which we try to keep pest birds away from certain areas is habitat modification. You could do something as simple as sloped ledges so that the pigeons cannot roost. Also, we cannot discount education and outreach. So school visits, just to remind kids not to feed wildlife. And then also offering repeat-feeders other sorts of activities beyond feeding birds. They could be nature-based activities like community gardening or birdwatching, for instance.

Elliott: What kind of research have you conducted on the population ecology of birds in Singapore or other kinds of research that have informed these management strategies?

Malcolm: So in 2021, we did a study to look at how COVID-19 social restrictions would affect pest bird abundance and foraging behaviour. When we have these social restrictions in place, nobody can go out to feed birds, hawker centres are closed. It's sort of like a natural experiment where there's a drastic drop in anthropogenic food.

So we wanted to see how the birds, when we have these social restrictions in place, whether or not it would lead to a decline in the population numbers. And we found that to be the case.

Elliott: Yeah, so I think the effects of COVID-19 on not just humans but wildlife was really interesting. And, you mentioned something about them spending most of their time foraging during the COVID-19 lockdown.

Malcolm: Yes.

Elliott: Did this kind of influence how much time they spend on other activities? So I would imagine that if animals were spending more time foraging, they'd have less time to reproduce

and do other things. So was there any correlation or any kind of findings that suggested that as well?

Malcolm: Yeah, that's exactly what we did also. Aside from documenting the numbers, we did this other part where we observed their activities as well throughout the day. And we found that before COVID-19 social restrictions that they were foraging less and they had more opportunities to rest.

But during the COVID-19 social restrictions, we found that their activity budgets changed quite a bit more. So instead of spending more time resting, they spent more time foraging for food. The reason why is because they don't have this ready food source that's provided for by people. So they had to go down to the grass patch to look for grass seeds, so they reverted back to feeding more on natural sources of food.

That's a good thing also because that would mean that the pigeons would spend more time looking for these grass seeds, which are not so abundant. And that diverts time away from other activities like resting and reproducing.

Elliott: Right, so basically, not feeding the birds and actually everyone doing a small part is way more effective than any other population management strategies that you've mentioned, right? So that would be, I guess, in the long term, the way to go. Just more outreach and encouraging people to let these birds find their own food basically. Right, cool.

How about you, Keita, I know you do some research at the NUS Avian Evolution Lab, so any interesting findings or research done so far?

Keita: Ah yes, definitely. A lot of the work that we do in the NUS Avian Evolution Lab, we work on DNA material and we look at topics such as population genomics. So by looking at the DNA of different populations of animals, we can tell whether these populations are actually mixing with each other or not, whether there is gene flow or not.

If there's gene flow, it means that some birds from one population might be mixing with other birds from another population, and that means that these two populations are very well connected. In Singapore's context, some of my colleagues have worked on Javan Mynas and pigeons especially, and it has been shown that these mynas and pigeons, across the different urban spaces in Singapore are actually very well connected.

So this contrasts with other species in Singapore. For example, you have birds like the Short-tailed Babbler, Chestnut-winged Babbler. These are birds that are very reliant on

Singapore's Central Catchment forest and these birds are actually pretty fragmented. A population from the northern part of Central Catchment might not actually be mixing with the birds from the southern part of Central Catchment.

Unlike that, a lot of the urban birds are actually pretty well connected. So, for the pigeons and mynas, we do know from DNA studies that they are all very well connected. Now, this puts into context a lot of the efforts that we want to put in place when we want to control their population.

For example, if we have an estate, say, Choa Chu Kang, that's putting in a lot of effort to not feed the birds, it's actually very easy for many birds to just fly over from Bukit Batok to Choa Chu Kang. So, what this means is that it's very important for all of us in Singapore to put in effort together to ensure that our efforts are properly sustained.

Elliott: Right, so actually it can be quite complex when we look at certain species that are so adaptable. I was just wondering in your opinion, Keita, is there something about the natural ecology or natural traits that these birds have that makes them so successful in inhabiting urban spaces and staying so connected?

Keita: So some of the traits that I suspect would be very important for the mynas and the pigeons is the kind of habitats they live in their natural environment. Both of these birds are typically from more open spaces as compared to say, the birds that are very reliant on forested habitats in Singapore.

So this reliance on open spaces, it's kind of similar to the urban habitat that we allow them to live in. And I think that allows them to thrive in Singapore's urban spaces. Another thing – I don't think there are any studies on this – but it's just how bold they are.

Sometimes you walk right up to a Javan Myna. It looks at you. It's like “Where's my food?” Same for the pigeons.

Malcolm: Yeah, I believe that to be true also, Keita, I think in terms of the Java Mynas, they are just not afraid, and very curious to begin with, so they're not really afraid to try new things, try new habitats. And that's probably one of the reasons why they're so adaptable and they do so well in urban environments.

Elliott: I see. Yeah. Well, I guess they're here to stay. In both your opinions, how do we manage or navigate population management in the long run? Do we keep using the same strategies? Will we have to adapt these strategies?

Malcolm: For the public, we should just not feed these pigeons and crows and mynas, they can find their own food.

And from our standpoint, it's important to enforce the Wildlife Act, which prohibits the feeding of wild animals. That includes all the undesirable bird species that we spoke about. Added to that, it's important also to keep stock of our population management measures, and we can do this by monitoring the populations of these sorts of birds, so we do regular surveys just to keep tabs on how the populations are doing.

Elliott: How about you, Keita?

Keita: So for us, the message is very simple. I echo what Malcolm said. I will just sum it down to: watch birds, photograph birds, don't feed birds.

Elliott: Nice. I think that's quite a simple and straightforward message. It's been very interesting today listening to both of you talk about urban birds in a way that makes them very fascinating. Basically, ‘watch birds, photograph birds, don't feed birds’. And just remember, you know, all of you can do your part by not feeding these birds and ensuring proper disposal of your food waste. That goes much further than, you know, any other population control methods.

I've had a really great time learning from both of you, Malcolm and Keita. We've made some very supposedly mundane birds like the Javan Mynas and crows quite fascinating for the listeners.

Elliott: Thank you for listening to this episode of *That's Wild*. If you would like to hear more, please tune in for more episodes on Spotify, Apple Podcasts, or YouTube. And if you like our content, don't forget to show your support by hitting the follow button and giving us a 5-star rating.

Malcolm and Keita: Yay! Thank you! See you in the field!