



EvoLand
LAND MONITORING EVOLUTION

D3.6 EvoLand prototypes datasets - final version

Work Package 3 – Prototype Demonstration

Authors:

Fabian Berndt, Linda Moser, Fahad Jahangir, Elmer Ekinzog (GAF), Astrid Vannoppen, Wanda De Keersmaecker, Mathilde De Vroey, Kasper Bonte, Nick Gutkin (VITO), Eve Poitevin, Iris Lucas, Loic Fauqueur, Alexandre Pennec, Hoa Vu, Christophe Fatras, Yoann Courmont (CLS)

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Lead beneficiary	GAF			
Lead author	Fabian Berndt		Email	fabian.berndt@gaf.de
Other authors	Linda Moser, Fahad Jahangir, Elmer Ekinzog (GAF), Astrid Vannoppen, Wanda De Keersmaecker, Mathilde De Vroey, Kasper Bonte, Nick Gutkin (VITO), Eve Poitevin, Iris Lucas, Loic Fauqueur, Alexandre Pennec, Hoa Vu, Christophe Fatras, Yoann Courmont (CLS)			
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1. Forest Prototypes

C1 – Continuous Forest Monitoring

Description	
Name	C01 Continuous Forest Monitoring
Description	Tree cover canopy changes/losses derived from a time series of Sentinel 2 data on a monthly basis.
Coverage	Sentinel 2 tiles: 32TNT, 32TPT, 32UMU, 32UMV, 32UNA, 32UNU, 32UNV, 32UPA, 32UPU, 32UPV (Central Europe); 30SUF, 30SUG, 30SUH, 30SVF, 30SVG, 30SVH, 30SWF, 30SWG, 30SWH (Spain) and 33VVK, 33VWK, 33VVJ, 33VWJ (Sweden).
Spatial Resolution	10m
Temporal Resolution	Monthly: 2019-2021 (Central Europe); 2020-2022 (Spain); 2020-2022 (Sweden)
File format	Cloud Optimized Geotiff
File type	UINT16
Bands	1
Projection	ETRS89-extended / LAEA Europe
Class codes/values	Date of forest change/loss detection in YYMM
Repository	S3 EvoLand bucket - https://evoland.s3.waw3-2.cloudferro.com/WP3_Delivery_Phase2_Prototypes/C01_ContForestMonitoring/
Access	Public
File size	26.83 MB (Central Europe); 22.65 MB (Spain); 9.09 MB (Sweden)
DOI	No paper published
License	Creative commons attribution 4.0 international license
Citation	No paper published

C2 – Forest Disturbances Mapping

Description	
Name	C02 Forest Disturbance Mapping
Description	Classification of forest disturbance agents including the assigned classes and their probabilities, from a time series of Sentinel 2 data merged with the C1 prototype as input.
Coverage	Sentinel 2 tiles: 32TNT, 32TPT, 32UMU, 32UMV, 32UNA, 32UNU, 32UNV, 32UPA, 32UPU, 32UPV (Central Europe); 30SUF, 30SUG, 30SUH, 30SVF, 30SVG, 30SVH, 30SWF, 30SWG, 30SWH (Spain) and 33VVK, 33VWK, 33VVJ, 33VWJ (Sweden).
Spatial Resolution	10m

Temporal Resolution	Monthly: 2019-2021 (Central Europe); 2020-2022 (Spain); 2020-2022 (Sweden)
File format	Cloud Optimized Geotiff
File type	- Disturbance agent classification: UINT8 - Disturbance agent probabilities: 32bit float
Bands	- Disturbance agent classification (6 bands) - Disturbance agent probabilities (6 bands)
Projection	ETRS89-extended / LAEA Europe
Class codes/values	Classes/Probabilities Central: 1: Bark beetle 2: Clear cut 3: Healthy tree cover 4: Salvage logging 5: Wildfire 6: Windthrow
Repository	S3 EvoLand bucket - https://evoland.s3.waw3-2.cloudferro.com/WP3_Delivery_Phase2_Prototypes/C02_ForestDisturbance/
Access	Public
File size	Classes: 15.26 MB (Central Europe); 13.11 MB (Spain); 5.68 MB (Sweden) Probabilities: 411.79 MB (Central Europe); 391.29 MB (Spain); 179.51 MB (Sweden)
DOI	No paper published
License	Creative commons attribution 4.0 international license
Citation	No paper published

C3 – Biomass Mapping

Description	
Name	C03 Biomass Mapping
Description	Classification of Above-Ground Woody Biomass (AGB) and Forest Canopy Height (FCH) from multitemporal Sentinel 2 + Sentinel 1 data, ALOS Palsar-2 and GEDI data
Coverage	Sentinel 2 tiles: 30SUF, 30SUG, 30SUH, 30SVF, 30SVG, 30SVH, 30SWF, 30SWG, 30SWG (Spain) ; 33VVK, 33VWK, 33VWJ , 33VVJ (Sweden)
Spatial Resolution	10m
Temporal Resolution	Yearly: 2020, 2021, 2022 (Sweden); 2021 Spain
File format	Cloud Optimized Geotiff
File type	32 bit float
Bands	1
Projection	ETRS89-extended / LAEA Europe

Class codes/values	- FCH in meters - AGB in t/ha
Repository	S3 EvoLand bucket - https://evoland.s3.waw3-2.cloudferro.com/WP3_Delivery_Phase2_Prototypes/C03_ForestBiomass/
Access	Public
File size	Sweden: - FCH: 384.90 MB (2020), 1012,5 MB (2021), 378.48 MB (2022) - AGB: 591.43 MB (2020), 990,41 MB (2021), 582.29 MB (2022) Spain: - FCH: 1.14 GB (2021) - AGB: 1.16 GB (2021)
DOI	No paper published
License	Creative commons attribution 4.0 international license
Citation	No paper published

C12 – Tree Types Mapping

Description	
Name	C12 Tree Types Mapping
Description	Classification of European Tree Types from multitemporal Sentinel 2 data
Coverage	Sentinel 2 tiles: 32TNT, 32TPT, 32ULD, 32ULE, 32UMA, 32UMB, 32UMC, 32UMD, 32UME, 32UMU, 32UMV, 32UNA, 32UNB, 32UNC, 32UND, 32UNE, 32UNU, 32UNV, 32UPA, 32UPB, 32UPC, 32UPD, 32UPE, 32UPU, 32UPV (Central Europe - extended)
Spatial Resolution	10m
Temporal Resolution	Yearly: 2021
File format	Cloud Optimized Geotiff
File type	8 bit unsigned
Bands	1
Projection	ETRS89-extended / LAEA Europe
Class codes/values	0: No tree cover 21: Fagus 22: Quercus 23: Betula 24: Alnus 25: Populus 26: Other Broadleaved 31: Picea 32: Pinus 33: Other Coniferous

Repository	S3 EvoLand bucket - https://evoland.s3.waw3-2.cloudferro.com/WP3_Delivery_Phase2_Prototypes/C12_TreeTypes/
Access	Public
File size	297.4 MB
DOI	No paper published
License	Creative commons attribution 4.0 international license
Citation	No paper published

2 Agriculture Prototypes

C4 – Cover Crop Type

Description	
Name	C04 Cover Crop Type
Description	Cover crop type map differentiating 2 groups of cover crops at 10 m resolution
Coverage	Belgium (2019, 2020)
Spatial Resolution	10m
Temporal Resolution	yearly
File format	UINT16
File type	Cloud Optimized Geotiff
Bands	1
Projection	EPSG:3035 - ETRS89-extended / LAEA Europe
Class codes/values	0 – Non crop 11 - Grass-like (rye, oats, clover) 12 - Leaf-rich (mustard, oilseed...) & Seed mixes 21 – Winter crop flag 65 - No secondary crop 65525 – Inconsistency flag 65526-65533 – HRL VLCC quality flags
Repository	S3 EvoLand bucket - https://evoland.s3.waw3-2.cloudferro.com/WP3_Delivery_Phase2_Prototypes/C04_CoverCrop/
Access	Public
File size	24 MB
DOI	No paper published
License	Creative commons attribution 4.0 international license
Citation	No paper published

C5 – Grassland/Cropland GPP

Description	
Name	C05 Grassland/Cropland GPP
Description	GPP estimation at 10 m resolution over cropland and grassland locations based on Sentinel-2
Coverage	Sentinel-2 tile 31UFS (2018 and 2022)
Spatial Resolution	10 m

Temporal Resolution	Dekad (10-daily)
File format	UInt16
File type	Cloud Optimized Geotiff
Bands	1
Projection	EPSG:32631 - WGS 84 / UTM zone 31N
Class codes/values	Continuous output of GPP in gC/m ² /day (physical range 0-35)
Repository	S3 EvoLand bucket - https://evoland.s3.waw3-2.cloudferro.com/WP3_Delivery_Phase1_Prototypes/C05_Grassl andCroplandGPP/
Access	Public
File size	2 x 5.5 GB (36 files)
DOI	No paper published
License	Creative commons attribution 4.0 international license
Citation	No paper published

C6 – Small Landscape Features

Description	
Name	C06 Small Landscape Features
Description	Mapping of woody vegetated features outside forest and stable landscape features within agricultural areas (grass margin, ditches, ponds, hedges). This dataset contains two layers: Status layer: Mapping of small landscape, providing pixel-level information about the presence and type of SLF. Change layer: Monitoring changes in small landscape features between two dates, based on whether an SLF appeared or disappeared during the time period.
Coverage	Subset of Sentinel-2 tiles 30SWG, 30SWH (Spain), 31UES, 31UFS (Belgium), 34TFQ, 34TFR, 34TFS (Romania)
Spatial Resolution	5m
Temporal Resolution	yearly
File format	UINT8
File type	Cloud Optimized Geotiff
Bands	1
Projection	EPSG :3035

Class codes/values	Status layer: 0: No SLF present 1: SLF with 0-meter height (e.g., grass margins) 2: SLF with 0 to 1 meter height (e.g., hedges) 3: SLF with height greater than 1 meter or woody vegetation 4: Ponds Change layer: 0: No change in SLF 1: SLF disappeared between the first and second date 2: SLF appeared between the first and second date
Flags	255 – No Data
Repository	S3 EvoLand bucket - https://evoland.s3.waw3-2.cloudferro.com/WP3_Delivery_Phase2_Prototypes/C06_SmallLandscapeFeatures/
Access	Public
File size	363 MB
DOI	No paper published
License	Creative commons attribution 4.0 international license
Citation	No paper published

3. Water prototypes

C7 – Improved Water Bodies Mapping

Description	
Name	C07 Improved water bodies mapping
Description	Phase 2: Provides spatio-temporal information about inland water, mapping permanent, new and ephemeral water bodies.
Coverage	Sentinel-2 tiles 30NUL, 30NUM, 30NVL, 30NVM (Ivory Coast), 30SWG,30SWH (Spain), 31UFS, 31UES, 31UFR, 31UER (Belgium), 33VVJ, 33VWJ, 33VVK, 33VWK (Sweden)
Spatial Resolution	10m
Temporal Resolution	NRT for phase 2
File format	UINT8
File type	Cloud Optimized GeoTIFF
Bands	1
Projection	UTM zone
Class codes/values	0, '#ffffff' , // Not Water (opacity 0%) 1, '#52aff3' , // Temporary 2, '#2f76e1' , // Permanent 255, '#deddde' , // Excluded data
Flags	255, '#deddde' , // Excluded data
Repository	S3 EvoLand bucket - https://evoland.s3.waw3-2.cloudferro.com/WP3_Delivery_Phase2_Prototypes/C07_WaterBodiesMapping/
Access	Public
File size	1 to 3 MB per file
DOI	No paper published
License	Creative commons attribution 4.0 international license
Citation	No paper published

4. Urban prototypes

C8 – Continuous Imperviousness Monitoring

Description	
Name	C08 – Continuous Imperviousness Monitoring
Description	Imperviousness degree maps and imperviousness change maps. Monitors the percentage of soil sealing and captures the spatial distribution of artificially sealed areas including the level of sealing of the soil and the change of imperviousness degree.
Coverage	Phase 1: Sentinel-2 tiles 31TCJ, 31TCK, 31TDJ, 31TDK, 31TEJ, 31TEK, 31TFJ, 31TFK (South of France), 31UER, 31UES, 31UFR, 31UFS (Belgium), 32TNT, 32TPT, 32UMU, 32UMV, 32UNA, 32UNU, 32UNV, 32UPA, 32UPU, 32UPV (Central Europe).
Spatial Resolution	5m
Temporal Resolution	6-monthly for phase2 as we use Sentinel-2 L3A monthly mosaic imagery
File format	UINT8
File type	Cloud Optimized GeoTIFF
Bands	2
Projection	UTM32
Class codes/values	Imperviousness degree as a percentage between 0 and 100 Imperviousness density change as the degree of imperviousness change (-100% - +100%). Negative values indicate reduction in imperviousness, 0% signifies no change between two periods, positive values indicate an increase in imperviousness. This range is rescaled from [-100,100] to [0, 201].
Flags	
Repository	S3 EvoLand bucket - s3://evoland/WP3_Delivery_Phase2_Prototypes/C08_ContImperviousnessMonitoring/
Access	Public
File size	6.60GB
DOI	No paper published
License	Creative commons attribution 4.0 international license
Citation	No paper published

C9 – Automated Land Use Mapping of Urban Dynamics

Description	
Name	C09 Automated land use mapping of urban dynamics
Description	Mapping of automatically detected urban change polygons, including the main type of change detected.
Coverage	Sentinel-2 tiles 31TCJ, 31TCK, 31TDJ, 31TDK, 31TEJ, 31TEK, 31TFJ, 31TFK (South of France), 31UER, 31UES, 31UFR, 31UFS (Belgium), 32TNT, 32TPT, 32UMU, 32UMV, 32UNA, 32UNU, 32UNV, 32UPA, 32UPU, 32UPV (Central Europe), 30NUL, 30NUM, 30NVL, 30NVM (Ivory Coast)
Spatial Resolution	5m
Temporal Resolution	yearly
File format	UINT8
File type	Cloud Optimized GeoTIFF
Bands	3 bands
Projection	UTM32
Class codes/values	Band 1 – Type of Change Indicates the nature of the change that occurred: 0: No change 12: Renaturation (conversion to more natural land cover) 11: Urban renewal (redevelopment within existing urban areas) 21: Urban sprawl (expansion of urban areas into natural/agricultural zones) Band 2 – Land Cover Class (First Year) Shows the land cover classification of each pixel at the start of the time period: 0: Construction / landfill 1: Sealed surfaces (e.g., roads, buildings) 2: Natural / agricultural land 3: Woody vegetation (e.g., forests) 4: Water bodies 255: No change Band 3 – Land Cover Class (Second Year) Shows the land cover classification of each pixel at the end of the time period: 0: Construction / landfill 1: Sealed surfaces (e.g., roads, buildings)

	2: Natural / agricultural land 3: Woody vegetation (e.g., forests) 4: Water bodies 255: No change
Flags	N/A
Repository	S3 EvoLand bucket - https://evoland.s3.waw3-2.cloudferro.com/WP3_Delivery_Phase2_Prototypes/C09_AutomatedLUMappingUrban/
Access	Public
File size	119 MB
DOI	No paper published
License	Creative commons attribution 4.0 international license
Citation	No paper published

5. General Land Cover Prototypes

C10 – Continuous Mapping of Land Surface Characteristics

Description	
Name	C10 Continuous mapping of Land Surface Categories (LSC)
Description	Land Surface Categories (LSC) are basic, independent diagnostic categories and characteristics describing the properties of the Earth's surface. This deliverable describes the LSC prototype maps, produced at 10m resolution for single scenes over the test tiles
Coverage	Prototype sites of Spain, Southern France, Belgium, Central Europe, Sweden, Eastern Europe, and Côte d'Ivoire
Spatial Resolution	10 m
Temporal Resolution	Single scenes (one scene per month for the years 2020, 2021, and 2022)
File format	Byte
File type	Cloud Optimized GeoTIFF
Bands	1
Projection	UTM projection
Class codes/values	classes: 0=no data, 1=tree, 2=shrub, 3= herbaceous vegetation, 4=bare, 5 = water, 6 = snow and ice, 7 = built-up, 254 = shadow, 255 = cloud
Repository	S3 EvoLand bucket - https://evoland.s3.waw3-2.cloudferro.com/WP3_Delivery_Phase2_Prototypes/C10_LandSurfaceCategories/
Access	Public
File size	330 GB
DOI	NA
License	Creative commons attribution 4.0 international license
Citation	NA

C11 – On-demand Land Cover Mapping

Description	
Name	C11 On-demand Land Cover Mapping
Description	Use case on on-demand forest management type classification

Coverage	Prototype areas in Belgium, Central Europe, Côte d'Ivoire, and French Guyana
Spatial Resolution	10 m
Temporal Resolution	Year 2020
File format	Byte
File type	Cloud Optimized GeoTIFF
Bands	1 band
Projection	UTM
Class codes/values	0: No tree 11: Naturally regenerating forests without any signs of management 20: Naturally regenerating forests with signs of forest management 31: Planted 32: Plantation 33: Rubber 40: Oil palm 50: Fruit tree 53: Agroforestry 100: Other trees 255: No data
Repository	S3 EvoLand bucket - https://evoland.s3.waw3-2.cloudferro.com/WP3_Delivery_Phase2_Prototypes/C11_On-demandLCMapping/
Access	Public
File size	241 MB
DOI	NA
License	Creative commons attribution 4.0 international license
Citation	NA



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