Connection with SDGs	SDG 15.
Opportunities for participatory data collection	Surveying habitats represents an excellent opportunity for widening participation. Alternatively, participatory GIS portals can be used to ground-truth satellite imagery.
Additional information	
References	Treeworks (1996) Veteran Trees Initiative Specialist Survey Method. Report produced by English Nature. Available from: http://www.treeworks.co.uk/downloads/SSM_HandBook.pdf

10.9 Quantity of dead wood per unit area

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

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Quantity of dead wood per unit area	**Biodiversity**
Description and justification	Deadwood plays a key role in within ecosystems. Evaluating the quantity of deadwood associated with nature-based solution delivery can represent a proxy for quantification of biodiversity value. It can also be used to establish a baseline to ensure that deadwood provision is considered in future land management change decisions.
Definition	Deadwood encompasses all non-living woody biomass not contained in litter, either standing, lying on the ground, or in the soil (FAO, 2004). Deadwood provision is a key consideration in biodiversity conservation due to its value in terms of providing microhabitats for other species, providing a structural/functional role in stabilizing steep slopes and stream channels, and contributing to carbon, nitrogen and phosphorus cycles (Paletto et al 2012).
Strengths and weaknesses	If quantity is defined as presence/absence, this can be a relatively straightforward survey process (as long as a categorisation of 'deadwood' can be agreed upon). Such a method, however, misses critical data on deadwood volume and condition. If a more detailed quantification is desirable, defining and identifying deadwood can be more challenging as a standardised method has not been agreed upon in scientific literature. Moreover, the indicator represents a measure of habitat quality rather than biodiversity value as it does not include an assessment of organisms associated with deadwood (e.g., the many scarce and

	threatened species associated with this habitat). There is also no consensus on a threshold for a target amount of deadwood within a habitat, so the indicator tends to be focused on no net-loss, rather than informed thresholds.
Measurement procedure and tool	Calculation of the volume of standing and lying deadwood, typically in forests and other wooded land, classified by forest type (Forest Europe et al. 2011). Deadwood is typically classified according to type (standing, lying, decay state) in a defined area (tonnes/hectare or cubic metre/ha). Classification is typically defined nationally, with common examples including Length >/= 2 m. and diameter mean 10 cm (EEA 2020).
Scale of measurement	Possibly most relevant on a site/project scale. Could also be applied on a region or city-wide (e.g., Functional Urban Area) scale.
Data source	
Required data	Background maps (e.g., Ordnance Survey Maps) and ground-truthed GPS point source data to represent each individual deadwood feature.
Data input type	Quantitative and spatial
Data collection frequency	Surveys can be repeated regularly to keep mapping updated as deadwood removal can occur regularly through decomposition and or 'tidying' management. Surveys should be repeated at a maximum of 5 yearly intervals.
Level of expertise required	Some expertise is required for surveying deadwood on the ground. If surveys are to combine deadwood counts with characteristics/features (e.g., characterising veteran and ancient trees), then a greater level of expertise is required (see veteran tree indicator).
Synergies with other indicators	Synergies with other greenspace mapping indicators and protected habitats and species indicators, particularly Article 17 listed species and veteran tree surveys
Connection with SDGs	SDG 15
Opportunities for participatory data collection	Surveying habitats represents an excellent opportunity for widening participation. This can also be supplemented by the use of participatory GIS portals for 'citizen scientists' to upload observations.
Additional information	
References	EEA (2020) Forest deadwood indicator Assessment. Available from: https://www.eea.europa.eu/data-and-maps/indicators/ forest-deadwood-1/assessment-1 FAO, (2004). Global Forest Resources Assessment Update 2005: Terms and Definitions. Rome: Working Papers 83/E, Forest Resources Assessment Programme.

Forest Europe, UNECE and FAO (2011), State of Europe's forests 2011. Status and Trends in Sustainable Forest Management in Europe. Available at: www.foresteurope.org/documentos/State_of_Europes_Forests_2011_Report_Revised_November_2011.pdf

Paletto, A, Ferretti, F, De Meo, I, Cantiani, P and Focacci, M. (2012) Ecological and Environmental Role of Deadwood in Managed and Unmanaged Forests. 10.5772/24894.

10.10 Forest habitat fragmentation – Effective Mesh Density

Project Name: PHUSICOS (Grant Agreement no. 776681)

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Effective Mesh Density	**Biodiversity**
Description and justification	This indicator evaluates whether the Design scenarios ensure the removal of physical barriers obstructing forest habitat connectivity.
Definition	Effective mesh density quantifies the degree to which wildlife movement is interrupted by barriers in the environment. It expresses the degree of fragmentation of a landscape and measure the effective number of patches (forest areas) per 1 km^2 (EEA).
Strengths and weaknesses	+ It easily expresses how much the forest habitats are fragmented; in a long-term scenario, these indicators could be re-assessed, monitoring, through a direct survey, if the NBS implementation has produced impact on forest habitat fragmentation. - A detailed identification of forest patches localization should require a field and/or aerial survey and time-consuming data post-processing.
Measurement procedure and tool	It can be calculated using the following expression: $$s_{eff} = {}^{1}/_{m_{eff}}$$ given: