

MEDIA RELEASE

NParks launches Singapore's most extensive coral restoration effort, tapping on technology and research to plant 100,000 corals in Singapore's waters

- *Transplanted corals will help restore degraded reefs or establish new coral communities*
- *Smart technology will be deployed to optimise large-scale, ex-situ coral cultivation*
 - *Programme partners and donors include St John's Island National Marine Laboratory, Delta Electronics, GSK-EDB Trust Fund, Deutsche Bank, Takashimaya Singapore and KPI OceanConnect*

Singapore, 10 December 2024 – The National Parks Board (NParks) today launched the 100k Corals Initiative, which aims to plant 100,000 corals in Singapore's waters over the next 10 years and beyond. Corals will be cultivated at a new coral culture facility at NParks' Marine Park Outreach and Education Centre on St John's Island, before being transplanted into our marine environment to restore degraded reefs or establish new coral communities. This will be the most extensive coral restoration effort in Singapore to date. Given Singapore's limited coral cover, the programme will also scale up NParks' existing coral restoration efforts to substantially improve the resilience of local coral communities and reefs.

NParks is working with the **St John's Island National Marine Laboratory (SJINML)** to roll out the 100k Corals Initiative, which has received over S\$2 million in support to date through the Garden City Fund, NParks' registered charity and IPC, from the following donors:

- **Delta Electronics** (approximately S\$1.7 million)
- **GSK-EDB Trust Fund** (S\$1 million)
- **Deutsche Bank** (S\$100,000)
- **Takashimaya Singapore**
- **KPI OceanConnect**

To mark the launch of the 100k Corals Initiative, Minister for National Development and Minister-in-charge of Social Services Integration Desmond Lee took part in a coral planting activity at the coral culture facility today.

New coral culture facility for ex-situ coral cultivation

As part of the 100k Corals Initiative, NParks is establishing a new coral culture facility at the Marine Park Outreach and Education Centre on St John's Island. The cultivation of corals at the facility will be carried out by coral restoration experts and researchers from the National University of Singapore at SJINML. The coral species cultivated include several that are under NParks' Species Recovery Programme¹, such as the Staghorn coral (*Acropora digitifera*) and Plate Acropora coral (*Acropora millepora*).



Corals will be cultivated at a new coral culture facility on St John's Island
(Credit: NParks)

For more information on the coral species cultivated at the coral culture facility, please refer to [Annex A](#) below.

Serving as an ex-situ coral nursery, the coral culture facility will house six tanks that can rear up to 600 coral nubbins each. The nubbins, which are small coral fragments produced from adult colonies, will be attached to a specially designed frame that maximises the number of corals that can be grown in the tanks, and grown under controlled conditions. Once the nubbins have grown large enough, they will be transplanted onto degraded reefs for

¹ The Species Recovery Programme was introduced in 2015 as part of NParks' Nature Conservation Masterplan. It aims to conserve native flora and fauna by targeting endemic, rare or threatened native species in Singapore through reintroduction, habitat enhancement and protection efforts.



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restoration purposes, or inserted into other areas to establish new coral communities. Corals-of-opportunity, which are naturally fragmented corals lying free on the floor that may not survive without external intervention, could potentially be used as a source of transplant as well. The coral culture facility is targeted to be fully operational and open to the public in the second quarter of 2025.

During the launch event, special guest Dr. Jane Goodall DBE, founder of the Jane Goodall Institute, also did a sharing on marine conservation at the new coral culture facility.

For more information on the coral cultivation process, please refer to [Annex B](#) below.

Altogether, this will aid species recovery efforts for rarer coral species, and increase coral cover and diversity in Singapore, complementing efforts under NParks' Marine Conservation Action Plan² to protect the natural heritage of our City in Nature.

NParks-Delta Corals Research Programme

Established to kickstart the 100k Corals Initiative, the NParks-Delta Corals Research Programme is a collaborative project between NParks and Delta Electronics that integrates smart technology into NParks' coral cultivation efforts.

As part of the two-year research programme, NParks will leverage Delta's expertise in industrial and building automation to optimise large-scale coral cultivation at the coral culture facility. As the healthy growth of corals is dependent on several parameters, including lighting, temperature, water quality and water flow, smart technology will be deployed to cultivate corals under controlled conditions in the tanks, enabling them to thrive without being subject to environmental stressors such as ocean warming and acidification.

The tanks will be installed with a smart coral culture aquaculture system set up by Delta that integrates intelligent aquaculture and environment management. Designed to detect abnormalities that can affect coral growth, the system monitors water conditions using various instruments and transmits the data to researchers, enabling real-time, remote monitoring and

² Launched in 2015, the Marine Conservation Action Plan sets out strategies to protect, restore and enhance Singapore's coastal and marine habitats.



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timely intervention. For instance, if the temperature of the tanks is too high, the automated system will send an alert, allowing for a quicker response that can minimise adverse impact such as coral bleaching.

For more information on Delta's smart coral culture aquaculture system, please refer to the [media release from Delta Electronics](#).

As part of the research programme, NParks will work with experts to develop a nationwide coral reef restoration plan for resilience as well. A training programme will also be developed by NParks, SJINML and Friends of Marine Park for citizen science monitoring of the transplanted corals, and volunteers will be trained to assist with coral husbandry and underwater monitoring techniques. More details of volunteer training opportunities will be shared when ready.

In all, the NParks-Delta Research Programme will provide the 100k Corals Initiative with a sustainable source of corals to be transplanted, and enable further cross-sector collaborations and research opportunities. Furthermore, it will build capacity and technical know-how in large-scale coral restoration for future conservation efforts.

Importance of coral conservation

Corals are keystone reef-building animals that support a marine ecosystem, and an estimated one-quarter of marine species depend on coral reefs to survive. They are also a potential nature-based solution to help mitigate the impacts of climate change, serving as a natural defence against shoreline erosion while providing habitats for a rich array of marine biodiversity. Hence, to safeguard this valuable ecosystem, it is imperative to scale up coral restoration efforts locally, which will contribute towards a high-quality living environment in our City in Nature.

To support the 100k Corals Initiative, interested parties can donate online to the Garden City Fund via go.gov.sg/donate100kcorals or email garden_city_fund@nparks.gov.sg.

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Annex A – Coral species cultivated at coral culture facility

<p>Staghorn coral (<i>Acropora digitifera</i>)</p> 	<p><u>Status in RDB3</u> Endangered</p> <p><u>Description</u> This species has cylindrical, tapered branches that resemble digits and form large plates over one metre in size. It is found in shallow environments, in the intertidal or on reef flats.</p>
<p>Plate Acropora coral (<i>Acropora millepora</i>)</p> 	<p><u>Status in RDB3</u> Endangered</p> <p><u>Description</u> This species has irregular branches that form large clumps, with prominent tubular corallites at the tip of each branch. It is found in shallow environments, including reef flats and lagoons as well as reef slopes.</p>

Annex B – Coral cultivation process

<p>1. Part of an adult coral colony is collected from a reef</p>	 <p>(Photo credit: NParks)</p>
<p>2. Small coral nubbins are fragmented from the adult colony</p>	 <p>(Photo credit: NParks)</p>
<p>3. Coral nubbins are cultivated at the coral culture facility</p>	 <p>(Photo credit: NParks)</p>

4. Cultivated corals are transplanted onto reefs



(Photo credit: NParks)



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About National Parks Board (NParks)

The National Parks Board (NParks) is responsible for enhancing and managing the urban ecosystems of our City in Nature. We are the lead agency for greenery, biodiversity conservation, and wildlife and animal health, welfare and management. We also work closely with the community to enhance the quality of our living environment.

NParks manages parks, nature reserves, the Singapore Botanic Gardens, Pulau Ubin and the Sisters' Islands Marine Park. Adding to this is the extensive network of Nature Ways, and Park Connector Network that links major parks, nature areas and residential estates island-wide. NParks also manages millions of trees, including those along roads and in our parks, gardens and state land.

NParks has developed an urban biodiversity conservation model, which aims to conserve representative ecosystems in land-scarce Singapore. NParks also monitors and coordinates measures to enhance the presence of biodiversity in our urban landscape.

The Animal & Veterinary Service, a cluster within NParks, is the main touch-point for animal-related issues, as well as the first responder for animal-related feedback. By improving the standards of the animal and veterinary sectors, we aim to safeguard animal health and welfare in Singapore.

NParks is working closely with partners in the landscape, horticulture, veterinary and animal sectors to increase productivity, and provide training for all levels of the workforce. Enhancing competencies of the industry will support Singapore's vision of being a City in Nature.

For more information, visit www.nparks.gov.sg and www.facebook.com/nparksbuzz