

Indicator 5: Change in indigenous species composition, butterflies



Figure: Butterflies on Lonna Island during summer 2014. The photograph on the left shows a Red Admiral and the one on the right shows a Painted Lady. Both of these species are migratory species that do not overwinter in Finland. (Photographs: Milja Heikkinen 2014)

Status:

The butterfly fauna of Helsinki is faced with major changes. An inventory of the butterfly fauna of Finland has revealed that climate change has brought new species to the northernmost areas. The inventory of 2010 revealed that ca. 120-130 new species had been recorded during the previous decade. It is highly likely that this trend has continued and that the next inventory, in 2020, will reveal a similar number of new species. It is likely that the trend is similar for Helsinki, though it should be noted that some species have also disappeared from Helsinki, as climate warming has driven them further northwards. It is possible that the total number of established species in Helsinki has increased but the proportion of indigenous species reduced.

There has not been any comprehensive and systematic survey of the butterflies of Helsinki. It is possible to make an estimate of the number of species on the basis of current records, though the estimation is laborious and the precision in the order of ± 50 species. One of the difficulties of this task is that some species occur in very small locations, in addition to which some promising habitats are difficult to survey. For instance, in city centre locations, it can be challenging to maintain a trap for a sufficiently long duration without disturbance.¹

Score:

A baseline reference value for this criterion is not yet available.

0 points: the number of species decreases or remains the same

1 point: 1 additional species

2 point: 2 additional species

3 point: 3 additional species

4 point: 4 additional species

¹ The statistics on which this indicator is based were obtained via a telephone interview with the Managing Director of the Finnish Lepidopterists' Association (Suomen perhostutkijain seura) Jari Kaitila on 24.2.2015

Monitoring:

The reliable monitoring of this indicator would require the development of systematic species monitoring. It will be necessary to determine whether such resources are available. Such monitoring could provide much useful information because butterflies are a taxon that clearly responds to climate warming. The first survey would require considerable effort so that the work would be easy to continue. The first survey should be done as comprehensively as possible. Subsequent surveys could focus on areas and species for which changes are considered probable.

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