Landscape Planting for Building Resilience & Enhancing Biodiversity

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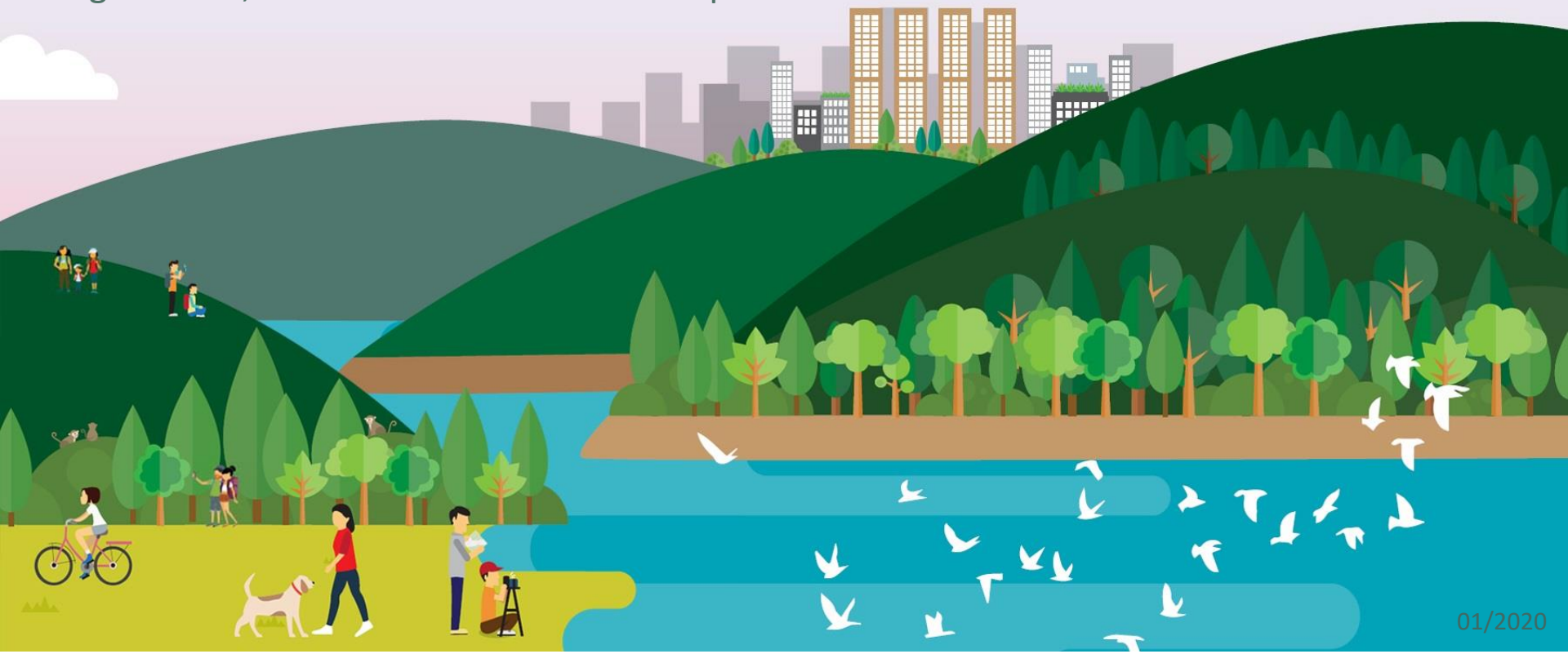
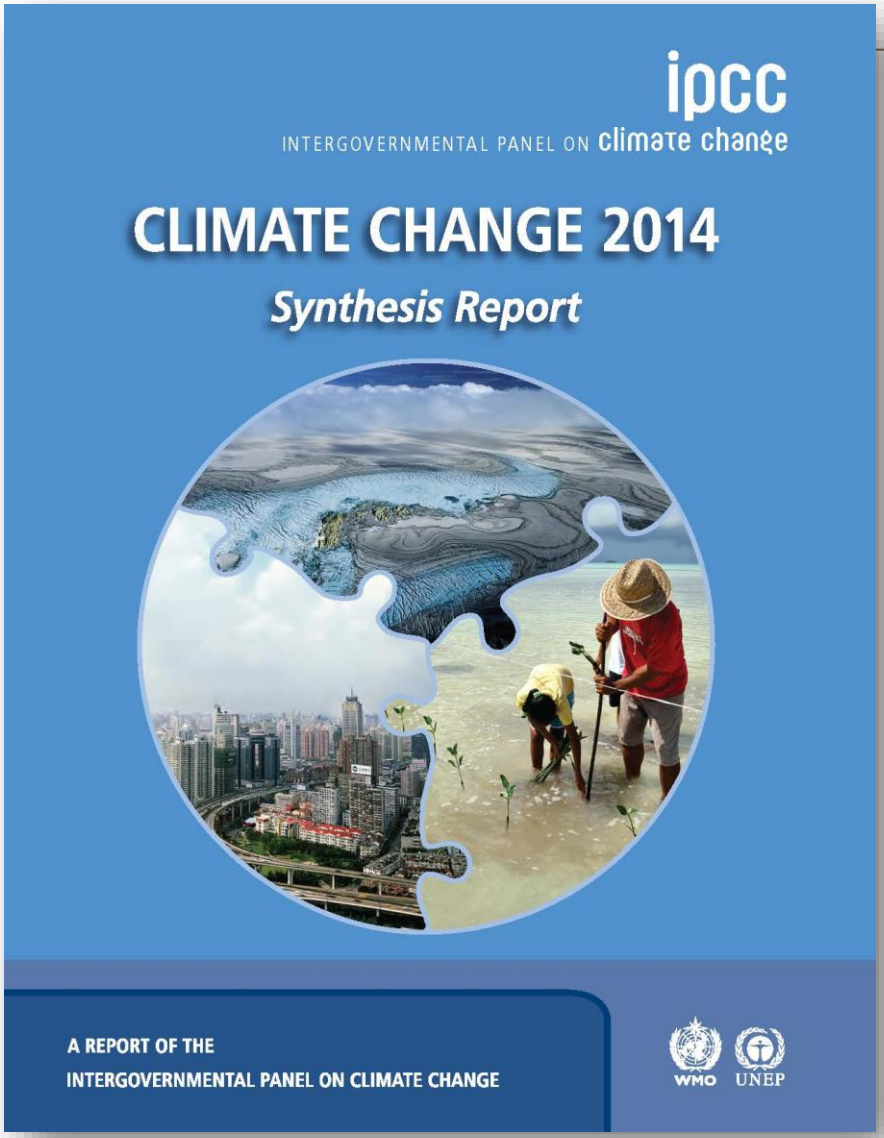


01/2020

hk 生物多樣性 Biodiversity

漁農自然護理署
Agriculture, Fisheries and Conservation Department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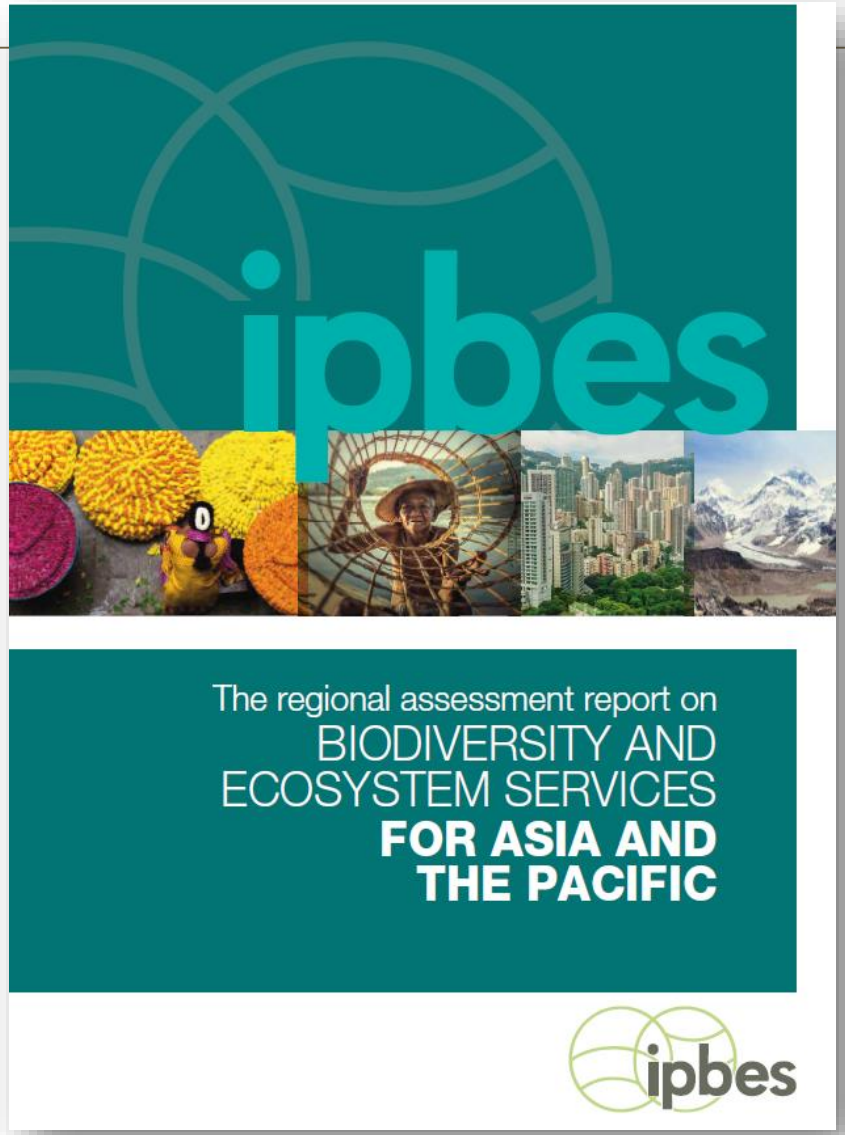
INTERGOVERNMENTAL PANEL ON climate change
CLIMATE CHANGE 2014
Synthesis Report
A REPORT OF THE
INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE
WMO
UNEP


ipbes
The regional assessment report on
BIODIVERSITY AND
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Media Release: Nature's Dangerous Decline 'Unprecedented'; Species Extinction Rates 'Accelerating'

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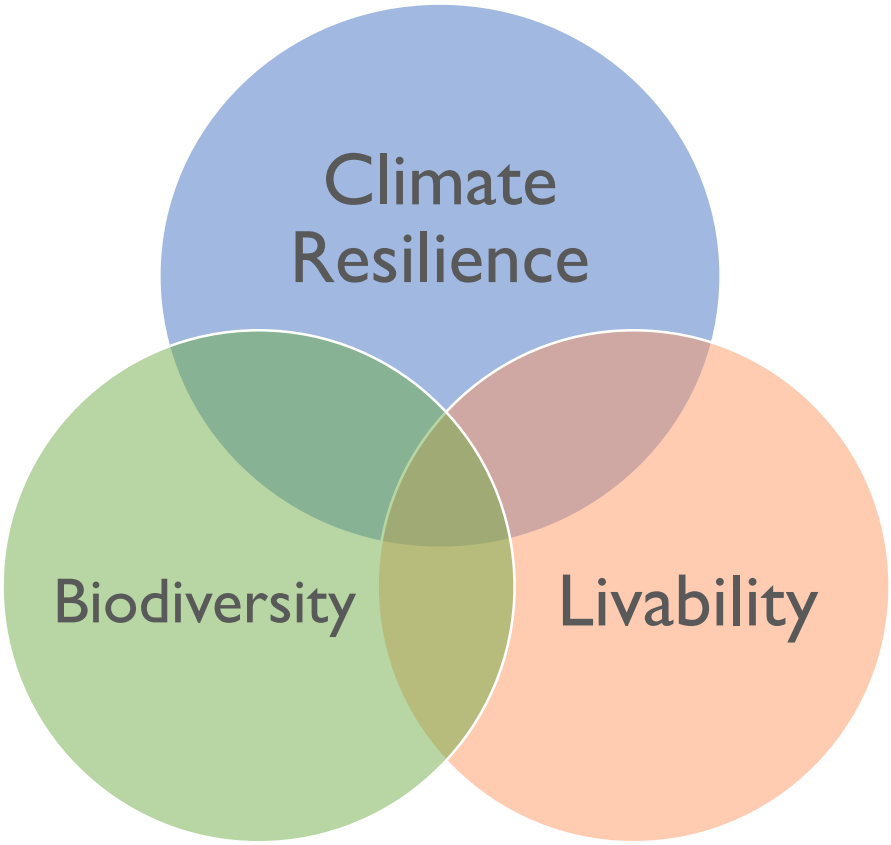
Nature-based solutions to climate change

- Urban greening
  e.g. urban forests; green roof, vertical greening
- Sustainable drainage systems
  e.g. rain gardens, restored drainage channels, constructed wetlands



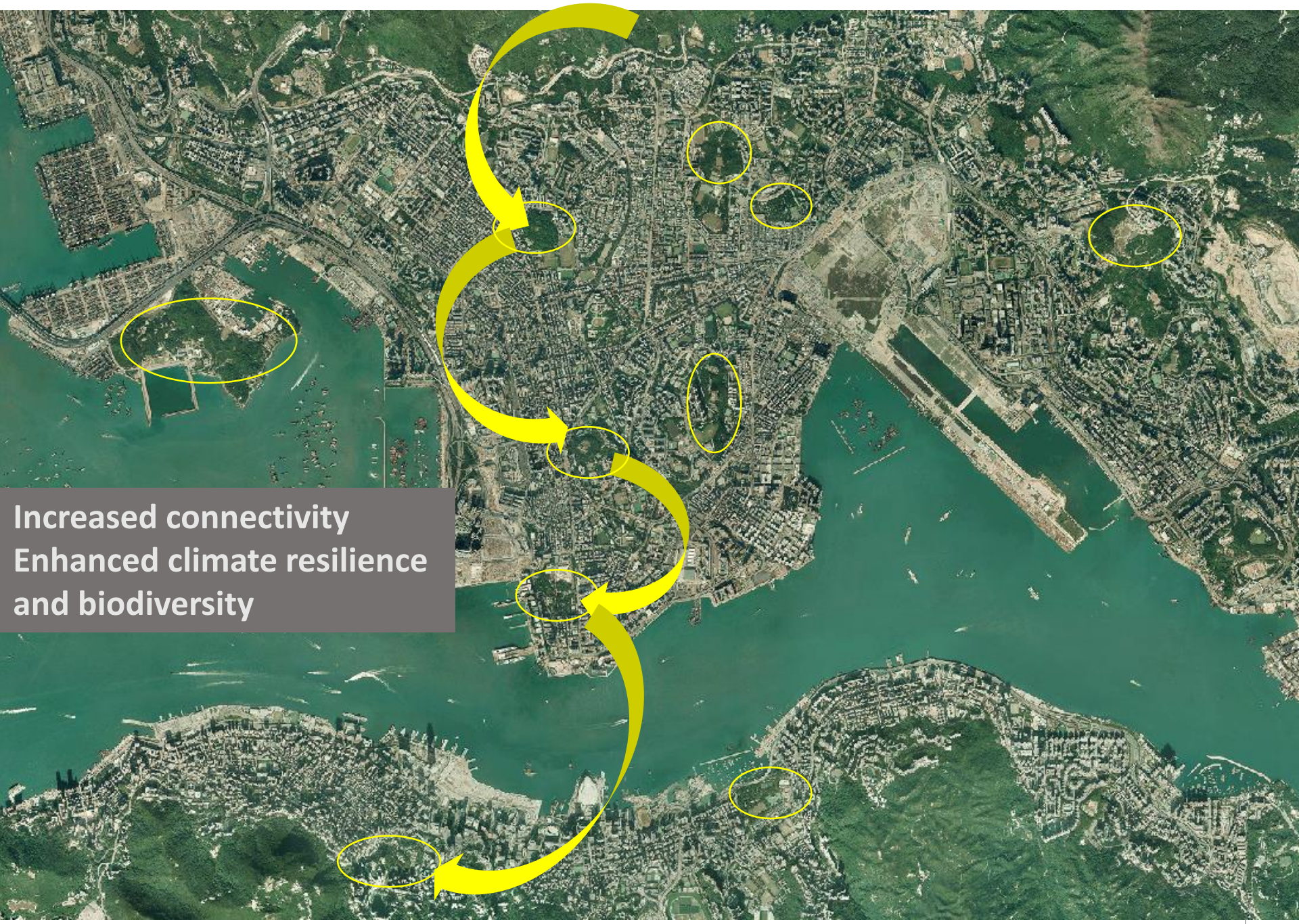
Enhancing biodiversity in urban areas

Enhancing biodiversity in urban areas

Scale	Actions / Design elements for conserving or enhancing biodiversity
Regional Planning	• Protect natural habitats • Delineate buffer areas and riparian setback • Provide city blue/green space networks as ecological corridors/ stepping stones
City Infrastructure	• Restore degraded habitats • Revitalise drainage channels • Stormwater retention pond • Eco-shoreline
Local Project	• Ecological gardens / conservation corners • Roadside/ rooftop / vertical greening • Rain garden, bioswale • Urban agriculture • Wildlife-friendly structure (e.g. bat box)

Principles

Linear corridors for wildlife


Increased connectivity
Enhanced climate resilience
and biodiversity

Principles

Providing diverse habitats

- Provide habitats for feeding, perching, roosting, breeding







Natural-looking landscapes

Canopy
(tall trees)

Understorey
(small trees
& shrubs)

Herbs &
ground cover

Secondary forests in HK

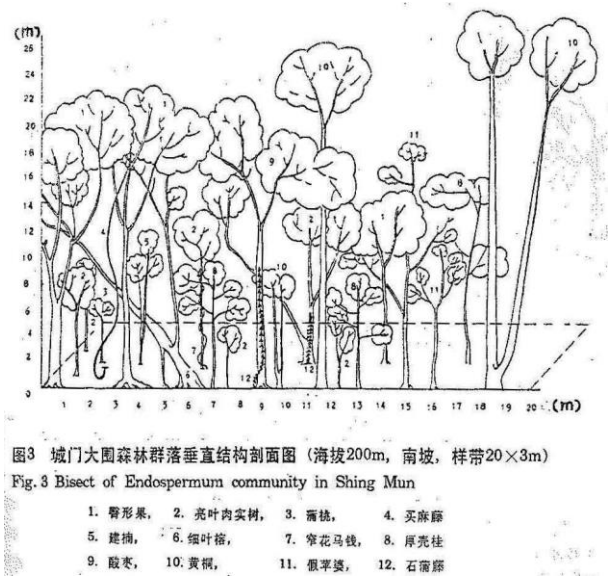


图3 城门大围森林群落垂直结构剖面图（海拔200m，南坡，样带20×3m）

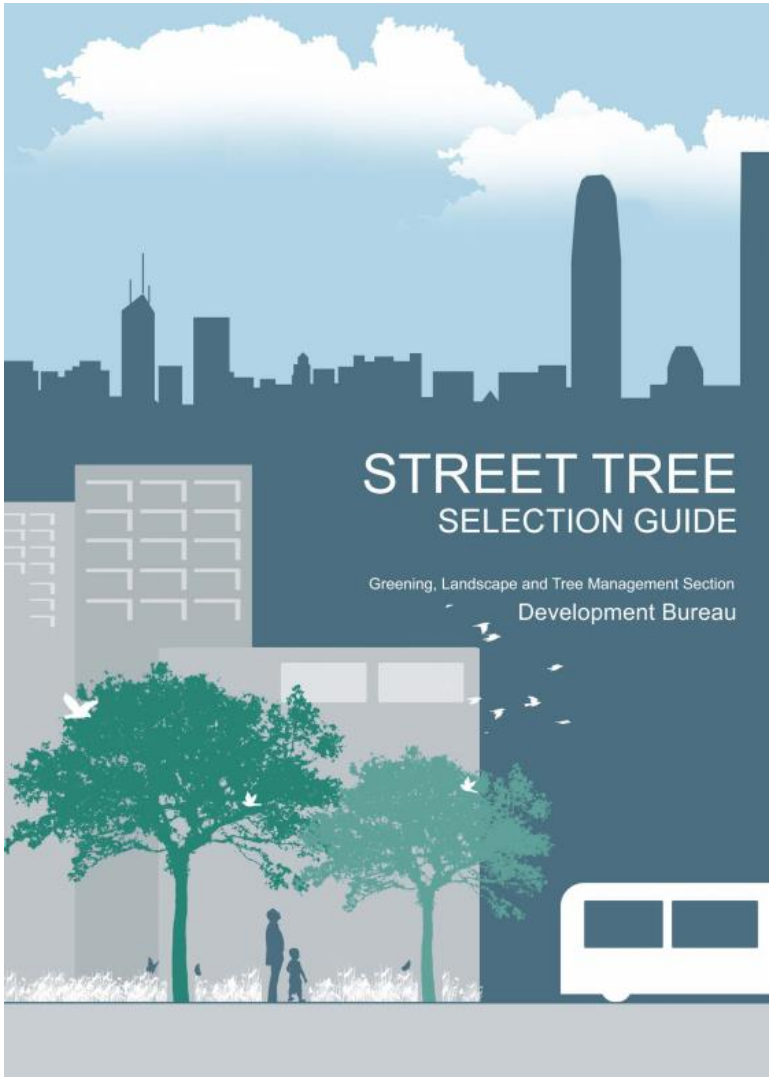
Fig. 3 Bisect of Endospermum community in Shing Mun

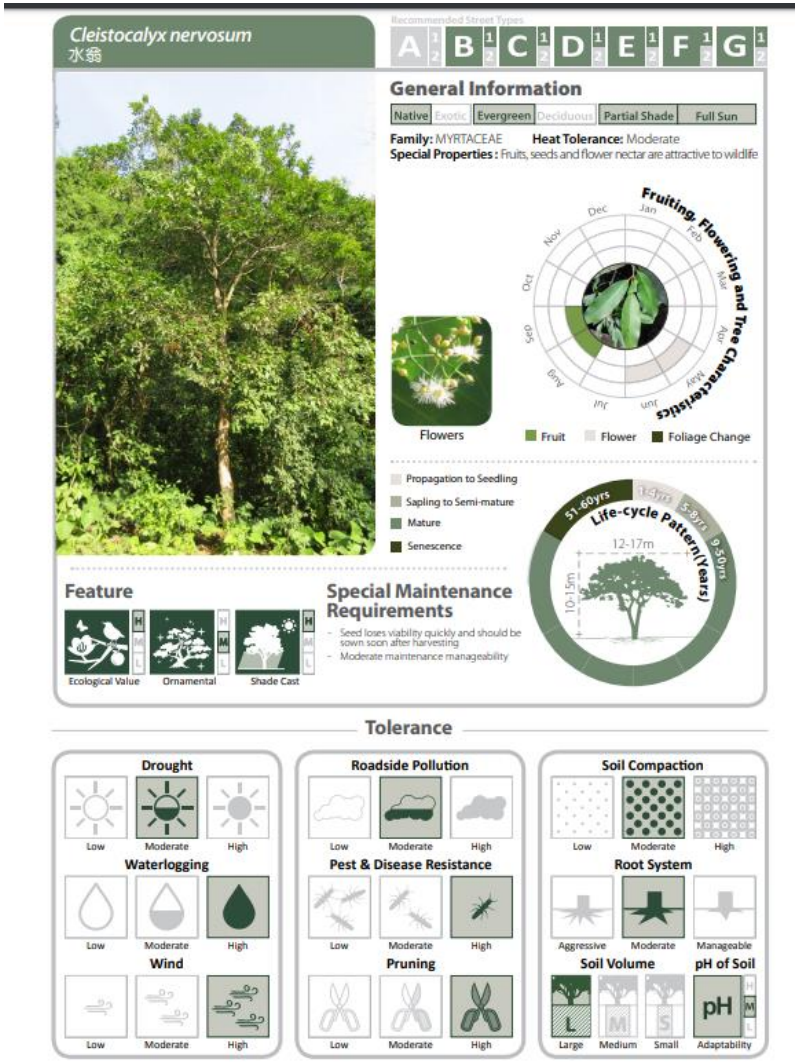
1. 臀形果， 2. 亮叶肉实树， 3. 猫挑， 4. 买麻藤
5. 建柚， 6. 细叶榕， 7. 窄花马钱， 8. 厚壳桂
9. 胶枣， 10. 黄桐， 11. 假苹婆， 12. 石南藤

(Source: Zhang et al, 1989)

Principles

Native species for urban areas





Native species – opportunities & challenges

Syzygium hancei 韓氏蒲桃

Bischofia javanica 秋楓

Litsea glutinosa 潺槁樹

Cleistocalyx operculatus 水翁

Sterculia lanceolata 假蘋婆

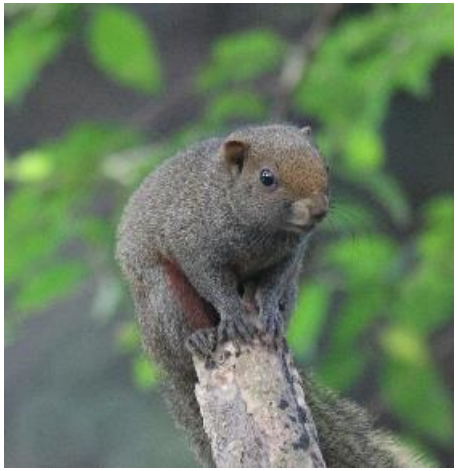
Practical considerations

Understanding site context

- Connectivity with natural habitats nearby

(Photo credit: Survey and Mapping Office, Lands Department)

Understanding HK's urban wildlife




Butterflies in urban areas

In **Hong Kong** ~250

In **13 urban parks**
(Tam & Bonebrake 2015) 58

Butterflies in urban areas

- Dominance of common species
  - Use wide range of nectar plants
  - More easily attracted by flora and surrounding wood cover
- Rare species determined by spatial context – difficulty to disperse and establish

(Sources: Tam & Bonebrake 2015; Tsang & Bonebrake 2016)

Setting up butterfly gardens

- Choice of species
  - Provide nectar and larval food
  - Plants of different sizes, colours and shapes, that bloom at different times of the year
  - Consider night-blooming flowers (e.g. *Cestrum nocturnum* 夜香樹)
  - Use native species as far as possible
- Layout
  - Prefer proximity to surrounding natural habitats
  - Choose open area that gets lots of sunlight and shelter from wind
  - Plant in clusters (not rows)
  - Desirable to provide water sources, e.g. shallow pools /puddles
- Maintenance
  - Remove invasive weeds regularly
  - Avoid disturbance and too much trimming
  - Do not use pesticides and herbicides

Post-project monitoring

Dragonfly

Beetle

Butterfly

Plant

Fish

Amphibian & Reptile

Bird

Mammal

Strengthening capacity

PROJECT MANAGERS & SPECIALISTS

- Set clear objectives in biodiversity enhancement
- Proper monitoring to assess performance
- Document results and share experience

ACADEMICS & EXPERTS

- Conduct research on local urban biodiversity
- Study specific enhancement measures
- Prepare best practices and guidelines

Thank you

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