AfN-METHOD-E-01

NARIA Framework - Terrestrial Ecosystem Condition Method

Land | Ecosystem

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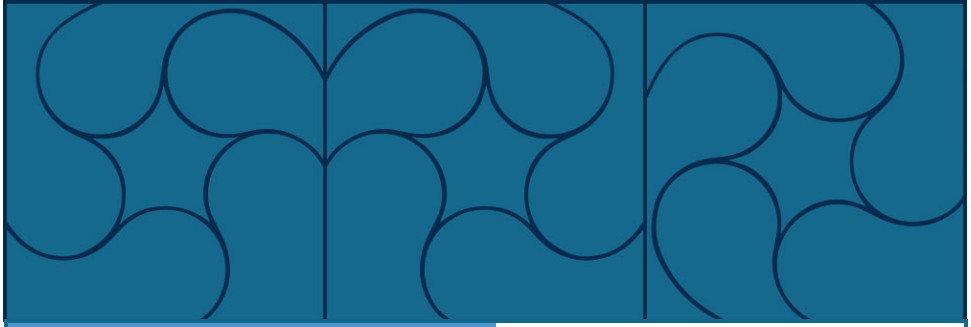

Method Name	NARIA Framework – Terrestrial Ecosystem Condition Method
Method ID	AfN-METHOD-E-01
Environmental Asset	Terrestrial Ecosystems
Accuracy Level	Moderate (80%); High (90%); Very High (95%)
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License fees associated with using this Method	Subject to Licence fees, please contact Credit Nature.
Embargo Period	3 years (ending April 2027)
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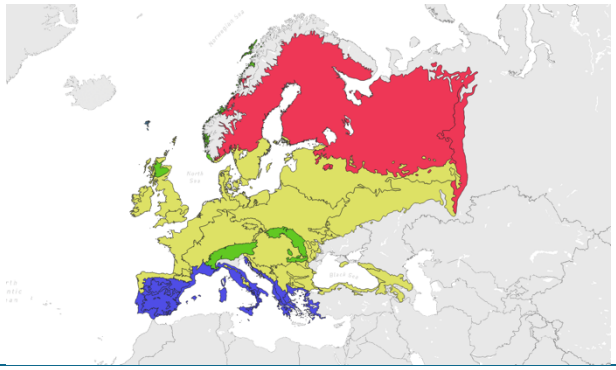
About

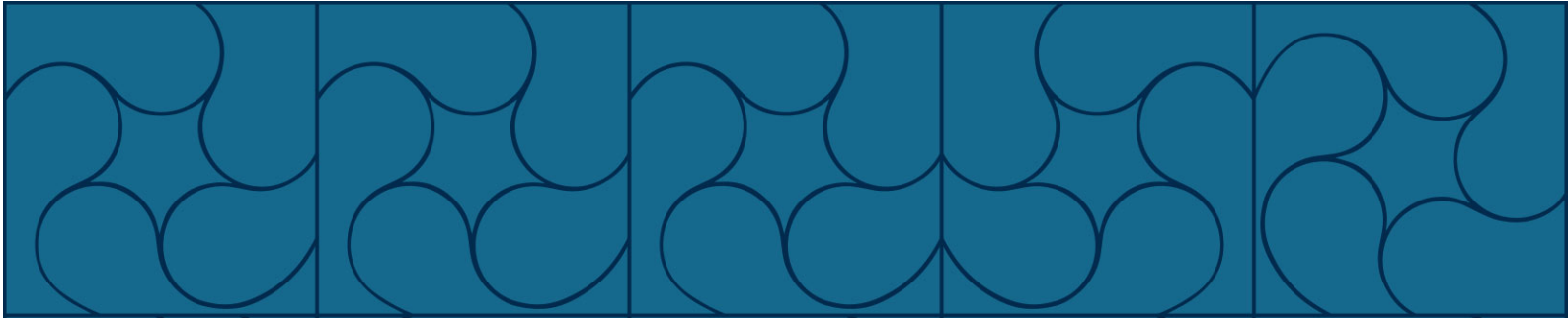
Environmental Asset	Terrestrial Ecosystems
Purpose	This restoration Method is designed for the purpose of baselining and monitoring the condition of four terrestrial ecosystem processes (characteristics) that recover and maintain ecosystem integrity. It seeks to measure improvement in the state of these processes to states where they support the recovery of ecosystems to states where they have the capacity to self-recover and adapt. This approach is intended to bring consistency to measurement of ecosystem process condition to evidence units of change fit for high integrity global nature markets.
Target Audience	Organisations interested in measuring, reporting and forecasting the changes in the state of ecosystem integrity to evidence the impact of nature positive investments, land management practices and/or policies.
Decisions to inform	This method can be used as a baselining and monitoring tool to record point-in-time condition of key ecosystem processes. It has the capacity to estimate forecasts of future condition to estimate change following changes in land management practices as a result of investment in restoration projects (such as through CreditNature Nature Investment Certificates). Forecasting and backcasting are only possible when future conditions can be predicted with reasonable accuracy.

Application

Reporting Period	1 to 5 years Reporting Period, dependent on account objectives.
Scale and Size	The Method can be used at Project, Property, Aggregate and Regional scales. It is best applied on sites over 200ha (2km²) in area. Data capture complexities at larger scales may mean insufficient detail for a high or very high accuracy level to be achieved.
Geographical Location	The method is suited to application in temperate ecoregions of Western and Eastern Europe, see coloured areas on the map to the right. 
Realm	Terrestrial
Biome/Functional Ecosystem Group	The method can be applied in the following Functional Ecosystem Groups (IUCN Global Ecosystem Typology): Boreal montane forests; Deciduous temperate forests; Oceanic temperate rainforests; Temperate sclerophyll forests; Seasonal dry temperate shrublands; Cool temperate heathlands; Trophic savannas; Temperate woodlands; Temperate grasslands; Temperate alpine grasslands; Croplands; Sown pastures and fields; Plantations; Semi-natural old fields; Temperate forested wetlands; Permanent marshes; Seasonal floodplain marshes; Boreal temperate bogs; Boreal temperate fens. Within these ecosystem groups it is suited to application in areas that have historically been subject to agricultural, forestry or other human modifications.

Snapshot

	High Accuracy (90%)	Moderate Accuracy (80%)
Stratification	Single assessment unit: Each accounting area (land asset or land asset clusters) is treated as a whole and data should be collected to represent the whole accounting area.	
Sample Location	Data must be collected to represent the whole land asset. For three of the four indicators the accounting area is sampled as a whole. Bird Trait Diversity has a sampling protocol for data capture.	
Sample Intensity	Data must be verifiably accurate and precise for the whole land asset. Data intensity requirements are metric specific and detailed. ***See metric technical document appendices.*** **Bird Trait Diversity:** Determined by the habitat's complexity and behavioural traits of the potential species pool. **Landscape Connectivity:** 100% sampling required. **Trophic Function Metric:** Sampling intensity is specified by the data capture protocol based on the openness/area of closed canopy vegetation. **Vegetation Spatial Diversity:** 100% at low resolution with high resolution surveys covering a representative sample based on the spatial heterogeneity of the accounting area. For areas requiring drone based surveys the intensity is based on a vegetation representative sampling framework.	
Sample Timing	Baseline assessment data should be reflective of the state of the ecosystem within the past two years. **Bird Trait Diversity:** Bird species lists must represent the breeding, wintering and passage seasons. **Landscape Connectivity:** Landscape Connectivity data can be collected at any time. **Trophic Function Metric:** Trophic Function is ideally collected in winter and early summer. **Vegetation Spatial Diversity:** Vegetation Spatial Diversity is ideally suited to summer data collection. Other indicators have no time-specific requirements for data feeds.	
Indicators and measurement techniques	The method comprises four constituent metrics that are aggregated using the geometric mean to provide the overall ECI score. The metrics are: **Bird Trait Diversity:** measured by calculating the characteristic of the trait space for the bird assemblage recorded within the accounting area. **Landscape Connectivity:** GIS mapping of linear barriers to species dispersal and calculating Effective Mesh Size. **Trophic Function:** measures trait dissimilarity and functional effects of large herbivores with access to the accounting area as a measure of the potential for trophic cascade effects on the generation/ maintenance of ecosystem complexity. **Vegetation Spatial Diversity:** measured by applying the Interspersion and Juxtaposition Index on a habitat map and applying a steady-state penalisation to some vegetation types.	
Expertise Required	Approved CreditNature project developers may prepare data for application in the method. Data collection may be carried out by qualified contractors who are experienced in bird finding and surveys, identification and counting large herbivores, habitat mapping and use of remote sensing data. Operational GIS capabilities are required to prepare Landscape Connectivity and Vegetation Spatial Diversity datasets, as well as experience of conducting vegetation surveys. Application of the method currently requires understanding of using R and Python.	



This Method is under embargo. Please contact CreditNature (info@creditnature.com) to request to view the full Method.

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