

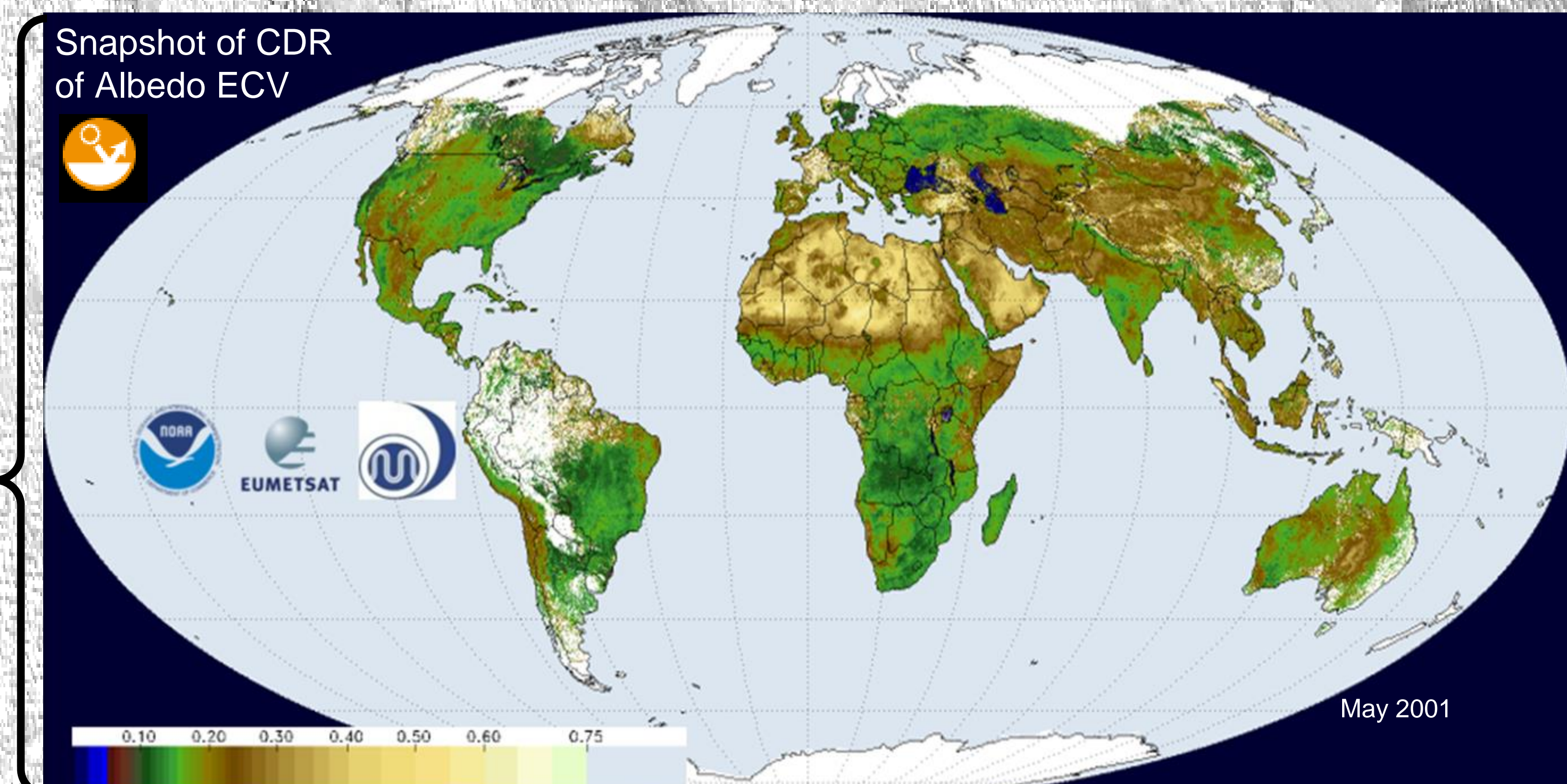
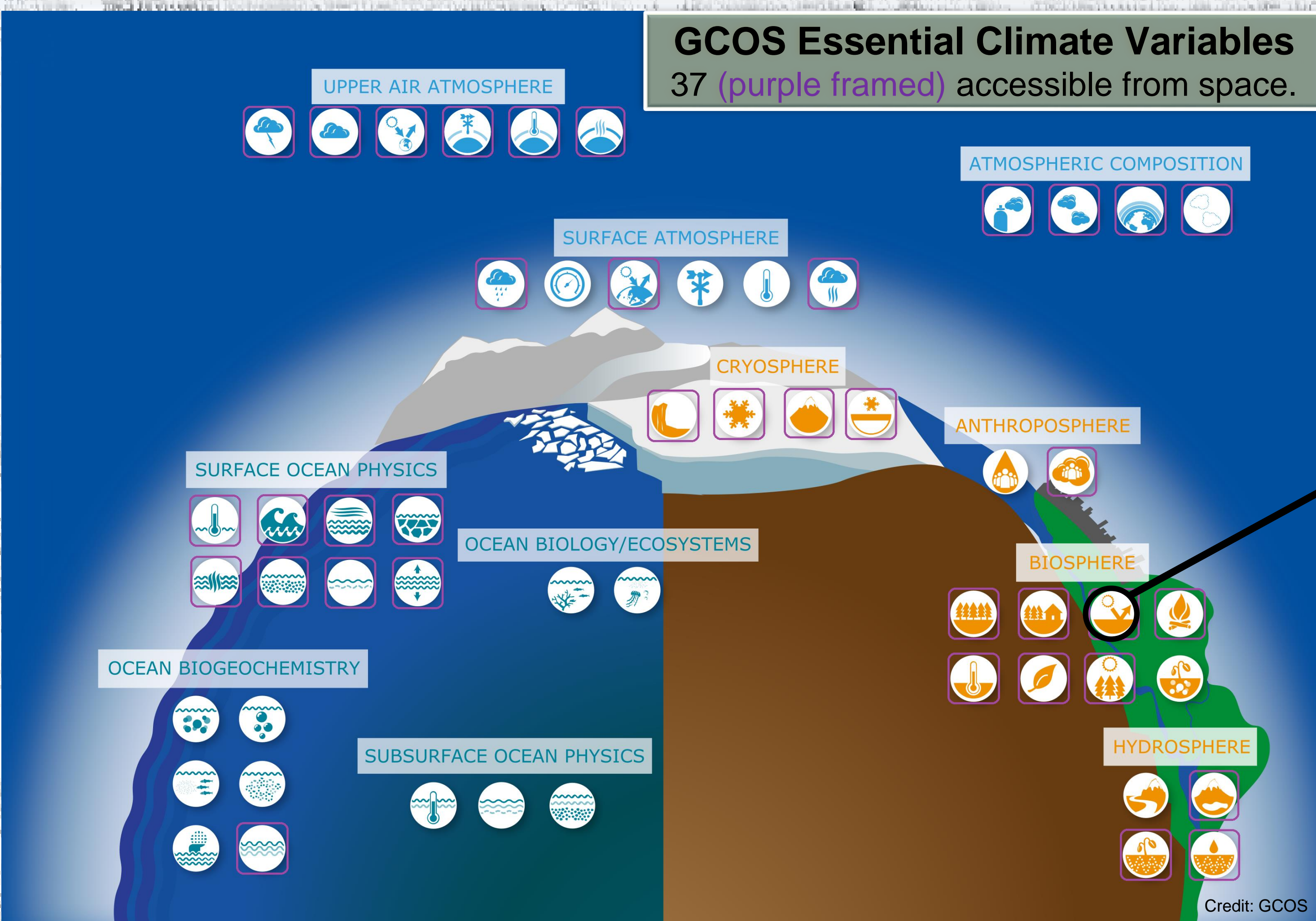
Supporting UNFCCC Objectives through International Coordination of Long-term Satellite Records

Jeffrey L. Privette¹, Jörg Schulz², Alexandra L. Nunes³, Albrecht von Bargaen, and Wenying Su⁵
on behalf of the Joint CEOS/CGMS Joint Working Group on Climate

¹NOAA, ²EUMETSAT, ³Hamtec Consulting Ltd, ⁴DLR, ⁵NASA

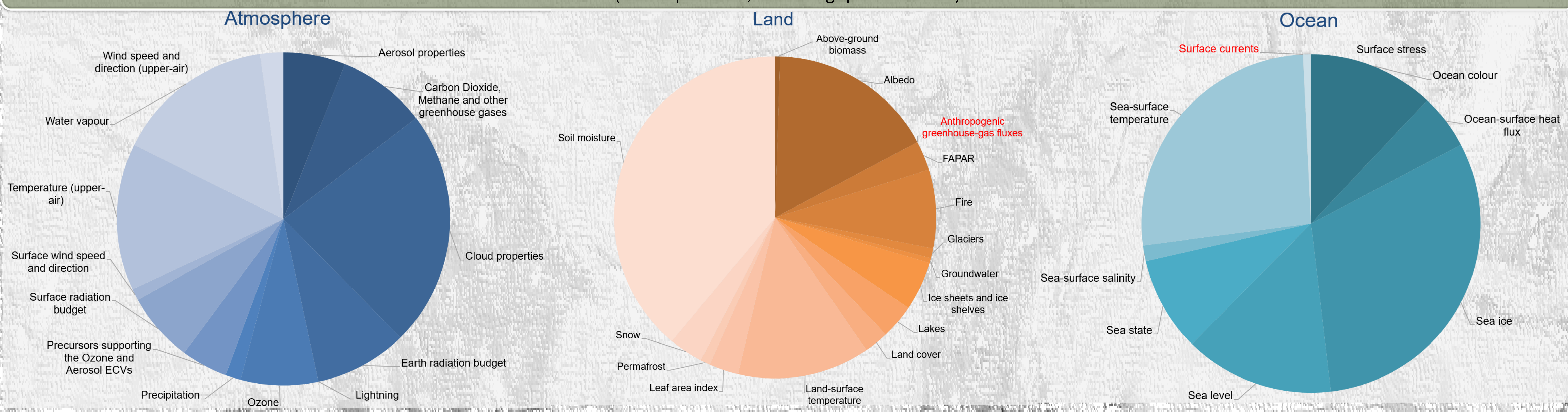
Abstract

Operational satellite observations of Earth now extend beyond 40 years in temporal length. Increasingly, scientists are using these data to develop [Climate Data Records \(CDRs\)](#) – consistently-processed homogeneous time-series data sets -- useful for monitoring and modelling climate change and variability, analysing climate processes and supporting other [UN Sustainable Development Goals](#). In July 2020, the [Joint CEOS/CGMS Working Group on Climate \(WGClimate\)](#) released its third version of the world's only [comprehensive Inventory of satellite CDRs](#). The Inventory contains information on more than 1500 current and future CDRs that address the [GCOS Essential Climate Variables](#) and user requirements. These CDRs will provide unique global information that supports periodic assessments ([Global Stocktakes](#)) of the [Paris Agreement](#) implementation and progress toward achieving the Agreement's long-term goals. For example, greenhouse gas (GHG) monitoring helps provide global and regional constraints on GHG sources and sinks supporting improved [National Determined Contributions](#). CDRs support other [UNFCCC objectives](#) by monitoring sea level rise, storms, extreme precipitation, floods, drought, (de)forestation, and evolution of urban areas, enabling statements about disaster impacts leading to loss & damage. The sustained monitoring of the climate system from space also enables monitoring change due to mitigation and adaptation measures applied by UNFCCC Parties.



Relative Composition of Inventory

(CDRs per ECV; Current gaps in red font)



Inventory of ECV Climate Data Records

- The [ECV Inventory v3.0](#) contains information for 1137 data records and fills prior gaps for the Lightning, Sea-surface salinity, Above-ground biomass, and Permafrost ECVs -- the latter two significant for analysis of the Earth's carbon cycle
- Data access is free and open for more than 99% of the CDRs in the Inventory
- Anybody with an internet connection can download the Inventory for dedicated analyses, find direct access points to climate data records in the Inventory, and get access to WGClimate's [Gap Analysis Report](#) and [Coordinated Action Plan](#)
- Inventory contents are verified and updated approximately bi-annually with approval from CEOS and CGMS
- The Inventory informs space agency planning and improves availability and interoperability of climate data records
- The Inventory is used by climate services to chose climate data records, e.g., for the Copernicus Climate Change Service
- The Inventory informs the responses of the space agencies to the GCOS status report and Implementation Plan
- The current and planned CDRs in Inventory demonstrate the implementation of the [Architecture for Climate Monitoring from Space](#). Related posters: "[Climate Data Records in Action: Earth Observation Use Cases Aiding Decision-Making](#)" and "[Creating a Coordinated Global Atmospheric CO2 Inventory to Support the Global Stocktake](#)"

Major Activities of the Joint CEOS/CGMS Working Group on Climate

