

Indicator 2: Ecological Networks

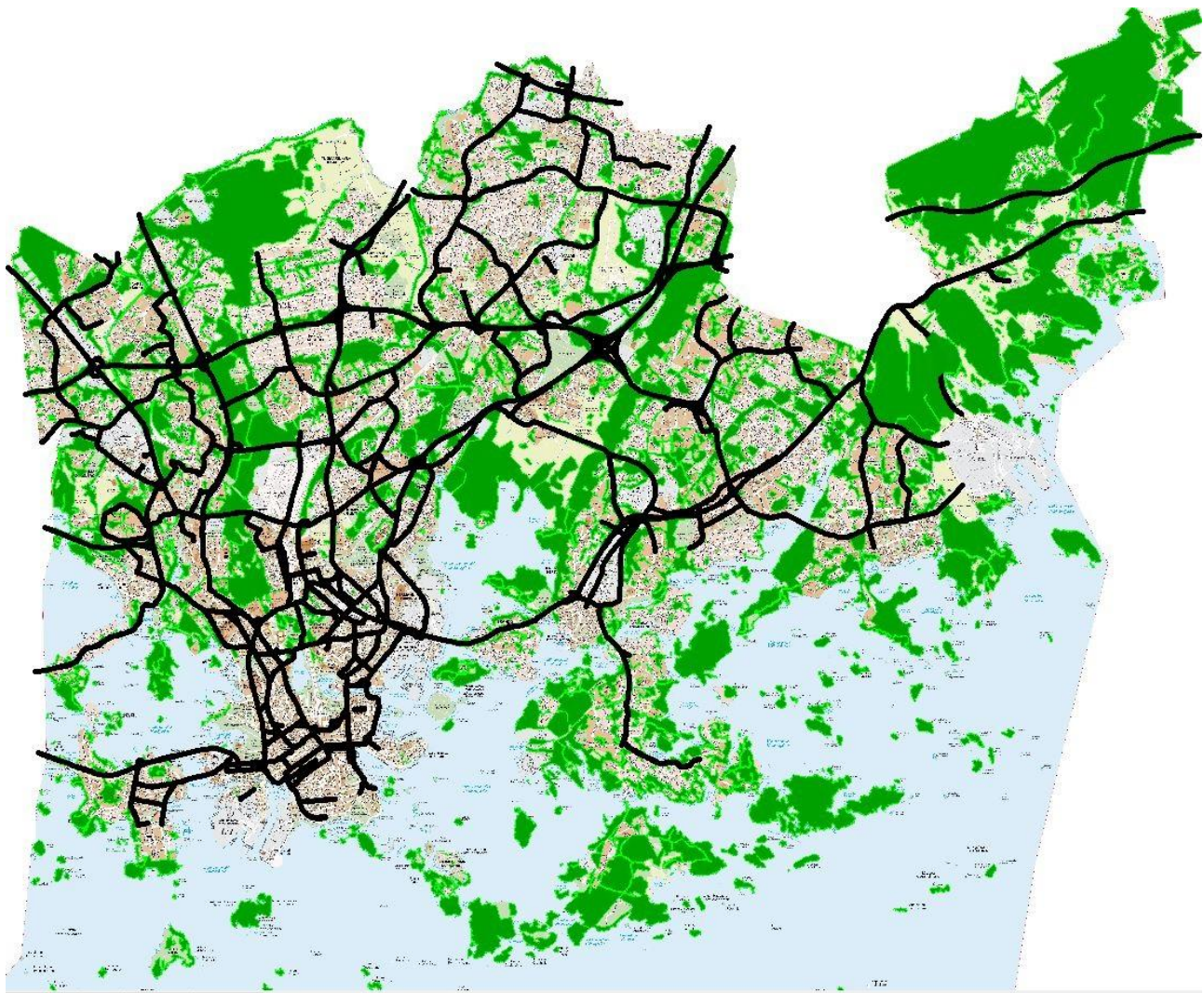


Figure: Nature areas and roads. Busy roads (> 5000 cars per day) that fragment the integrity of ecological networks are marked with a black line on the map. Diverting traffic to underground tunnels reduces such fragmentation. For instance, the road leading to the Vuosaari docks does not fragment nature areas, because it is partially underground. It is additionally important to note that some areas are isolated also because of their distance apart.

Status:

Although Helsinki has a considerable amount of nature areas, they do not form a coherent network. To assess this indicator, roads with traffic in excess of 5000 cars per day were, in accordance with CBI guidelines, categorized as dispersal barriers. Additionally, in this indicator the Vantaanjoki River was not considered to constitute a corridor connecting nature areas.

Indicator 2 was calculated using the equation:

$$IND2 = \frac{1}{A_{total}} (A_1^2 + A_2^2 + A_3^2 + \dots + A_n^2), \text{ in which}$$

n is the number of networks of nature areas that are connected to each other

A_n is the surface area of the network (ha)

A_{total} is the total combined surface area of nature areas (ha)

When the values for nature areas categorized according to isolation and barriers are inserted into the equation, the result is 383.87 ha.

Score:

0 points: < 200 ha

1 point: 201 - 500 ha

2 points: 501 - 1000 ha

3 points: 1001 - 1500 ha

4 points: > 1500 ha

Monitoring:

The calculation of this indicator is based on Indicator 1. It is therefore logical to monitor this indicator in conjunction with Indicator 1. According to this indicator, Helsinki's nature areas are already highly fragmented. In the future in green space planning it will be necessary to endeavour to conserve existing connections and, wherever possible, establish new ones. This will probably necessitate the further development of underground traffic solutions. On the basis of current drafts of the next General Plan for Helsinki, however, it seems probable that ecological networks will become even more fragmented.

To improve the assessment of this indicator, there is a need to improve the surveying of ecological corridors, such as those passing beneath major roads. When considering the reliability of the evaluation of this indicator, it is necessary to bear in mind that barriers to dispersal depend on the species considered, and it is not possible to accommodate the traits of all species. For instance, a squirrel might be able to move without difficulty through a park area that is too managed for flying squirrels.

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