# Singapore, a City in a Garden



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#### Unique characteristics of Singapore

- Singapore is a city-state
- Singapore is a small island
- Singapore has high native biodiversity

# The beginning of the Garden City programme 16 June 1963



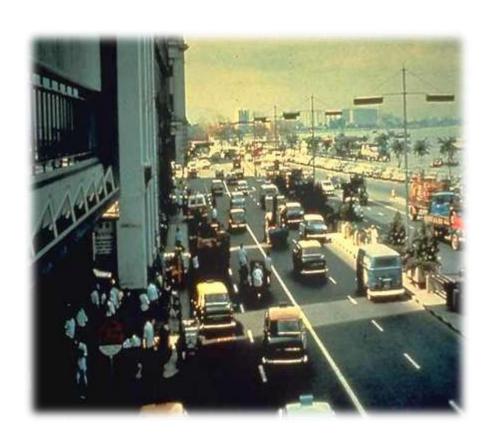
# Garden City strategies 1960s to 1990s

- Green & Clean Singapore
- Roadside tree planting
- Provide parks and open spaces
- Park Connector Network
- Legislation Parks and Trees Act

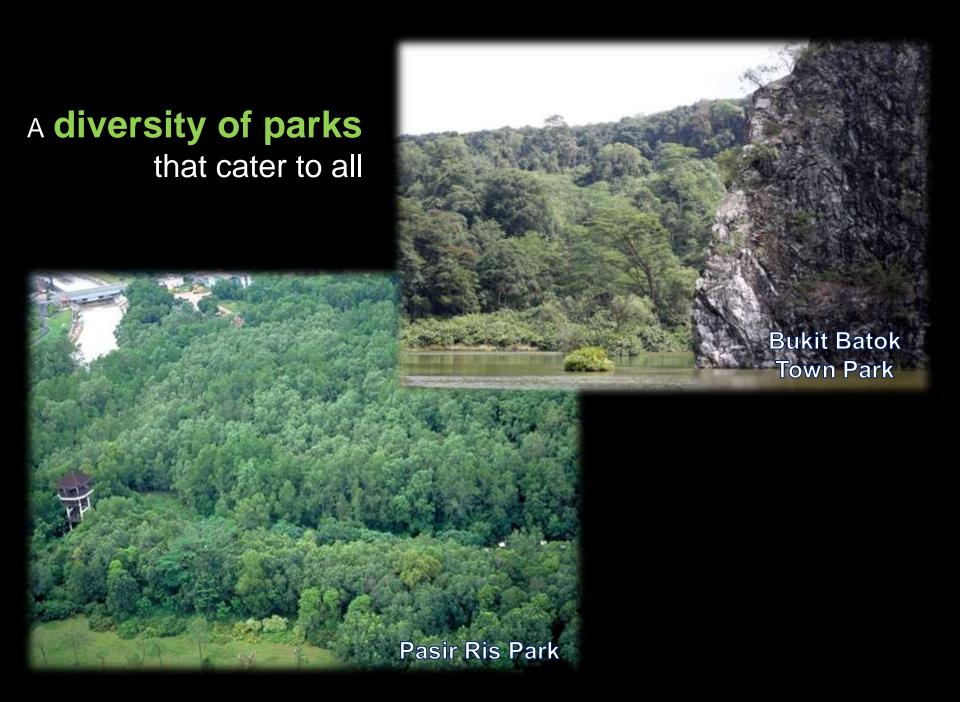
# Roadside tree planting



# Planting in









#### A diversity of parks

that cater to all





#### **Our Park Connector Network (PCN)**



# **Legislation** Parks and Trees Act

An Act to provide for the planting, maintenance and conservation of trees and plants within national parks, nature reserves, tree conservation areas, heritage road green buffers and other specified areas.

National parks and nature reserves are set aside for the following purposes:

- (a) The propagation, protection and conservation of the trees, plants, animals and other organisms of Singapore;
- (b) The study, research and preservation of objects and places of aesthetic, historical or scientific interest;
- (c) The study, research and dissemination of knowledge in botany, horticulture, biotechnology, or natural and local history; and
- (d) Recreational and educational use by the public.

#### Singapore's rich native biodiversity

- 2145 native vascular plant species
- 364 bird species
- 98 reptile species
- 66 freshwater fish species
- 301 butterfly species
- 127 dragonfly species
- more than 400 spider species
- 35 true mangrove tree species
- 12 seagrass species
- 255 hard coral species
- 50 sea anemone species



### Chek Jawa story









Artist Impression of the Eco-Link

#### PROJECT NEEDS

Linking two high points on opposite slopes, the Eco-Link will be developed and planted to encourage exchange of plant and animal genetic materials between the two nature reserves. Animals, birds and insects will be able to move freely within the vegetated areas along the bridge, and travel between the two reserves. This will also mean that plant species can successfully propagate by way of pollination and dispersal agents. There will be a proposed walking/hiking trail for visitors to appreciate and enjoy the natures.

## Thrusts of the City in a Garden

- Establish world-class gardens
- Rejuvenate urban parks and enliven our streetscape
- Optimise urban spaces for greenery and recreation
- Enrich biodiversity in our urban environment
- Enhance competencies of our landscape and horticultural industry
- Engage and inspire communities to co-create a greener Singapore

#### Thrust 1 Establish world-class gardens



#### Thrust 1 | Establish world-class gardens



#### Thrust 2 Rejuvenate urban parks and enliven our streetscape







#### Thrust 3 Optimise urban spaces for greenery and recreation



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#### Thrust 4 Enrich biodiversity in our urban environment



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#### Enhance competencies of our landscape and horticultural industry



Thrust 6 | Engage and inspire communities to co-create a greener Singapore









# Singapore's National Biodiversity Strategy and Action Plan | Conserving Our Biodiversity

- Strategy 1: Safeguard Our Biodiversity
- Strategy 2: Consider Biodiversity Issues in Policy and Decisionmaking
- Strategy 3: Improve Knowledge of Our Biodiversity and the Natural Environment
- Strategy 4: Enhance Education and Public Awareness
- Strategy 5: Strengthen Partnerships with All Stakeholders and Promote International Collaboration

## Projects under NBSAP



The Singapore Index on Cities' Biodiversity (SI) is a CBD-led collaboration with the Global Partnership on Local and Sub-National Action for Biodiversity

www.cbd.int/authorities

#### Development of the SI

#### Objectives of the SI:

- To assist national governments and local authorities in benchmarking their biodiversity conservation efforts in the urban context
- Evaluate progress in reducing the rate of biodiversity loss in urban ecosystems

#### Pre-conditions of the SI:

- a self-assessment tool
- easy to apply
- scientifically credible
- objective and fair

# 3RD EXPERTWORKSHOP ON THE DEVELOPMENT OF THE CITY BIODIVERSITY INDEX







### **Indicators** Native Biodiversity in the City

- Ind. 1: Proportion of Natural Areas in City
- Ind. 2: Connectivity Measures or Ecological Networks to Counter Fragmentation
- Ind. 3: Native Biodiversity in Built-Up Areas
- Ind. 4: Change in Number of Native Species (Vascular Plants)
- Ind. 5: Change in Number of Native Species (Birds)
- Ind. 6: Change in Number of Native Species (Butterflies)
- Ind. 7 & 8: Changes in Numbers of Native Species (any 2 taxonomic groups of choice)
- Ind. 9: Proportion of Protected Natural Areas
- Ind. 10: Proportion of Invasive Alien Species (as Opposed to Native Species)

#### **Indicators** Ecosystem Services of Biodiversity

- Ind. 11: Regulation of Quantity of Water Through Permeable Areas
- Ind. 12: Climate Regulation: Carbon Storage and Cooling Effect of Vegetation
- Ind. 13: Recreational Service
- Ind. 14: Educational Service

#### **Indicators** Governance and Management of Biodiversity

- **Ind. 15**: Budget Allocated to Biodiversity
- Ind. 16: Number of Biodiversity Projects Implemented by the City
   Annually
- Ind. 17: Existence of Local Biodiversity Strategy and Action Plan
- Ind. 18 19: Institutional Capacity
- Ind. 20 21: Participation and Partnership
- Ind. 22 23: Education and Awareness

# Over **50** Cities are applying the **SI**

Curitiba (Brazil) F

**Edmonton** (Canada)

Montreal (Canada)

**Hamilton** (New Zealand)

Paris (France)

Nagoya (Japan)

Brussels Capital Region (Belgium)

Tallinn (Estonia)

Frankfurt (Germany)

Bandung (Indonesia)

Waitakere City (New Zealand)

Bangkok (Thailand)

Chiang Mai (Thailand)

Krabi (Thailand)

Phuket (Thailand)

**London** (United Kingdom)

Joondalup (Australia)

Phnom Penh (Cambodia)

Siem Reap (Cambodia)

Ottawa (Canada)

> 300 European cities participating in the

European Capitals of Biodiversity Competition

(from five countries – France, Germany, Hungary,

Spain and Slovakia)

Singapore

Padang (Indonesia)

Pekanbaru (Indonesia)

Vientiane (Lao PDR)

Xayaboury (Lao PDR)

Sibu (Malaysia)

Kuantan (Malaysia)

**Iloilo City** (Philippines)

Puerto Princesa City (Philippines)

**Quezon City** (Philippines)

Ourense (Spain)

**Montpelier** (USA)

Hyderabad (India)

**Kings County** (USA)

Danang (Viet Nam)

Hanoi (Viet Nam)

Helsinki (Sweden)

Stockholm (Sweden)

**Heping District, Shenyang** (China)

**Amsterdam** (Netherlands)

Barcelona (Spain)

Visakhapatnam (India)

Jerusalem (Israel)

**New Orleans** (USA)

Calgary (Canada)

Guatemala City (Guatemala)

#### **Multi-faceted Applications**

- As a diagnostic, planning and decision-making tool
- As the biodiversity component of broader indices/ frameworks
- Good practices for sustainable development
- Guidelines on how to enhance native biodiversity
- Basis for calculation of economic value of biodiversity and ecosystem services
- Capacity-building in biodiversity conservation for cities

