# Singapore Index on Cities' Biodiversity (SI, CBI) in Helsinki

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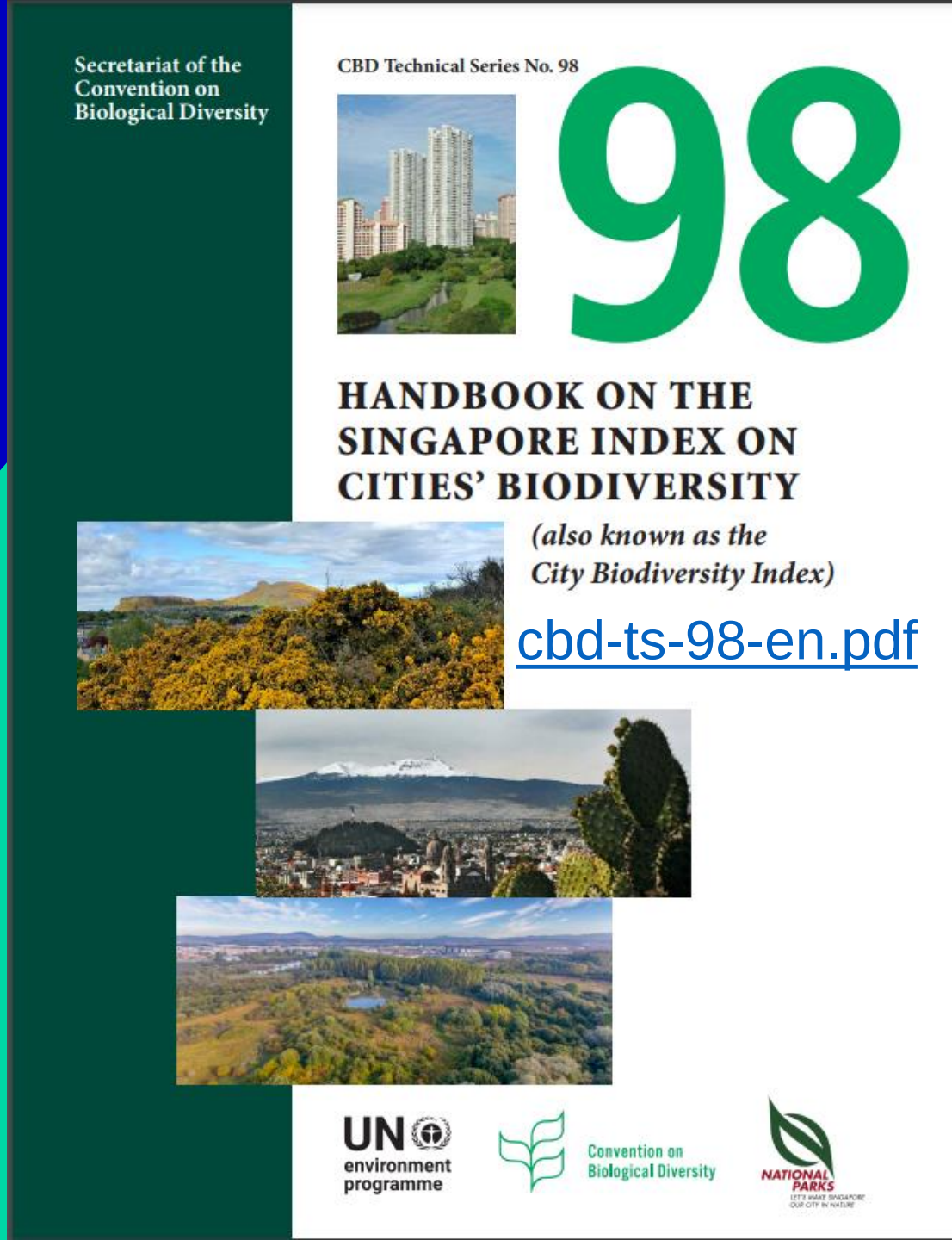
Helsinki



# History of expert work

- 2006 ICLEI
- 2008 first time in COP Conference (UN Conference of the Parties)
- 2009-2011: 3 expert workshops: first handbook version: 23 indicators
- 2019: 1 expert workshop: updated version: 28 indicators

## 2006 Cape Town, South Africa

**ICLEI – Local Governments for Sustainability (ICLEI) General Assembly:**

Attended by more than 300 representatives of ICLEI member cities and local authorities.

Established ICLEI-LAB – a pilot project

## March 2007 Curitiba, Brazil

**Cities and Biodiversity: Achieving the 2010 Biodiversity Target Meeting.**

Global Partnership on Cities and Biodiversity initiated to:

- support cities in the sustainable management of urban biodiversity resources;
- provide assistance in the implementation

## May 2008 Bonn, Germany

**Ninth Meeting of the COP to the CBD (COP 9)**

It was first time cities spoke at the highest level forum of a UN environmental convention: Mayors of the Steering Committee (Bonn, Curitiba, Montreal and Nagoya) addressed ministers and high-ranking officials from Parties during the high-level segment.

Announcement of the Singapore Index: Former Minister for National Development of Singapore, Mr Mah Bow Tan, proposed the establishment of an index to measure biodiversity in cities

## February 2009 Singapore

**First Expert Workshop on the Development of the Singapore Index**

Format of the index and its components were decided on.

## 2010

**Global Partnership on Local and Subnational Action for Biodiversity.**

Global Partnership on Cities and Biodiversity was expanded and renamed the "Global Partnership on Local and Subnational Action for Biodiversity" to include other levels of local and subnational authorities such as the Network

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# Profile of the City of Helsinki 2015

**CBI is a self-assessment tool for cities to evaluate the progress of their biodiversity conservation efforts**

- Rich biodiversity and ecosystem services (natural capital) can exist also in cities

Professor of urban ecology **Jari Niemelä** (†) and his students from University of Helsinki supported significantly our indicator work in 2015

https://www.hel.fi/helsinki/en/housing/nature/biodiversity/cbi-en

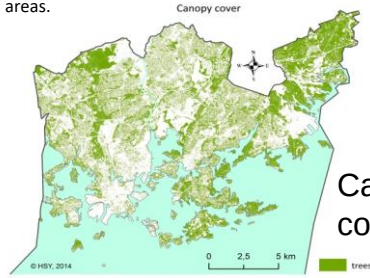
20.09.2022

Helsinki is the capital city of Finland, with a metropolitan population of about 1 million residents from the four municipalities of Helsinki, Espoo, Vantaa, and Kauniainen. The population of Helsinki municipality itself was 612 664 in 2014, with a terrestrial area of 212 km² and approximately 500 km² of coastal and marine area. Helsinki has a humid continental climate, with an average temperature of 5.9°C and 655 mm of precipitation. Summer temperatures average 15°C, and winter temperatures can go below -15°C accompanied with heavy snow, especially in January. The duration of daylight also varies greatly: in the summer each day can be as long as 19 hours and as sho as 6 hours in the winter.

## NATIVE BIODIVERSITY

Most of Helsinki is located within the hemiboreal zone, which is characterized by groves of noble tree species, together with populations of animals that are dependent upon them. The Helsinki area includes an abundance of noble tree stands and all of the noble deciduous tree species that occur in Finland can be found in Helsinki. The Östersundomin area to the east of Helsinki belongs to the southern boreal coniferous zone instead of the hemiboreal zone.

Helsinki also has peatlands, known as peat plateau bogs. The biodiversity of the adjacent archipelago contributes greatly to the regional diversity, and the archipelago serves as an effective conservation area for indigenous plant species. Due to the large coastal area, Helsinki also possesses many marine nature areas.




Canopy cover

Application of Singapore Index on Cities' Biodiversity

## Return of the flying squirrel

The flying squirrel (*Pteromys volans*) is a strictly protected species according to the EU's Habitats Directive and the Finnish Nature Conservation Decree. It requires mixed forests for its habitat (spruce and deciduous) containing sufficient deciduous trees for food as well as large trees with cavities for nesting sites.

In a 2014 survey, 12 inhabited flying squirrel territories were recorded, whereas previously this species had been recorded only as a vagrant. The population in Helsinki is expected to rise, as the population in the neighbouring municipality of Espoo has increased. The spread of this species into Helsinki demonstrates the successful implementation of the city's forest management

# Native Biodiversity: 9 indicators

Green – done **Bold green – most important** **Bold black – important but not done (new)**

1. **Proportion of Natural Areas:** in Helsinki has 76 km$^2$, approximately 36% of the city's terrestrial area
2. **Ecological Networks:** connectivity mean mesh size is 384.8 ha
3. **Birds in Built up Areas:** -
4. **Change in Number of Vascular Plant Species:** (baseline data) 565 species
5. **Change in Number of Native Bird Species:** (baseline data): 68 (nesting)
6. Change in Number of Butterfly Species: baseline data available
7. Habitat Restoration: new in SI, possible
8. **Proportion of Protected Natural Areas:** approximately 3.5% of the city land area
9. **Proportion of Invasive Alien Species:** approximately 5.5% when including vascular plants, amphibians, reptiles and mammals

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# Ecosystem Services: 5 indicators

Green – done **Bold green – most inportant** **Bold black – important but not done (new)**

10. **Regulation of Quantity of Water:** the amount of permeable surface in Helsinki is 59 – 63%
11. **Climate Regulation – Benefits on Trees and Greenery:** the tree canopy cover of Helsinki is approximately 39%
12. **Recreational Services:** 11.7 ha of recreation areas per resident
13. **Health and Wellbeing - Proximity/Accessibility to Parks:** new, possible
14. Food Security Resilience - Urban Agriculture Policy/Plan/Quidelines : new, possible?

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# Governance and Management: 14 indicators

Green – done **Bold green – most important** **Bold black – important but not done (new)**

15. Institutional Capacity: at least 7 institutions and their sub-units
16. **Budget Allocated to Biodiversity:** 10.55 million euros in 2014, which constitutes approximately 0.14 % of the city's total expenditure (Note: municipal social- and health care had high costs)
17. Policies, Rules and Regulations: (BDstrategy): local BD Action Plan including UN:s CBD initiatives
18. **Status of Natural Capital Assessment (Ecosystem services) in the City:** new
19. State of Green and Blue Space Management plans (improving the quality of green and blue spaces): new, possible
20. **Biodiversity Related Responses to Climate Change :** new, possible
21. **Policy and/or Incentives for Green Infrastructure as Nature-based Solutions:** new, possible

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# Governance and Management (2)

Green – done **Bold green – most important** **Bold black – important but not done (new)**

22. Cross-sectoral and Inter-agency Collaborations: ~ 80 biodiversity related cooperation partners
23. Participation and partnership (Public Consultation Process): normal municipal activity
24. Participation and Partnership (Agencies, Companies, Academic Institutions): 17 municipal departments participated in cooperative actions for the conservation of biodiversity
25. Number of Biodiversity Projects Implemented by the City annually: the city implemented ~ 50 biodiversity related projects in 2014
26. Education (BD in school curricula): part of the curriculum of primary schools
27. Awareness (Public Awareness events): 2014 the city had a major role in the organization of ~ 270 events related to biodiversity
28. Community Science (number of scientists): new, possible

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# Native biodiversity

## 1: Natural areas in Helsinki (green)

**Includes** natural, restored and naturalised areas

**Definition of natural areas**

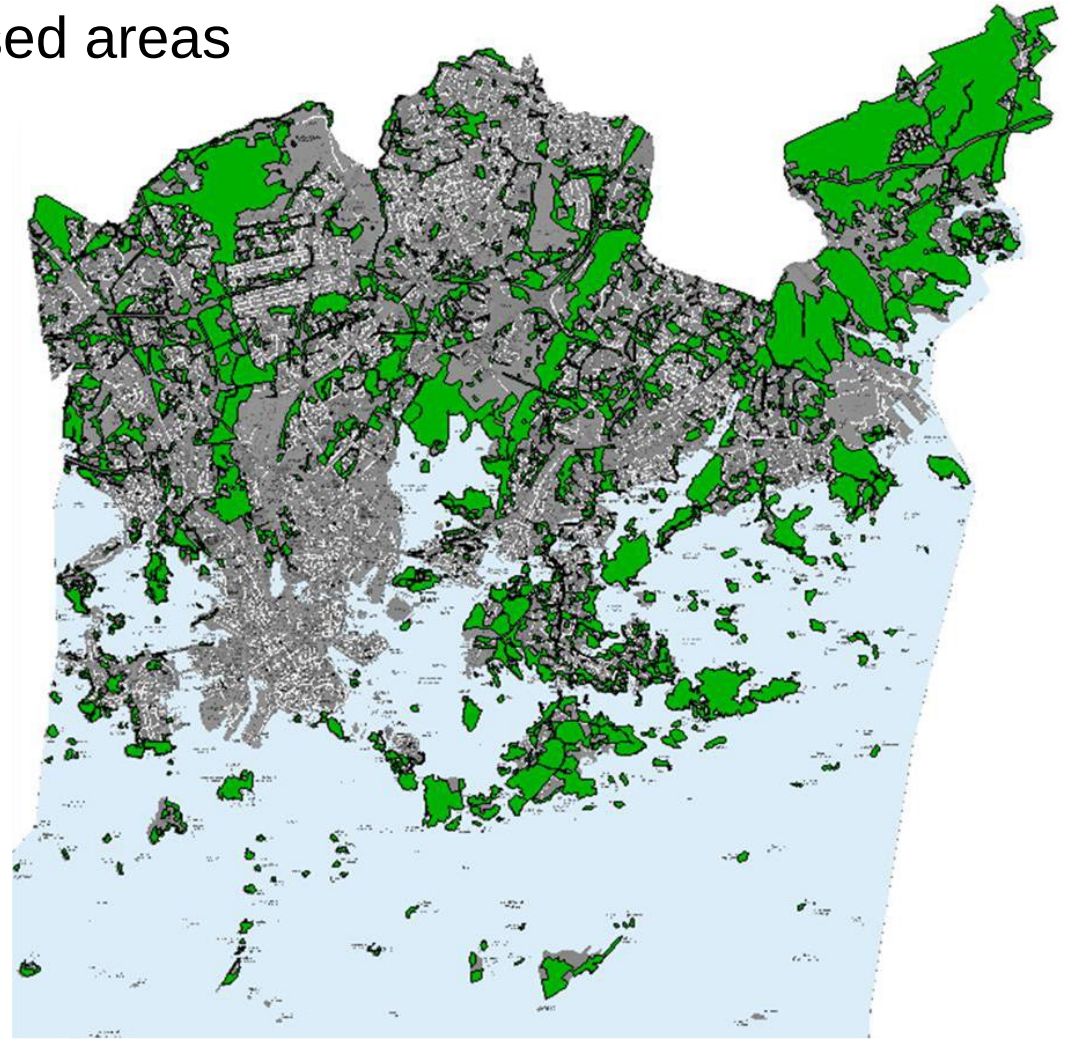
→ need for a more exact definition

- minimum vegetation cover %?
- minimum size for the natural area?

36% of the terrestrial area is natural

**Score:** > 20%: 4 points
(Scoring range: 0-4 points)

(Number 8: Proportion of Protected Natural Area)



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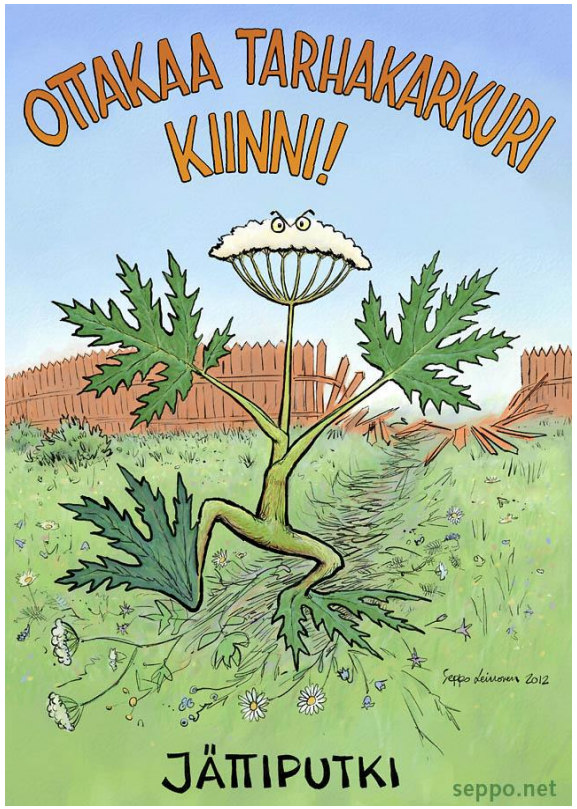
# Native biodiversity

## 9. Invasive alien species

Number of known harmful alien species is 64 and the percentage proportion of total number of species is 5.5. %.

**Score:** 1.0% - 11.0%: 3 points
(Scoring range: 0-4 points)




CAPTURE THE GARDEN ESCAPEE!

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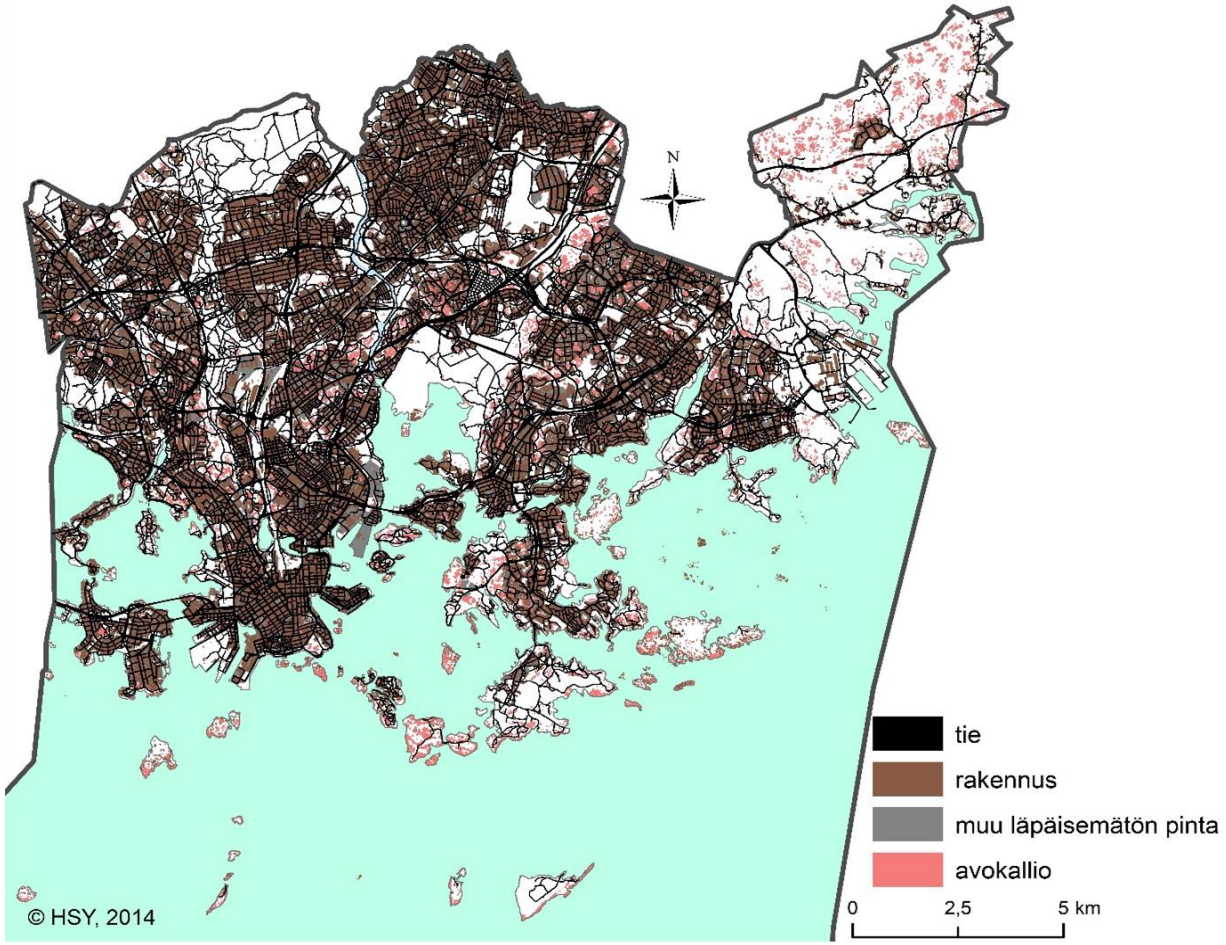
# Ecosystem services
## 10: Regulation of quantity of water

The amount of permeable surface is 59 – 63 % (white)

**Score:** 2 points
(Scoring range: 0-4 points)

Green roofs could be included




Helsinki Region Environment Services HSY

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# In Helsinki (58/96 points)

- We selected those indicators of which we had data; in many cases we had baseline data
- No resources to systematic species monitoring
- New nature monitoring plan for 2022-2031 was completed in 2021
- New strategic targets: e.g. five new protected areas/year -> 10 % of land area (now about 5 %), tree canopy cover about 30 % of land area
- Departments involved: mainly urban environment (nature protection, planning, green areas), education, culture and leisure (sports), zoo, some facts from state institutions, Helsinki University (Natural Museum)
- Temporal time span need not be 3-5 years, it can be 4 or 8 years (city government periods are 4 years)
- In Helsinki results have been available online although they are not comprehensive
- Some politicians from different parties have been interested: they recognize the need of indicators

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# Some notices

- Many governance and management indicators are important supporters to mainstreaming and green transition (integrating biodiversity and ecosystems with social and economic goals)
- In Singapore Index does not include habitat types, only habitat restoration
- Do not focus on points; monitor your own development and needs
- Start with some of the indicators, e.g. natural and protected areas together with one or two groups of native species – you only get less points and you can do others later on
- Find the way best for your community and show the metadata (how it was done)
- Focus on the rare native species and estimate the numbers of all native species
- Write your own exact definition for natural area
- Report to politicians and residents (e.g. environmental reporting)
- Very good expert-planned index with possibility to small modifications
- Need for more information about CBI/SI

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