

### 9.3.1 Number of invasive alien species

**Project Name:** CONNECTING Nature (Grant Agreement no. 730222)

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Number of Invasive Alien Species		Biodiversity
<b>Description and justification</b>	Proportion of invasive alien species within an area	
<b>Definition</b>	Provides an overview of the prevalence of potentially harmful species within a defined area (site/neighbourhood/region/city)	
<b>Strengths and weaknesses</b>	If monitored over time, this provides strong evidence of the status of invasive alien species in terms of increasing or decreasing. It is only as strong as the current list of invasive species, as such there may be need for new baselines as new invasive alien species are discovered.	
<b>Measurement procedure and tool</b>	Proportion is calculated on the basis of the number of invasive alien species divided by the total number of species (i.e., the number of invasive alien species plus the total number of native species).	
<b>Scale of measurement</b>	% of species in a defined area	
<b>Data source</b>		
<b>Required data</b>	Survey data	
<b>Data input type</b>	Quantitative	
<b>Data collection frequency</b>	Typically annual, but can be less frequent if resources are stretched.	
<b>Level of expertise required</b>	High expertise is typically required for species identification. This requirement can be reduced if an index of easily identifiable species is created as a proxy	
<b>Synergies with other indicators</b>	Builds from number of native species indicator	
<b>Connection with SDGs</b>	SDGs 14, 15. Also SDG 2 if alien species are a threat to food production	
<b>Opportunities for participatory</b>	Surveying represents an excellent opportunity for widening participation.	

<b>data collection</b>	
<b>Additional information</b>	
<b>References</b>	<p>Ruf, K., Gregor, M., Davis, M., Naumann, S. and McFarland, K., 2018. The European Urban Biodiversity Index (EUBI): a composite indicator for biodiversity in cities. ETC/BD report to the EEA:</p> <p>Also: CBI Indicator 10:  <a href="https://www.nparks.gov.sg/biodiversity/urban-biodiversity/the-singapore-index-on-cities-biodiversity">https://www.nparks.gov.sg/biodiversity/urban-biodiversity/the-singapore-index-on-cities-biodiversity</a></p> <p>European Capital of Biodiversity Indicators 10:  <a href="https://www.capital-biodiversity.eu/uploads/media/Indicators_on_urban_biodiversity_-_LIST_-_European_Capitals_of_Biodiversity.pdf">https://www.capital-biodiversity.eu/uploads/media/Indicators_on_urban_biodiversity_-_LIST_-_European_Capitals_of_Biodiversity.pdf</a></p>

## 9.4 Species diversity within defined area per Shannon Diversity Index

**Project Name:** proGReg (Grant Agreement no. 776528)

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Shannon Diversity Index	Biodiversity
<b>Description and justification</b>	The Shannon Diversity is a very common index used in ecology to quantify diversity in a community. The index provides more information about the fauna and flora composition than simply area richness. It takes into consideration both the number of different species observed and their relative abundances
<b>Definition</b>	<p>Shannon Diversity Index it is calculated as follows:</p> $H = - \sum_{i=1}^S p_i \ln p_i$ <p><math>P_i</math> is the proportion of total number of individuals of <math>i^{\text{th}}</math> species, divided by total number of individuals of all species recorded.</p>
<b>Strengths and weaknesses</b>	<p>Strengths</p> <ul style="list-style-type: none"> <li>• applicable to different taxonomic groups</li> <li>• easy to apply and very plastic, in fact we can use it for flora and fauna</li> <li>• repeatable and standardized</li> <li>• cheaper data collecting</li> </ul> <p>Weaknesses</p> <ul style="list-style-type: none"> <li>• high staff specialization</li> <li>• high sampling efforts</li> </ul>
<b>Measurement</b>	Shannon Diversity Index needs semiquantitative data. In our case, data must be collected through linear transects (linear paths with