

# Dataset collection

## Environmental Marine Information System

### Description:

The Marine Geoportal EMIS relies on biological and physical variables generated from both hydrodynamic models and satellite remote sensing. A number of these variables and advanced products are available as raster datasets to the scientific and environmental managerial community through various tools (GIS Viewer, EMIS-R, Marine Analyst, Maps) which enable the user to conduct regional assessments. The geographical extent is 70N - 10S and 30W - 42E and the available spatial resolution are 4 and 2km. To access the datasets a http url is provided (<http://emis.jrc.ec.europa.eu/satellite/>). Each folder includes time series of datasets with IDENTIFIER CODED formed as follow: DATASET IDENTIFIER CODE Examples: ../satellite/4km/EMIS\_A\_CHLA\_MM\_YYYY ../satellite/4km/climatology/EMIS\_A\_CHLA\_MM ../satellite/4km/anomalies/EMIS\_A\_ANO\_CHLA\_MM\_YYYY ../satellite/2km/8d/EMIS\_A\_ANO\_DD\_MM\_YYYY DATASET RESOLUTION /2km/ /4km/ SUBFOLDERS /8d/: 8 Day datasets /climatology/ /anomalies/ MARINE GEOPORTALS EMIS\_: ENVIRONMENTAL MARINE INFORMATION SYSTEM (EMIS) OCEAN COLOUR SENSORS A\_: MODIS-AQUA T\_: MODIS-TERRA S\_: SEAWIFS M\_: MERIS P\_: PATHFINDER V\_: VIIRS DEFINITION OF DATASETS' ACRONYMS ANO\_: Anomalies CHLA\_: Chlorophyll Concentration K490\_: Diffuse Attenuation Coefficient PAR\_: Photosynthetically Available Radiation APH\_: Absorption Coefficient of Phytoplankton at 443nm ADG\_: Absorption Coefficient of detritus/CDOM at 443nm BBP\_: Particulate backscatter Coefficient at 443 nm ZEU\_: Surface Productive Layer PP\_: Primary Production SST\_: Sea Surface Temperature TEMPORAL DEFINITION \_DD: day \_MM: month \_YYYY: year

### Contact point email:

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### Landing page:

<https://jeodpp.jrc.ec.europa.eu/ftp/public/JRC-OpenData/EMIS>

### Datasets:

- EMIS - SeaWiFS Monthly anomalies sea surface Chlorophyll-a concentration (2km) in  $\text{mg.m}^{-3}$  [00d79a93-ca02-46f6-b7b4-2e271ec3568c]
- EMIS - MODIS-AQUA Monthly mean particulate backscattering coefficient at 443nm (4km) in  $\text{m}^{-1}$  [034ff0b2-9ebe-479c-a838-2def29380287]
- EMIS - SeaWiFS Monthly mean sea surface Chlorophyll-a concentration (4km) in  $\text{mg.m}^{-3}$  [03c06463-d7cd-4f17-b7b6-ea818b85b6af]
- Spawning habitat of Atlantic bluefin tuna (BFT) 25-500kg Annual climatology 2003-2013 (frequency of occurrence, %) [077251dc-623b-4211-981a-0b4216b41573]
- EMIS - MODEL Monthly climatology Temperature of the Bottom Layer (degree-C) [0850da4c-d6bd-478f-9732-368ef7c5b34f]
- EMIS - SeaWiFS Monthly climatology sea surface diffuse attenuation coefficient at 490nm (4km) in  $\text{m}^{-1}$  [094dd2fb-7da0-45c9-826e-e9abf5181b3e]
- EMIS - MERIS Monthly climatology particulate backscattering coefficient at 443nm (2km) in  $\text{m}^{-1}$  [0aa0acbf-360b-4204-96af-16c344e10f83]
- EMIS - MODIS-AQUA Monthly climatology absorption coefficient due to chromophoric dissolved organic matter and non-pigmented particles at 443nm (4km) in  $\text{m}^{-1}$  [0c4916f3-dda1-452f-ac74-9d7a5f3cee91]
- EMIS - EUNIS Broadscale Seabed Habitats of the Northeast Atlantic and Adjacent Seas [0ce69f28-b0a4-43f6-8d59-34cc6e47e825]
- EMIS - Feeding habitat of fin whales (FBW) in the western Mediterranean Sea Annual climatology 2003-2015 (frequency of occurrence, %) [170dc73f-e253-427c-9f48-704df35cf500]
- EMIS - Favourable feeding habitat of fin whale Monthly 1998-2016 (frequency of occurrence, %) [186a00ac-28f2-4a1c-a165-149d933574fd]
- EMIS - MODEL Monthly climatology Temperature of the Mixed Layer (in degree-C) [1e85334b-f14b-4caf-a90e-8185b15c04f3]
- Preferred habitat of tropical tuna species (Skipjack) in the Eastern Atlantic and Western Indian Oceans Annual climatology 1998-2013 (frequency of occurrence, %) [201a449a-6342-4406-8e96-ca3c14882464]
- EMIS - Favourable Feeding habitat of Hake (0-15cm) in the Mediterranean Sea Annual climatology 2003-2015 (frequency of occurrence, %) [24254db1-79ab-4157-bb7a-ba2a7da9081c]
- EMIS - MODEL Monthly mean Salinity of the Bottom Layer (in psu) [272f6b7a-ee81-4678-89d5-cb327f754dc5]
- EMIS - MODIS-AQUA Monthly mean sea surface Chlorophyll-a concentration (2km) in  $\text{mg.m}^{-3}$  [2792b966-06fd-4336-8dec-bb442bc659d9]
- EMIS - MERIS Monthly climatology sea surface Chlorophyll-a concentration (2km) in  $\text{mg.m}^{-3}$  [2bdb0bb9-5551-41d5-b230-2e428b762a9c]

- [EMIS - MODEL Monthly climatology Mixed Layer Depth \(in m\) \[2bf20e0b-4e8a-42fc-b197-02db6fd2af56\]](#)
- [EMIS - MODIS-TERRA Monthly mean sea surface temperature \(4km\) in degree-C \[2c060f87-cb9d-4599-a328-f5b41e98c0d2\]](#)
- [EMIS - BLACK SEA Daily sea surface Chlorophyll-a concentration in mg.m<sup>-3</sup> \[2daecf2a-9fcc-4fa3-9c8b-d91513673163\]](#)
- [EMIS - SeaWiFS Monthly climatology primary production \(4km\) in gC.m<sup>-2</sup>.day<sup>-1</sup> \[318b08dd-f7bd-4be8-9abf-8b9575bde21f\]](#)
- [EMIS - Favourable feeding habitat of fin whale Monthly 1998-2018 \(frequency of occurrence, %\) \[343b4357-6550-4dcb-ba38-1f5b78f3ac9e\]](#)
- [EMIS - Favourable feeding habitat of juvenile Atlantic bluefin tuna \(ABFT\) Monthly 2003-2014 \(frequency of occurrence, %\) \[34918ea3-5b23-49fb-840d-f72de4caa324\]](#)
- [EMIS - MERIS Monthly climatology sea surface diffuse attenuation coefficient at 490nm \(4km\) in m<sup>-1</sup> \[35bfa535-7bdc-4e43-b12c-29b2c6195ac0\]](#)
- [EMIS - MODIS-AQUA Monthly mean photosynthetically available radiation \(4km\) in E.m<sup>-2</sup>.d<sup>-1</sup> \[368b9e45-0d8e-48e2-acf1-2d100ad277b8\]](#)
- [EMIS - MODIS-AQUA Monthly anomalies sea surface diffuse attenuation coefficient at 490nm \(4km\) in m<sup>-1</sup> \[385fdb37-b062-4bb3-834c-0e9104a340f0\]](#)
- [EMIS - MODIS-AQUA Monthly anomalies sea surface diffuse attenuation coefficient at 490nm \(2km\) in m<sup>-1</sup> \[38da14a9-47cd-46e2-ab0d-7cabf153dbd1\]](#)
- [EMIS - Favourable feeding habitat of hake nurseries Monthly 1998-2018 \(frequency of occurrence, %\) \[3c1044f7-0728-47d1-ac7d-78505082c38d\]](#)
- [EMIS - SeaWiFS Monthly anomalies sea surface Chlorophyll-a concentration \(4km\) in mg.m<sup>-3</sup> \[3eeb91e7-c41b-4ceb-a09d-7659c213543d\]](#)
- [EMIS - MERIS Monthly climatology absorption coefficient due to chromophoric dissolved organic matter and non-pigmented particles at 443nm \(4km\) in m<sup>-1</sup> \[40c4a077-ce20-4583-8f82-a44e8f9bfd3c\]](#)
- [EMIS - MODIS-TERRA Monthly anomalies sea surface temperature \(2km\) in degree-C \[4211aa84-8ec1-416e-9ed2-97a9fd6c2eec\]](#)
- [EMIS - MODIS-AQUA Monthly anomalies absorption coefficient due to phytoplankton at 443nm \(4km\) in m<sup>-1</sup> \[450aa9c4-7cd6-48ab-b24c-b85ec512d477\]](#)
- [EMIS - MERIS Monthly mean sea surface Chlorophyll-a concentration \(2km\) in mg.m<sup>-3</sup> \[46b20de4-e60e-4163-88f4-77b6961ae6ed\]](#)
- [EMIS - MODIS-TERRA Monthly mean sea surface temperature \(2km\) in degree-C \[4c468f8d-8252-4575-bea4-33687a0bb428\]](#)
- [EMIS - Favourable feeding habitat of adult Atlantic bluefin tuna \(ABFT\) Monthly 2003-2014 \(frequency of occurrence, %\) \[4effa9d5-af0d-450b-af6e-bfaa8dafcff2\]](#)
- [EMIS - MODEL Monthly climatology Salinity of the Bottom Layer \(in psu\) \[531feabf-80a8-4d4e-80e2-b1ba74bc5400\]](#)
- [EMIS - MERIS Monthly mean sea surface Chlorophyll-a concentration \(4km\) in mg.m<sup>-3</sup> \[54a284df-6740-4860-8beb-f3c0c34e0a1f\]](#)
- [EMIS - MERIS Monthly anomalies sea surface diffuse attenuation coefficient at 490nm \(4km\) in m<sup>-1</sup> \[55a136b1-50ef-44c9-962f-95345ee08e9f\]](#)
- [EMIS - PATHFINDER Monthly climatology sea surface temperature \(4km\) in degree-C \[5838224e-174e-4172-8035-b6c17f07748b\]](#)
- [EMIS - MODIS-AQUA Monthly anomalies sea surface Chlorophyll-a concentration \(4km\) in mg.m<sup>-3</sup> \[5a680934-f05a-4159-8b9d-35e4d406c1d8\]](#)
- [EMIS - SeaWiFS Monthly climatology sea surface Chlorophyll-a concentration \(2km\) in mg.m<sup>-3</sup> \[6191c755-3801-4a9e-9966-c862524c7dee\]](#)
- [EMIS - MODIS-AQUA Monthly climatology sea surface diffuse attenuation coefficient at 490nm \(2km\) in m<sup>-1</sup> \[63a19ff8-25f5-435f-9121-71fa51b13dcf\]](#)
- [EMIS - MODIS-AQUA Monthly climatology particulate backscattering coefficient at 443nm \(4km\) in m<sup>-1</sup> \[6961fac8-e6f9-4677-b5ed-e0bb1bc54c75\]](#)
- [EMIS - MERIS Monthly mean sea surface diffuse attenuation coefficient at 490nm \(2km\) in m<sup>-1</sup> \[69665d40-6707-47de-b1bc-1757e97656b6\]](#)
- [EMIS - MODIS-AQUA Monthly anomalies sea surface Chlorophyll-a concentration \(2km\) in mg.m<sup>-3</sup> \[6b33cf93-9c1e-4f70-8583-0823cb3fd6a5\]](#)
- [EMIS - MERIS Monthly climatology sea surface Chlorophyll-a concentration \(4km\) in mg.m<sup>-3</sup> \[6f6fdc76-1b81-4c85-8644-54674624234a\]](#)
- [EMIS - MERIS Monthly climatology particulate backscattering coefficient at 443nm \(4km\) in m<sup>-1</sup> \[7183d559-d7ad-43c9-823c-b5358dc4d693\]](#)
- [EMIS - MERIS Monthly mean Surface productive layer \(Euphotic Depth\) \(2km\) in m \[71dac67a-8a40-4f47-ac99-4ef0c1b8bc96\]](#)
- [Feeding habitat of Atlantic bluefin tuna \(BFT\) 25-500kg Annual climatology 2003-2013 \(frequency of occurrence, %\) \[735b0b7b-59a2-4970-a4bc-d4875b8f862d\]](#)
- [EMIS - MODEL Monthly mean Temperature of the Mixed Layer \(in degree-C\) \[7a81f2ac-dc9e-433c-a1c0-6b944faf6d1c\]](#)
- [Feeding habitat of Atlantic bluefin tuna \(BFT\) 5-25kg Annual climatology 2003-2012 \(frequency of occurrence, %\) \[821a04b7-768c-4504-8bc0-5da499deeb34\]](#)
- [EMIS - SeaWiFS Monthly mean sea surface Chlorophyll-a concentration \(2km\) in mg.m<sup>-3</sup> \[8586e8d1-cc68-4426-a0fe-a93b2f741e40\]](#)
- [EMIS - MODIS-AQUA Monthly climatology photosynthetically available radiation \(4km\) in E.m<sup>-2</sup>.d<sup>-1</sup> \[861ea97a-d30d-4925-bca8-88fb6e3c1916\]](#)
- [EMIS - MODIS-AQUA Monthly climatology sea surface Chlorophyll-a concentration \(2km\) in mg.m<sup>-3</sup> \[88b1abea-99a6-49a2-b32b-46b6ad4d3275\]](#)
- [EMIS - MODIS-AQUA Monthly climatology sea surface diffuse attenuation coefficient at 490nm \(4km\) in m<sup>-1</sup> \[8ac03651-76d6-4236-a0f1-e40aaacf89b7\]](#)
- [EMIS - MERIS Monthly mean particulate backscattering coefficient at 443nm \(4km\) in m<sup>-1</sup> \[90fc9eba-34d1-4727-b4bb-e2609f46c4e6\]](#)

- [EMIS - MERIS Monthly anomalies sea surface Chlorophyll-a concentration \(4km\) in mg.m<sup>-3</sup> \[91372f11-4b74-4931-b5fd-ec470642fc15\]](#)
- [EMIS - SeaWiFS Monthly climatology sea surface diffuse attenuation coefficient at 490nm \(2km\) in m<sup>-1</sup> \[919ed129-65d9-47f1-8ed0-72c7fc529af3\]](#)
- [EMIS - Mediterranean Sea 50 years mean spatial eutrophication map, as captured by the TRIX indicator \[93d07f10-7757-485f-bb8e-3160536b97f8\]](#)
- [EMIS - MERIS Monthly mean particulate backscattering coefficient at 443nm \(2km\) in m<sup>-1</sup> \[991871e7-c711-4139-8fa3-ea492480eb6e\]](#)
- [EMIS - MERIS Monthly climatology Surface productive layer \(Euphotic Depth\) \(4km\) in m \[998eb56a-48cd-40ca-81bb-73a20268d884\]](#)
- [EMIS - SeaWiFS Monthly mean sea surface diffuse attenuation coefficient \(4km\) at 490nm in m<sup>-1</sup> \[9ce0dd87-fb1b-4f7c-b03f-3f384785b336\]](#)
- [EMIS - SeaWiFS Monthly climatology photosynthetically available radiation \(4km\) in E.m<sup>-2</sup>.d<sup>-1</sup> \[9de4dcdb-7918-41e2-a4a1-186d96c99c24\]](#)
- [EMIS - MODIS-TERRA Monthly climatology sea surface temperature \(2km\) in degree-C \[a066c89e-072c-412d-9ec6-312094218364\]](#)
- [EMIS - PATHFINDER Monthly mean sea surface temperature \(4km\) in degree-C \[a21f19ef-722e-4679-87e2-4c4844f88e43\]](#)
- [EMIS - SeaWiFS Monthly anomalies sea surface Chlorophyll-a concentration \(2km\) in mg.m<sup>-3</sup> \[a745d874-e56d-4a79-9841-03014d6acaf4\]](#)
- [EMIS - MERIS Monthly climatology absorption coefficient due to chromophoric dissolved organic matter and non-pigmented particles at 443nm \(2km\) in m<sup>-1</sup> \[a856a778-b55b-469d-abc3-b43624b5bf63\]](#)
- [EMIS - MODIS-TERRA Monthly gradients sea surface temperature \(2km\) \(ratio\) \[ac397312-015a-45b8-848c-61093c00d9fc\]](#)
- [EMIS - MERIS Monthly anomalies sea surface diffuse attenuation coefficient at 490nm \(2km\) in m<sup>-1</sup> \[ae02f482-e8d2-4be2-a015-ac051e8750f7\]](#)
- [EMIS - MERIS Monthly mean absorption coefficient due to chromophoric dissolved organic matter and non-pigmented particles at 443nm \(2km\) in m<sup>-1</sup> \[b2c93f4d-7d90-448f-a6f4-62f78e3b673b\]](#)
- [EMIS - MODIS-AQUA Monthly anomalies particulate backscattering coefficient at 443nm \(4km\) in m<sup>-1</sup> \[b2d82f30-9d34-460c-bb6e-47782f2d1879\]](#)
- [EMIS - MODEL Monthly mean of the Maximum Density Gradient \(in kg.m<sup>-4</sup>\) \[b4b64490-194a-4859-9ccd-d68856cd9c71\]](#)
- [EMIS - SeaWiFS Monthly climatology photosynthetically available radiation \(2km\) in E.m<sup>-2</sup>.d<sup>-1</sup> \[b604468f-2b83-49b8-9986-320bee141ed2\]](#)
- [EMIS - List of Web services \[bd5188c9-214d-423c-9500-427a40cf3aae\]](#)
- [EMIS - MODIS-AQUA Monthly mean absorption coefficient due to chromophoric dissolved organic matter and non-pigmented particles at 443nm \(4km\) in m<sup>-1</sup> \[bff4477c-ceb5-40e6-8f61-6bda603b47a5\]](#)
- [EMIS - MODIS-AQUA Monthly mean sea surface Chlorophyll-a concentration \(4km\) in mg.m<sup>-3</sup> \[c021e35f-5157-4543-ac75-7271331fe1c7\]](#)
- [EMIS - MODIS-AQUA Monthly climatology sea surface Chlorophyll-a concentration \(4km\) in mg.m<sup>-3</sup> \[c107c391-9b9b-4ceb-8d19-9b00d011ef42\]](#)
- [EMIS - MODIS-TERRA Monthly climatology sea surface temperature \(4km\) in degree-C \[c2bee743-37d2-49cb-a899-73b868732536\]](#)
- [EMIS - MERIS 8Day mean sea surface Chlorophyll-a concentration \(2km\) in mg.m<sup>-3</sup> \[c72594ec-1b51-4326-a96b-47f5f7c57fea\]](#)
- [EMIS - PATHFINDER Monthly anomalies sea surface temperature \(4km\) in degree-C \[c99b539d-f2cb-43a7-b8b5-e2185c1edd93\]](#)
- [EMIS - MERIS Monthly mean Surface productive layer \(Euphotic Depth\) \(4km\) in m \[ca6dd86f-fc44-4a9d-8f24-6a4e702aeabf\]](#)
- [EMIS - MODIS-AQUA Monthly climatology absorption coefficient due to phytoplankton at 443nm \(4km\) in m<sup>-1</sup> \[ca8c31a9-6995-4aad-a687-e45ea364758c\]](#)
- [EMIS - SeaWiFS Monthly anomalies sea surface diffuse attenuation coefficient at 490nm \(2km\) in m<sup>-1</sup> \[cadd96e7-6d49-4d73-94fa-cacd44861eae\]](#)
- [EMIS - Oxygen Depletion Risk Index \[cb0eab6e-0221-486e-b128-56d4aa0c11d3\]](#)
- [EMIS - Favourable spawning habitat of adult Atlantic bluefin tuna \(ABFT\) Monthly 2003-2014 \(frequency of occurrence, %\) \[cc2f75c9-7784-4ca1-a5d5-9d10970d3dc2\]](#)
- [EMIS - MERIS Monthly mean sea surface diffuse attenuation coefficient at 490nm \(4km\) in m<sup>-1</sup> \[ccecbed6-74f9-401e-a57c-7bcbf656ad27\]](#)
- [EMIS - SeaWiFS Monthly mean photosynthetically available radiation \(2km\) in E.m<sup>-2</sup>.d<sup>-1</sup> \[cf7655a0-3243-4a0c-a415-46118142e1b4\]](#)
- [EMIS - MODIS-AQUA Monthly mean sea surface diffuse attenuation coefficient at 490nm \(4km\) in m<sup>-1</sup> \[d483cc7a-78fe-408b-83e6-f98afb36ea4f\]](#)
- [EMIS - MERIS Monthly mean absorption coefficient due to chromophoric dissolved organic matter and non-pigmented particles at 443nm \(4km\) in m<sup>-1</sup> \[d80ac6d1-52fa-4318-a7fd-d8f307d721ed\]](#)
- [EMIS - MODIS-TERRA Monthly anomalies sea surface temperature \(4km\) in degree-C \[d92f71db-d210-4dcd-bb31-29a30e1416f3\]](#)
- [EMIS - Favourable feeding habitat of hake nurseries Monthly 1998-2016 \(frequency of occurrence, %\) \[dc223681-7fcd-4135-b6c2-159e9afcb9aa\]](#)
- [EMIS - MODIS-AQUA Monthly mean absorption coefficient due to phytoplankton at 443nm \(4km\) in m<sup>-1</sup> \[dc2f8e82-46ef-44d2-8372-92a4c64cd5ff\]](#)
- [EMIS - BLACK SEA Monthly mean sea surface Chlorophyll-a concentration in mg.m<sup>-3</sup> \[e3823274-17f0-4f77-9f42-7a3cd84be6a7\]](#)
- [EMIS - SeaWiFS Monthly climatology sea surface Chlorophyll-a concentration \(4km\) in mg.m<sup>-3</sup> \[e3e89bc2-1c80-40ca-b596-80d71df9016a\]](#)
- [EMIS - MODEL Monthly mean Mixed Layer Depth \(in m\) \[e49afa0b-8c4d-4559-b986-b68b524c6302\]](#)
- [EMIS - SeaWiFS Monthly anomalies sea surface diffuse attenuation coefficient at 490nm \(4km\) in m<sup>-1</sup> \[e5202113-abda-4abb-b29a-7bf2e4ebef6b\]](#)

- EMIS - SeaWiFS Monthly mean primary production (4km) in  $\text{gC.m}^{-2}.\text{day}^{-1}$   
[e784ea7a-85e4-4e78-85d4-d7953311536f]
- EMIS - MODEL Monthly climatology of the Maximum Density Gradient (in  $\text{kg.m}^{-4}$ )  
[ea2e84a6-39c8-4e4d-a460-271f3d35bd71]
- EMIS - BLACK SEA Monthly climatology sea surface Chlorophyll-a concentration in  $\text{mg.m}^{-3}$   
[eb84797b-2da4-4354-9d6a-c052ebaf585c]
- EMIS - SeaWiFS Monthly mean sea surface diffuse attenuation coefficient at 490nm (2km) in  $\text{m}^{-1}$   
[eda89e19-46a0-49c5-bada-e85c7ab5430b]
- EMIS - MERIS Monthly gradients sea surface Chlorophyll-a concentration (2km) (ratio)  
[ef0d035b-4f40-4cba-baef-08b765294e54]
- EMIS - MODIS-AQUA Monthly mean sea surface diffuse attenuation coefficient at 490nm (2km) in  $\text{m}^{-1}$   
[f43226c2-c346-4e3c-9828-86428a16335f]
- EMIS - MERIS Monthly climatology sea surface diffuse attenuation coefficient at 490nm (2km) in  $\text{m}^{-1}$   
[f62e0568-9366-437e-a856-a92d04278d9e]
- EMIS - MODEL Monthly mean Temperature of the Bottom Layer (degree-C)  
[f6523d3f-0c35-4430-817d-8b12c6ee5304]
- EMIS - MERIS Monthly climatology Surface productive layer (Euphotic Depth) (2km) in m  
[fb1e24da-d53f-4aa2-b856-d3ca328adf86]
- EMIS - MODIS-AQUA Monthly anomalies absorption coefficient due to chromophoric dissolved organic matter and non-pigmented particles at 443nm (4km) in  $\text{m}^{-1}$  [fc817e0f-7059-4342-a2dd-72645afcad89]
- EMIS - MERIS Monthly anomalies sea surface Chlorophyll-a concentration (2km) in  $\text{mg.m}^{-3}$   
[fdfcbc4a-11a4-4058-91c2-71cac90b48e6]
- EMIS - SeaWiFS Monthly mean photosynthetically available radiation (4km) in  $\text{E.m}^{-2}.\text{d}^{-1}$   
[ffc34727-a365-4b24-863c-3f43b8c5f023]