

Press release

For immediate release

HKU Researchers Reveal Hong Kong as a ‘Biodiversity Ark’ for Yellow-crested Cockatoos and Expand Nesting Support

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Image 1: Researchers found that the city’s population retains high genetic diversity despite its small size, highlighting its potential conservation value. Image credit: Uva FUNG

A new genomic study by researchers from the HKU School of Biological Sciences (SBS) has found that Hong Kong’s introduced population of Yellow-crested Cockatoos retains unexpectedly high genetic diversity and could serve as a genetic reservoir for this critically endangered species. Published in *Evolutionary Applications*, the study also underpins a new conservation initiative with local schools to install artificial nest boxes and monitor this rare urban population.

Hong Kong is home to around 200 Yellow-crested Cockatoos – about 10% of the remaining global population. Although this urban population is small and isolated, it has so far avoided the severe genetic decline often expected in such cases. Some individuals may even carry genetic lineages that have disappeared from parts of the species’ native range in Indonesia.

To understand how this population contributes to the global conservation of this species, researchers in the Merilä Lab at HKU SBS sequenced the whole genomes of Hong Kong’s cockatoos and compared them with native-range populations in Indonesia. Their analysis examined the birds’ genetic health, origins and potential conservation value, highlighting several key findings:

1. **High Genetic Diversity:** Hong Kong’s cockatoos show genetic diversity comparable to other wild parrot populations.
2. **Mixed Subspecies Heritage:** The population carries genetic signatures from all Yellow-crested Cockatoo subspecies, with many individuals showing mixed ancestry.
3. **Preservation of Lost Lineages:** Over half of the sampled birds carry a maternal lineage linked to Lombok or nearby areas, where the species may now be locally extinct.

4. Signs of Inbreeding: Some individuals show elevated inbreeding levels, highlighting the need for continued monitoring.
5. Small Breeding Population: The number of effectively breeding individuals remains low, raising concerns for the population's long-term survival.
6. Genetic Rescue Potential: Hong Kong's cockatoos could potentially support future genetic rescue efforts for declining native populations in Indonesia.



Image 2: A pair of cockatoos uses the nest box installed on the St. Louis School campus in Sai Ying Pun. Photo credit: Winster Wong.



Image 3: As part of the conservation project, the team is working with local schools to install specially designed artificial nest boxes, providing safe nesting sites for Hong Kong's urban cockatoos. One of the boxes has been sponsored by Quarry Bay School and is installed in Victoria Park. Photo credit: Ceri Hill.

“Hong Kong’s population presents a natural, 60-year test case for the genetic impacts of inter-breeding Yellow-crested Cockatoo subspecies,” said Dr Astrid ANDERSSON of HKU SBS, lead author of the study. “Instead of dismissing urban, introduced populations as ecologically redundant, we should view them as potential ‘biodiversity arks’ that can actively help prevent extinction.”

The native population of Yellow-crested Cockatoos in Indonesia has declined to fewer than 2,000 birds due to historic over-trapping for the pet trade and habitat loss. However, the team cautions that any future translocation would require careful risk assessment, threat mitigation, biosecurity planning and long-term monitoring.

Building Safe Homes for Hong Kong's Urban Cockatoos

As part of the conservation project, the team is working with local schools to install specially designed artificial nest boxes. Modified from Australian prototypes to better withstand Hong Kong's humid climate, the boxes are equipped with internal cameras, allowing researchers and students to monitor breeding behaviour without disturbing the birds.

To date, four nest boxes have been installed through partnerships with three schools: The ISF Academy in Pok Fu Lam, St. Louis School in Sai Ying Pun, and Quarry Bay School (ESF), with its box installed in Victoria Park. An additional ten nest boxes have been installed in urban parks around Hong Kong island, with the support of management authorities.

“Over 60% of the cockatoos' previous nest sites in natural tree hollows have been lost due to typhoons and pruning, which has created a housing crisis for these birds in Hong Kong,” said Dr Andersson. “By partnering with local schools, we are providing safe havens for breeding so we do not lose this globally important urban population.”

“This initiative is a great opportunity to engage the next generation in urban conservation and hands-on conservation action,” said Harry WONG, arborist, designer and collaborator on the project. “Students can help build and install the nest boxes while learning about urban wildlife design.”

Video footage from inside the nest box shows the cockatoos' breeding behaviour without disturbing the birds. The video is available here: <https://youtu.be/CbjEC7HNOVg> Video credit: @HK_cockatoo_watch.

A video interview with Dr Astrid Andersson on her research and the team's nest-box conservation efforts is available here: <https://tinyurl.com/2jp8rruf> Video credit: The University of Hong Kong

For more details, please refer to the journal paper “[Assessing the Genetic Health and Conservation Value of an Introduced Urban Population of a Critically Endangered Parrot](#)” published in *Evolutionary Applications*.

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