



Welcome and Introduction from ESA

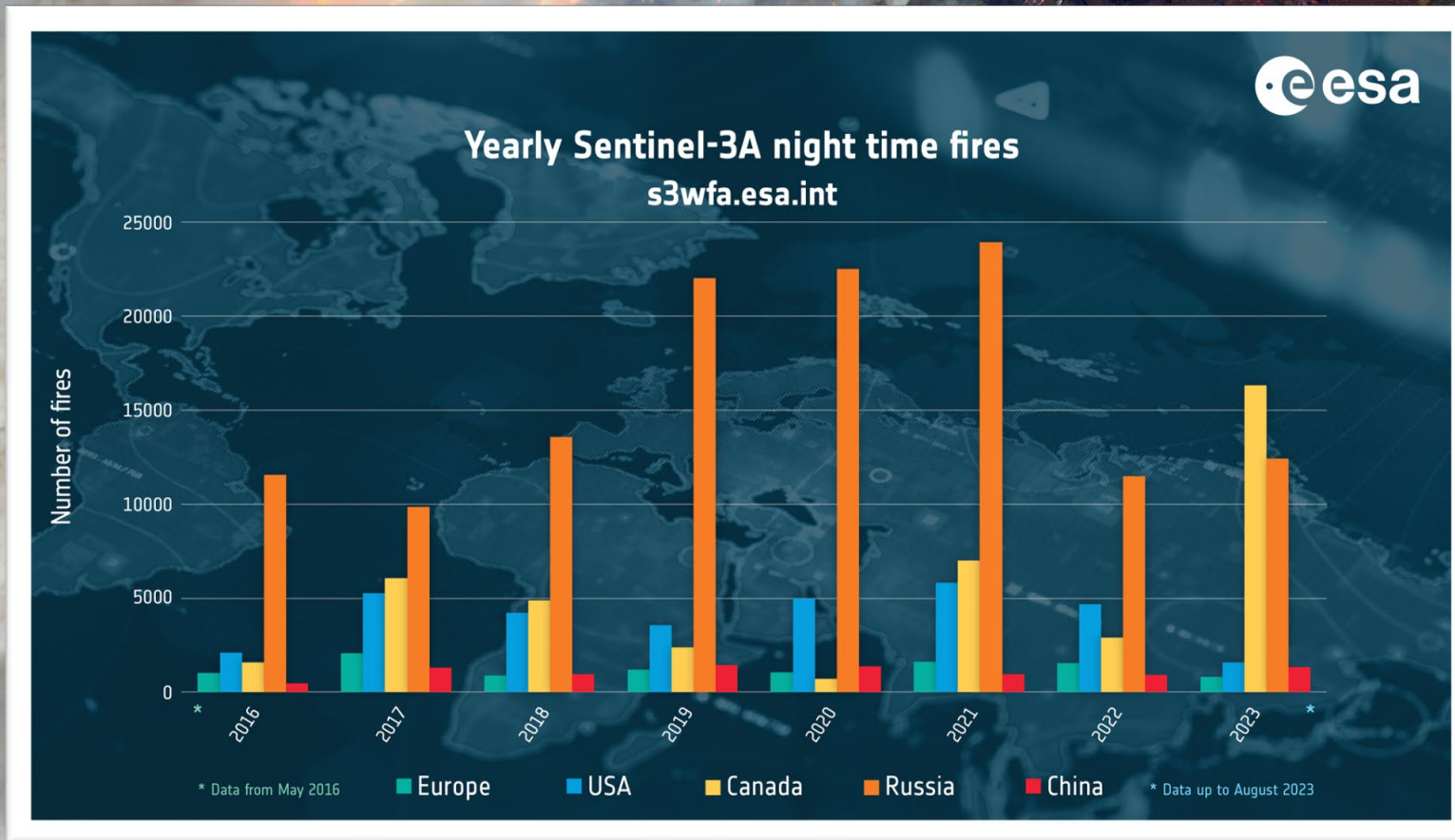
Rune Floberghagen, Head of the Science, Applications & Climate Department

EO for Carbon Markets Forum 2023 | 03 - 05 October 2023 | ESA-ESRIN, Frascati - Italy

ESA UNCLASSIFIED - For ESA Official Use Only



Wildfires in Canada



Québec

s3wfa.esa.int

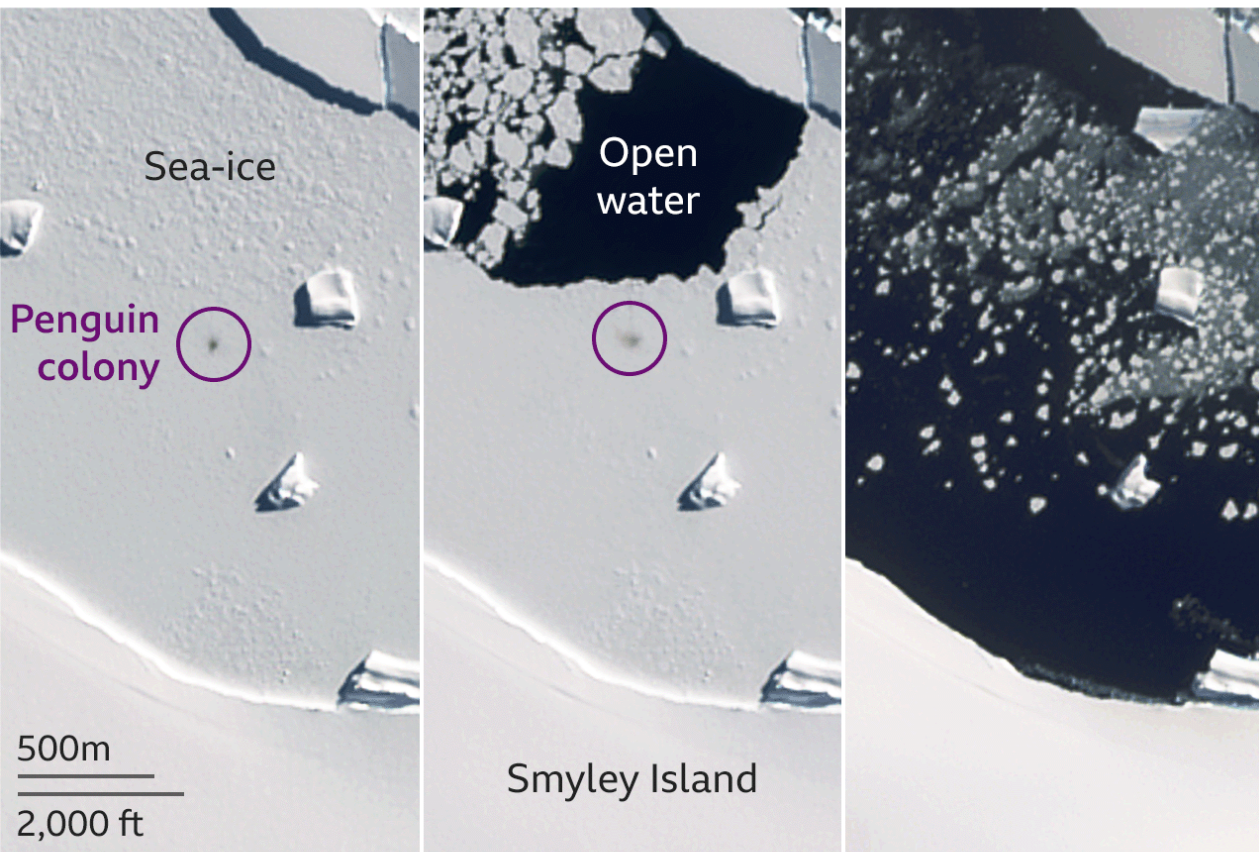


Loss of Smyley Island emperor colony in 2022

21 October

28 October

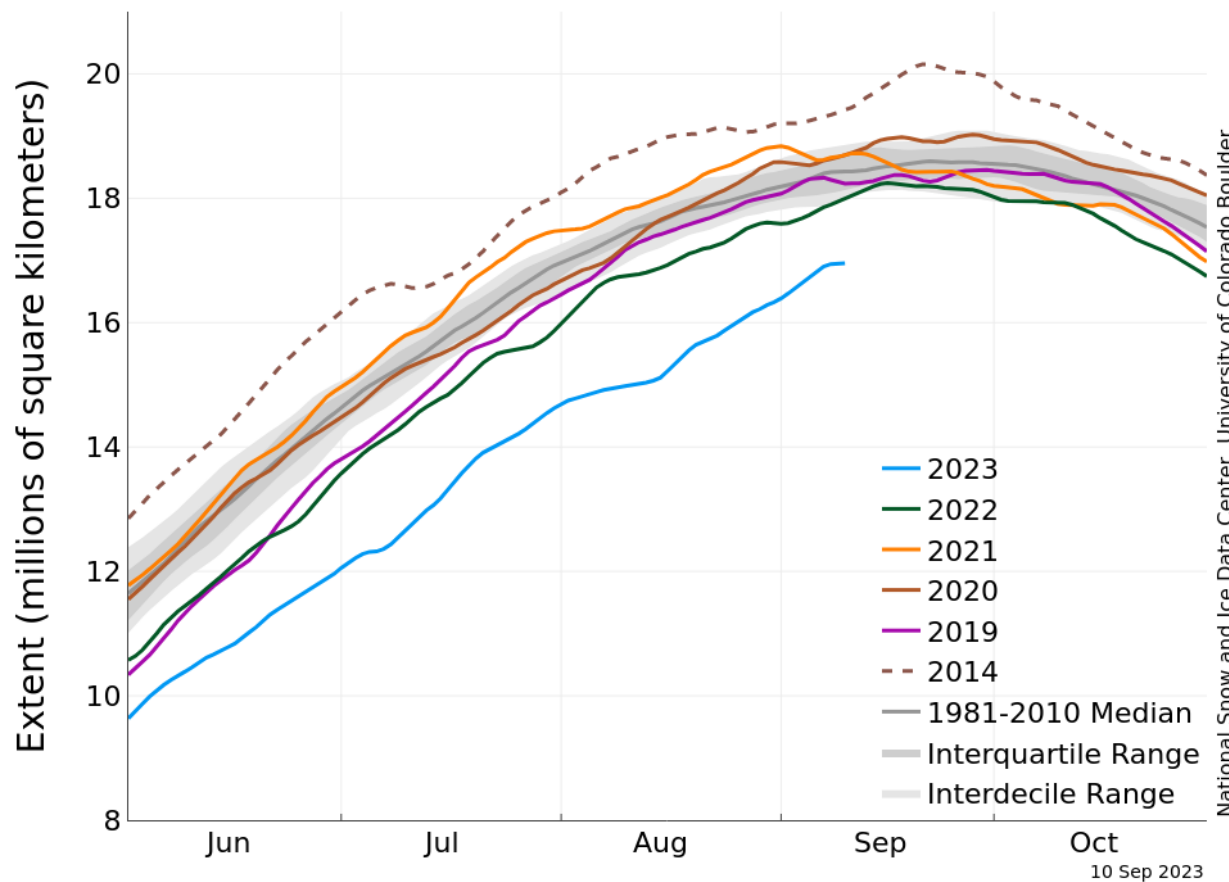
3 December



Source: Copernicus Sentinel-2



Antarctic Sea Ice Extent (Area of ocean with at least 15% sea ice)



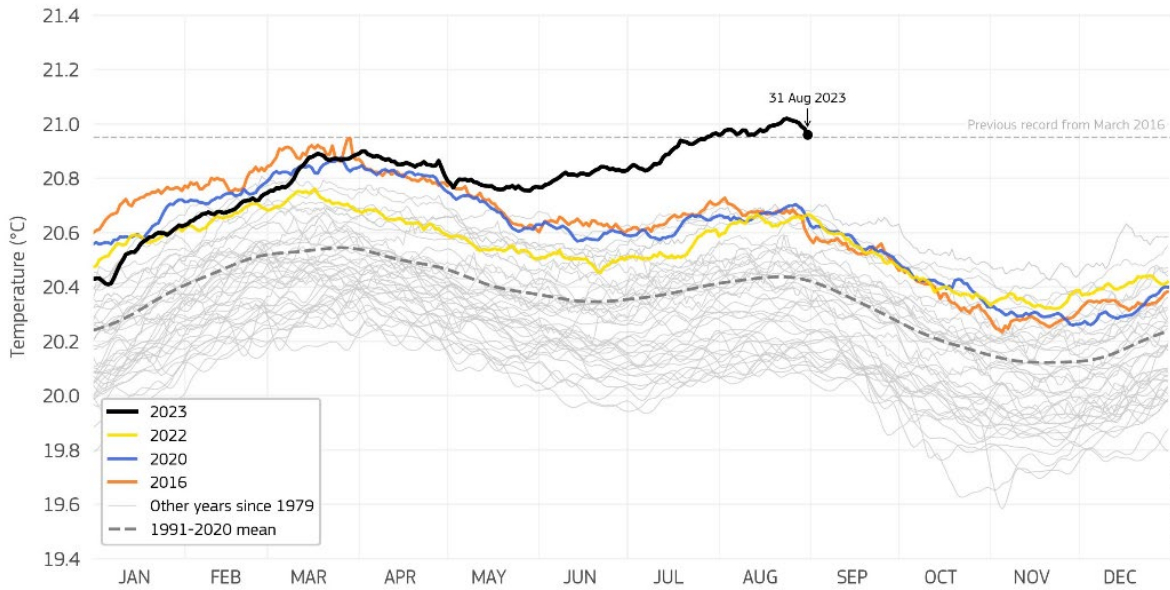
National Snow and Ice Data Center, University of Colorado Boulder

10 Sep 2023

DAILY SEA SURFACE TEMPERATURE

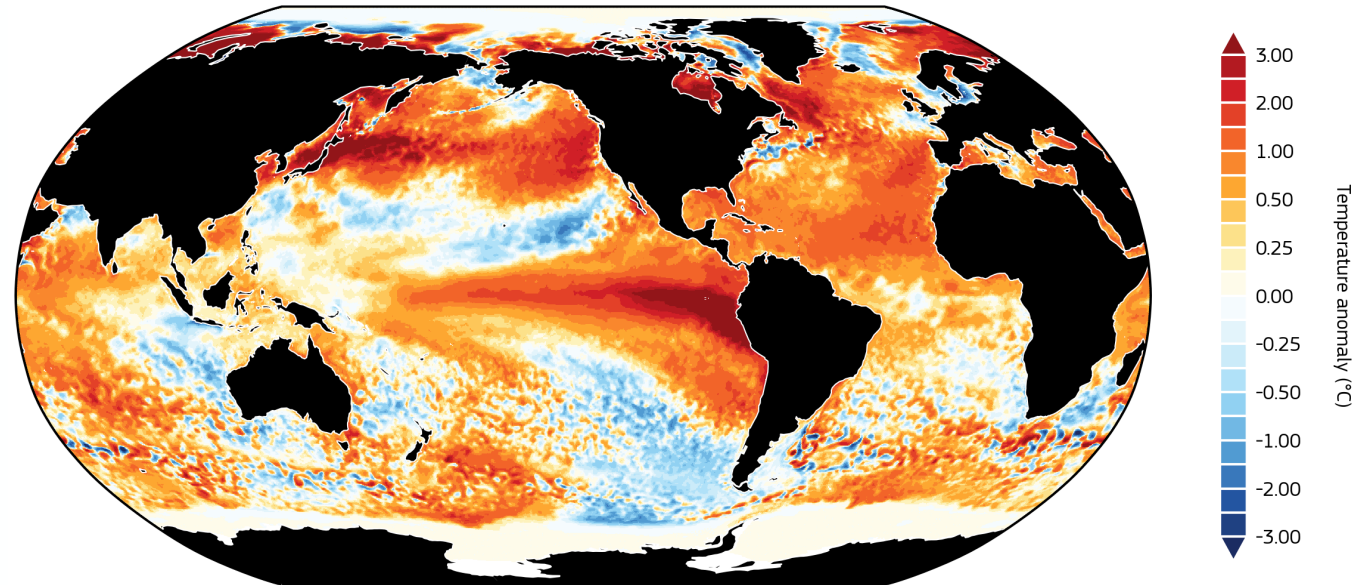
Extrapolar global ocean (60°S–60°N)

Data: ERA5 1979–2023 • Credit: C3S/ECMWF



SEA SURFACE TEMPERATURE ANOMALY • AUGUST 2023

Reference period: 1991–2020 • Data: ERA5 • Credit C3S/ECMWF

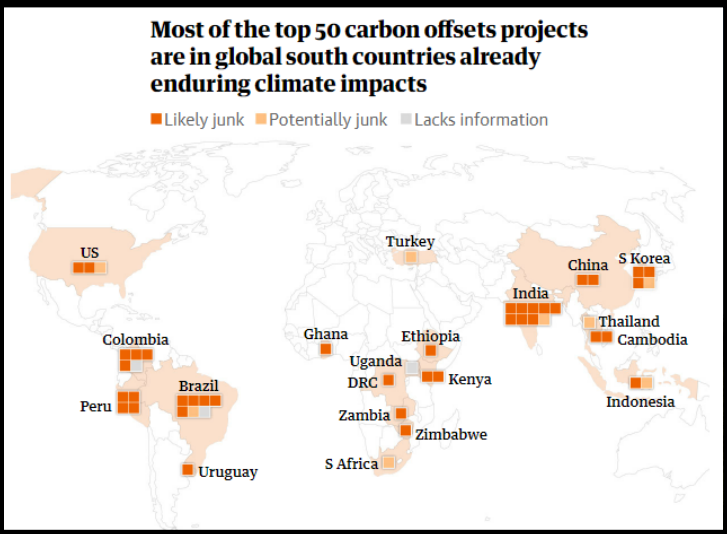


Credibility at stake

Revealed: top carbon offset projects may not cut planet-heating emissions

EU AGREES BAN ON 'CLIMATE NEUTRAL' CLAIMS BY 2026

'Companies need to re-assess the way they communicate about their purchase of carbon credits': EU agrees ban on 'climate neutral' claims by 2026

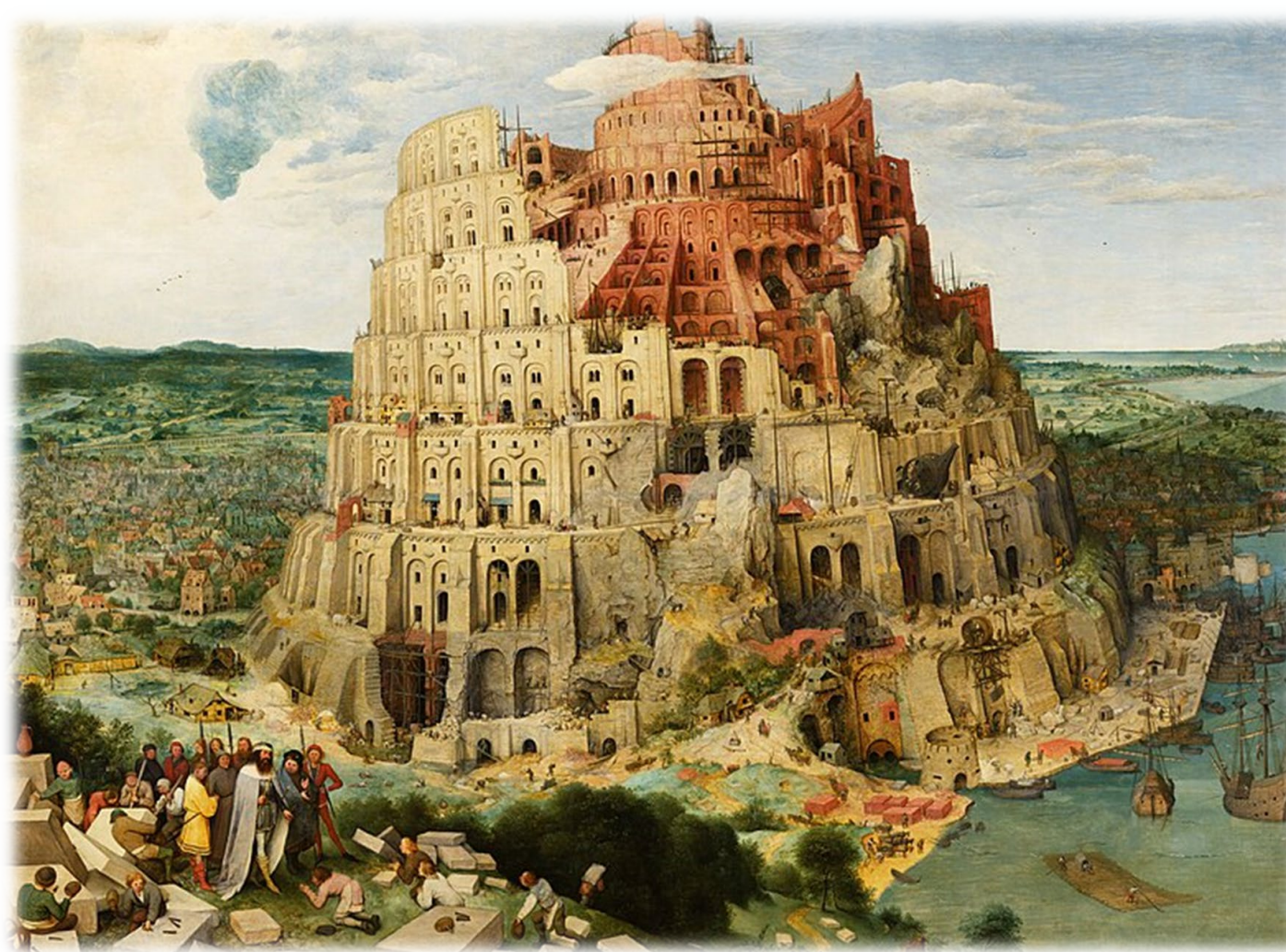


Traders in CO2 Credits Saddled With Vast Stranded-Asset Pile

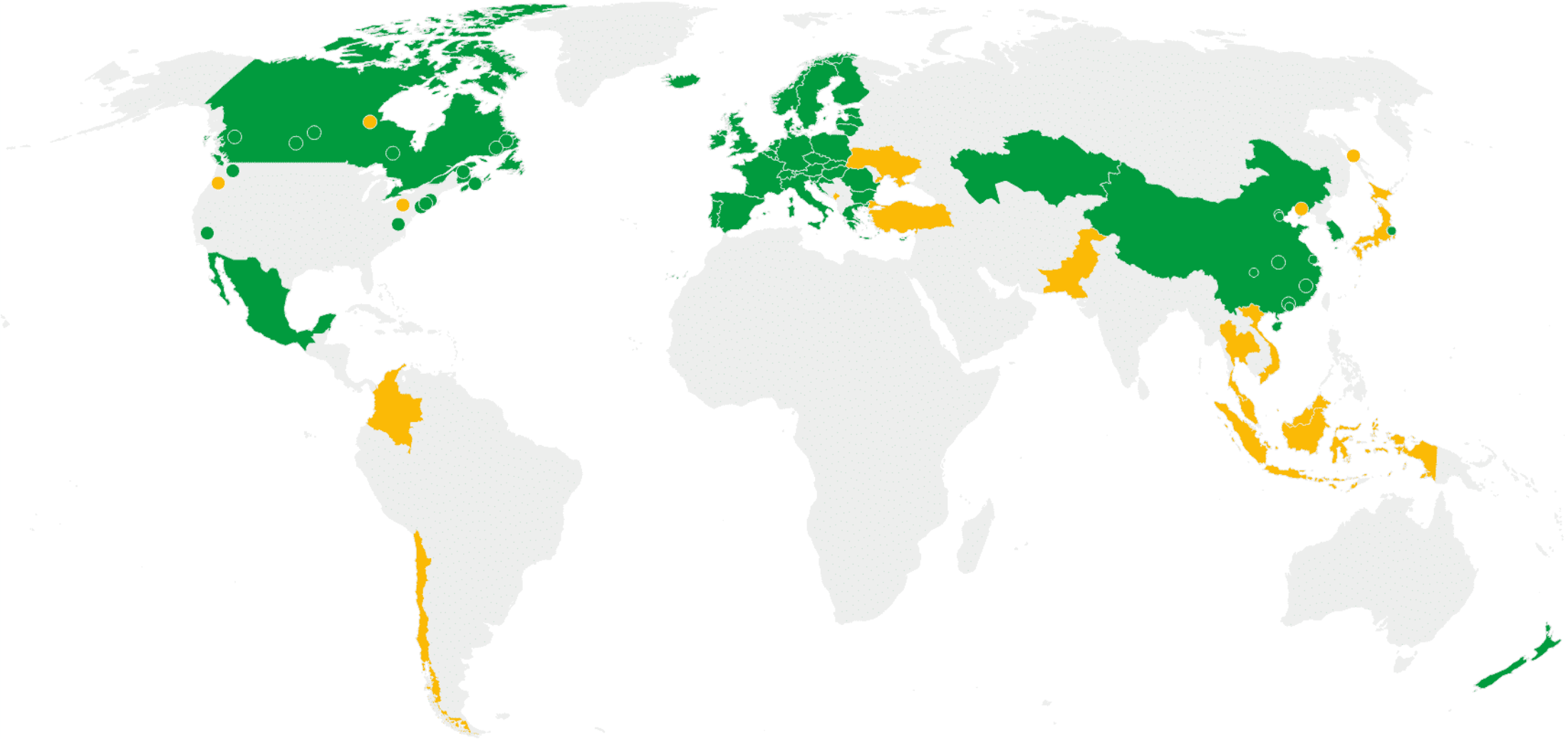
- Millions of carbon credits lie dormant on traders' accounts
- Trafigura executive says onus is on sellers to meet standards

Carbon credit speculators could lose billions as offsets deemed 'worthless'

Carbon Certification Standards



Current Compliance Credit Market Landscape



[A Guide to Compliance Carbon Credit Markets • Carbon Credits](#)



EU Emissions Trading System



EU EMISSIONS TRADING SYSTEM

FOR CITIZENS, BUSINESS & THE CLIMATE

below **2°C**

Paris COP21

Reducing emissions by at least **40%** EU wide

in **43%** EU ETS





Earth Observation can bring quality, transparency and credibility to Carbon Markets

Biomass from Space



- Version 4 with global maps from 2010, 2017, 2018, 2019 and 2020 in cooperation with



Consistency: a decade of change



RADD (RAdar for Detecting Deforestation) Alerts - based on dense Sentinel-1 time series

Central African Republic
RADD Alerts 2019 –2021
Selective logging

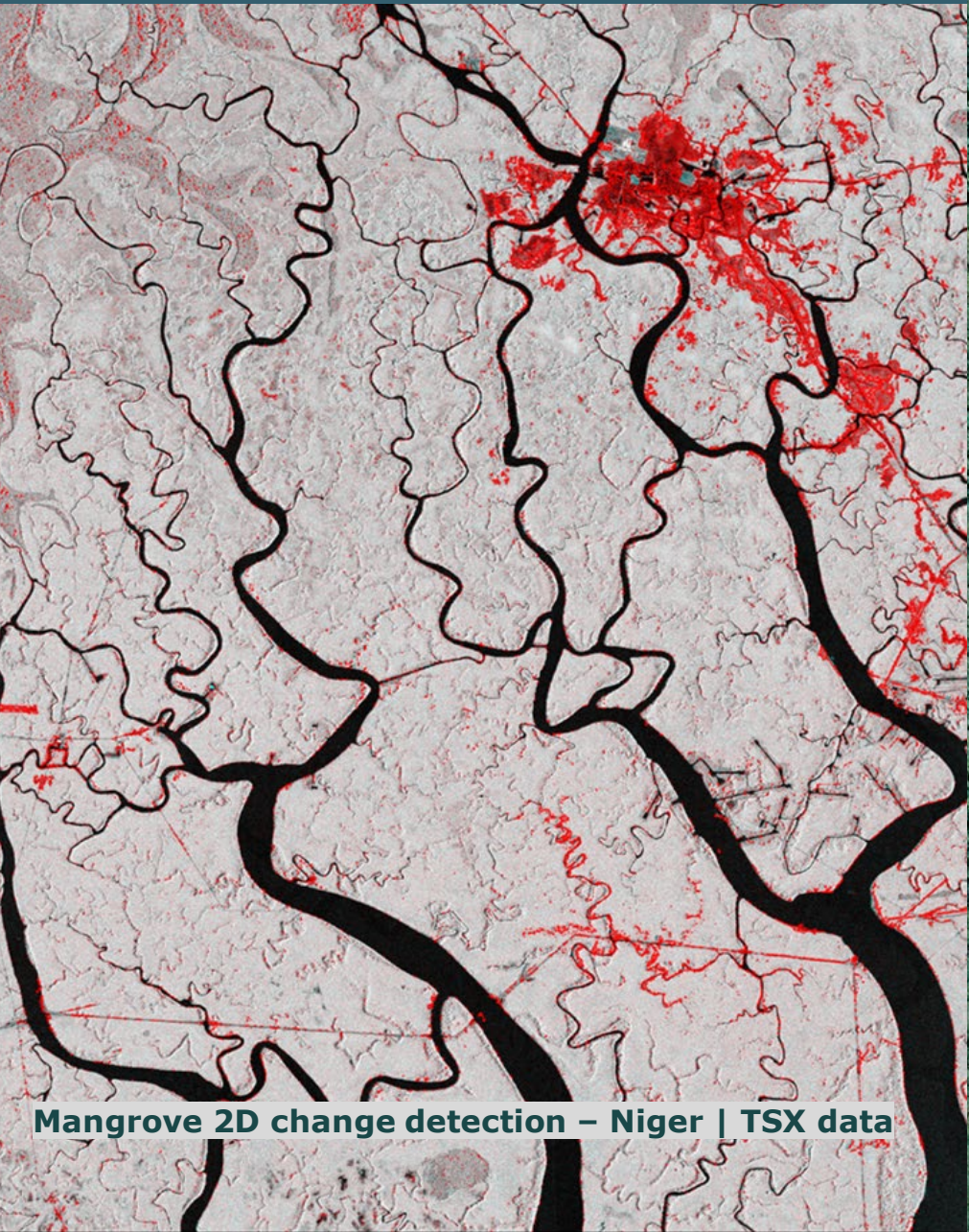
<http://radd-alert.wur.nl>



Credit: Pieter Moonen

Reiche et al.(2021), ERL

Commercial Solutions



Mangrove 2D change detection – Niger | TSX data



Kampung Dam, Malaysia, tree presence evidence | Pleiades Neo

Kampung Dam





EARTH OBSERVATION FOR SOIL PROTECTION AND RESTORATION

06–07 March 2024

ESA–ESRIN | Frascati (Rome), Italy



COASTAL BLUE CARBON



2 to 5 times more carbon per area unit than forests

New Verra Ocean Carbon Working Group





GTIF

Green Transition Information Factory



EO for Carbon Markets Forum 2023 | 03 - 05 October 2023 | ESA-ESRIN, Frascati - Italy

ESA UNCLASSIFIED - For ESA Official Use Only

