Trends.Earth — [redacted]

version 2.2.6

Conservation International

April 16, 2026

[redacted]

[redacted] [redacted] [redacted] **1**

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[redacted] [redacted] [redacted] QGIS 1

[redacted] [redacted] [redacted] Earth Engine 5

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[redacted]

[redacted]

[redacted]

TRENDS.EARTH — [redacted], [redacted] [redacted] GNU, [redacted] 2.0 [redacted].

[redacted] TRENDS.EARTH [redacted]. [redacted] — [redacted] QGIS, [redacted], [redacted], [redacted], [redacted]. [redacted] [redacted] [redacted], [redacted] [redacted], [redacted] [redacted] GitHub trends.earth.

[redacted] TRENDS.EARTH [redacted] QGIS [redacted] [redacted] [redacted] [redacted] Python, [redacted] [redacted] [redacted] [redacted] Google Earth Engine (gee). [redacted] [redacted] [redacted] gee [redacted] GitHub.

[redacted]:

- [redacted] «trends.earth-algorithms» [redacted] [redacted] [redacted] [redacted], [redacted] [redacted], [redacted] [redacted] NDVI, [redacted] [redacted] [redacted]. [redacted] [redacted] [redacted] [redacted] [redacted] «landdegradation <https://github.com/ConservationInternational/trends.earth-algorithms>» [redacted] GitHub.
- [redacted] trends.earth-schemas [redacted] [redacted] [redacted], [redacted] [redacted]/[redacted] [redacted] trends.earth, [redacted] [redacted] [redacted], [redacted], [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted].

[redacted] [redacted] [redacted] [redacted] [redacted] [redacted], [redacted] [redacted] [redacted] Trends.Earth, [redacted] [redacted] [redacted] [redacted], [redacted] [redacted] [redacted] [redacted] [redacted]-[redacted] [redacted].

[redacted] QGIS

[redacted] trends.earth

[redacted] Trends.Earth [redacted] [redacted] [redacted], [redacted] [redacted] [redacted] [redacted] Google Eearth Engine, [redacted] [redacted] [redacted], [redacted] [redacted] GitHub [redacted] «trends.earth <https://github.com/ConservationInternational/trends.earth>»_. [redacted] [redacted] [redacted] [redacted] [redacted] [redacted], [redacted] [redacted], [redacted] [redacted] [redacted] [redacted] [redacted] [redacted].

[redacted] [redacted] [redacted] [redacted] [redacted] trends.earth, [redacted] [redacted] [redacted] [redacted]. [redacted] [redacted] [redacted] QGIS3, [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] «[redacted]». [redacted] «qgis2» — [redacted] [redacted] [redacted] [redacted] [redacted], [redacted] [redacted] [redacted] [redacted] QGIS2 2.18+.

[redacted]

Python

[redacted] Python. [redacted] QGIS, Python [redacted] (Python [redacted], [redacted] QGIS, [redacted] Python, [redacted] Python — [redacted] Anaconda <https://www.anaconda.com>. [redacted] Python 3. [redacted] Python 3.7 ([redacted]) [redacted] Anaconda, [redacted]. [redacted] <https://www.anaconda.com/distribution/#download-section>.

[redacted] Python

[redacted] trends.earth, [redacted] Invoke, [redacted] «dev» [redacted] Trends.Earth, [redacted] trends.earth [redacted]:

```
pip install -r requirements-dev.txt
```

> **Note**
>
> [redacted] Anaconda, [redacted] Python 3.7, [redacted] (invoke-[redacted]). [redacted] — [redacted] «[redacted] Anaconda», [redacted] Anaconda.

PyQt

PyQt5 — [redacted], [redacted] QGIS3. [redacted] Trends.Earth [redacted] QGIS3, [redacted] PyQt5. [redacted] pip, [redacted]:

```
pip install PyQt5
```

> **Note**
>
> PyQt4 — [redacted], [redacted] QGIS2. [redacted] Windows — [redacted], [redacted] UC Irvine. [redacted] PyQt4, [redacted]. [redacted] Python, [redacted]. [redacted], [redacted] Python 2.7, [redacted] «cp27» [redacted].

[redacted]

> [redacted] Python 3.7, [redacted] «cp37» [redacted]. [redacted] «amd64» [redacted] python 64-bit [redacted] «win32» [redacted] python 32-bit.
>
> [redacted] «pip», [redacted]. [redacted], [redacted] 64-bit [redacted] Python 3.7 [redacted]:
>
> ```
> pip install PyQt4-4.11.4-cp37-cp37m-win_amd64.whl
> ```

[redacted]

[redacted], [redacted] Trend.Earth [redacted], [redacted] ([redacted], 0.65), [redacted], [redacted], [redacted] ([redacted], 0.66), [redacted]. [redacted] QGIS, [redacted]. [redacted], [redacted], [redacted] Trend.Earth [redacted].

[redacted] ([redacted], [redacted]), [redacted] — [redacted]. [redacted], [redacted], [redacted] 0.66 [redacted], [redacted] 0.67, [redacted]. [redacted], [redacted] ([redacted] GEE), [redacted] invoke-[redacted], [redacted]. [redacted] 0.67, [redacted]:

```
invoke set-version -v 0.67
```

[redacted], [redacted]. [redacted], [redacted], [redacted].

[redacted]

[redacted], [redacted], [redacted]. [redacted], [redacted] QGIS ([redacted]), [redacted], [redacted].

[redacted], [redacted] QGIS, [redacted]. [redacted] invoke-[redacted], [redacted]. [redacted], [redacted], [redacted], [redacted], [redacted] QGIS. [redacted], [redacted]:

[redacted]

```
invoke plugin-setup
```

[redacted] trends.earth, [redacted] [redacted] [redacted] [redacted] [redacted] [redacted]-[redacted] [redacted]. [redacted] [redacted] «[redacted]-[redacted]» [redacted] [redacted] [redacted] [redacted] [redacted] [redacted]. [redacted] [redacted] [redacted], [redacted] [redacted] «-[redacted]» ([redacted]) [redacted] [redacted] [redacted] [redacted].

[redacted] [redacted] «[redacted]-[redacted]» [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] QGIS [redacted] [redacted] [redacted]. [redacted] [redacted] [redacted], [redacted]:

```
invoke plugin-install
```

[redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted]: 1) [redacted] QGIS, [redacted] 2) [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] Trends.Earth [redacted] [redacted] [redacted] [redacted] [redacted] [redacted].

[redacted] [redacted] «[redacted]-[redacted]» [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted], [redacted] [redacted] [redacted] [redacted] ([redacted] [redacted] [redacted] [redacted].[redacted]), [redacted] [redacted] [redacted] [redacted] [redacted]. [redacted] [redacted] [redacted] [redacted], [redacted] [redacted] «-c» ([redacted]) [redacted] [redacted] [redacted] [redacted]. [redacted], [redacted] [redacted] [redacted] QGIS, [redacted] [redacted] [redacted] [redacted] [redacted] [redacted], [redacted] [redacted] «-[redacted]».

> **Note**
>
> [redacted] [redacted]-[redacted], [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] QGIS3. [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] QGIS3, [redacted] [redacted] «-v 2» [redacted] [redacted] «[redacted]-[redacted]». [redacted], [redacted] [redacted] [redacted] [redacted], [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] QGIS3 — [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] QGIS2 [redacted] [redacted] [redacted] [redacted] [redacted] QGIS3.

[redacted].

[redacted] [redacted] [redacted] [redacted] geoBoundaries [redacted] [redacted] [redacted], [redacted] [redacted] [redacted], [redacted] [redacted] [redacted]:

```
invoke download-boundaries-cache
```

[redacted] [redacted] [redacted] [redacted] API Trends.Earth. [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] invoke.yaml` [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted]:

```yaml
trends_earth_api:
    user: "you@example.com"
    password: "your-password"
```

[redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] *TRENDS_EARTH_API_USER* [redacted] *TRENDS_EARTH_API_PASSWORD* [redacted] [redacted] [redacted].

[redacted]

[redacted] ZIP [redacted]

[redacted] invoke-[redacted], [redacted] [redacted] [redacted] [redacted] ZIP, [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] QGIS [redacted] [redacted] [redacted] [redacted] [redacted] [redacted]. [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] ZIP, [redacted] [redacted] [redacted], [redacted] „[redacted], [redacted] [redacted] [redacted] readme <https://github.com/ConservationInternational/trends.earth#installing-latest-packaged-development-version>`_, [redacted]:

```
invoke zipfile-build
```

[redacted] [redacted] [redacted] [redacted] [redacted] [redacted] «[redacted]» [redacted] [redacted] [redacted] [redacted] [redacted] trends.earth, [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] «LDMP.zip». [redacted] [redacted] [redacted] [redacted] [redacted], [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] Trends.Earth. [redacted] [redacted] [redacted] [redacted], [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted]-[redacted] [redacted] [redacted] [redacted], [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted].

[redacted] ZIP [redacted]

[redacted] Trends.Earth [redacted] GitHub [redacted] [redacted] [redacted] ZIP-[redacted], [redacted] [redacted] [redacted], [redacted] [redacted] [redacted], [redacted] [redacted] [redacted] [redacted] Trends.Earth. [redacted] [redacted] ZIP-[redacted] [redacted] [redacted] [redacted] [redacted] [redacted] (ZIP-[redacted] [redacted] [redacted] S3), [redacted] [redacted] [redacted]:

```
invoke zipfile-deploy
```

[redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] https://s3.amazonaws.com/trends.earth/sharing/LDMP.zip.

> **Note**
>
> [redacted] [redacted] [redacted] [redacted], [redacted] [redacted] [redacted] [redacted], [redacted] [redacted] [redacted] [redacted] [redacted] «trends.earth» [redacted] S3.

[redacted] [redacted] [redacted] Earth Engine

[redacted] [redacted] [redacted] Google Earth Engine (GEE), [redacted] Trends.Earth, [redacted] [redacted] [redacted] «gee» [redacted] [redacted] [redacted] trends.earth. [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] trends.earth QGIS, [redacted] [redacted] [redacted] [redacted] [redacted] api.trends.earth, [redacted] [redacted] [redacted] [redacted] [redacted] [redacted], [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] Earth Engine [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] GEE. [redacted] [redacted], [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] GEE, [redacted] [redacted] [redacted] [redacted] Trends.Earth.

[redacted]

[redacted]

trends.earth-CLI

[redacted] api.trends.earth [redacted] Python trends.earth-CLI. [redacted] GitHub [redacted] trends.earth-CLI <https://github.com/ConservationInternational/trends.earth-CLI>.

[redacted] — [redacted] trends.earth. [redacted], [redacted] Code, [redacted] «trends.earth <https://github.com/ConservationInternational/trends.earth>» ([redacted] QGIS [redacted] GEE), [redacted] «trends.earth-CLI <https://github.com/ConservationInternational/trends.earth-CLI>».

[redacted], trends.earth-CLI [redacted] trends.earth [redacted]. [redacted], [redacted] trends.earth-CLI [redacted] «invoke.yaml» [redacted] trends.earth, [redacted] Trends.Earth, [redacted] trends.earth-CLI. [redacted] YAML [redacted] Windows [redacted] «C:/Users/azvol/Code/trends.earth-CLI/tecli»):

```
gee:
    tecli: "C:/Users/azvol/Code/trends.earth-CLI/tecli"
```

[redacted] .yaml, [redacted].

[redacted]

[redacted] trends.earth-CLI [redacted] docker [redacted] Windows, [redacted] Mac OS. [redacted] Linux, [redacted] , [redacted] Linux, [redacted].

[redacted] Earth Engine

[redacted] trends.earth-CLI [redacted] .tecli.yml [redacted] GEE [redacted] GEE. [redacted] GEE [redacted] tecli, [redacted] JSON ([redacted] google cloud console), [redacted] base64. [redacted] base64 [redacted] tecli [redacted]:

```
invoke tecli-config set EE_SERVICE_ACCOUNT_JSON key
```

[redacted] «[redacted]» — [redacted] base64, [redacted] JSON.

[redacted] GEE [redacted] JavaScript [redacted] Python, [redacted] api.trends.earth. [redacted], [redacted] `run`. [redacted]

[redacted]

[redacted] «land_cover», [redacted] [redacted] [redacted] [redacted] Trends.Earth [redacted] [redacted] [redacted] [redacted] [redacted]:

```
invoke tecli-run land_cover
```

[redacted] [redacted] [redacted] trends.earth-CLI [redacted] [redacted] [redacted] [redacted] [redacted], [redacted] [redacted] [redacted] [redacted] «land_cover». [redacted] [redacted] [redacted] [redacted] [redacted] [redacted], [redacted] [redacted] [redacted] [redacted] [redacted]. [redacted] [redacted] [redacted] [redacted] [redacted] api.trends.earth [redacted], [redacted] `invoke tecli-run` [redacted] [redacted] [redacted] [redacted] [redacted].

[redacted] [redacted] `invoke tecli-run` [redacted] [redacted] [redacted] [redacted]:

```
Invalid JWT: Token must be a short-lived token (60 minutes) and in a
reasonable timeframe. Check your iat and exp values and use a clock with
skew to account for clock differences between systems.
```

[redacted] [redacted] [redacted] [redacted], [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted]. [redacted] [redacted] [redacted] [redacted] [redacted].

[redacted] [redacted] GEE [redacted] api.trends.earth

[redacted] [redacted] [redacted] [redacted] GEE, [redacted] [redacted] [redacted], [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] QGIS ([redacted] [redacted] [redacted] Trends.Earth), [redacted] [redacted] [redacted] [redacted] api.trends.earth. [redacted] [redacted] [redacted] [redacted] — [redacted] [redacted] [redacted] api.trends.earth. [redacted] [redacted] [redacted]:

```
invoke tecli-login
```

[redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted]. [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted], [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] Trends.Earth [redacted] [redacted] QGIS. [redacted] [redacted] [redacted] [redacted] [redacted] [redacted], [redacted] [redacted], [redacted] [redacted] [redacted] [redacted] [redacted]. [redacted] [redacted] [redacted], [redacted], [redacted] «land_cover», [redacted] [redacted], [redacted]:

```
invoke tecli-publish -s land_cover
```

[redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted], [redacted] [redacted] [redacted] [redacted], [redacted] [redacted] [redacted] [redacted] [redacted] [redacted]. [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted], [redacted] [redacted] [redacted] [redacted], [redacted] [redacted] [redacted], [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted], [redacted]. [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] ([redacted] [redacted]).

[redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] *tecli-info* [redacted] [redacted] [redacted] [redacted], [redacted] [redacted], [redacted] [redacted] [redacted] [redacted] — [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted]). [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted]:

```
invoke tecli-publish -s land_cover
```

[redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] GEE [redacted] ([redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted]), [redacted]:

[redacted]

```
invoke tecli-publish
```

[redacted], [redacted], [redacted], [redacted].

[redacted]

Trends.Earth [redacted], [redacted].

[redacted] «[redacted]/[redacted]» [redacted], [redacted]. [redacted] GeoPackage, [redacted] data/error_recode [redacted]. [redacted] 6 [redacted], [redacted]. [redacted] ISO [redacted]. [redacted]. [redacted] QGIS [redacted], [redacted] QGIS, [redacted].

[redacted] *data/error_recode* [redacted]. [redacted], [redacted] QGIS.

[redacted] QML. [redacted]. [redacted].

[redacted]:

```
import QtQuick 2.0
import QtCharts 2.0

ChartView {
    width: 380
    height:200
    margins {top: 0; bottom: 0; left: 0; right: 0}
    backgroundColor: "#eeeeec"
    legend.alignment: Qt.AlignBottom
    antialiasing: true
    ValueAxis {
        id: valueAxisY
        min: 0
        max: 100
    }

    BarSeries {
        id: mySeries
        axisY: valueAxisY
        axisX: BarCategoryAxis { categories: ["Productivity", "Land cover", "Soil organic carbon"] }
        BarSet { label: "Degraded"; color: "#9b2779"; values: [expression.evaluate("\"prod_deg\""), expression.evaluate("\"land_deg\""), expression.evaluate("\"soil_deg\"")] }
        BarSet { label: "Improved"; color: "#006500"; values: [expression.evaluate("\"prod_imp\""), expression.evaluate("\"land_imp\""), expression.evaluate("\"soil_imp\"")] }
        BarSet { label: "Stable"; color: "#ffffe0"; values: [expression.evaluate("\"prod_stab\""), expression.evaluate("\"land_stab\""), expression.evaluate("\"soil_stab\"")] }
    }
}
```

[redacted]``expression.evaluate(»"prod_deg"»)``, [redacted], [redacted] — [redacted]. [redacted]/[redacted]: [redacted], [redacted]. [redacted]: [redacted], [redacted]. [redacted], [redacted], [redacted]:

[redacted]

- prod_deg — [redacted]
- prod_stab — [redacted]
- prod_imp — [redacted]

[redacted] (`land_*` fields) [redacted] (`soil_*` fields).

[redacted] charts.py [redacted]. [redacted] (bbox) [redacted]. [redacted] numpy, [redacted].

[redacted].

[redacted]

[redacted] QGIS QMD. [redacted] QMD [redacted] **Edit metadata** [redacted] Trends.Earth dock.

[redacted] ZIP, [redacted] ISO XML [redacted] XSLT. [redacted] `data\xsl` [redacted].

[redacted]

[redacted]

[redacted] `QgsProject` [redacted] `QgsPrintLayout`, [redacted] `qgis_process` [redacted] (**[redacted]**). [redacted] `qgis_process` [redacted].

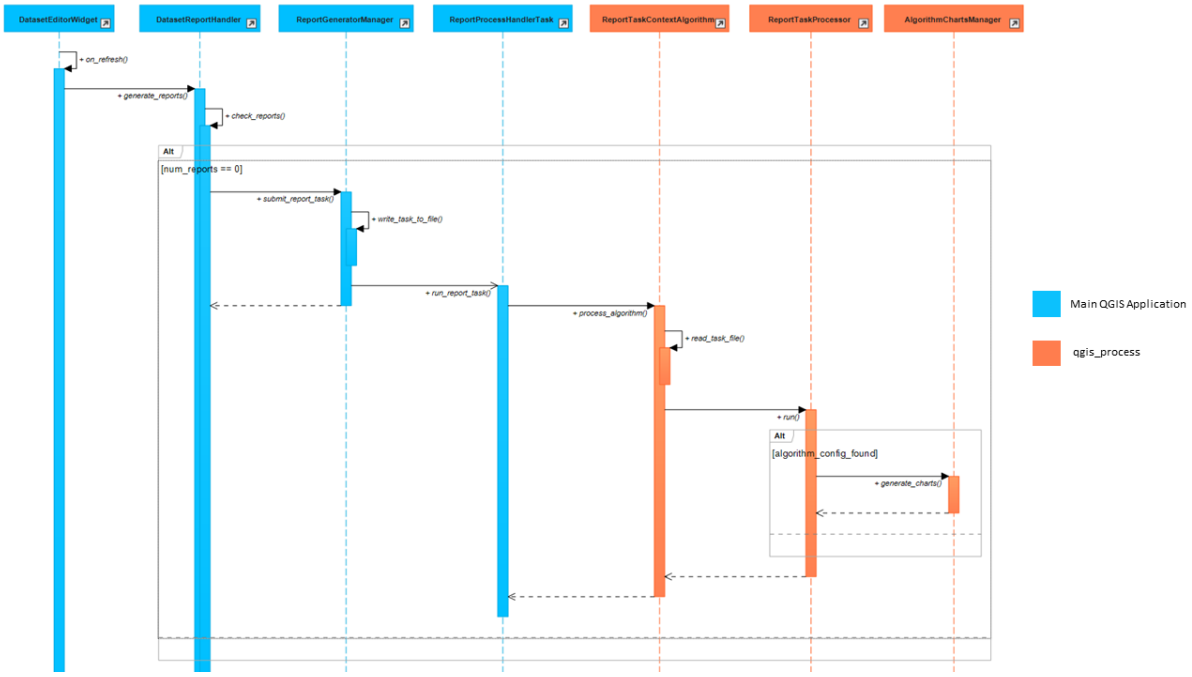
[redacted]:

1. [redacted] `ReportTaskContext`, [redacted] `ReportConfiguration` ([redacted]) [redacted] `Job`, [redacted] **Datasets**. [redacted] `ReportTaskContext` [redacted] JSON, [redacted] `ReportProcessHandlerTask` ([redacted] QgsTask).

[redacted]

2. [redacted] `ReportProcessHandlerTask` [redacted] `qgis_process` [redacted] JSON [redacted] [redacted] `trendsearth:reporttask`. [redacted], [redacted] [redacted] [redacted] `ReportTaskContext` [redacted] [redacted] [redacted] `ReportTaskProcessor`, [redacted] [redacted] [redacted] [redacted] QGIS. [redacted], [redacted], [redacted] `ReportTaskProcessor` [redacted] [redacted]-[redacted] [redacted] `AlgorithmChartsManager`, [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted]. [redacted] [redacted], [redacted] [redacted] [redacted] PNG. ([redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted])

[redacted] [redacted] [redacted] [redacted] [redacted] [redacted]:



* [redacted] [redacted] [redacted], [redacted] [redacted] [redacted].

> **Note**
>
> [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted]. [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] LDMP.reports [redacted] LDMP.processing_provider.report.

[redacted]

[redacted] [redacted] [redacted] [redacted] [redacted], [redacted] [redacted] [redacted], [redacted] ([redacted] [redacted]) [redacted] **`report_settings`** [redacted] [redacted] [redacted] [redacted]. [redacted] [redacted] [redacted] [redacted] [redacted] [redacted], [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted].

[redacted] [redacted] [redacted] [redacted] `namedtuple` [redacted] [redacted] LDMP.reports.expressions [redacted], [redacted], [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] `ReportTaskProcessor`.

[redacted]

[redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted], [redacted] [redacted] [redacted].

[redacted]

[redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted], [redacted] [redacted]. [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] `JobAttrVarInfo`, [redacted] [redacted] [redacted] [redacted]:

[redacted] [redacted] [redacted]	[redacted]	[redacted]	[redacted] [redacted] [redacted] [redacted]
job_attr	[redacted] [redacted] `Job`, [redacted] [redacted] [redacted] [redacted] [redacted]. [redacted], *id* [redacted] `job.id`. [redacted] [redacted] [redacted] [redacted] [redacted] [redacted], [redacted] [redacted] [redacted] [redacted] [redacted] [redacted], [redacted], *results.uri.uri*.	[redacted]	[redacted].
var_name	[redacted] [redacted] [redacted] [redacted]. [redacted] [redacted] [redacted] *te_job_*.	[redacted]	[redacted].
default_value	[redacted] [redacted] [redacted], [redacted] [redacted] [redacted] [redacted] *var_name*, [redacted] [redacted] [redacted] [redacted].	[redacted]	[redacted]
fmt_func	[redacted]-[redacted], [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted], [redacted] [redacted] QGIS. [redacted], `str` [redacted] [redacted] [redacted] [redacted] [redacted] *id* [redacted] [redacted] UUID [redacted] [redacted]. [redacted] [redacted] [redacted] [redacted] [redacted] [redacted]-[redacted].	[redacted]-[redacted] [redacted]	[redacted]

[redacted] [redacted] [redacted] [redacted], [redacted] [redacted] [redacted] *te_job_result_name*, [redacted] [redacted] `job.results.name`.

```
# LDMP/reports/expressions.py
def _job_attr_var_mapping() -> typing.List[JobAttrVarInfo]:
    return [
        ...
        JobAttrVarInfo('results.name', 'te_job_result_name', '', str),
        ...
    ]
```

[redacted] [redacted]

[redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted]. [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] `LayerVarInfo`, [redacted] [redacted] [redacted]:

[redacted]

[redacted]	[redacted]	[redacted]	[redacted]
var_name	[redacted] *te_current_layer_*.	[redacted]	[redacted].
default_value	[redacted] *var_name*, [redacted].	[redacted]	[redacted]
fmt_func	[redacted]-[redacted], [redacted] [redacted] [redacted] [redacted] [redacted]/[redacted] [redacted] [redacted] QgsRasterLayer object [redacted], [redacted] QGIS. [redacted] [redacted] [redacted] [redacted] [redacted]-[redacted]. [redacted], `lambda layer: layer.name()` [redacted] [redacted].	[redacted]-[redacted] [redacted]	[redacted]

[redacted] *te_current_layer_height*, [redacted].

```
# LDMP/reports/expressions.py
def _current_job_layer_var_mapping() -> typing.List[LayerVarInfo]:
    return [
        ...
        LayerVarInfo(
            'te_current_layer_height',
            '',
            lambda layer: layer.height()
        )
        ...
    ]
```

> **Note**
>
> [redacted].

[redacted]

[redacted] — [redacted]:

1. [redacted] `BaseChart` [redacted] LDMP.reports.charts . [redacted] `export` [redacted] [redacted] Python `Plotly`, [redacted] QGIS. [redacted], [redacted] `export` [redacted] `save_image` [redacted] `Figure` [redacted] Plotly [redacted], [redacted] Qt `QImageWriter`. [redacted]

[redacted]

[redacted] [redacted], [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted]. [redacted] [redacted] [redacted] [redacted]:

```
# LDMP/reports/charts.py
Class MyCustomChart(BaseChart):
    def export(self) -> typing.Tuple[bool, list]:
        status = True
        messages = []

        # Create chart Figure using Plotly and set properties
        fig = go.Figure(...)

        # Add warning or error messages
        messages.append('Colour list not supported.')

        # Set image path in dataset's reports folder
        img_path = f'{self.root_output_dir}/chart-NDVI.png'

        # Save image and append its path
        self.save_image(fig, img_path)
        self._paths.append(img_path)

        return status, messages
```

[redacted] [redacted] [redacted] [redacted] [redacted] [redacted] `UniqueValuesPieChart`.

2. [redacted] [redacted] [redacted] [redacted], [redacted] [redacted] `BaseAlgorithmChartsConfiguration` [redacted] [redacted] `_add_charts`. [redacted] [redacted] [redacted] [redacted] [redacted] [redacted], [redacted] [redacted] [redacted] [redacted] [redacted]. [redacted] `layer_band_infos` [redacted] [redacted] [redacted] `LayerBandInfo`, [redacted] [redacted] [redacted] [redacted] [redacted], [redacted] [redacted] [redacted] [redacted]. [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] `LandCoverChartsConfiguration`.

3. [redacted], [redacted] [redacted] ([redacted]) [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] `AlgorithmChartsManager`, [redacted] [redacted] [redacted]:

```
# LDMP/reports/charts.py
Class AlgorithmChartsManager:
    def _set_default_chart_config_types(self):
        ...
        self.add_alg_chart_config('land-cover', LandCoverChartsConfiguration)
        self.add_alg_chart_config('productivity', MyCustomLandProductivityChartsConfiguration)
        ...
```

[redacted] `AlgorithmChartsManager`, [redacted] [redacted] `ReportTaskProcessor`, [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted].

[redacted] [redacted] [redacted]

[redacted]

[redacted] Trends.Earth [redacted] [redacted] [redacted] Sphinx, [redacted] [redacted] [redacted] reStructuredText. [redacted] [redacted] [redacted] [redacted] [redacted]-[redacted] [redacted] [redacted] [redacted], [redacted] [redacted] [redacted] [redacted], [redacted] [redacted] [redacted] [redacted] [redacted].

[redacted]

[redacted] Trends.Earth [redacted] [redacted] «docs» folder [redacted] [redacted] trends.earth. [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted], [redacted]:

- build: [redacted] [redacted] build [redacted] trends.earth ([redacted] [redacted] PDF [redacted] HTML). [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] `docs-build`.
- i18n: [redacted] [redacted] [redacted] [redacted] [redacted]. [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted], [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted].
- resources: [redacted] [redacted] [redacted] ([redacted] [redacted] [redacted] [redacted] PDF), [redacted] [redacted] [redacted]. [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] («EN» [redacted] [redacted]), [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] — [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] «[redacted]» [redacted] [redacted] [redacted] [redacted], [redacted] [redacted] [redacted], [redacted] [redacted] [redacted].
- source: [redacted] [redacted] [redacted] [redacted] reStructuredText, [redacted] [redacted] ([redacted] [redacted] [redacted] [redacted] [redacted], [redacted] [redacted] [redacted] [redacted] [redacted]).

[redacted]

[redacted] Python

[redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] Sphinx, sphinx-intl [redacted] sphinx-rtd-theme ([redacted] [redacted] Trends.Earth), [redacted] [redacted] [redacted]. [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] «dev» [redacted] Trends.Earth, [redacted] [redacted], [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] trends.earth code [redacted] [redacted]:

```
pip install -r requirements-dev.txt
```

LaTeX

LaTeX [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] Trends.Earth [redacted] [redacted] PDF.

[redacted] [redacted] [redacted] Windows, [redacted] [redacted] [redacted] [redacted] [redacted] LaTeX [redacted] [redacted] proTeXt [redacted] [redacted] `zip, [redacted] [redacted]<http://ftp.math.purdue.edu/mirrors/ctan.org/systems/windows/protext/>`_. [redacted] LaTeX [redacted] [redacted] ([redacted] [redacted]), [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted].

[redacted] MacOS, MacTeX — [redacted] [redacted], [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted].

[redacted] Linux [redacted] LaTeX [redacted] [redacted] [redacted] [redacted] — [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] LaTeX.

[redacted]

Qt Linguist

Qt Linguist [redacted] GUI [redacted] «lrelease» [redacted]:

```
lrelease
```

[redacted] Qt Linguist. [redacted] Qt Linguist. [redacted] Qt Linguist [redacted] lrelease [redacted] Trends.Earth [redacted].

[redacted]

[redacted] sphinx [redacted] «docs\source». [redacted] Trends.Earth: HTML-[redacted] ([redacted]) [redacted] PDF-[redacted] ([redacted]). [redacted] Trends.Earth [redacted] «docs-build». [redacted] Trends.Earth, [redacted] HTML [redacted] PDF, [redacted] ([redacted]). [redacted] `-f` ([redacted] «fast/[redacted]»). [redacted] HTML [redacted]:

```
invoke docs-build -f
```

[redacted] «docs\build\html\en», [redacted] HTML-[redacted]. [redacted] «index.html» [redacted]-[redacted], [redacted].

[redacted] PDF [redacted] HTML ([redacted]), [redacted]):

```
invoke docs-build
```

[redacted] HTML [redacted] «docs\build\html\en», [redacted] PDF [redacted] «docs\build\html\en\pdfs».

[redacted] ([redacted]), [redacted]):

```
invoke docs-build -l es
```

[redacted], [redacted] HTML-[redacted]:

[redacted]

```
invoke docs-build -f -l es
```

[redacted], [redacted] `-c` (clean/[redacted]):

```
invoke docs-build -c
```

[redacted] docs-build [redacted], [redacted]. [redacted] `-i` (ignore errors / [redacted]):

```
invoke docs-build -i
```

[redacted] Transifex, [redacted]. [redacted] Transifex [redacted], [redacted]:

```
invoke translate-push
```

> **Note**
>
> [redacted] Trends.Earth Transifex.

[redacted]

[redacted] Transifex, [redacted]. [redacted]:

```
invoke translate-pull
```

[redacted] (PDF), [redacted] `docs-build` [redacted]:

```
invoke docs-build
```

[redacted].

[redacted]

> **Note**
>
> [redacted] `-f` (force/[redacted]), [redacted] Transifex ([redacted]). [redacted] Transifex, [redacted] github.

[redacted]

[redacted] .rst, [redacted] PDF-[redacted].

- docs\source\index.rst: [redacted] .rst [redacted].
- .tx\config: [redacted] .rst [redacted]).
- docs\source\conf.py: [redacted] PDF-[redacted] `latex_documents`. [redacted] PDF-[redacted]. [redacted] PDF-[redacted] [redacted] `latex_documents`.

[redacted]

[redacted] (PDF [redacted]), [redacted] «docs\resources\en». [redacted] GUI [redacted] «docs\resourcesen» ([redacted]). [redacted] «docs\resources\es»). [redacted].

[redacted]

> **Note**
>
> [redacted], docs\source\static, [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted], [redacted] [redacted] Trends.Earth. [redacted] [redacted] [redacted]-[redacted] [redacted] [redacted] [redacted] [redacted] [redacted], [redacted] [redacted] [redacted] [redacted] [redacted] [redacted]. [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] — [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] docs\resources\en [redacted], [redacted] [redacted] [redacted], [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] docs\resources.

[redacted] [redacted] [redacted]

[redacted] [redacted] QGIS [redacted] [redacted] [redacted] [redacted] transifex. [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] (**[redacted]** [redacted] [redacted] [redacted]!), [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] transifex, [redacted] [redacted] [redacted] [redacted] trends.earth@conservation.org.

[redacted] [redacted] [redacted] [redacted]

[redacted]

[redacted] [redacted] [redacted] Trends.Earth [redacted] [redacted] [redacted] [redacted] [redacted], [redacted] git-[redacted], [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] GitHub, [redacted] [redacted] [redacted] [redacted] [redacted] QGIS. [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted], [redacted] [redacted] [redacted] [redacted] [redacted].

[redacted] [redacted] [redacted]

[redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted]:

1. [redacted] [redacted] [redacted]

[redacted] [redacted] [redacted] [redacted] [redacted] [redacted] *LDMPmetadata.txt*, [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted]. [redacted] [redacted] [redacted] [redacted] [redacted] [redacted], [redacted] [redacted] [redacted], [redacted] [redacted] [redacted], [redacted] [redacted] [redacted] [redacted] [redacted].

2. [redacted] [redacted] [redacted]

[redacted] [redacted] set-version, [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted]:

```
invoke set-version -v X.Y.Z -m
```

[redacted] XYZ — [redacted] [redacted] [redacted] [redacted] ([redacted], 2.1.20). [redacted] `-m` [redacted], [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] (trends.earth-schemas [redacted] trends.earth-algorithms).

[redacted] [redacted]:

- [redacted] `LDMP/metadata.txt [redacted] [redacted]

[redacted]

- [redacted] *LDMP/_version.py* [redacted] git.
- [redacted] (docs/source/conf.py)
- [redacted] experimental [redacted] [redacted]/[redacted] [redacted] ([redacted] = [redacted], [redacted] = [redacted] [redacted]).
- [redacted]

> **Note**
>
> [redacted] (■ [redacted], 2.1.18) [redacted] set-version [redacted], [redacted] [redacted] [redacted]. [redacted] (■ [redacted] [redacted], 2.1.19) [redacted] master.

**3. [redacted] GEE ([redacted]) **

[redacted] Google earth Engine (■ [redacted] gee) [redacted] trends.earth-schemas [redacted] trends.earth-algorithms, [redacted] -g [redacted] set-version:

```
invoke set-version -v X.Y.Z -m -g
```

[redacted] GEE. [redacted], [redacted] GEE [redacted]:

```
# In trends.earth-schemas (where x.y.z is the new version number
invoke set-tag -v x.y.z

# In trends.earth-algorithms (where x.y.z is the new version number)
invoke set-tag -v x.y.z
```

[redacted], [redacted] API-[redacted] Trends.Earth:

```
invoke tecli-publish
```

[redacted] GEE [redacted] api.trends.earth, [redacted] [redacted] [redacted]. [redacted] [redacted] [redacted].

4. [redacted]

[redacted], [redacted] git:

```
git add -A
git commit -m "Release version X.Y.Z"
```

5. [redacted] git-[redacted]

[redacted] `invoke set-tag:

```
invoke set-tag -v x.y.z # (where x.y.z is the new version number
```

[redacted]

[redacted] git-[redacted] (v2.1.20) [redacted] GitHub. [redacted],
[redacted].

6. [redacted] GitHub

[redacted] release-GitHub, [redacted] GitHub [redacted] zip-[redacted]:

```
invoke release-github
```

[redacted]:

- [redacted] zip-[redacted] (LDMP_2.1.20.zip) [redacted].
- [redacted] .pyc, [redacted] QGIS.
- [redacted] GitHub, [redacted] ZIP-[redacted]

> **Note**
>
> [redacted] GitHub [redacted] repo, [redacted] invoke.yaml. [redacted].

7. [redacted] QGIS

[redacted], [redacted] QGIS:

1. [redacted] zip-[redacted] (LDMP_2.1.20.zip) [redacted] GitHub ([redacted] ssets.
2. [redacted] QGIS plugin repository <https://plugins.qgis.org/plugins/>
3. [redacted]
4. [redacted], [redacted] zip-[redacted]

[redacted] QGIS [redacted] zip-[redacted] [redacted] QGIS.

[redacted]

[redacted] Trends.Earth [redacted]:

- [redacted] (2.1.18, 2.1.20): [redacted],
- [redacted] (2.1.19, 2.1.21): [redacted]

[redacted] QGIS [redacted].

[redacted]

[redacted] TRENDS.EARTH.

2.2.6 (April 13, 2026)

- Added experimental support for LDN counterbalancing analysis
- Moved file downloads to background tasks to keep the interface responsive
- Added local job logging for better troubleshooting of locally-run analyses
- Improved caching of area extents for faster dropdown loading
- Added support for parallel processing in te_algorithms
- Added documentation on SO2-3 indicator calculations
- [redacted]

2.2.4 (March 19, 2026)

- [redacted] API-[redacted], [redacted], [redacted] [redacted] [redacted].
- [redacted] URL-[redacted] API-[redacted]
- [redacted]
- [redacted]
- [redacted]
- [redacted]
- Added in-plugin news feed
- Added handling for Google Earth Engine terms of service change
- Optimized local caching of job results to improve plugin responsiveness
- Add styles for SPEI layers and NDVI integrals
- [redacted], [redacted] FAQ [redacted]
- [redacted]

2.2.2 (28 [redacted] 2026 [redacted])

- [redacted]
- [redacted] (LPD) [redacted]

[redacted]

- [redacted] JSON-[redacted]
- [redacted]
- [redacted]
- [redacted]
- [redacted] SOC [redacted] SOC (2000)
- [redacted] Thread
- [redacted]

2.2.0 (24 [redacted] 2025 [redacted])

- [redacted] Natural Earth [redacted] geoBoundaries ([redacted] Natural Earth)
- [redacted].
- [redacted].
- [redacted] API-[redacted] API trends.earth.
- [redacted].
- [redacted] https://data.trends.earth

2.1.20 (10 [redacted] 2025 [redacted])

- [redacted] 15.3.1 [redacted].
- [redacted].
- [redacted]
- [redacted] te_schemas [redacted] te_algorithms, [redacted] te_algorithms.

[redacted]

- [redacted] FAO-WOCAT/JRC/Trends.Earth LPD [redacted] 15.3.1.
- [redacted] trends.earth-API ([redacted]).
- [redacted] setuptools-scm [redacted] (trends.earth)
- [redacted] googleearthengine-api [redacted] 1.6.6.

2.1.18 (5 [redacted] 2025 [redacted])

- [redacted]: [redacted] @merydian [redacted] #943
- [redacted]: [redacted] 15.3.1 [redacted] @merydian [redacted] #945
- [redacted] @github-actions[bot] [redacted] #946
- [pre-commit.ci] [redacted] pre-commit [redacted] @pre-commit-ci[bot] [redacted] #929
- [redacted], [redacted] @dimasciput [redacted] #954.
- [redacted] nix [redacted] NixOS, [redacted] @timlinux [redacted] #950.
- [redacted] Qgis [redacted] @timlinux [redacted] #955
- [redacted] 2.1.18 [redacted] @timlinux [redacted] #956
- [pre-commit.ci] [redacted] pre-commit [redacted] @pre-commit-ci[bot] [redacted] #948
- [redacted] fig, [redacted] @azvoleff [redacted] #951.
- [redacted] @github-actions[bot] [redacted] #958
- [redacted] 15.3.1 [redacted] @merydian [redacted] #961
- [redacted] FAO-WOCAT [redacted] 15.3.1 [redacted] @merydian [redacted] #963
- [redacted] @github-actions[bot] [redacted] #964
- [redacted] CHIRPS [redacted] UK-CEH [redacted].

2.1.16 (31 [redacted] 2024 [redacted])

- [redacted] 812
- [redacted] np.float

[redacted]

- [redacted] (MODIS, CHIRPS, ESA CCI, PERSIAN, MODIS ET, Hansen Global Forest Change)
- [redacted] ruff [redacted]/[redacted]
- [redacted] 15.3.1, [redacted], [redacted]
- [redacted]

2.1.14 (24 [redacted] 2023 [redacted])

- [redacted] JRC, FAO-WOCAT [redacted] Trends.Earth, [redacted].

2.1.12 (17 [redacted] 2023 [redacted])

- [redacted] WorldPop, [redacted].

2.1.10 (7 [redacted] 2023 [redacted])

- [redacted] shapefiles/geojsons [redacted] aoi (#768)
- [redacted].
- [redacted]

2.1.8 (25 [redacted] 2023 [redacted])

- [redacted] JSON-[redacted] [redacted] Prais, [redacted]/[redacted].
- [redacted] #752 — [redacted]/[redacted]

2.1.6 (8 [redacted], 2022)

- [redacted] 45 ([redacted], [redacted] Corine).
- [redacted], [redacted] Mac/Linux [redacted]-[redacted] QgsPanelWidget.
- [redacted]

[redacted]

2.1.6 (21 [redacted], 2022)

- [redacted] [redacted]691 ([redacted], [redacted] [redacted] [redacted] [redacted] [redacted] [redacted]). [redacted] [redacted] [redacted] [redacted], [redacted] [redacted] [redacted] [redacted] [redacted] [redacted].
- [redacted] [redacted] Python, [redacted], [redacted] [redacted] [redacted] [redacted] [redacted], [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted].

2.1.2 (18 [redacted], 2022)

- [redacted] [redacted]724: [redacted], [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] 38 ([redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] qsettings, [redacted] [redacted] [redacted] 32).
- [redacted] [redacted]722 — [redacted] [redacted] [redacted], [redacted] [redacted] [redacted] [redacted] land_cover_transition_matrix_unccd.json.
- [redacted] [redacted]726: [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted].

2.1.0 (11 [redacted], 2022)

- [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] QGIS.
- marshmallow-dataclass [redacted] [redacted] 8.5.10 [redacted] marshmallow [redacted] 3.18.0. [redacted] [redacted] [redacted] [redacted] trend.earth-schemas, [redacted] [redacted], [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] ([redacted] [redacted] [redacted] [redacted] [redacted] [redacted]).

2.0.7 (31 [redacted], 2022)

- [redacted] [redacted] [redacted] Excel [redacted] [redacted] 15.3.1 [redacted] [redacted] [redacted] [redacted] — [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted].
- [redacted] [redacted] [redacted] 3 [redacted] — [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] ([redacted] [redacted] [redacted] [redacted] [redacted] Trends.Earth [redacted] [redacted] [redacted], [redacted] [redacted] [redacted]).

2.0.5 (19 [redacted], 2022)

- [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] JRC LPD [redacted] WOCAT LPD.

2.0.3 (19 [redacted], 2022)

[redacted]

- [redacted]
- [redacted] Excel, [redacted] 7 [redacted].
- [redacted].

2.0.1 (13 [redacted], 2022)

- [redacted] Trends.Earth, [redacted]. [redacted] 15.3.1, [redacted].
- [redacted].
- [redacted].
- [redacted]/[redacted] [redacted]. [redacted] [redacted] [redacted] [redacted] [redacted] [redacted]/[redacted] [redacted] [redacted] [redacted].
- [redacted] Excel [redacted] 15.3.1. [redacted] [redacted] (**[redacted]**) [redacted].

2.0 (20 [redacted], 2022)

- [redacted]
- [redacted]
- Trends.Earth [redacted], [redacted] [redacted]. [redacted] [redacted] (**[redacted]**).
- [redacted] (**[redacted]**)
- [redacted] [redacted], [redacted]
- [redacted] (**[redacted]**. **[redacted]**.)

[redacted]

1.0.10 (7 [redacted], 2022)

- [redacted] TransformDirection, [redacted] QGIS 3.22+.

1.0.8 (15 [redacted], 2021)

- [redacted] (500 [redacted] 505).

1.0.6 (15 [redacted], 2021)

- trends.earth-schemas [redacted] setup.py ([redacted])
- [redacted] NDVI [redacted] 2020 [redacted] GEE ([redacted] 2020 [redacted])
- [redacted].

1.0.4 (30 [redacted], 2021)

- [redacted] Trends.Earth, [redacted] WorldPop [redacted] Gridded Population of the World [redacted] 4 (GPWv4)
- [redacted], [redacted] ESA-CCI [redacted] 2020 [redacted]
- [redacted] GPCC [redacted] GPCP
- [redacted]
- [redacted]

1.0.2 (14 [redacted], 2020)

- [redacted], [redacted] 10 000 [redacted] 25 000 [redacted]. [redacted].
- [redacted] MERRA2 ([redacted] 2019 [redacted]).
- [redacted].
- [redacted] httplib2 [redacted] 0.18.0.
- [redacted] GPCC [redacted] V6 [redacted] V7
- [redacted] Hansen et al. [redacted] 2019 [redacted]

[redacted]

- [redacted] ([redacted] [redacted] [redacted] [redacted] [redacted]/[redacted] [redacted]).
- [redacted] PointZ, MultiPoint, MultiPointZ, PolygonZ, MultiPolygonZ).
- [redacted] Python, [redacted] QMessageBox.

1.0.0 (27 [redacted], 2020)

- [redacted] (■ [redacted] Numba) [redacted]. [redacted] SDG15.3.1, [redacted] ■ [redacted] [redacted] ■ [redacted] [redacted].
- ■ [redacted] ■ [redacted] ■ [redacted] [redacted] [redacted] [redacted] «[redacted]» [redacted], [redacted] [redacted] [redacted] [redacted] [redacted] [redacted], ■ [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted]. [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] ■ [redacted] [redacted] [redacted].
- [redacted] [redacted] [redacted] [redacted] [redacted] [redacted], ■ [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted].
- [redacted] [redacted] [redacted] [redacted] MODIS (■ [redacted] [redacted] [redacted] [redacted] [redacted] [redacted])
- [redacted] [redacted] [redacted] [redacted] [redacted] ■ [redacted] [redacted] [redacted] [redacted]
- [redacted] [redacted] [redacted] [redacted] ■ [redacted] ■ [redacted] about.
- ■ [redacted] [redacted] [redacted] [redacted] [redacted] [redacted].
- [redacted] [redacted] [redacted] ■ [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted].
- [redacted] [redacted] [redacted] (■ [redacted] [redacted] ■ [redacted] [redacted]).

0.98 (2 [redacted], 2020)

- [redacted] QGIS3 - [redacted] [redacted] [redacted] Qt5 ■ QGIS3 API.
- [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] 2020 [redacted] [redacted] [redacted].
- [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] 1styles [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted].

[redacted]

- [redacted] QGSProcessing [redacted] QGStask - [redacted], [redacted] [redacted] 1.0./
- [redacted].
- [redacted] GEE [redacted] GEE API (0.1.213).
- [redacted] QGIS.
- [redacted].
- [redacted] docs [redacted] trends.earth.
- [redacted], [redacted] [redacted] Trends.Earth.
- [redacted] .gitignore.
- [redacted] transifex [redacted] «trendsearth».
- [redacted].

0.66 (20 [redacted], 2019)

- [redacted] 10 000 000 [redacted]. [redacted], [redacted] 10 000 [redacted]. [redacted].
- [redacted] SDG 11.3.1 [redacted] SDG 11.3.1.
- [redacted] SDG 11.3.1 [redacted] 1998 [redacted] ([redacted]), [redacted].
- [redacted] SDG 15.3.1 [redacted] ESA [redacted] MODIS.
- [redacted] readme [redacted], [redacted] Github.
- [redacted], [redacted] Google-[redacted].

0.64 (9 [redacted], 2019)

- [redacted] nodata [redacted].
- [redacted] Hansen [redacted] 2018 [redacted].

[redacted]

- [redacted] 30m [redacted] Wood's Hole [redacted] [redacted]
- [redacted] SDG 15.3.1 [redacted] [redacted] 2015 ([redacted] [redacted] ESA).
- [redacted] Trends.Earth [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] SDG [redacted] 15.3.1.

0.62 (27 [redacted], 2019)

- [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted].
- [redacted] [redacted] MODIS [redacted] 2018 [redacted].
- [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted].
- Openpyxl [redacted] [redacted] [redacted] [redacted] - [redacted] [redacted] [redacted] Trends.Earth [redacted] [redacted] [redacted].
- [redacted] [redacted] [redacted] [redacted] [redacted] [redacted].

0.60 (3 [redacted], 2018)

- [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] (SDG 11.3.1)
- [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted]
- [redacted] [redacted] [redacted] [redacted] [redacted]

0.58 (11 [redacted], 2018)

- [redacted] [redacted] [redacted] [redacted] [redacted] [redacted]
- [redacted] [redacted] [redacted] [redacted] [redacted] ([redacted] [redacted] [redacted] [redacted]) [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted]
- [redacted] [redacted], [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted]

0.56.5 (21 [redacted], 2018)

- [redacted] [redacted] [redacted] [redacted] LPD [redacted] [redacted] [redacted] [redacted] [redacted].

0.56.4 (21 [redacted], 2018)

- [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted].

[redacted]

- [redacted] SOC [redacted] [redacted].
- MOD16A2 [redacted]
- [redacted] SOC [redacted] LC
- [redacted] Trends.Earth.
- [redacted] NULL [redacted].

0.56.3 (21 [redacted], 2018)

- [redacted] 180-[redacted] ([redacted], [redacted] [redacted] [redacted].).
- [redacted], [redacted] [redacted] NDVI (< 0,01 [redacted] NDVI [redacted] [redacted]) [redacted].

0.56.2 (10 [redacted], 2018)

- [redacted] unicode.

0.56.1 (10 [redacted], 2018)

- [redacted]

0.56 (9 [redacted], 2018)

- [redacted] (([redacted] [redacted])
- [redacted]
- [redacted], [redacted] [redacted] [redacted] [redacted] [redacted]

0.54 (8 [redacted], 2018)

- [redacted] [redacted], [redacted] [redacted] [redacted] [redacted].
- [redacted], [redacted] maps.trends.earth
- [redacted] pyopenxl
- [redacted]/[redacted] [redacted] [redacted] [redacted]

[redacted]

0.52.1 (21 [redacted], 2018)

- [redacted].

0.52.1 (21 [redacted], 2018)

- [redacted].

0.52 (19 [redacted], 2018)

- [redacted].

0.50 (15 [redacted], 2018)

- [redacted], [redacted] Trends.Earth [redacted] Excel.
- [redacted].

0.48 (13 [redacted], 2018)

- [redacted]

0.46 (13 [redacted], 2018)

- [redacted] ([redacted], [redacted])
- [redacted] UNCCD
- [redacted]
- [redacted] TE
- [redacted] ([redacted])

0.44 (12 [redacted], 2018)

- [redacted]
- [redacted]

[redacted]

- [redacted]
- [redacted], [redacted] [redacted] [redacted] [redacted] [redacted] [redacted]
- [redacted] [redacted] [redacted] [redacted] [redacted] Natural Earth
- [redacted]-[redacted]-[redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted]
- [redacted] «[redacted] [redacted]» [redacted] «[redacted] [redacted]» [redacted] [redacted] UNCCD
- [redacted]
- [redacted] [redacted] [redacted] 3.0.0b7
- [redacted] [redacted] GEE [redacted] [redacted] [redacted] trends.earth
- [redacted], [redacted], [redacted] [redacted] [redacted] [redacted]-[redacted]
- [redacted] [redacted] [redacted] [redacted] GEE, [redacted] [redacted] [redacted] VRT
- [redacted] [redacted] [redacted] [redacted], [redacted] [redacted] 180 [redacted]
- [redacted] [redacted] [redacted] [redacted]
- [redacted] [redacted] [redacted] [redacted] [redacted] GEE [redacted] [redacted] [redacted] [redacted] [redacted]

0.42 (4 [redacted], 2018)

- [redacted] [redacted] [redacted] [redacted] [redacted] LC ([redacted]-[redacted] setEnabled [redacted] [redacted] [redacted])

0.40 (4 [redacted], 2018)

- [redacted] [redacted] [redacted] [redacted] [redacted] [redacted].
- [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted]..
- [redacted] [redacted] [redacted] [redacted], [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted].
- [redacted] [redacted] [redacted] [redacted] [redacted] 2 [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted].
- [redacted] [redacted] GEE [redacted] v0.3.
- [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted], [redacted] [redacted] [redacted] [redacted] [redacted] [redacted].
- [redacted] [redacted] MODIS [redacted] [redacted] [redacted].

0.38 (16 [redacted], 2018)

- [redacted]
- [redacted], [redacted] [redacted] [redacted] [redacted] [redacted]-[redacted] [redacted] [redacted]
- [redacted]
- [redacted] firstShow [redacted] [redacted]
- [redacted], [redacted] [redacted] [redacted] [redacted] [redacted] [redacted]
- [redacted] [redacted] [redacted] [redacted], [redacted], [redacted] [redacted] [redacted] [redacted].
- [redacted] [redacted] [redacted] [redacted], [redacted] -32768 ([redacted]) [redacted] -32767 ([redacted])
- [redacted]
- [redacted] [redacted], [redacted] [redacted].
- [redacted] [redacted] [redacted], [redacted] [redacted] [redacted] [redacted] GEE.
- [redacted] trends.earth [redacted] QGIS.
- [redacted] — [redacted] [redacted] CCI.

0.36 (14 [redacted], 2017)

- [redacted] showEvent [redacted] [redacted].

[redacted]

0.34 (14 [redacted], 2017)

0.32 (14 [redacted], 2017)

0.30 (12 [redacted], 2017)

0.24 (6 [redacted], 2017)

0.22 (4 [redacted], 2017)

0.18 (2 [redacted], 2017)

0.16 (6 [redacted], 2017)

0.14 (25 [redacted], 2017)

0.12 (6 [redacted], 2017)