



## The Geoland2 BioPar burned area product

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The European Commission Geoland2 project intends to constitute a major step forward to the implementation of the GMES Land Monitoring Core Service (LMCS). The Bio-geophysical Parameters (BioPar) Core Monitoring Service aims at setting-up pre-operational infrastructures for providing regional, European, and global bio-geophysical variables, both in near real time and off-line mode, for describing the vegetation state, the radiation budget at the surface, and the water cycle. The burned area product is part of the BioPar portfolio.

The burned area product further builds on the experience of the Global Burned Area (GBA2000) and L3JRC projects. In the GBA2000 project, several algorithms were developed for different geographical regions of the world, and applied to a 1-year time series (the year 2000) of SPOT-VEGETATION data. In the L3JRC project, a single algorithm was improved and applied to a 7-year global dataset of SPOT-VEGETATION data. Since the conception of the Geoland2 project, work has been undertaken to improve the L3JRC algorithm, mainly based on user comments and feedback. Furthermore, the Geoland2 burned area product specification has been developed to meet the requirements of the Core Information Service, specifically LandCarbon and Natural Resource Monitoring in Africa (Narma).

The Geoland2 burned area product has the following improvements over the L3JRC product:

- It resolves issues with users extracting statistics and burned area estimates for time periods considered to be outside the main seasons for burning. Specifically, this deals with issues in northern latitude winters.
- The number of pre-processing steps has been shortened, reducing processing time.
- An improved land-water mask has been used. This resolves a problem around the coastlines of land masses which were frequently being detected as being burned.
- A season metric calculation is performed over a 1x1 degree grid. For each grid cell, a date is logged against the start of the fire season, peak of the fire season and then the end of the fire season. Once a fire season has been confirmed as being finished, the region effectively resets itself, which means that the land surface can burn again when the next fire season starts. This automated season reset feature enables multiple fire seasons to be analysed.
- Provides easy to interpret seasonality tables every 10 days (the reporting period for the product).

It is intended that the product will be validated using CEOS-approved protocols and data sets currently being developed through the European Space Agency Fire-CCI project. In this paper, initial results being produced operationally and will be presented along with examples highlighting the performance of the seasonality metric.