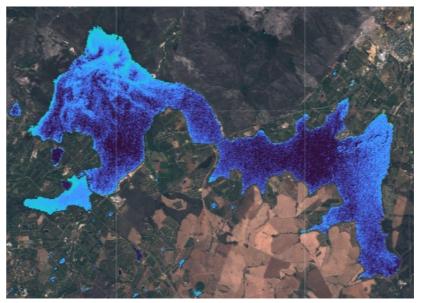


Sentinel 2 user-relevant water quality monitoring in small southern African water bodies (SWAM ZA GB)





Marié E. Smith^{1,2}, Dalin Jiang³, Evangelos Spyrakos³, Humeshni Pillay²





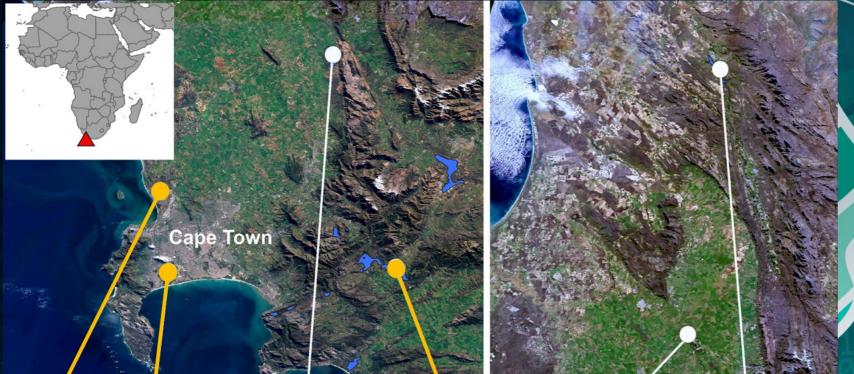
UNIVERSITY of STIRLING



ESA UNCLASSIFIED - For ESA Official Use Only

Study sites: Western Cape, South Africa







BioSCAPE sampling sites



Important reservoirs



Important recreational sites









3. Voelvlei dam 4. Theewaterskloof



5. Misverstand Dam



6. Clanwilliam Dam



Important biodiversity sites

WP1. Stakeholder engagement, communication and

dissemination

esa

 We have engaged with stakeholders: Department of Water and Sanitation, City of Cape Town, Catchment Management agencies

 LPS oral presentation in F.04.05 Inland Water Quality and Resources Management - PART 2 (23 Jun 16:15-17:45 in Room 0.11/0.12)

 Presented about the project at local forums and task team meetings

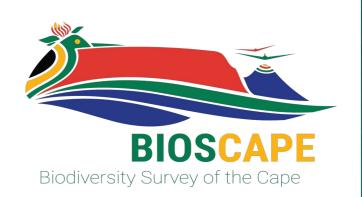


WP2. Evaluating atmospheric correction models and water quality retrieving algorithms

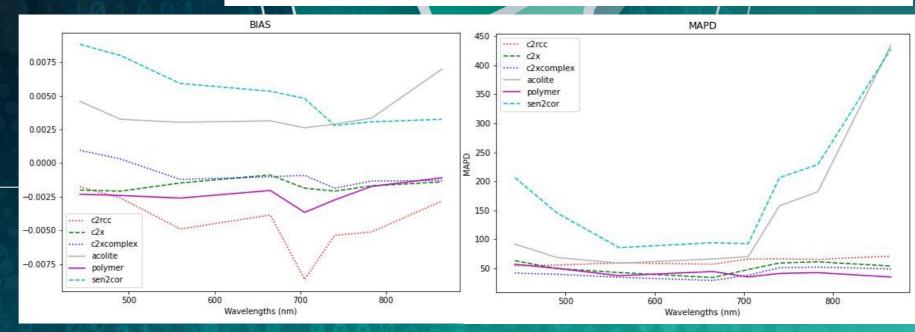


 High quality optical data were collected in Theewaterskloof, Zeekoevlei and Rietvlei during the BioSCape campaign in Oct & Nov 2023, which can be used to assess the most appropriate aquatic AC for the region





- AC algorithms assessed:
 - O Sen2Cor
 - o C2RCC
 - 0 C2X
 - o C2Complex
 - O Polymer
 - O Acolite

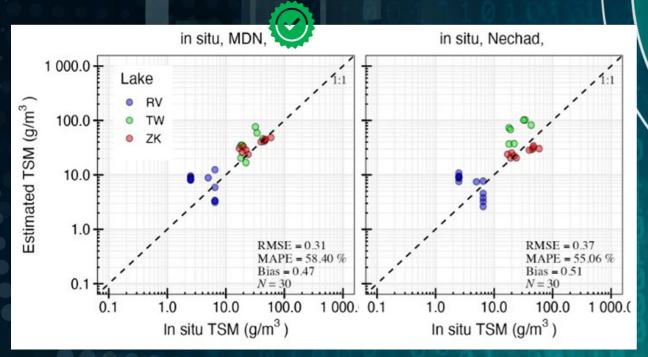


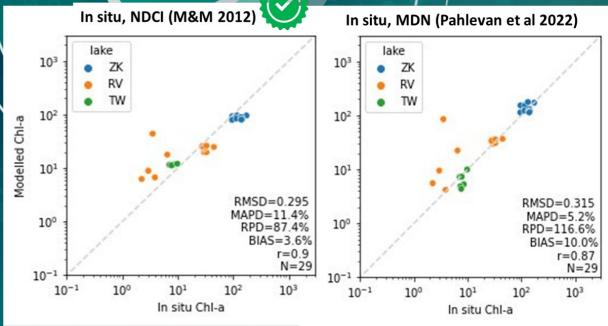
ESA UNCLASSIFIED – For ESA Official Use Only

WP2. Evaluating atmospheric correction models and water quality retrieving algorithms



 We have assessed the performance of different published TSM and Chl-a algorithms on in situ Rrs data

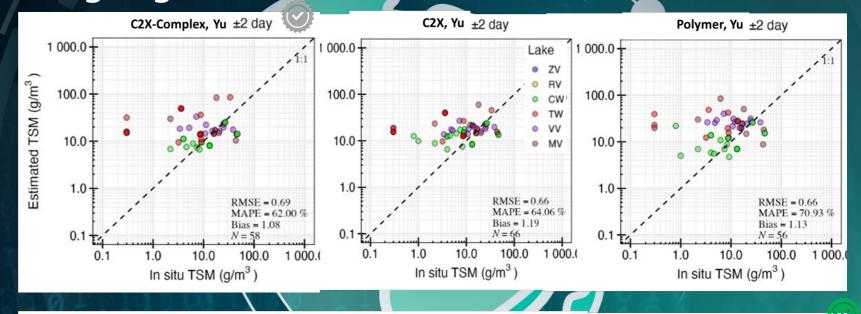


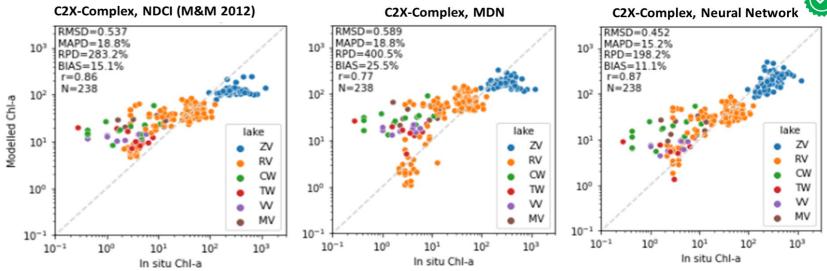


WP2. Evaluating atmospheric correction models and water quality retrieving algorithms



 We have assessed the performance of different published TSM and Chl-a algorithms on satellite-derived atmospheric correction and biogeochemical algorithm combinations



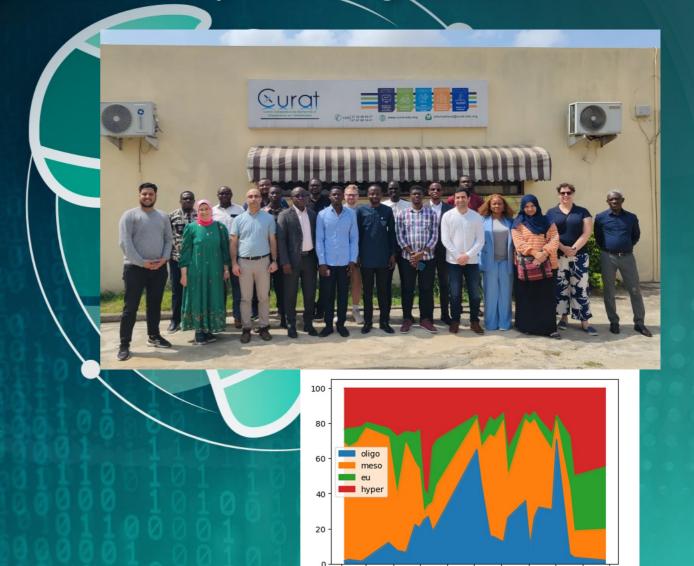


WP3. Developing processing chain and producing time

series water quality data

 Co-PI Marie attended the face to face training course in Abidjan in March 2025

 The Sentinel 2 processing chains have been set up to search for, read, resample, subset and process L1C files with atmospheric corrections from SNAP



ESA UNCLASSIFIED – For ESA Official Use Only

Still to come...

esa

 Task 3.2: Create Chl-a and TSM data cubes for all study sites for 2015-2025

 Task 4.1: Assess trends and variability of water quality and surface area

 Task 4.2: Explore the potential impacts of extreme events (droughts and floods) on the water quality

 Task 1.4: Journal article preparation and submission

 Task 1.3: present final project results and datasets to stakeholders (Feb/Mar 2026)





Thank you!

Marie Smith msmith2@csir.co.za

Dalin Jiang dalin.jiang@stir.ac.uk









European Space Agency













Department: Water and Sanitation REPUBLIC OF SOUTH AFRICA













ESA UNCLASSIFIED – For ESA Official Use Only

