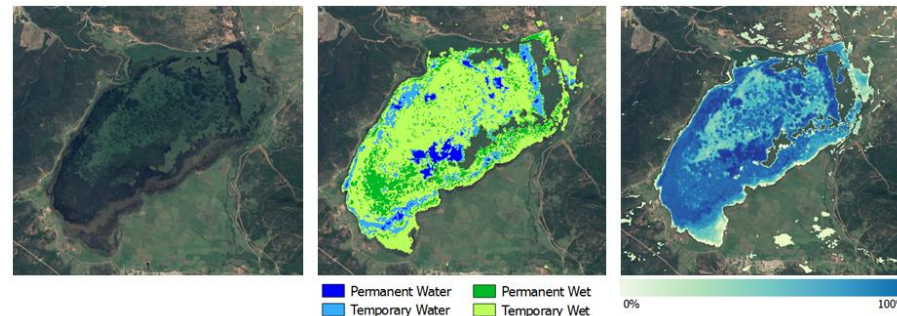


# Wetland Inventory



**Description:** The Wetland inventory workflow provides the functionality to derive a raster-based delineation of wetland/non-wetland in wetland-prone areas. The creation of the wetland inventory is based on a multi-temporal classification approach using optical and radar data (if available in sufficient quantity). Water and wetness frequency parameters are separately derived for both datasets and fused in the end to give an accurate delineation of delineation of wet areas as a support to wetland inventories. In the optical approach, Sentinel-2 MSI imagery is used to derive water and wetness probabilities from combining spectral indices and dynamic thresholding techniques. The resulting multi-temporal classifications are then aggregated to derive water and wetness frequencies, the Water-Wetness-Probability Index (WWPI) and a wetland classification map. The radar-based algorithm builds on geophysical parameters, surface soil moisture dynamics and water bodies, derived from historical Envisat ASAR and Sentinel-1 backscatter time series to identify permanent/temporary wet and flooded areas. Processing of the radar data cannot be done within the toolbox, due to the heavy data load necessary to create the information layers.

After the separate processing of the optical and radar imagery, the data is fused into a combined water and wetness product making use of the advantages of both sensor systems.



**Product :** Wetland Inventory (Wetland Classification/Delineation [center] and Water and Wetness Probability Index [right])

**Location:** Lake Tonga, Algeria

**Input imagery:** Sentinel-1/Sentinel-2

**Time period:** 2015/2016

**Spatial resolution:** 20 meters

**Accuracy:** +85% overall and individual class accuracy

