



# The GEOSS Portfolio for Science and Technology

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Featuring:

**Biodiversity: GEO Protected Areas  
Assessment & Monitoring Pilot: The  
GRAAMP Viewer**

# GEO Protected Areas Assessment & Monitoring Pilot: The GPAAMP Viewer

The GEO Protected Areas Assessment and Monitoring Pilot (GPAAMP) Viewer is a web based GIS application that focuses on data (e.g., biodiversity, environmental, climate) for African protected areas.

Primarily a means for visualising information from disparate sources delivered through standards-based web services, it can aid in the management and assessment of protected areas.

In the spirit of GEO BON, it is expected that additional applications from third parties will build on the common services and data products underpinning the application, e.g., enabling species distribution modelling using appropriate datasets.



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## GPAAMP

GPAAMP is a proposal for a GEO BON “early product” led by the Joint Research Centre of the EC (JRC EC). It aims to provide decision makers with a regularly updated tool - the Digital Observatory for Protected Areas (DOPA) - to assess the state of African protected areas and to prioritize them according to biodiversity values and threats in order to support decision making and fund allocation processes

(<http://bioval.jrc.ec.europa.eu/PA/>).

The Digital Observatory for Protected Areas, DOPA (<http://dopa.jrc.ec.europa.eu/>) is being realised partly through the EU-funded EuroGEOSS project ([www.eurogeoss.eu](http://www.eurogeoss.eu)), “a European contribution to GEOSS”.

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*The GPAAMP Viewer is a freely distributable, standards-based, Open Source, web-based GIS client. Supporting viewing and download services, it functions primarily as a means for visualising information from disparate sources delivered through standards-based web services.*

The screenshot displays the GPAAMP Viewer web application. The main map shows the continent of Africa with a complex overlay of data layers in various colors (yellow, orange, red, purple, white). The interface includes a menu bar at the top with options like 'File', 'View', 'Help', 'Embed URL', and 'SHRE'. On the left, there is a 'Available Layers' panel with a tree view showing categories such as 'Africa', 'Species Information', 'GBIF Occurrence', 'GBIF All Occurrences', 'Bacteria', 'Chromista', 'Plantae', 'Archaea', 'Protozoa', 'Viruses', 'incertae sedis', 'Fungi', and 'Animalia'. Below this, there are sections for 'GROMS', 'USGS Ecosystems', 'Protected Areas', 'BirdLife', 'IUCN Redlist', 'CESIN', 'Population Density', and 'Human'. At the bottom left, a 'Layers' panel shows 'Isobioclimates', 'Plantae', and 'World Map' as active layers. On the right side of the map, there is a 'Layer Preview GBIF GeoSpatial Portal' panel with navigation controls. At the bottom, there is a 'Console' panel with tabs for 'Legend Panel' and 'Plantae', and an 'About GPAAMP Viewer' section providing a brief description of the application.



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## GPAAMP Viewer Development

The development of the GPAAMP Viewer focuses on two areas: i) the web based GIS client application and its customisation for African protected areas, ii) the data services that can be consumed and processed for presentation by the web based GIS client.



### Web Service Providers

Web services used by the GPAAMP Viewer have been provided by the following parties, several of which are supported through EuroGEOSS.

#### GBIF

Open Geospatial Consortium (OGC) Web Map Service (WMS) and Web Feature Service (WFS) of African taxon occurrence data ([www.gbif.org](http://www.gbif.org))

#### USGS

OGC WMS of world ecosystem classification maps (<http://www.usgs.gov/>)

#### UNEP-WCMC

OGC WFS of World Database of Protected Areas (<http://www.unep-wcmc.org/>)

#### BirdLife/RSPB

OGC WFS of various types of bird distributions including breeding areas, migration paths, wintering grounds (<http://www.birdlife.org/>; <http://www.rspb.org.uk/>)

#### Joint Research Centre of EC

An alert service (KML format) on the status of African protected areas including drought, fire, etc. (<http://ec.europa.eu/dgs/jrc/>)

#### CIESIN

OGC WMS of disasters, human pressures on African protected areas (<http://www.ciesin.columbia.edu/>)





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## GPAAMP Viewer Development

The DOPA is being designed in conformance with the GEOSS Common Infrastructure (GCI) featuring a Service Oriented Architecture model involving many loosely coupled applications and services. By adopting appropriate standards in line with the GCI, relevant data services can be brought together and integrated. The GPAAMP Viewer application presented here, by also conforming to the GCI, can be integrated as a component of the DOPA.



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## Availability

The GPAAMP Viewer is an Open Source application and freely distributable. Please check the GBIF tools web site (<http://tools.gbif.org/gpaamp-demo>) for further information, documentation and source code.