Analysis of the decline of the Aculeo Lagoon's water body

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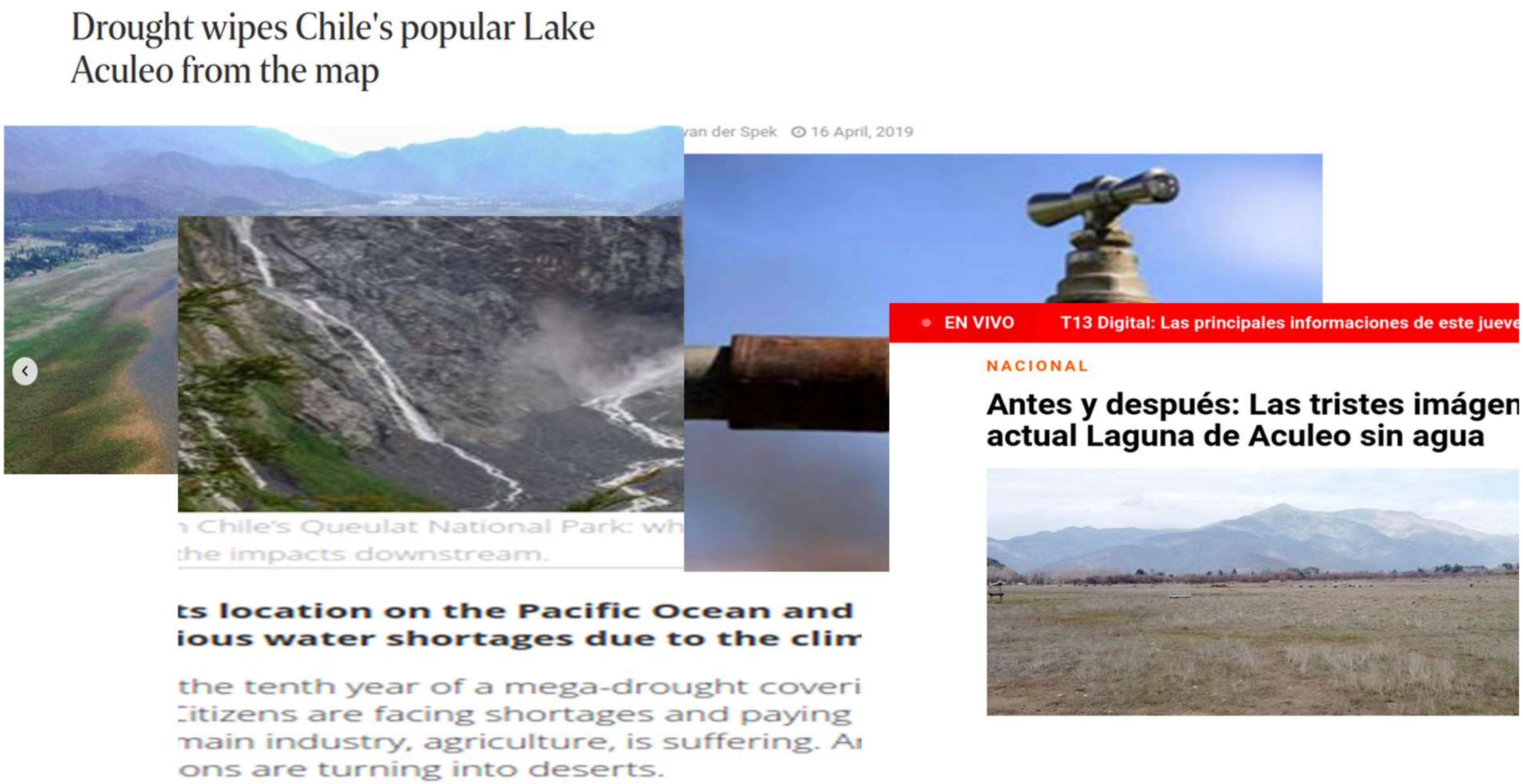
Structure

- Analysing the Aculeo Lagoon’s water body.
- Why use Sentinel-1 and/or Global Surface Water Explorer (GSWE)?
- Possible insight for further studies.

Motivation


Drought wipes Chile's popular Lake Aculeo from the map

van der Spek 16 April, 2019

Chile's Queulat National Park: wh

the impacts downstream.

ts location on the Pacific Ocean and
ious water shortages due to the clim

the tenth year of a mega-drought coveri
Citizens are facing shortages and paying
main industry, agriculture, is suffering. A
ons are turning into deserts.

EN VIVO T13 Digital: Las principales informaciones de este jueve

NACIONAL

Antes y después: Las tristes imágen
actual Laguna de Aculeo sin agua

The Aculeo Lagoon’s water body

Location

Comuna de Paine, provincia de Maipo, Región Metropolitana, Chile

Latitude: 33°50′47″S
Longitude: 70°54′55″O

Overview

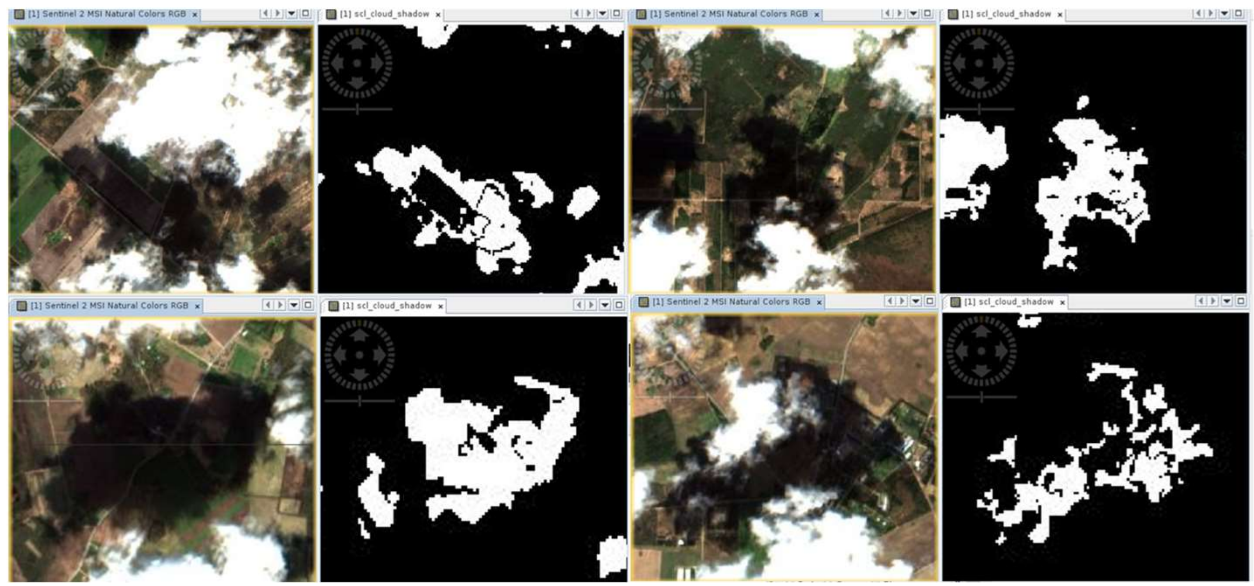
- Since 2010 – onwards.
- Environmental issues?
- Industry?

Source: Google Maps

Why use Sentinel-1?

Source: forum.step.esa.int (2021)

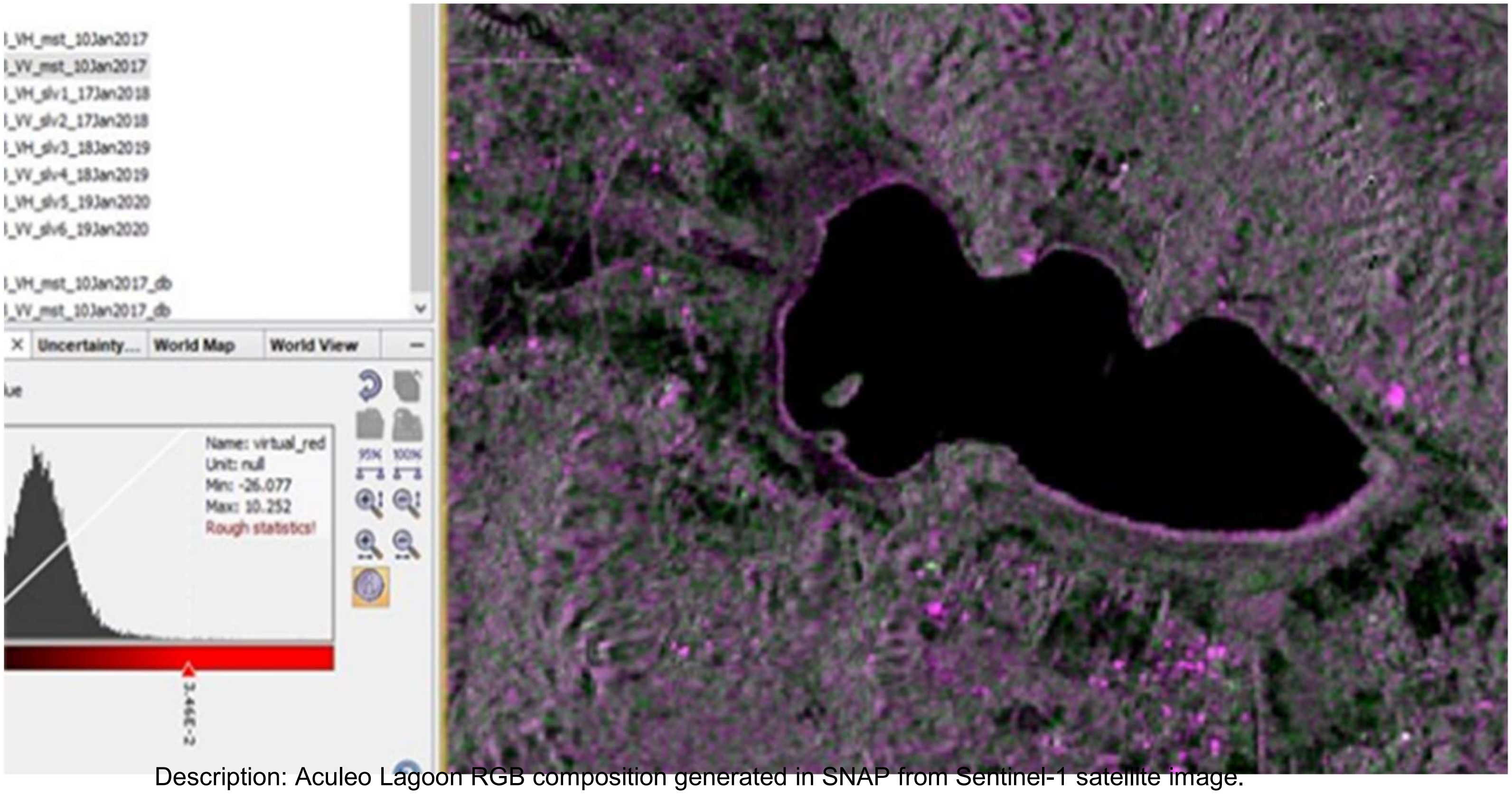
- Cloud
- Revisit (Continuity)
- Identification



Source: forum.step.esa.int (2021)

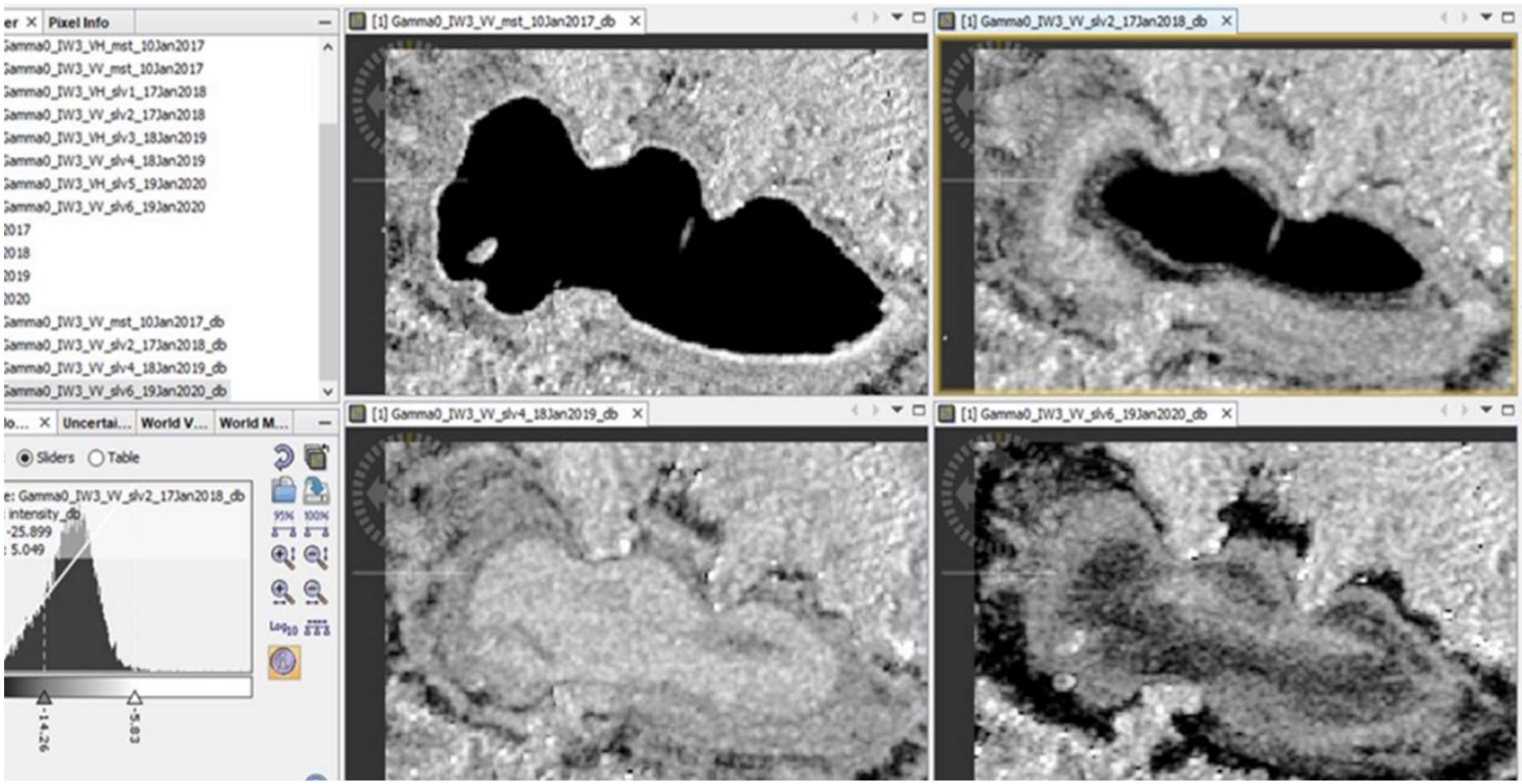
- Resolution
- SNAP (Free software)
- Integration

¿Porque usar Sentinel-1?



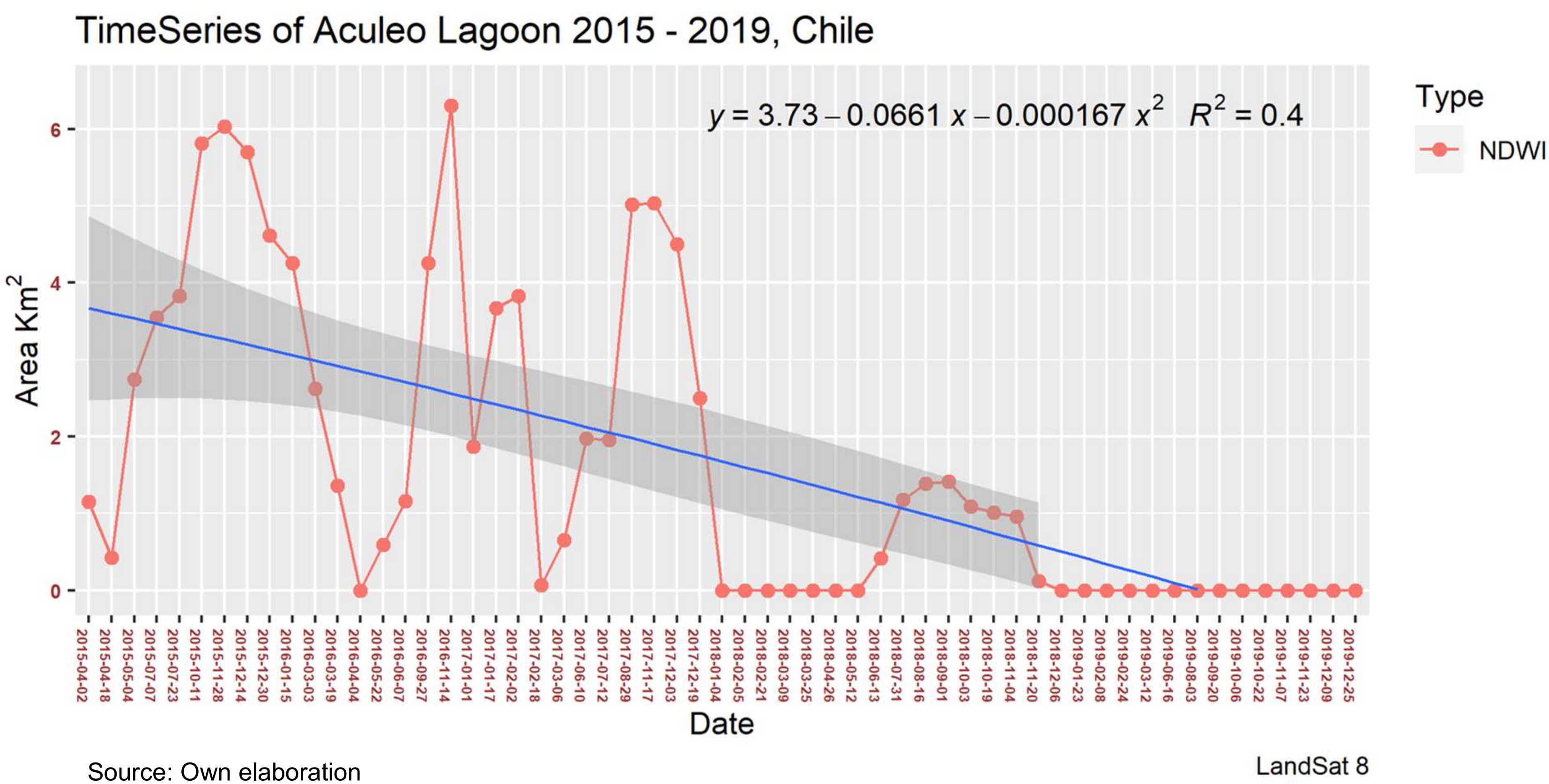
Description: Aculeo Lagoon RGB composition generated in SNAP from Sentinel-1 satellite image.
Source: Own elaboration

¿Porque usar Sentinel-1?



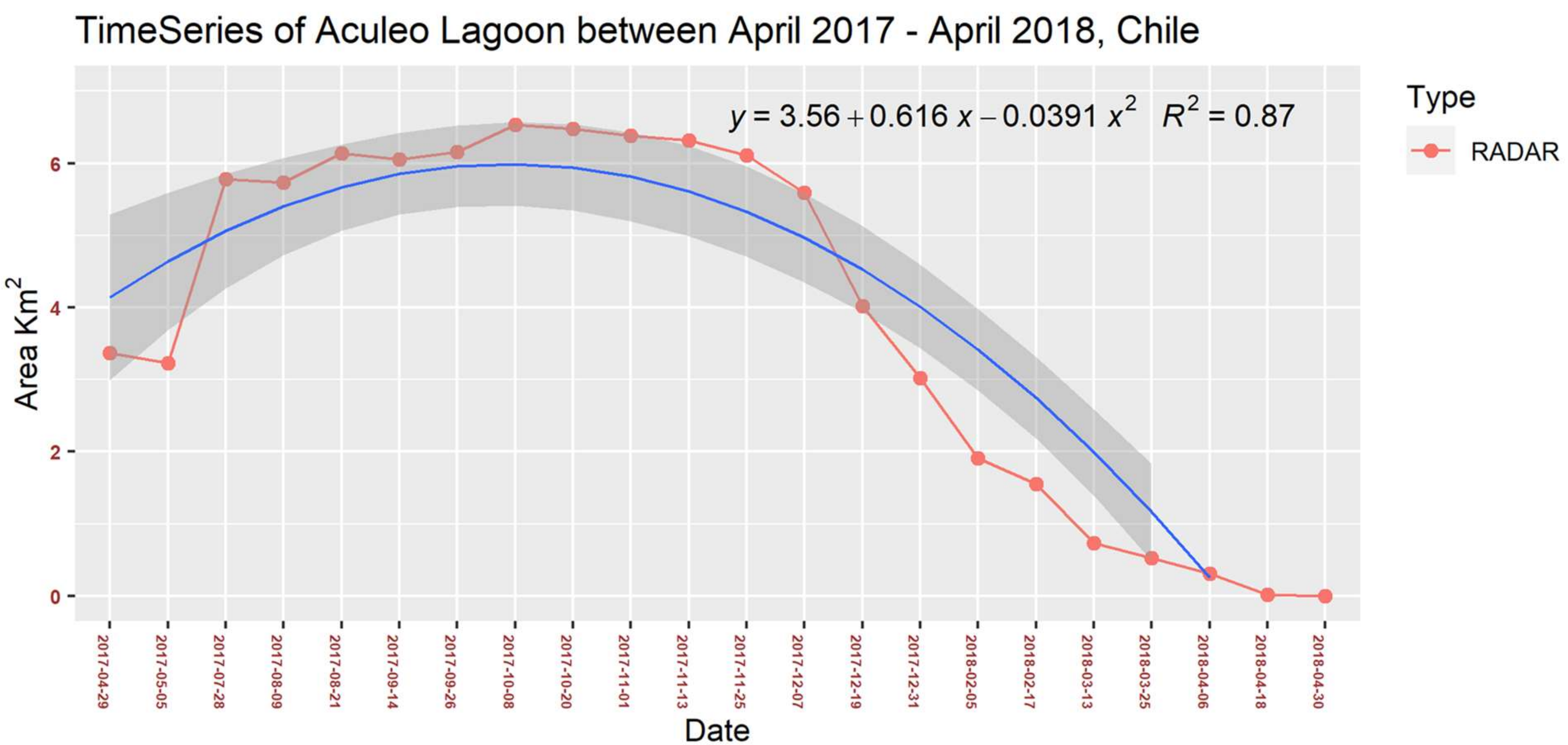
Description: Four different images of Aculeo Lagoon on different dates.
Source: Own elaboration

Why use Sentinel-1?



Source: Own elaboration

Why use Sentinel-1?



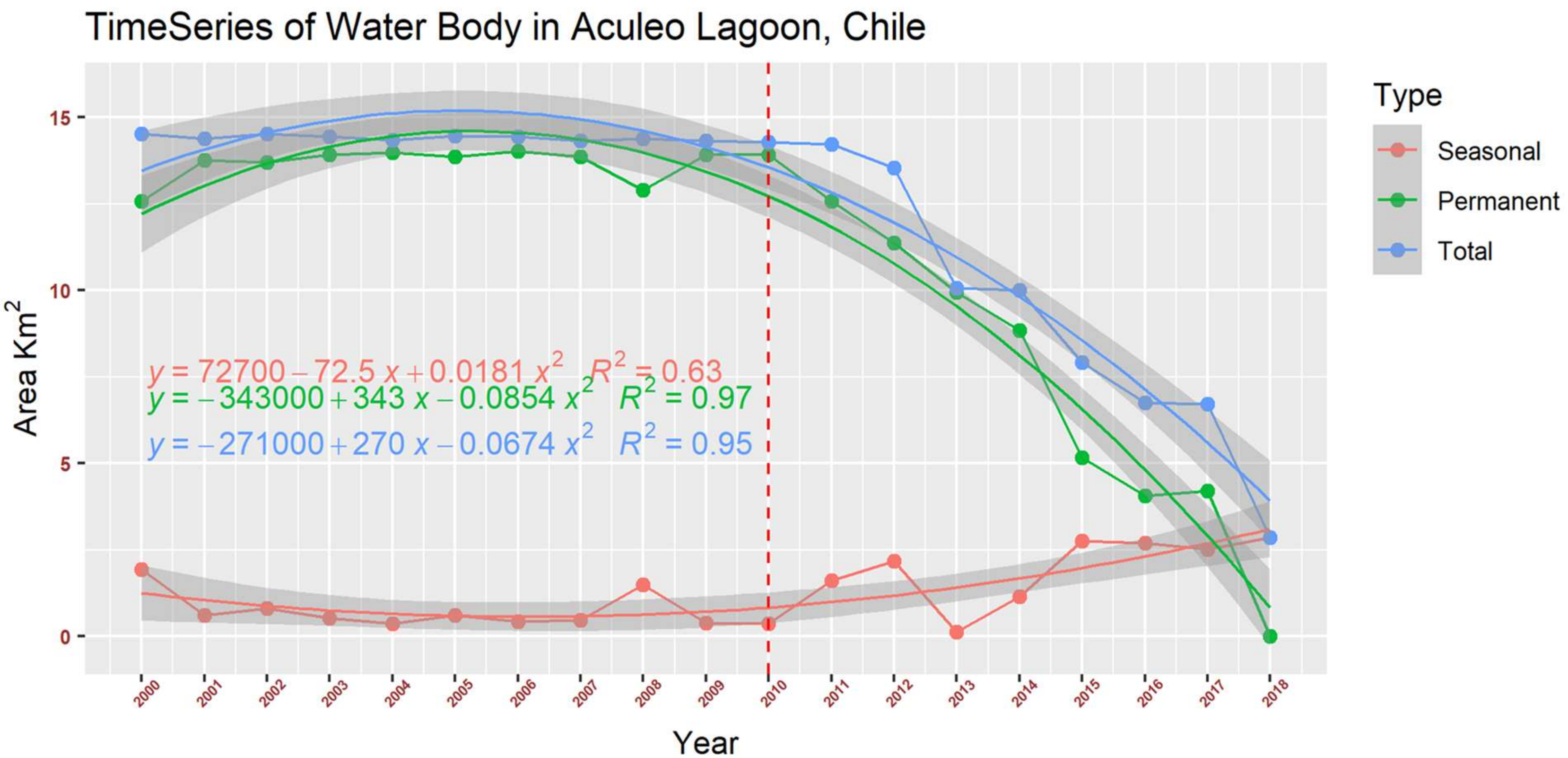
Source: Own elaboration

Sentinel 1

Why use GSWE?

- Pixel resolution (30 m).
- Global Surface Water Explorer (GSWE).
- Information between 2000-2018.

•Why use GSWE?



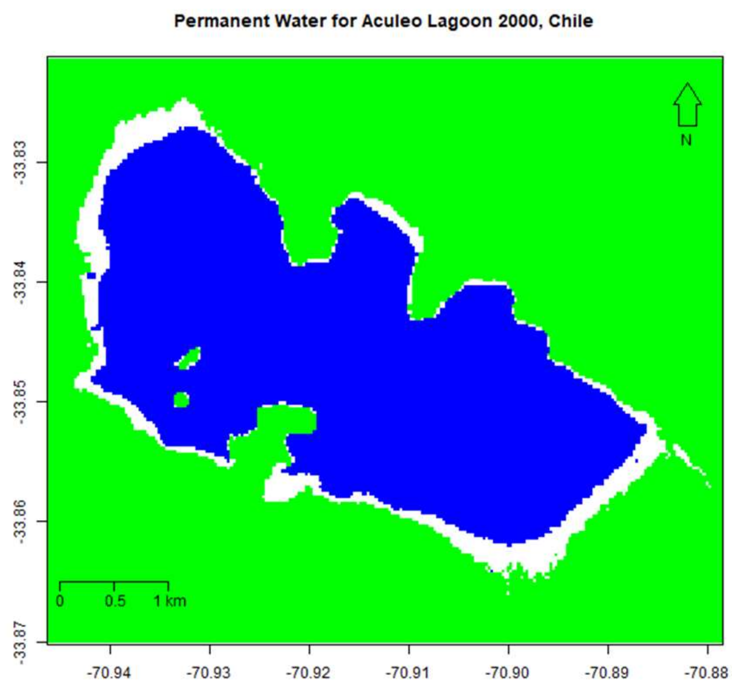
Source: JRC/Google

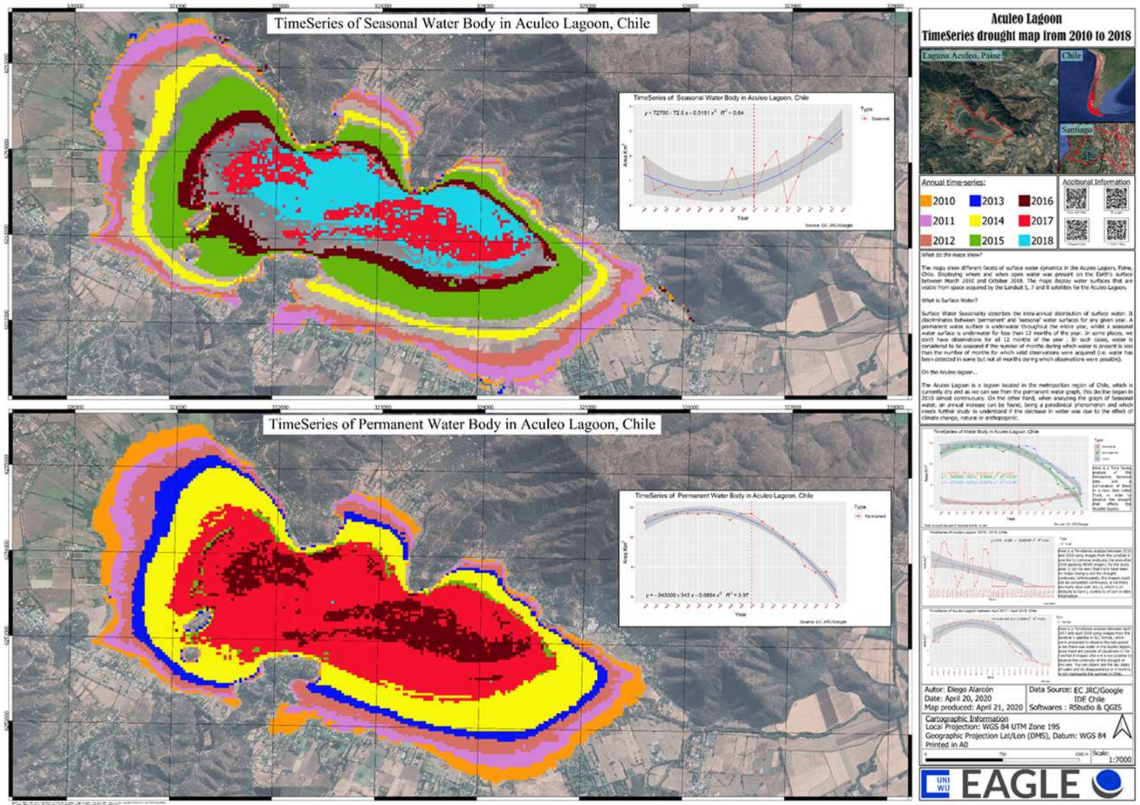
Possible conclusions for future studies

- Continuity (no cloud cover).
- Combine with Sentinel-2 or other optical satellites.
- Coordinate with authorities for possible future studies.
- More..

Study

- https://github.com/diegoalarc/Test__MB1_and_MB2





Questions

[Paper – D. Alarcón](#)

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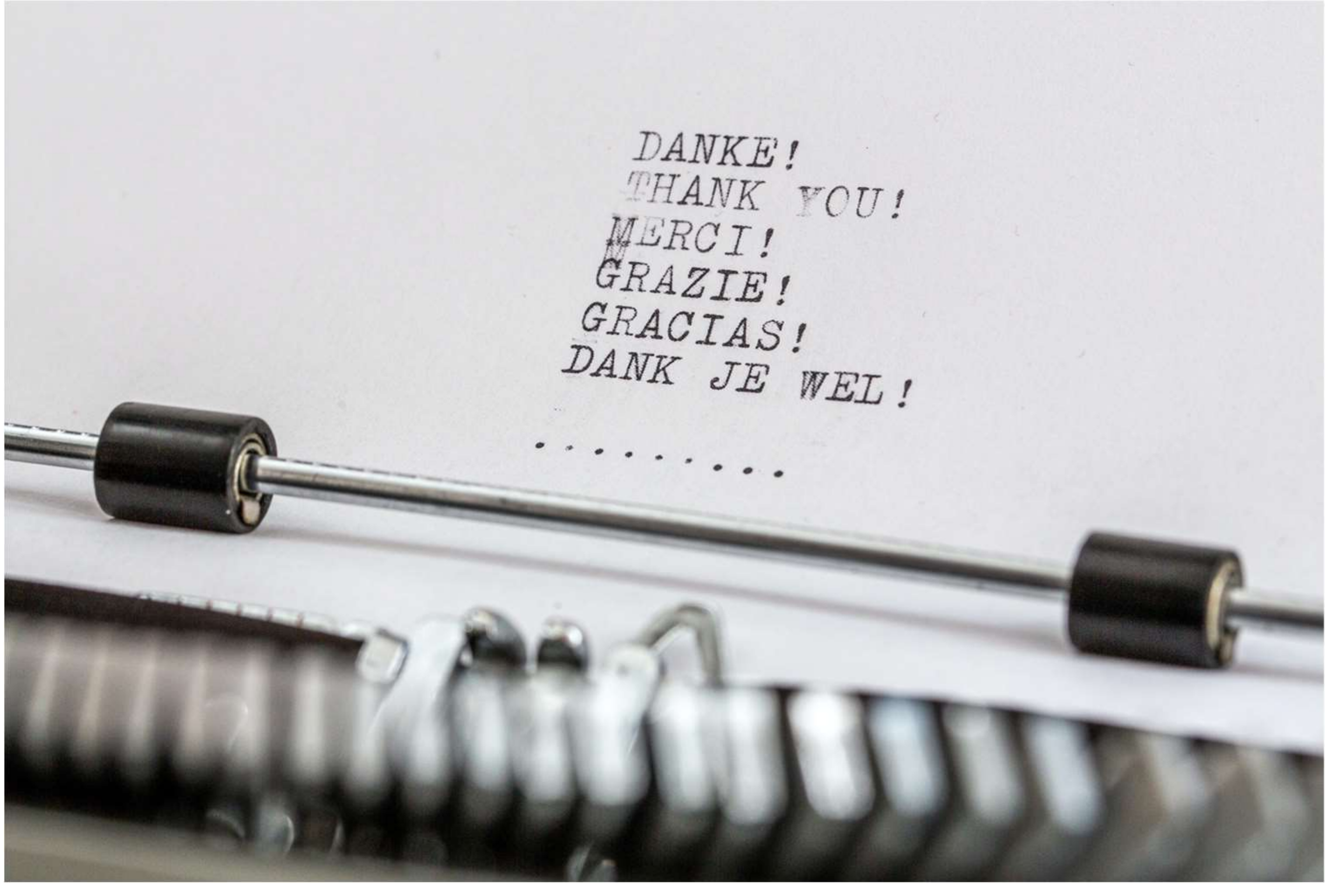
y del Global Surface Water E›

RESUMEN

La laguna de Aculeo está ubicada en la comuna
Región Metropolitana de Chile. A partir del añ
de su cuerpo de agua experimentó uno de los
bios evidenciados en el país y que, en el 2018,
completamente seca. Este documento intenta m
bios en este cuerpo de agua, mediante los produ
Single Look Complex (SLC), de Sentinel-1A y 1B
la Comisión Europea del Global Surface Wate
datos obtenidos de Sentinel-1 corresponden a
prendido entre abril de 2017 a abril de 2018. Es


DANKE!
THANK YOU!
MERCI!
GRAZIE!
GRACIAS!
DANK JE WEL!
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