

Landscape fragmentation Effective Mesh Size: major and medium anthropogenic fragmenting elements (FGA2-M), version 2.0, Nov. 2016

The raster file is the basis of the indicator for assessing landscape fragmentation due to urban and transport expansion. The computation is based on the method of Effective Mesh Size (meff, Jaeger 2000). The effective mesh size (meff) can be interpreted as the area that is accessible to animals when starting a movement at a randomly chosen point inside a landscape without encountering a physical barrier. The meff expresses the probability that any two points chosen randomly in an area are connected, that is, not separated by the barriers of a Fragmentation Geometry (FG) such as transport routes or built-up areas. Hence, meff is a measure of landscape connectivity, i.e. the degree to which movements between different parts of the landscape are possible. The meff is measured as an area (km2), within the cells of a 1 km2 regular grid as reporting units.

Simple

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No information provided.

Maintenance and update frequency	Irregular
GEMET - INSPIRE themes, version 1.0	 Habitats and biotopes Transport networks Soil
Keywords	
Keywords	
GEMET	 landscape built environment animal habitat animal corridor built-up area
Continents, countries, sea regions of the world.	• EEA39
Spatial scope	• European
EEA topics	 Land use Biodiversity Agriculture and food

	Forests and forestry				
Use limitation	EEA standard re-use policy: unless otherwise indicated, re-use of content on the EEA website for commercial or non-commercial purposes is permitted free of charge, provided that the source is acknowledged (<u>http://www.eea.europa.eu/legal/copyright</u>). Copyright holder: European Environment Agency (EEA).				
Access constraints	Other restrictions				
Other constraints	no limitations to public access				
Spatial representation type	Grid				
Distance	1 km				
Language of dataset	English				
Character set	UTF8				
Topic category	• Environment				

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Begin date	2011-11-30		
End date	2016-08-31		
Coordinate reference system identifier	EPSG:3035		
Distribution format	• GeoTIFF (6.0)		
OnLine resource	Protocol	Linkage	Name
	EEA:FILEPATH	https://sdi.eea.europa.eu/webdav/datastore/public /eea_r_3035_1_km_fga2-m_p_2011-2016_v02_r00/	
	WWW:URL	https://sdi.eea.europa.eu/data/53bb9d36-0e28-4486-aa06- dc488671c84e	Direct download
	ESRI:REST	https://land.discomap.eea.europa.eu/arcgis/rest/services/Land /Major_and_medium_antropogenic_fragmentation_effective_mesh_size /MapServer	
	OGC:WMS	https://land.discomap.eea.europa.eu/arcgis/services/Land /Major and medium antropogenic fragmentation effective mesh size /MapServer/WMSServer?request=GetCapabilities&service=WMS	0
Hierarchy level	Dataset		

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Conformance result

Title	Commission Regulation (EU) No 1089/2010 of 23 November 2010 implementing Directive 2007/2/EC of the European Parliament and of the Council as regards interoperability of spatial data sets and services				
Date (Publication)	2010-12-08				
Explanation	See the referenced specification				
Statement	Calculation of the effective mesh size meff is based on two main datasets: 1) the Fragmentation Geometry (FG) (i.e., the set of all elements defining the fragmentation pattern) and 2) reporting units (spatial units for which meff is calculated). The reporting units layer (in this case a regular 1km2 grid) and the Fragmentation Geometry layer are overlaid and the Meff is calculated for each reporting unit.				
	The Copernicus High Resolution Layer - Imperviousness degree (30% of IMD) is the source layer for the build-up area. The Open Street Map (OSM) database is the source of the transport infrastructure. Only the following OSM elements are included in the calculation of the meff index: motorways and motorways links, trunk and trunk links, primary roads and primary roads links, secondary roads and secondary roads links, tertiary roads and tertiary roads links, railroads. Tunnels are excluded from the dataset.				
	The mapping computation steps are:				
	1) selection of build-up areas from the Copernicus High Resolution Imperviousness Degree layer				
	2) selection of transport routes relevant to the fragmentation geometry				
	3) deleting of tunnels from the transport routes				
	1				

4) creating of buffers around the transport routes. A buffer size is dependent on the route class

6) erasing of build-up areas and the buffered transport routes from the seamless EEA39 territory layer

7) computation of meff values for each 1km sq reporting unit

References:

Jaeger, J. A.G.(2000): Landscape division, splitting index, and effective mesh size: New measures of landscape fragmentation. Landscape ecology 15(2), pp 115-130, http://link.springer.com/article/10.1023/A%3A1008129329289

Metadata

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Overviews



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