

Indicator 15.5.1

Indicator Name, Target and Goal

Indicator 15.5.1 Red List Index

Target 15.5 Take urgent and significant action to reduce the degradation of natural habitats, halt the loss of biodiversity and, by 2020, protect and prevent the extinction of threatened species

Goal 15 Protect, restore and promote sustainable use of terrestrial ecosystems, and halt biodiversity loss

Definition and Rationale

○ Definition

The Red List Index is an index that measures changes in aggregate extinction risk across groups of species. It is based on the number of species in each category of extinction risk on the Red List by Ministry of the Environment, and expressed as changes in an index ranging from 0 to 1.

This indicator shows the trends in biodiversity throughout Japan.

○ Concepts

Threatened species are those listed on the Red List by Ministry of the Environment in the categories Vulnerable, Endangered, or Critically Endangered (i.e., species that are facing a high, very high, or extremely high risk of extinction in the wild in the medium-term future).

○ Rationale and Interpretation:

The world's species are impacted by a number of threatening processes, including habitat destruction and degradation, overexploitation, invasive alien species, human disturbance, pollution and climate change. This indicator can be used to assess overall changes in the extinction risk of groups of species as a result of these threats and the extent to which threats are being mitigated.

The Red List Index value ranges from 1 (all species are evaluated as out of the category') to 0 (all species are categorized as 'Extinct'), and so indicates how far the set of species has moved overall towards extinction. A downward trend in the Red List Index over time means that the expected rate of future species extinctions is worsening (i.e., the rate of biodiversity loss is increasing). An upward trend means that the expected rate of species extinctions is abating (i.e., the rate of biodiversity loss is decreasing), and a horizontal line means that the expected rate of species extinctions is

remaining the same, although in each of these cases it does not mean that biodiversity loss has stopped.

The name “Red List Index” should not be taken to imply that the indicator is produced as a composite indicator of a number of disparate metrics (in the same way that, e.g., the Multidimensional Poverty Index is compiled). The index is compiled from data on changes over time in the Red List Category for each species, excluding any changes driven by improved knowledge or revised taxonomy.

The Red List Index calculates the extinction risk of a group relative to the worst-case scenario where all species of that group would be Extinct.

Data Sources and Collection Method

Data source: The latest Red List of Ministry of the Environment.

Collection Method: Gathering data collected by the specialists of each species and approved by the conference of Red List.

Method of Computation and Other Methodological Considerations

○ Computation Method

The Red List Index is calculated for a specific time period by first multiplying the number of species in each Red List Category by a weight (ranging from 1 for ‘Near Threatened’ to 5 for ‘Extinct’ and ‘Extinct in the Wild’) and summing these values. This is then divided by a maximum threat score which is the total number of species multiplied by the weight assigned to the ‘Extinct’ category. This final value is subtracted from 1 to give the Red List Index value.

Mathematically this calculation is expressed as:

$$RLI_t = 1 - \frac{\sum W_c(t,s)}{W_{EX} \cdot N}$$

where $W_c(t,s)$ is the weight for category c at time t for species.

The weights are: for ‘Extinct’ and ‘Extinct in Wild’ = 5, ‘Critically Endangered’ = 4, ‘Endangered’ = 3, ‘Critically Endangered + Endangered’ = 3.5, ‘Vulnerable’ = 2, ‘Near Threatened’ and ‘Data Deficient’ = 1. W_{EX} = 5, the weight assigned to ‘Extinct’ or ‘Extinct in the Wild’ species; and N is the total number of the species targeted for evaluation.

- Comments and limitations
N/A

Data Disaggregation

N/A

References

N/A

Custodian Ministries of Data

Ministry of the Environment

Fisheries Agency, Ministry of Agriculture, Forestry and Fisheries

Custodian Ministries of Related Policies

Ministry of Foreign Affairs

Ministry of Agriculture, Forestry and Fisheries

Fisheries Agency, Ministry of Agriculture, Forestry and Fisheries

Ministry of the Environment

International Organizations

International Union for Conservation of Nature and Natural Resources (IUCN)