



## Landscape fragmentation Effective Mesh Density 2018: major and medium anthropogenic fragmenting elements (FGA2-S), Dec. 2021

This dataset is the new version of the Effective Mesh Density (seff) 2018 dataset with improved input data, for the year 2018. This new dataset uses the 2018 10m Copernicus Imperviousness Density and the TomTom TeleAtlas datasets as fragmenting geometries.

The Effective Mesh Density (seff) is a measure of the degree to which movement between different parts of the landscape is interrupted by a Fragmentation Geometry (FG). FGs are defined as the presence of impervious surfaces and traffic infrastructure, including medium sized roads. The more FGs fragment the landscape, the higher the effective mesh density hence the higher the fragmentation. The geographic coverage of the dataset is EEA39.

An important consequence of landscape fragmentation is the increased isolation of ecosystem patches that breaks the structural connections and decreases resilience and ability of habitats to provide various ecosystem services. Fragmentation also influences human communities, agriculture, recreation and overall quality of life. Monitoring how fragmentation decreases landscape quality and changes the visual perception of landscapes provides information for policy measures that aim at improving ecosystem condition and restoration as well as maintaining the attractiveness of landscapes for recreational activities.

### Simple

Date (Publication)	2021-05-11
Date (Creation)	2021-05-06
Edition	01.00
Citation identifier	eea_r_3035_100_m_fga2-s-2018_p_2017-2019_v01_r00
Citation identifier	DAT-222-en

### Point of contact

No information provided.

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No information provided.

Maintenance and update frequency	Irregular
GEMET - INSPIRE themes, version 1.0	<ul style="list-style-type: none"><li>• Transport networks</li><li>• Soil</li><li>• Habitats and biotopes</li></ul>
Keywords	
Keywords	
GEMET	<ul style="list-style-type: none"><li>• animal habitat</li><li>• built-up area</li><li>• built environment</li><li>• animal corridor</li><li>• landscape</li></ul>
Continents, countries, sea regions of the world.	<ul style="list-style-type: none"><li>• EEA39</li></ul>
<a href="#">Spatial scope</a>	<ul style="list-style-type: none"><li>• <a href="#">European</a></li></ul>

Temporal resolution	<ul style="list-style-type: none"> <li>• Triennial</li> </ul>
EEA Management Plan	<ul style="list-style-type: none"> <li>• 2019 1.8.4</li> </ul>
EEA topics	<ul style="list-style-type: none"> <li>• Agriculture and food</li> <li>• Forests and forestry</li> <li>• Land use</li> <li>• Biodiversity</li> </ul>
Access constraints	Other restrictions
Other constraints	<a href="#">no limitations to public access</a>
Use constraints	Other restrictions
Other constraints	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 ( <a href="http://www.eea.europa.eu/legal/copyright">http://www.eea.europa.eu/legal/copyright</a> ). Copyright holder: European Environment Agency (EEA).
Aggregate Datasetidentifier	25f51134-c776-43c4-bba7-75dcd75082c6
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Aggregate Datasetidentifier	493f3285-25ff-4a51-8620-59ac50613117
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Association Type	revision of
Spatial representation type	Grid
Distance	100 m
Language of dataset	English
Topic category	<ul style="list-style-type: none"> <li>• Environment</li> </ul>

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Begin date	2017-01-01		
End date	2019-11-30		
Coordinate reference system identifier	<a href="#">EPSG:3035</a>		
Distribution format	<ul style="list-style-type: none"> <li>GeoTIFF ( 6.0)</li> </ul>		
OnLine resource	<b>Protocol</b> EEA:FOLDERPATH  WWW:URL  ESRI:REST  OGC:WMS	<b>Linkage</b> <a href="https://sdi.eea.europa.eu/webdav/datastore/public/eea_r_3035_100_m_fga2-s-2018_p_2017-2019_v01_r00/">https://sdi.eea.europa.eu/webdav/datastore/public/eea_r_3035_100_m_fga2-s-2018_p_2017-2019_v01_r00/</a> <a href="https://sdi.eea.europa.eu/data/67110f21-39cb-48be-878e-d08b64a72256">https://sdi.eea.europa.eu/data/67110f21-39cb-48be-878e-d08b64a72256</a> <a href="https://land.discomap.eea.europa.eu/arcgis/rest/services/Fragmentation/Fragmentation_2018_mesh_density/ImageServer">https://land.discomap.eea.europa.eu/arcgis/rest/services/Fragmentation/Fragmentation_2018_mesh_density/ImageServer</a> <a href="https://land.discomap.eea.europa.eu/arcgis/services/Fragmentation/Fragmentation_2018_mesh_density/ImageServer/WMServer?request=GetCapabilities&amp;service=WMS">https://land.discomap.eea.europa.eu/arcgis/services/Fragmentation/Fragmentation_2018_mesh_density/ImageServer/WMServer?request=GetCapabilities&amp;service=WMS</a>	<b>Name</b>   Direct download   Fragmentation_2018_mesh_density: FragmentationSymbology
Hierarchy level	Dataset		

## 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

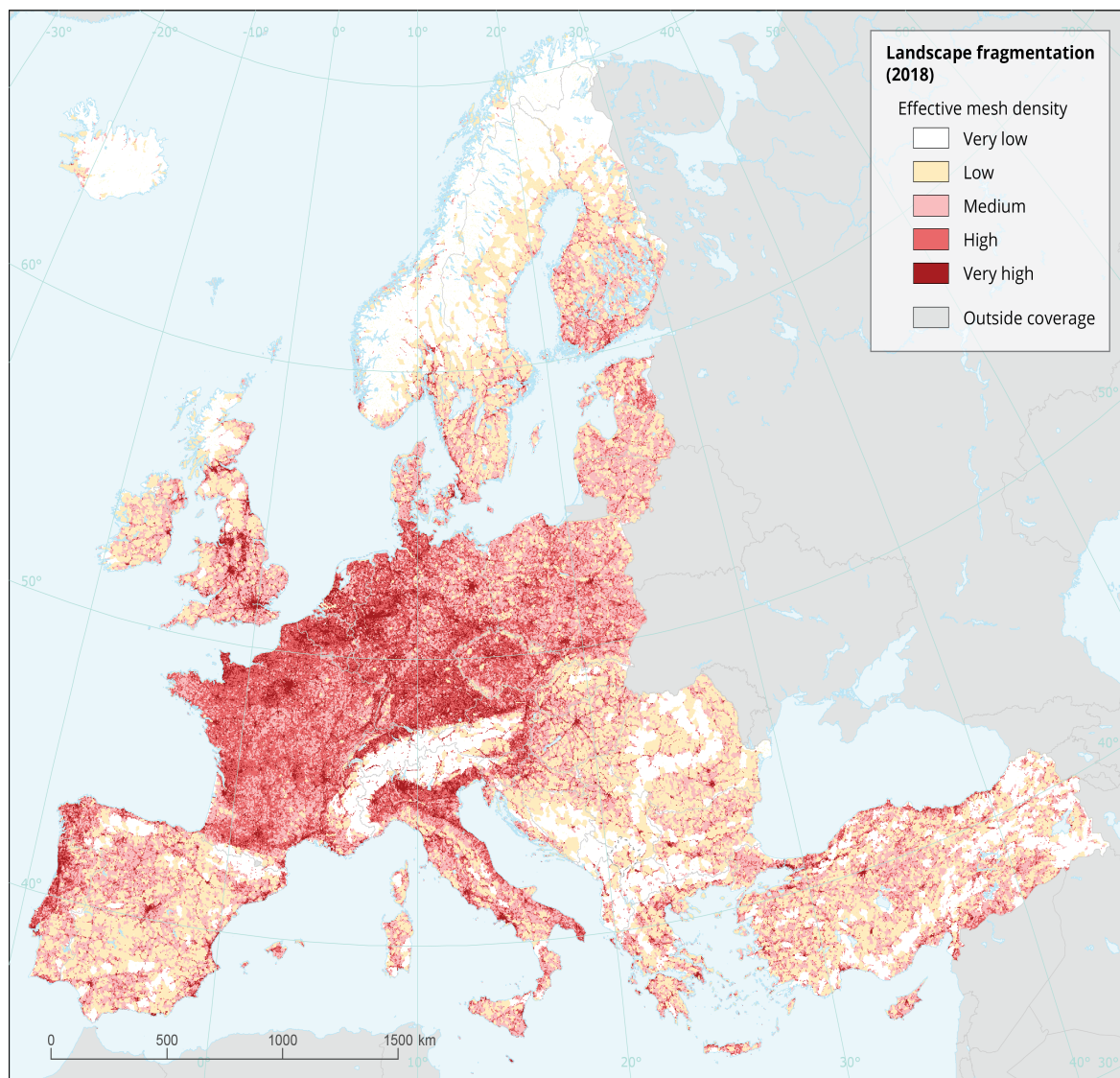
Statement	<p>The meff index expresses the probability that any two points chosen randomly in an area are connected; that is, not separated by barriers of a Fragmentation Geometry (FG) such as transport routes or built-up areas. Hence, meff is a measure of landscape connectivity, i.e. the degree to which movements between different parts of the landscape are possible. The larger the meff, the more connected the landscape.</p> <p>The seff value is calculated based on the Effective Mesh Size (meff) index, such as <math>seff = 1000 \text{ km}^2 / meff</math>. Hence seff is the number of meshes per 1000 km<sup>2</sup>.</p> <p>The 10m resolution Copernicus High Resolution Layer - Imperviousness degree (30% of IMD) is the source layer for the build-up area. The TomTom TeleAtlas road network database is the source of the transport infrastructure. The original TeleAtlas dataset is hosted at ESTAT and is not publicly available. Multinet: <a href="https://www.adci.com/tomtom/gis/">https://www.adci.com/tomtom/gis/</a>.</p> <p>The line vectors are buffered according to the road class they represent, resulting in a polygon layer. Buffering is also applied to prevent small topological inconsistencies (e.g. gaps) in data. Buffers applied to the various Tele Atlas classes:</p>
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	<p>Tele Atlas road class Buffer size [m] Buffer width [m]</p> <p>motorways, freeways 15 30</p> <p>major roads less important than a motorway 10 20</p> <p>other major roads 7,5 15</p> <p>secondary roads 5 10</p> <p>local connecting roads 2,5 5</p> <p>railroads 2 4</p> <p>Tunnels are excluded from the dataset.</p> <p>The mapping computation steps are:</p> <p>1) selection of no build-up areas from the HRL imperviousness layer (no build-up areas represent "landscape", fragmented by build-up)</p> <p>2) selection of transport routes relevant to the fragmentation geometry</p> <p>3) deleting of tunnels from the transport routes</p> <p>4) creating of buffers around the transport routes. A buffer size is dependent on the route class</p> <p>6) erasing of the buffered routes from the "landscape", fragmented by build-up (created as step 1 result)</p> <p>7) computation of meff values for each reference units</p> <p>For a detailed methodology, please consult the "Landscape fragmentation in Europe" report</p> <p><a href="http://www.eea.europa.eu/publications/landscape-fragmentation-in-europe">http://www.eea.europa.eu/publications/landscape-fragmentation-in-europe</a></p> <p>and</p> <p><a href="https://www.eea.europa.eu/data-and-maps/indicators/mobility-and-urbanisation-pressure-on-ecosystems/assessment">https://www.eea.europa.eu/data-and-maps/indicators/mobility-and-urbanisation-pressure-on-ecosystems/assessment</a></p> <p>and</p> <p><a href="https://forum.eionet.europa.eu/etc-urban-land-and-soil-systems/library/c1.-action-plan-2019/1.8.2.3-re-analysis-landscape-fragmentation-time-series/eea-core-set-indicator-landscape-fragmentation-pressure-urban-and-transport/index_html">https://forum.eionet.europa.eu/etc-urban-land-and-soil-systems/library/c1.-action-plan-2019/1.8.2.3-re-analysis-landscape-fragmentation-time-series/eea-core-set-indicator-landscape-fragmentation-pressure-urban-and-transport/index_html</a></p>
Source	<ul style="list-style-type: none"><li><a href="#">Imperviousness Density 2018 (raster 10 m), Europe, 3-yearly, Aug. 2020</a></li></ul>

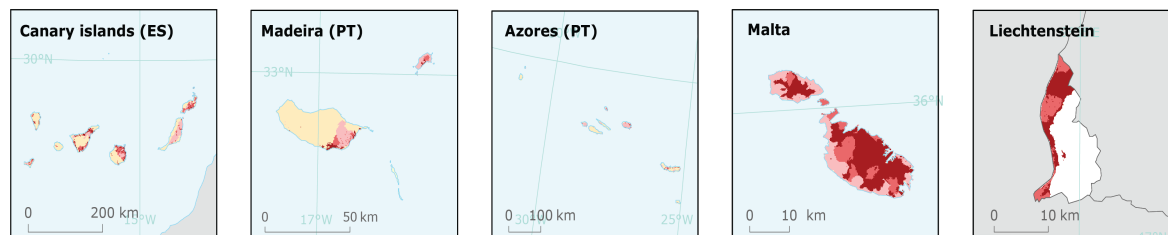
Metadata

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Character set	UTF8										
Hierarchy level	Dataset										
Date stamp	2024-01-16T12:28:10.083Z										
Metadata standard name	ISO 19115/19139										
Metadata standard version	1.0										
Metadata author	<table><tr><th>Organisation name</th><th>Individual name</th><th>Electronic mail address</th><th>Website Role</th></tr><tr><td>European Environment Agency</td><td></td><td>sdi@eea.europa.eu</td><td>Point of contact</td></tr></table>	Organisation name	Individual name	Electronic mail address	Website Role	European Environment Agency		sdi@eea.europa.eu	Point of contact		
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Overviews



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