

#4 The Greenest Green You Would Ever See | Bird Conservation In SG

00:00:00 Xiaoyun

Hello and welcome to *That's Wild*. I'm Xiaoyun, a nature guide and environmental educator. And I'll be your host for this podcast series, where we'll be talking to a variety of special guests about some wild and wonderful topics surrounding nature conservation in Singapore, our City in Nature. *That's Wild* is brought to you by the National Parks Board. If you like our content, don't forget to show your support by hitting that follow button and giving us a five-star rating.

Today, we have Dillen and Movin here with us to talk about birds, the unique and varied sounds that they make, and how we are conserving them here in Singapore. Welcome to the podcast guys!

00:00:38 Movin

Hey, thanks for having us.

00:00:39 Dillen

Hello, hello.

00:00:40 Movin

My name is Movin. I'm a PhD student at NUS. I work a lot on bird genetics basically, mainly in the region broadly. I'm interested in conservation and I'm also Vice President of the Bird Society of Singapore and also on the podcast Climate Cheesecake.

00:00:56 Dillen

Hi, I'm Dillen. I'm from the National Biodiversity Centre at the National Parks Board, and I mainly work on environmental impact assessments, consultations for developments and also other conservation related research. Yeah, and my hobby is bird watching.

00:01:15 Xiaoyun

So before we begin, can you recognise this bird call?

00:01:20 Movin

I'm sure you guys are really familiar with this bird keeping you guys up in the early mornings – it's an Asian Koel.

00:01:30 Xiaoyun

So we've just heard a really familiar call. Let's talk a bit on why birds have bird songs and bird calls.

00:01:30 Dillen

Bird vocalisations are distinctly separated into songs and calls. They're distinguished by their functions. What we know as songs are generally longer, more complex. It's what you would consider melodious. So, it's associated with mating functions such as trying to attract a mate or territorial displays. Although some of the songs can be kind of simple as well. For example, the Large-tailed Nightjar. It gives that chong, chong, chong, chong call. Yeah, so, that's the song of the Large-tailed Nightjar, but it's considered simple compared to a passerine or a songbird.

00:02:06 Movin

Yeah, and calls are basically much simpler. Calls are things that you hear single notes of oftentimes, and they're used for different functions. Some birds can be very small, the bush can be very thick, so they can lose sight of each other.

So, what happens is they have these things called contact calls. Each bird in the group just be making the call all the time, so that everyone kind of knows that they're all together in the same vicinity.

00:02:25 Xiaoyun

So that's what happens when they want to flock together?

00:02:28 Movin

Typically, some birds like tailor birds, babblers, warblers, things like that, the smaller birds that tend to look in vegetation for their food. So these are insect-eating birds, they wander around inside the vegetation, they're small birds, they can easily disappear from each other's line of sight. So, contact calls are one of the ways they sort of stay in touch and ensure that no one wanders off too far. Because if you lose sight of each other, it's easy to just be distracted by an especially tasty looking worm or something, and just you know, wander off. So, contact calls make sure that the flock stays tight and close to each other.

Other types of calls could be, for instance, some bird species, they leave their young to go hunting, or they go fishing, then they come back, then they listen to the call of the young, and each of the moms can recognise their young's call, right? So, that would be things like some of the seabirds.

00:03:20 Dillen

There's other things like alarm calls as well – some of the birds, maybe drongos, they give off alarm calls that kind of alert other members of their group, whether there's a raptor around, or a predator around. So, it's something to warn other members as well.

00:03:40 Movin

Yeah, and one interesting thing is that a lot of birds can mimic the songs and calls of other birds. So many species do that, and so things like some of your shamas, the drongo is especially famous for that, right? They actually can mimic the calls they hear around them, and they add this up to their own song sometimes, and then female birds are attracted to male birds that have much more mimicry in their repertoire, for instance, because that's considered more skilled.

00:04:06 Xiaoyun

So if it's a bird mimicking another bird's call, are you guys able to tell that apart? If it's not original.

00:04:13 Movin

It really depends. Some birds are masterful mimics, and some are not so masterful.

00:04:17 Dillen

Some common birds like the drongo, and the Asian Glossy Starling are really good at mimicking. I've heard this Asian Glossy Starling outside my window, it did a whole repertoire of calls. It's like the Blue-winged Pitta, and the Banded Woodpecker. And even drongos, I've heard them mimicking the Changeable Hawk Eagle as well. So, sometimes the mimic is really accurate, but I think how you can tell is sometimes they do a whole series of different calls. So you can kind of tell, it wouldn't be a single bird making all these calls and songs.

00:04:47 Movin

And drongos have this metallic sort of tone to their call all the time. It's very clangy, and very brassy. So usually, you'd be like, that's a bit of an uncanny valley with the song, and it sounds a bit off, sounds a bit metallic, so maybe it's a drongo.

00:05:06 Xiaoyun

So what are some other methods you can use to identify birds?

00:05:09 Movin

I think birdwatching is, I mean, it's in the name, right? Birdwatching. First of all, ID-ing birds based on what you see. Things like the bill shape, the overall size of the bird, the colour, what

it's doing, the behaviour it's exhibiting, those are all things that you can sort of use to get a sense of the species that you might be looking at.

At the same time, calls are also helpful. Some birds do mimic other birds, right? But by and large, every bird has its own sound. Or many birds have their own sounds, and they are diagnostic, meaning that if I listen to it, I will be able to tell you what species it is.

00:05:47 Dillen

So, I find field guides very useful for me; looking at the plates, looking at the descriptions of the features of the birds, they really help you to understand better. When you see a bird in a field, you compare it to what you see in a field guide. So, I think, these are some things you can rely on.

00:06:04 Movin

Yeah, and things like online resources, I mean, we have our whole website up. We have all of the birds recorded in Singapore so far, that's definitely something you can do. Being out in the field regularly, and using your binoculars regularly. And sort of keep doing it. It's like a muscle, right? You just keep practising your bird identification, and you'll get really good at it.

00:06:23 Dillen

And if there's anything you can't identify in the field, you can just take a photo and post it online, ask your friends. I think the community is really welcoming and helpful.

00:06:37 Xiaoyun

So perhaps for listeners, you guys could introduce or recommend some very nice places for birdwatching, and what are the common birds that you can see in those places.

00:06:46 Dillen

Singapore Botanic Gardens is one of my favourite places to bird at. I think you really get a great range of species there. You can get some of the more common, widespread species you can spot in gardens, as well as some of the more forest-dependent species, like your drongos or your Hill Mynas.

And some of the birds that are common, that you might hear there, are species like the Collared Kingfisher, and also the Blue-crowned Hanging Parrot. These are some of the quite common species. For instance, the Hanging Parrot, you often hear it, like this cheep-cheep-cheep call, as

you may have heard earlier, and you just spot it flying through the air. So it's really interesting to spot it flying around the Gardens.

00:07:32 Movin

Yeah, I mean, I really like the Botanic Gardens also, because you get some forest-dependent stuff, like Hill Myna, for instance, which typically in the region you would only see in decent forests, but in Singapore it's one of the few places in the world where we've integrated greenness into our cityscape, to an extent that we're even getting high canopy forest species, or forest species.

In the Ulu Pandan Park Connector, which is really far away from any patch of forest, you still get Hill Myna, so that's pretty interesting. Other places that I think people can go birding that's easily accessible is Bishan-Ang Mo Kio Park. Any neighbourhood park actually will have a good number of birds. Even small neighbourhood playgrounds with some vegetation nearby. The largest parks, Kent Ridge Park, even Ulu Pandan Park Connector, which I've mentioned a few times, these are all very thin strips of land, but you get really good birds there. There's a lot of greenery, and there's a lot of mature vegetation in some of these areas as well. So, you get some interesting species every so often.

The other one would be Jurong Lake Gardens. That deserves a special shoutout. Oh, and Tampines Eco Green is also pretty good, in the east.

00:08:45 Xiaoyun

Yeah, and recently, because I live in Woodlands, lots of Hampstead Wetlands as well.

Okay, I'm going to enjoy this portion. It's like a segue into your personal experiences with birding. How did you initially get into birding, what sparked your interest, and actually what sustains your interest?

00:09:06 Dillen

For me, I think I was always interested in animals, so when I was young, I just looked at random animals outside my house. One of the first birds I saw, which was interesting, and not a Javan Myna, was an Oriental Magpie Robin. It's just this black and white bird, I'm just like, what's that, hopping around the ground? So I thought that was really interesting, and just tried to find out more about the name of the bird, or what it was.

I think what started my proper birdwatching journey was related to wildlife photography. I bought a camera, and I just started going out to photograph animals in Singapore, and I think birds are

some of the more visible and prominent taxa, and it's the most well-studied taxa, and there are so many resources out there for it. Naturally, I kind of gravitated towards that, and then started going out with friends, and then just got hooked on this birdwatching hobby.

00:09:56 Movin

For me, the bird that poisoned my well was the Rufous-tailed Tailorbird in Pulau Ubin. So, it's actually a really small bird, but it's really pretty. It has reddish brown hair and a reddish brown tail. The back is grey brown, and the underparts are this sparkling white colour.

I saw it and I was very fascinated by it. It hopped onto the floor on one of the bridges in Ubin, and it was completely out. I was like, wow, that is such a weird thing. What is it? And then I was very obsessed with figuring out what it was, and then that took a bit of time. After I figured it out, I was like, oh my god, this is very fun. Then I was like, I guess I'm doing this for life. Okay, I didn't know that at the time, but then I would just be observing it more, I'd get more familiar with these available resources, which like Dillen says, for birds, you just have a lot of resources available. People have been watching birds for centuries. Definitely more so than other groups of animals. Even other charismatic groups, like mammals, for instance, you do not get the same kind of identification resources that you get for birds, much less things like herps and fish. And this is just vertebrates; invertebrates are a whole other black hole.

But anyways, that was sort of the bird that started it all, it snowballed from there. Then we kind of just started travelling everywhere. Yeah.

00:11:09 Xiaoyun

So maybe linking to you guys travelling, you can share about where has birding taken you to? Maybe places, or different encounters, or maybe even a feeling or a state of mind. Where has it taken you?

00:11:20 Movin

We did two plus, three weeks in South Africa. And that was crazy. We saw like 450 species of birds in three weeks. So that was quite a whirlwind.

00:11:40 Xiaoyun

That's insane.

00:11:41 Movin

I think if we had another week we would have added a hundred.

00:11:43 Xiaoyun

How do you get 20 species a day?

00:11:47 Movin

Yeah, those are the numbers that we're talking about.

00:11:51 Dillen

We just visited a really wide range of habitats. Savannahs, arid deserts, everything.

00:11:57 Movin

Then there's this area in the southernmost part of South Africa called the Cape, which is the fynbos. Which is its own vegetation type that's only found in southernmost Africa, nowhere else in the world. And the vegetation there looks alien. It's like small plants and succulents. Everything's endemic there and it's super cool. And because of that, it has its own birds and things like that. So it was pretty crazy. It was also a pretty good trip for mammals. Did not get the big five, but we got close to 40, 50 species. So it was pretty cool.

Oh wait, special mention to the pelagic trip. We also went out to sea looking for birds. Because in South Africa, there's this really cold current called the Benguela Current that is along the Western coast of South Africa. And that actually brings up a lot of marine nutrients. There's an upwelling there. And because of that, you get a lot of fish, schools, which is why it's like one of the most heavily fished areas in the world. And because of that, you also get a lot of sea birds there who come to eat the fish. And we went out to see those birds. It was rough. It was super choppy. Some of us were very sea sick. I will not name names. I mean we did see an albatross, which was really cool.

00:13:21 Dillen

But at what cost?

00:13:23 Xiaoyun

I think birds are fascinating. And the best thing is that it's available to so many people. And those trips sound amazing because of the birds.

Before we continue, it's time for our fun fact segment again. In the spirit of our podcast title *That's Wild*, I'd like to invite Dillen and Movin to share something wild about biodiversity that you guys may not have known before!

00:13:43 Dillen

So I think there's this really interesting group of birds called megapodes. Their range is Australasian and Indonesia, Australia, and Papua New Guinea. They're closely related to pheasants, which are in this bigger group called galliformes.

What's unique about them is that they rely on external sources of heat to incubate and hatch their eggs. So they actually don't incubate the eggs themselves. They don't sit on their nests and use their brood patch to warm the eggs. So what they do is they construct these massive mounds or burrows in sand or use compost, or just leaves and sticks. Some of these external sources of heat are like geothermal heat... So the ground might be warm.

So they will dig and bury their eggs in the sand, which might be heated; or they can use compost mounds. This keeps the temperature of the mound consistent, or they can also rely on solar heating just from the sun.

So it's external sources, they lay the eggs then they leave it there and maintain the nest, but they don't actually interact with the egg. And the chicks, they take a long time to hatch. Between 40 to 80 days, so it actually gets pretty long for birds. And the chicks come up precocial; they're well developed, and survive on their own and run around. And they can even start flying, right after hatching. So that's a really cool group of birds.

00:15:10 Xiaoyun

Some names of those in that group?

00:15:12 Dillen

Maleo. I think one of the more famous ones is the Brushturkey in Australia. Others are just variations, like Philippine Megapode. Yeah, or like Scrubfowls. So these are just some of the species.

00:15:24 Movin

Oh, and the Malleefowl, right? Malleefowl from Australia.

00:15:29 Dillen

So Movin, how about you?

00:15:30 Movin

Okay, so we've spoken a lot about the Green Broadbill right. The thing about birds is that they come in every colour, almost, right? But if you look at the world, mammals don't come in green or blue. And the reason is because birds' feathers have this thing called structural colouration. And in the case of the Green Broadbill, the green in the Green Broadbill is not actually pigment.

It's because of the micro shape of the feathers and the way it reflects light. So most green birds have that. And that's also precisely why the Green Broadbill is so green. It is the greenest green that you would have ever seen in your whole life. If you're looking at a patch of leaves, and you know the Green Broadbill is there, look for the greenest thing and that is probably the Green Broadbill. But there's one group of birds that has evolved actual green pigments, which is very rare.

And these are actually an African group of birds called the turacos. If you grind up Green Broadbill feathers and you destroy the structure, it's not green anymore. It's grey. But turacos, if you grind up their feathers, it's still green. And this is actually interesting because it's a copper-based pigment. And so that is my fun fact.

00:16:34 Xiaoyun

That's very wild.

00:16:36 Movin

Yeah, that's very wild.

00:16:41 Xiaoyun

So we need to bring it back home to Singapore. Let's talk a bit about bird conservation here. Maybe you guys can give us a brief overview about what is being done in Singapore for bird conservation.

00:16:50 Dillen

There are quite a lot of different initiatives and programmes that NParks does. The first one we have is the species recovery programme. So these are kind of targeted species action plans for specific species. For instance, the Blue-throated Bee-eater that's handled by the Pulau Ubin team. So actually, we ring some of these birds and monitor their nesting sites so that we can get more information on their life history and how better to conserve them.

And we also have outreach programmes like citizen science programmes such as Garden Bird Watch and Heron Watch, where we get public volunteers involved as well.

00:17:27 Movin

Special plug to Sungei Buloh for Wader Watch as well, which is a programme that they have for six months during the migratory season to get people interested in migratory birds to come down and just take a look at them.

00:17:38 Dillen

Another thing we do is also bird ringing. So we do tracking and ringing of birds to find out more about their movements and life history traits. So at Pulau Ubin and Sungei Buloh, they do a lot of ringing for birds. And this allows us to better understand just where they go about life. If you recapture a bird, you can find out a lot more information about it. Like how old is it? Where it's been, if it's been caught somewhere else. So we kind of get an idea of their movements as well.

00:18:05 Movin

To elaborate a bit more, you mentioned the Blue-throated Bee-eater right? A lot of people are going to be like that's not even such a rare bird in Singapore. But I think it's important; that's precisely why monitoring them and their breeding in particular is very important.

We have the luxury of having enough birds now to be able to reasonably study them and get some sense of where they go, preferred habitats, things like that. But in cases where populations drop below a certain level, it becomes incredibly difficult to study the birds. On one hand, you don't even want to disturb the birds because you're like, oh no, any disturbance is going to bring... Maybe they'll stop breeding or leave the site. You don't have that level of comfort or certainty.

And second of all, sometimes locating the birds after they drop below a certain level can be challenging. So off the top of my head, things like some of the forest babblers, those guys in Singapore are not doing as well. And doing some ecological studies on them is difficult because the population density is so low. So studying birds before they get that threatened is important, especially for birds that are occupying unique habitats, or utilising specific areas that other birds cannot use. So things like the Blue-throated Bee-eater and the sand bank type habitats – because what they actually do is they burrow into these banks of sand, they lay their eggs there. So this is not a very common habitat in Singapore. You don't really see it in many, many places.

And even though the Blue-throated Bee-eaters are doing well now, we don't know what the future of these habitats are going to be. We need to know which months they're using these habitats for breeding, when they disappear, things like that. These are all important things to know so that we can prevent birds from becoming endangered. Because I think in public

consciousness, there's always a sense of like – we only pay attention to something once it's threatened. But in many cases, once it's threatened, it's much harder to reverse that. But getting information about things before they become rare is also important precisely because it prevents us from spiralling down this rabbit hole of getting rarer and rarer and rarer and you have to do things like palliative care or emergency interventions to reverse this.

And also, when you talk about capture, recapture, ringing birds, it's important. It's vitally important because we just don't know that much about many bird species. Birds are some of the best studied animals in the world. But even birds in Singapore, we don't know that much. Like how much space, what's the territory of like a Straw-headed Bulbul, which is like the conservation poster child at this point for birds in Singapore. We don't know that. How long do they live in the wild? Who eats them? How territorial are they? These things are all things we don't really know.

And in part, it's also because these natural history studies have become so out of fashion. Yeah, you're not going to get into the highest impact journals because of these studies, right? But they're vitally important.

00:20:58 Xiaoyun

Movin you mentioned the Straw-headed Bulbul as a poster child because there was an action plan that was released last month.

00:21:06 Movin

Yeah. So Straw-headed Bulbuls. What do we know about it? It is one of the sexiest bulbuls in the world. It's the biggest bulbul in the world. Red-eyed, yellow-headed, brown golden-bodied, streaked, wears black eyeliner. All of the best things about birds, right? It has an absolutely beautiful call and song. And in part, this is the problem, right? It's got a really nice song. And because of that, it's been hunted to be kept in cages throughout the region.

So Singapore is the best place to see this bird. I have friends who are studying this bird and are trying to track them down in Kalimantan and stuff. And you have to travel like 16 km from the nearest trail or road to even hear the birds. And then the birds are still so shy. You know here you literally see them over condo pools and coconut trees like just chilling in high heat.

00:22:02 Dillen

We have this Straw-headed Bulbul Action Plan. And we cover a bunch of different topics within it, like monitoring ecology. Both Movin and I are involved in this group. And it also works into looking at genetics and conservation breeding of these birds. And also how to engage the

community and raise more awareness for the species. And also looking into the trade of these Straw-headed Bulbuls.

00:22:25 Movin

So the great thing about Singapore is that we're really good at keeping baseline poaching really really low. It's all thanks to the aunties and uncles in the park. If they see anyone, they will just complain and they will ask questions. And I mean this with the most love in my heart. It's not even a joke. The reason that we have so little poaching in Singapore is because people use these places. People use these parks. People go into these parks. And aunties and uncles are the best because when they see something not right – they're nosy. They will ask questions about it. They won't just be like – oh not my problem. They'll be like, oh what are you doing? You catch bird ah? I call NParks. You know what I mean? So, it's hard to poach birds in Singapore. It's challenging.

00:23:04 Xiaoyun

Yeah, I guess Singapore has many of such species of birds whereby they do really well here, because they can adapt to a variety of habitats, so you can spot them in higher frequency and numbers here in Singapore.

00:23:15 Movin

Singapore is a really interesting case study for the region because in many other cities, it's concrete, and then it's green. There's no interface between the two, right? Because of that, things that we generally think of in the region as forest species, things like Hill Myna and the Red-legged Crake, we do see them very close to human habitation or even within the neighbourhoods. Like, I walk 300 metres from my house at Ulu Pandan Connector and I can see and hear Hill Myna, and at night I hear the hoo-hoo-hoo-hoo of the Red-legged Crake. These birds are hard to see – ok, Hill Myna are not so hard to see, but Red-legged Crake is prized. It's like one of those, like, people who birdwatch in the region for years, but maybe don't live in Southeast Asia, they come, they travel. Maybe they've done like 10, 20 trips and they're missing the Red-legged Crake.

00:24:10 Dillen

They actually come to Singapore to see these birds, but you can actually spot them in the Botanic Gardens. I've heard them calling outside my office. And I just made a recording of them. They're just wandering around, because they're used to people.

00:24:20 Xiaoyun

And maybe hornbills. When I'm around the region, hornbills are so far away from me. And here our Oriental Pied Hornbills are just abundant.

00:24:33 Movin

Yeah. Even in Paya Lebar, even in urban areas, the birds are just moving through and they're comfortable with people. And I think that's amazing about Singapore. That's really quite cool. It tells us about the potential for the whole region, right? Like if newer cities and newer developments start doing more integrated things in this more conscious way, the potential is really there.

So the thing about Straw-headed Bulbuls is that it's one of those birds – you hear, you know.

00:25:05 Dillen

Actually I think the song is really interesting. The song is actually a duet of two birds. So when you hear the full song, it's just seamless – it's actually two birds singing. But they're so in sync it sounds like one call.

00:25:15 Movin

It's a pair. So this is how they defend territory, and re-establish their pair-bond. It's super romantic and all that stuff.

00:25:27 Dillen

So yeah, acoustics monitoring in particular, linking this to Straw-headed Bulbuls, it's really important for conservation planning, conservation research. You're knowing more about the birds in the area and using autonomous sound detections of birds which are very vocal. And this can really help supplement some of our human surveys of different habitats.

00:25:49 Movin

Yeah, people can't be there all the time. So putting a device there to record background sounds and then having a software or an algorithm to process it...

00:26:00 Dillen

You get really large volumes of data, and you can process it in an automated process without having to manually look through and listen to hundreds of hours of calls. I think that's really useful technology that we're trying to leverage right now. So that's something that NParks is working on with NUS as well to develop this acoustic monitoring system that can identify birds

just through their calls. Because as Movin mentioned before, the bird calls are really diagnostic. You can actually pick out species just from their calls or their songs.

00:26:32 Xiaoyun

We could talk a bit about the diverse birdlife in Singapore. And maybe you can share with us the entire landscape of things here.

00:26:38 Movin

All right Dillen, drop the numbers.

00:26:40 Dillen

So yeah, Singapore is actually... A lot of people think that we are such a small island, but we really have quite a lot of species that can be found here in Singapore. Our species count in Singapore is currently at 428 species. So I think that's really high for such a small island. I mean, you have countries which are 10-20 times bigger and maybe they only have like 600 species. So I think Singapore is really a great place. And I think a lot of the diversity comes from migrants. We get a lot of migrants in Singapore because Singapore is kind of the tip of the Thai Malay Peninsula. So all the migrants get funnelled down the peninsula. And then gradually, they finally stop at Singapore, which is the last stop before they have to cross the sea, towards maybe Indonesia.

A lot of these migrants, or even rare vagrants actually, just stop over in Singapore and we see them. So we get species like... You know back in 2021 we had this influx of rare species in Singapore. The Tree Pipit, Spotted Flycatcher and the Green Broadbill.

00:27:41 Movin

It's interesting because migratory birds don't really like flying over open water so much. So as far as possible, they just keep flying over land. So Singapore is the closest that you can get, right?

And the interesting thing is that that year, 2021, Dillen like you said, we got some weird birds. These birds don't come to Singapore. They don't even come to the region. Weird weather patterns up north probably pushed some individuals down south.

00:28:07 Dillen

So some of these birds that have been seen in Singapore, like the migrants, have not even been spotted in Malaysia, or in surrounding regions as well.

00:28:16 Movin

Yeah, so kudos to the birdwatching community in Singapore. There are so many people here, and the island is so densely bird-watched. It's almost impossible for these one to two individuals that are weird to slip through.

00:28:31 Xiaoyun

And with that, we've come to the end of our episode. Thank you, Dillen and Movin, for joining us today. More information about our bird conservation efforts can be found on our website. If you're interested to go birding or to connect with other birders in the community, do check out our Citizen Science programmes like Garden Bird Watch and Heron Watch. More information is linked in our episode show notes. My name is Xiaoyun, and thank you so much for listening to *That's Wild*. If you've enjoyed this episode, do give us a follow and share your thoughts with us on NParks' socials. Stay tuned for more exciting conversations to come! Bye!