



## Medium Resolution Vegetation Phenology and Productivity: Plant phenology index (raster 500m), Oct. 2022

This metadata refers to the Plant Phenology Index (PPI) dataset, one of the near real-time (NRT) Vegetation Index products of the pan-European Medium Resolution Vegetation Phenology and Productivity (MR-VPP), component of the Copernicus Land Monitoring Service (CLMS).

The Plant Phenology Index (PPI) is a physically based vegetation index for improved monitoring of plant phenology, that is developed from a simplified solution to the radiative transfer equation by Jin and Eklundh (2014). PPI has a linear relationship with green leaf area index, a strong correlation with gross primary productivity, and is capable of disentangling remotely sensed plant phenology from snow seasonality. It is reported to be superior to other indices for spring phenology retrieval over the northern latitudes and for GPP estimation in African semi-arid ecosystems. Comparison of satellite-derived PPI to ground observations of plant phenology and gross primary productivity (GPP) shows strong similarity of temporal patterns over several Nordic boreal forest sites. Further information is available in the Product User Manual: [https://land.copernicus.eu/user-corner/technical-library/clms\\_mrvpp\\_pum\\_d1-0.pdf](https://land.copernicus.eu/user-corner/technical-library/clms_mrvpp_pum_d1-0.pdf)

The PPI time series dataset is made available as raster files with 500 x 500m resolution, in ETRS89-LAEA projection corresponding to the MCD43 tiling grid, for those tiles that cover the EEA38 countries and the United Kingdom and for the period from January 2000 until today.

The full on-line access to open and free data for this resource will be made available in the second half of 2024. Until then the data will be made available 'on-demand' by filling in the form at: <https://land.copernicus.eu/contact-form>

### Simple

Date (Creation)	2022-06-08				
Date (Publication)	2022-10-10				
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Point of contact	Organisation name	Individual name	Electronic mail address	Website	Role
	European Commission			<a href="https://commission.europa.eu">https://commission.europa.eu</a>	Owner
	Copernicus Land Monitoring Service		<a href="mailto:copernicus@eea.europa.eu">copernicus@eea.europa.eu</a>	<a href="https://land.copernicus.eu">https://land.copernicus.eu</a>	Custodian
	European Environment Agency		<a href="mailto:sdi@eea.europa.eu">sdi@eea.europa.eu</a>	<a href="http://www.eea.europa.eu">http://www.eea.europa.eu</a>	Publisher
	Copernicus Land Monitoring Service helpdesk		<a href="mailto:copernicus@eea.europa.eu">copernicus@eea.europa.eu</a>	<a href="https://land.copernicus.eu/en/contact-service-helpdesk">https://land.copernicus.eu/en/contact-service-helpdesk</a>	Point of contact
Maintenance and update frequency	Annually				
GEMET - INSPIRE themes, version 1.0	<ul style="list-style-type: none"><li>Habitats and biotopes</li><li>Orthoimagery</li><li>Environmental monitoring facilities</li></ul>				
Keywords					
Continents, countries, sea regions of the world.	<ul style="list-style-type: none"><li>EEA38 (from 2020)</li><li>United Kingdom</li></ul>				
Keywords					
	<ul style="list-style-type: none"><li>plant ecology</li></ul>				

<b>GEMET</b>	<ul style="list-style-type: none"> <li>• plant production</li> <li>• productivity</li> <li>• land</li> <li>• remote sensing</li> <li>• index</li> <li>• vegetation</li> </ul>
<b>Spatial scope</b>	<ul style="list-style-type: none"> <li>• <a href="#">European</a></li> </ul>
<b>Temporal resolution</b>	<ul style="list-style-type: none"> <li>• Annually</li> </ul>
<b>EEA topics</b>	<ul style="list-style-type: none"> <li>• Agriculture and food</li> <li>• Land use</li> <li>• Forests and forestry</li> </ul>
<b>Access constraints</b>	Other restrictions
<b>Other constraints</b>	<a href="#">no limitations to public access</a>
<b>Use constraints</b>	Other restrictions
<b>Other constraints</b>	<p>The Copernicus component is governed by Regulation (EU) No 2021/696 of the European Parliament and of the Council of 28 April 2021 establishing the Union Space Programme and the European Union Agency for the Space Programme and repealing Regulations (EU) No 912/2010, (EU) No 1285/2013 and (EU) No 377/2014 and Decision No 541/2014/EU. Within the Copernicus component, a portfolio of land monitoring activities has been delegated by the European Union to the European Environment Agency (EEA) and the DG Joint Research Centre of the European Commission.</p> <p>The Copernicus land monitoring products and services are made available on a principle of full, open and free access, as established by the Commission Delegated Regulation (EU) No 1159/2013 of 12 July 2013.</p> <p>Free, full and open access to the products and services of the Copernicus Land Monitoring Service is made on the conditions that:</p> <ol style="list-style-type: none"> <li>1. When distributing or communicating Copernicus Land Monitoring Service products and services (data, software scripts, web services, user and methodological documentation and similar) to the public, users shall inform the public of the source of these products and services.</li> <li>2. Where the Copernicus Land Monitoring Service products and services have been adapted or modified by the user, the user shall clearly state this.</li> <li>3. Users shall make sure not to convey the impression to the public that the user's activities are officially endorsed by the European Union.</li> </ol>
<b>Spatial representation type</b>	Grid
<b>Distance</b>	500 m
<b>Language of dataset</b>	English
<b>Character set</b>	UTF8
<b>Topic category</b>	<ul style="list-style-type: none"> <li>• Environment</li> <li>• Imagery base maps earth cover</li> <li>• Climatology, meteorology, atmosphere</li> </ul>

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Begin date	2000-01-01		
Coordinate reference system identifier	<a href="#">EPSG:3035</a>		
Distribution format	• GeoTIFF ( )		
OnLine resource	Protocol WWW:LINK-1.0-http--link	Linkage <a href="https://land.copernicus.eu/user-corner/technical-library/clms_mrvpp_pum_d1-0.pdf">https://land.copernicus.eu/user-corner/technical-library/clms_mrvpp_pum_d1-0.pdf</a>	Name User manual
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

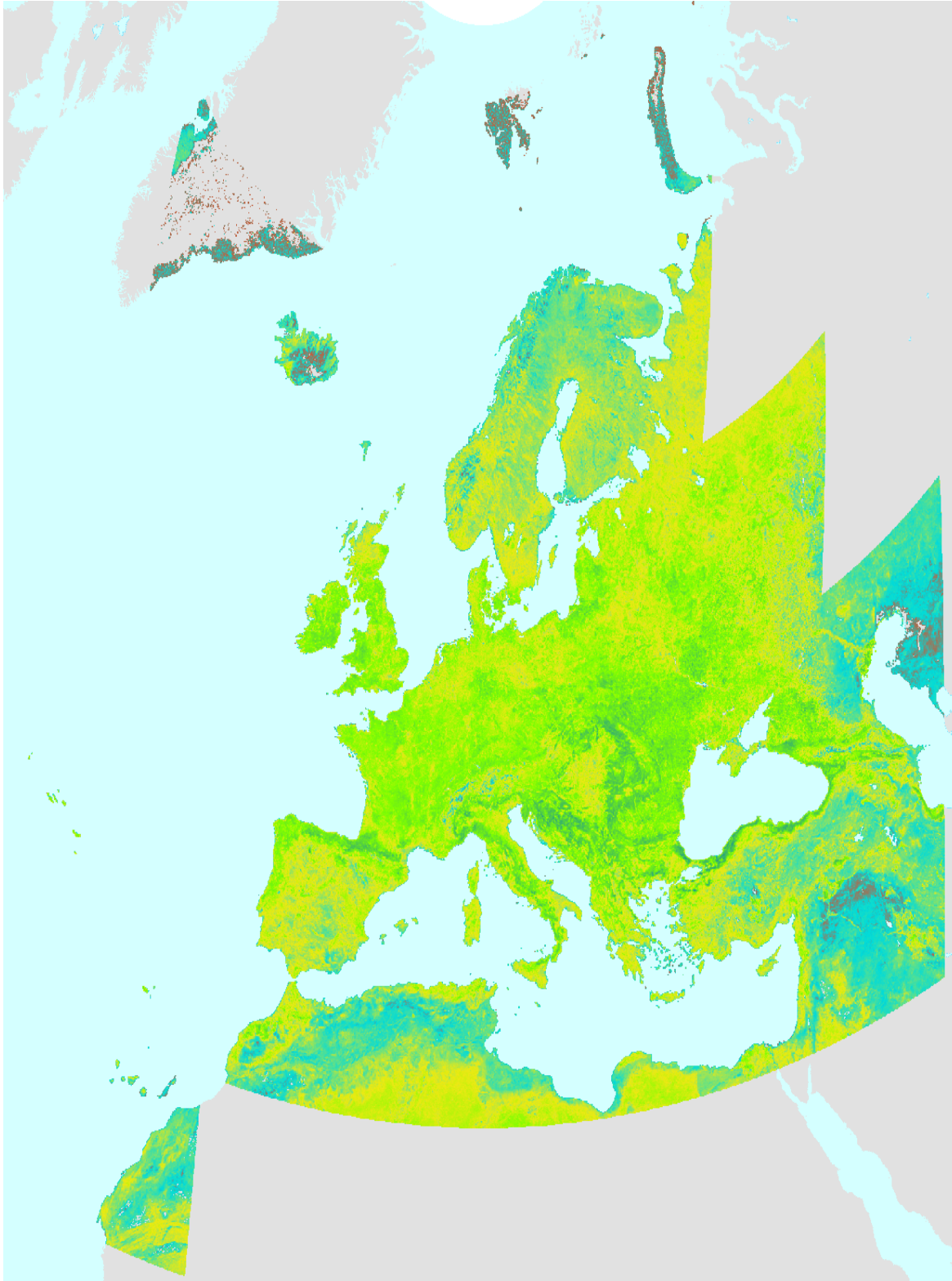
Statement	Vegetation Phenology and Productivity parameters (VPP) are based on Plant Phenology Index (PPI) seasonal trajectories and are yearly produced for two seasons using the Timesat software. The Plant Phenology Index (PPI) is a physically based vegetation index for improved monitoring of plant phenology, that is developed from a simplified solution to the radiative transfer equation by Jin and Eklundh (2014). PPI has a linear relationship with green leaf area index, a strong correlation with gross primary productivity, and is capable of disentangling remotely sensed plant phenology from snow seasonality. It is reported to be superior to other indices for spring phenology retrieval over the northern latitudes and for GPP estimation in African semi-arid ecosystems.
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Metadata

File identifier	de0bc1e4-5b32-44fa-9690-1eb9e64aff9d <a href="#">XML</a>
Metadata language	English
Character set	UTF8
Hierarchy level	Dataset
Date stamp	2024-04-02T13:53:38.221022Z
Metadata standard name	ISO 19115/19139
Metadata standard version	

**Metadata author****Organisation name**

European Environment Agency

**Individual name****Electronic  
mail  
address**sdi@eea.  
europa.eu**Website Role**Point  
of  
contact**Overviews**

Provided by

