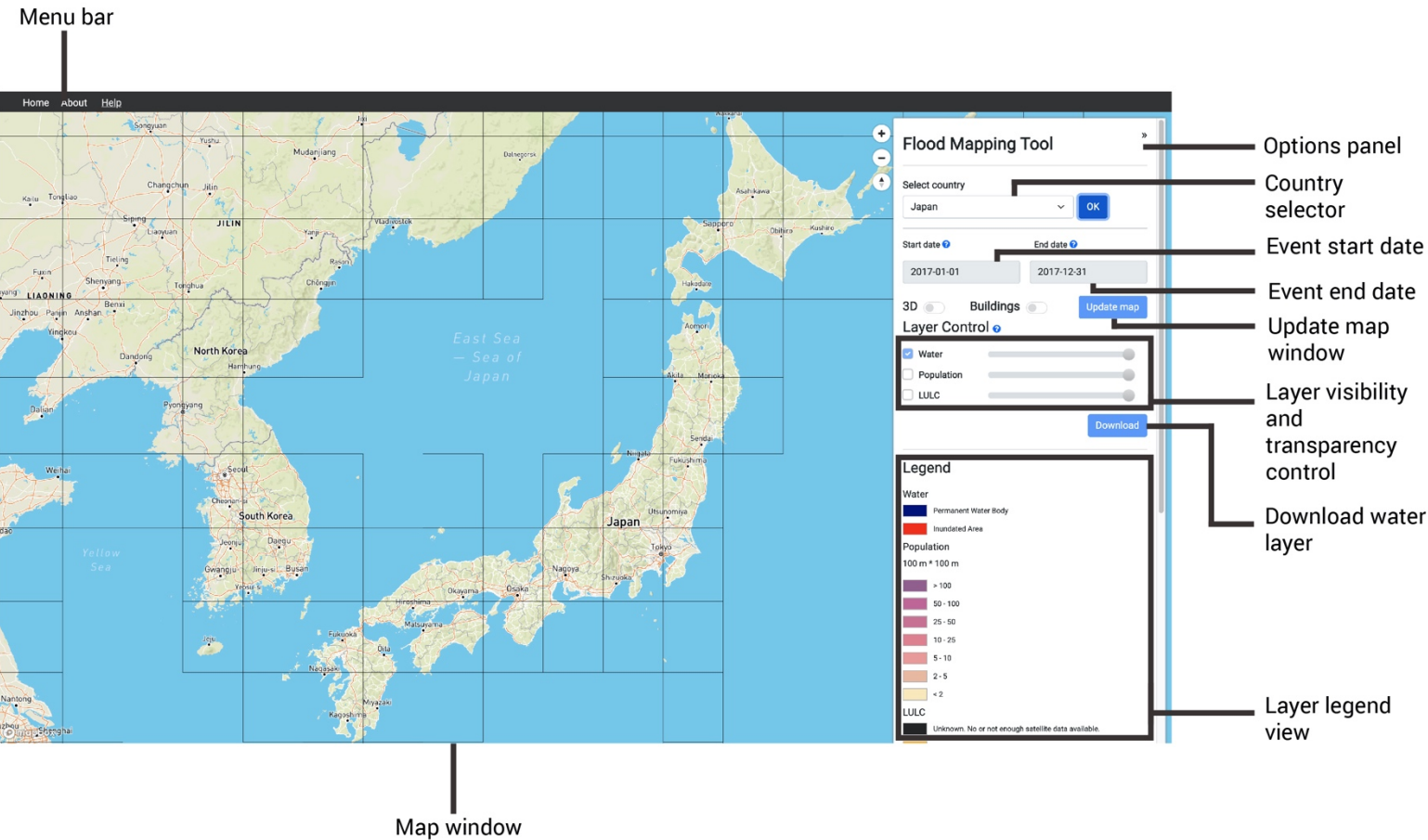# Flood Mapping Tool User Guide

Flood mapping tool (FMT) is the first tool released as part of the Web-based Spatial Decision Support System (WSDSS) to address flood-related information gaps in the currently available flood early warning and risk management systems. The FMT generates inundation maps for significant floods from 1984 till the present using open Earth data. The tool applies a water classification algorithm to 'stacks' of historical satellite imagery derived from Landsat to reveal inundation patterns over space and time. FMT is a hindcast tool that allows impacts of inundation on various socio-economic sectors to be analyzed.

There are three sections in this guide

1. Interface overview

2. Flood mapping tool operation

3. Acknowledgements and further reading

Interface overview

Menu bar

Map window

Options panel

Country selector

Event start date

Event end date

Update map window

Layer visibility and transparency control

Download water layer

Layer legend view

Flood Mapping Tool

Select country

Japan   OK

Start date   End date

2017-01-01   2017-12-31

3D   Buildings   Update map

Layer Control

☑ Water

☐ Population

☐ LULC

Download

Legend

Water

■ Permanent Water Body

■ Inundated Area

Population

100 m * 100 m

> 100

50 - 100

25 - 50

10 - 25

5 - 10

2 - 5

< 2

LULC

Unknown. No or not enough satellite data available.

Home   About   Help

Flood mapping tool operation

This section shows steps to operate the tool
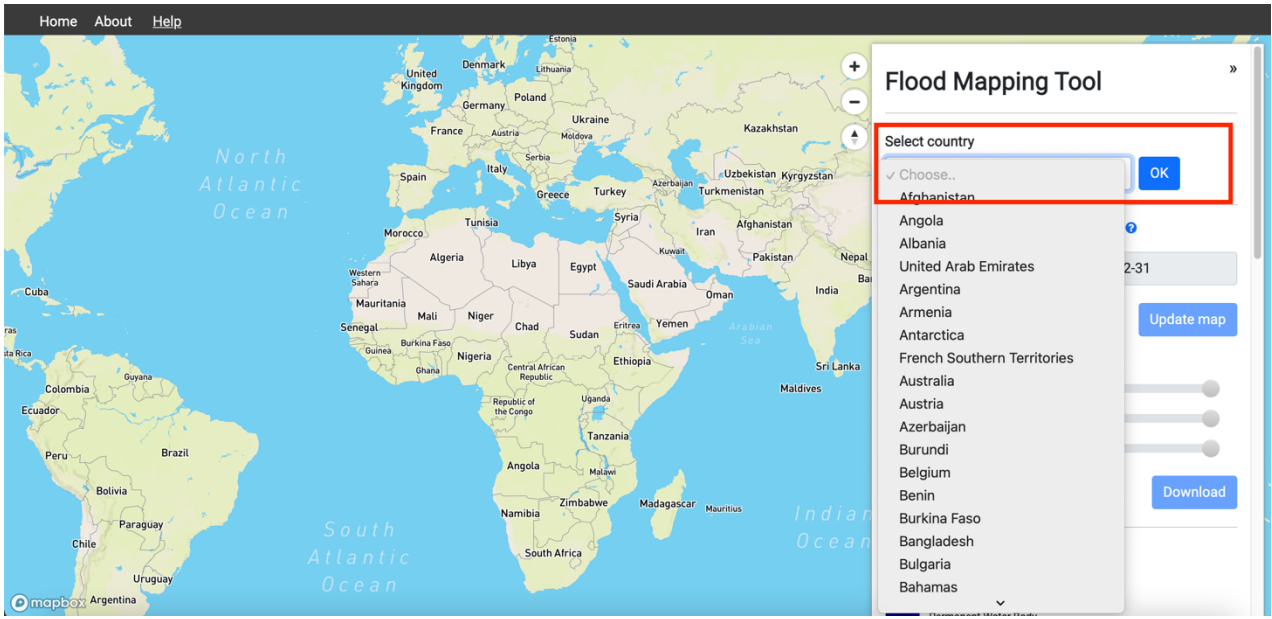
1. Browse to **https://floodmapping.inweh.unu.edu/** to access the tool
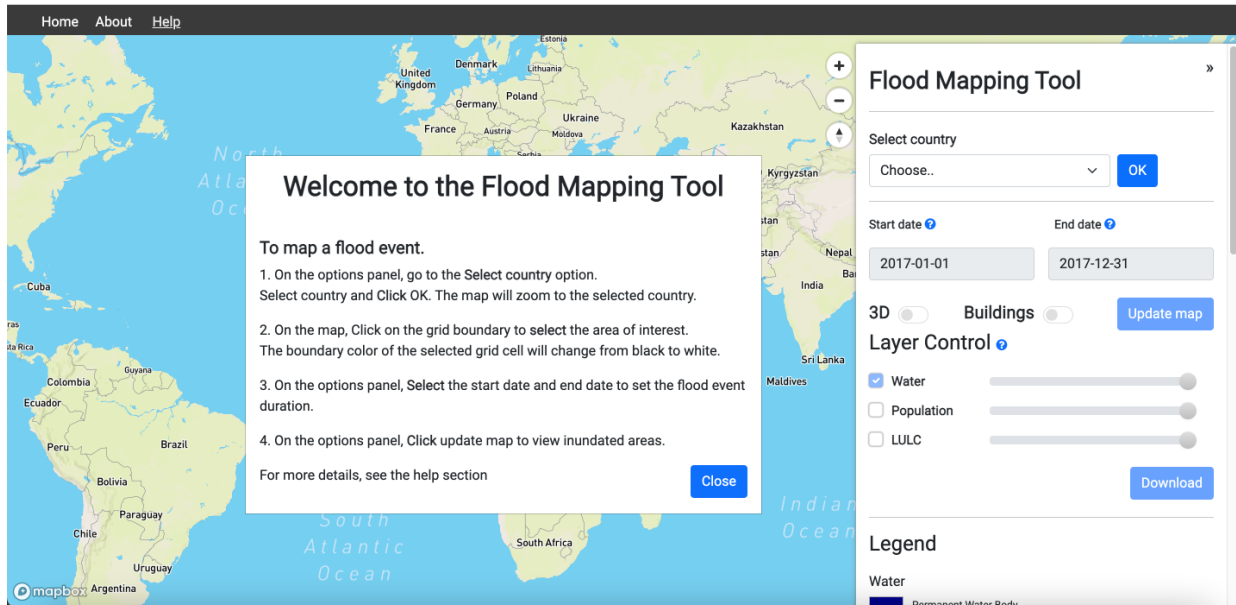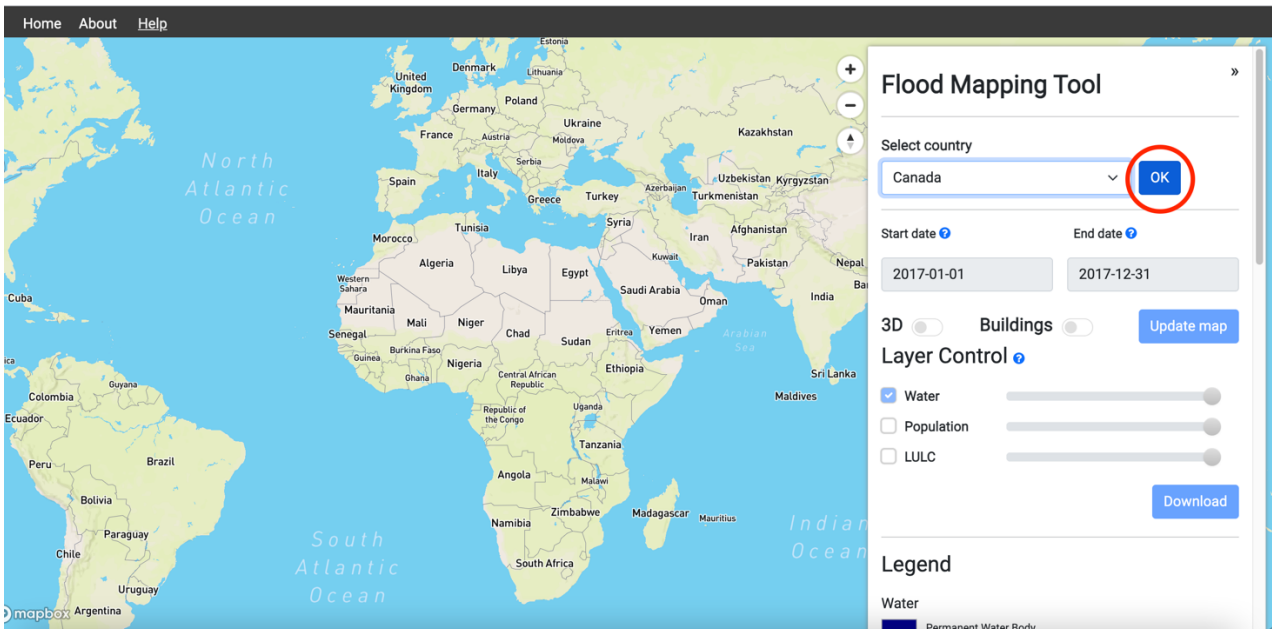

2. On the pop-up, **Click Close** to enable the controls on the options panel
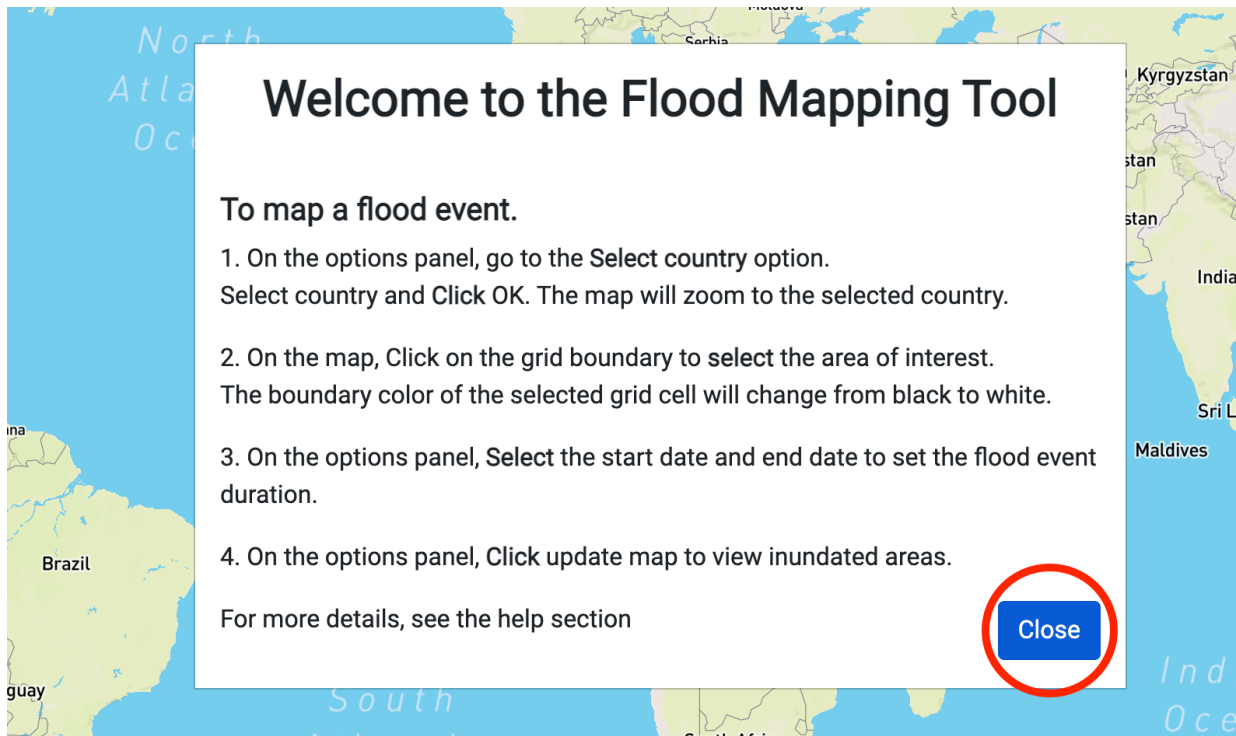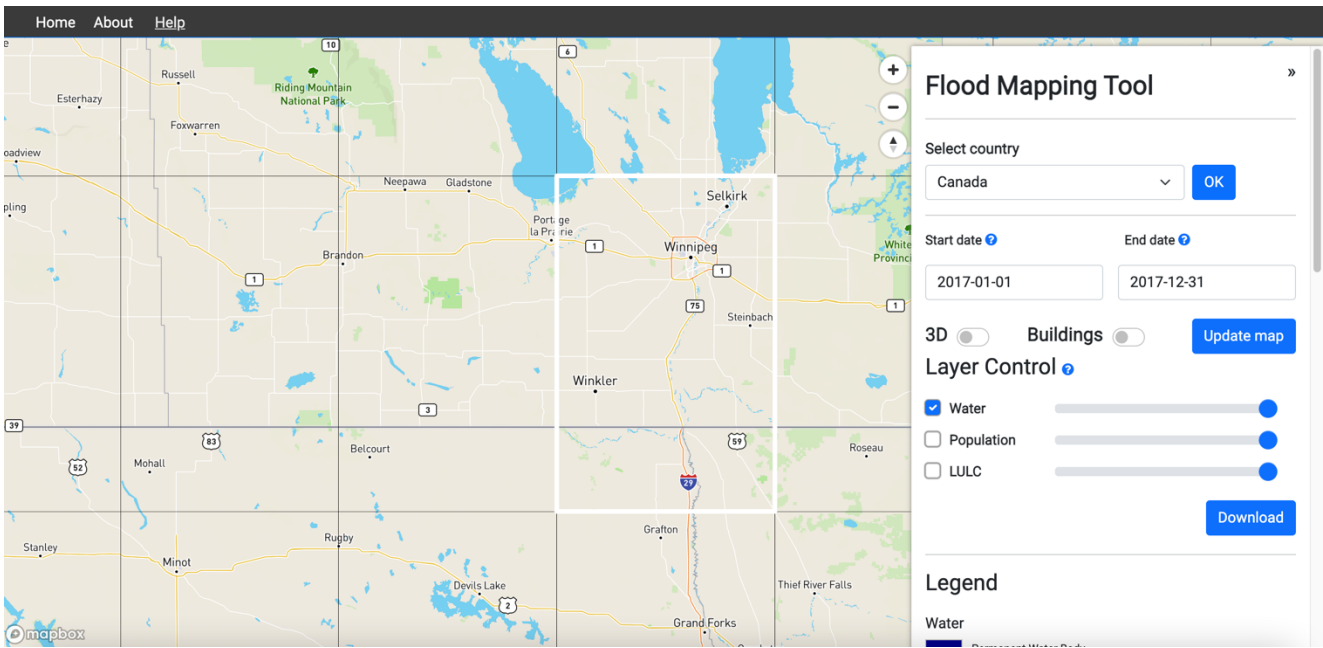
3. On the options panel, go to the **Select country** option.

4. Select country and **Click** OK. The map will zoom to the selected country.

5. On the map, click on the grid boundary to **select** the area of interest.
The boundary color of the selected grid cell will change from black to white.

6. **Select** the start date and end date on the options panel to set the flood event duration.

Add 30-45 days to the start date before the flood event and another 30-45 days to the end date after the flood events. This will help the flood mapping algorithm to pick up inundated areas with better accuracy
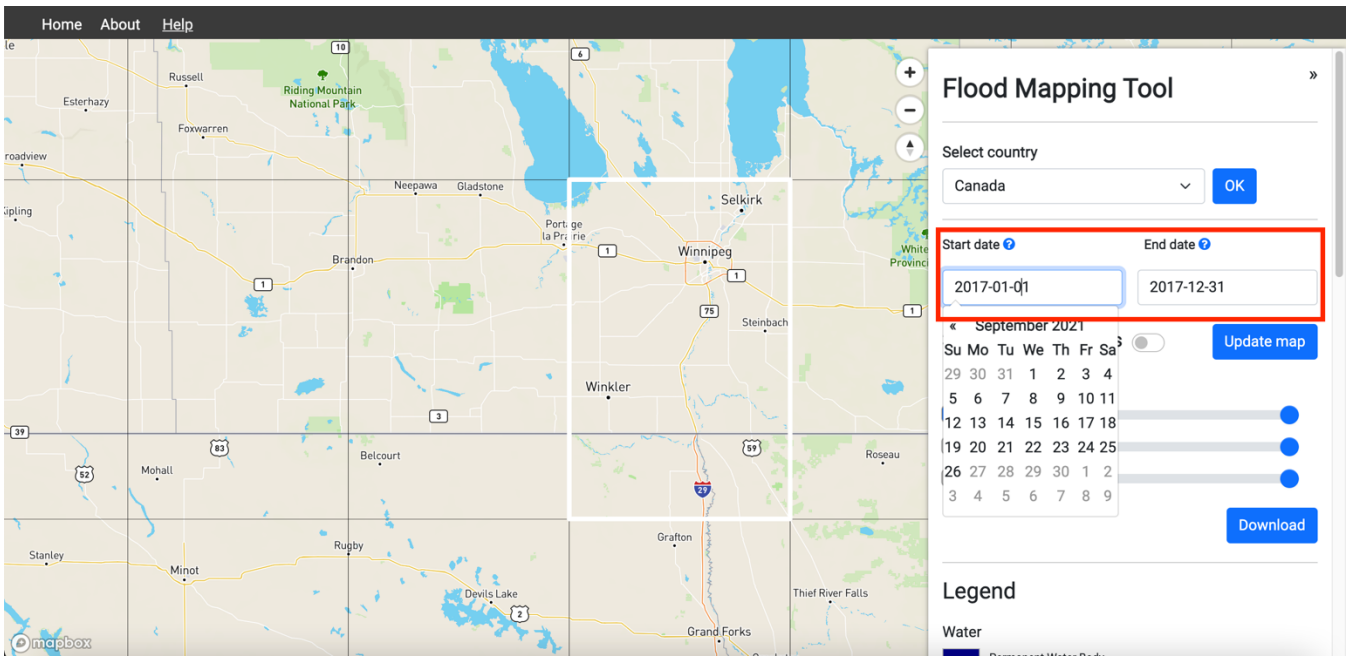
7. On the options panel, **Click** update map to view inundated areas.
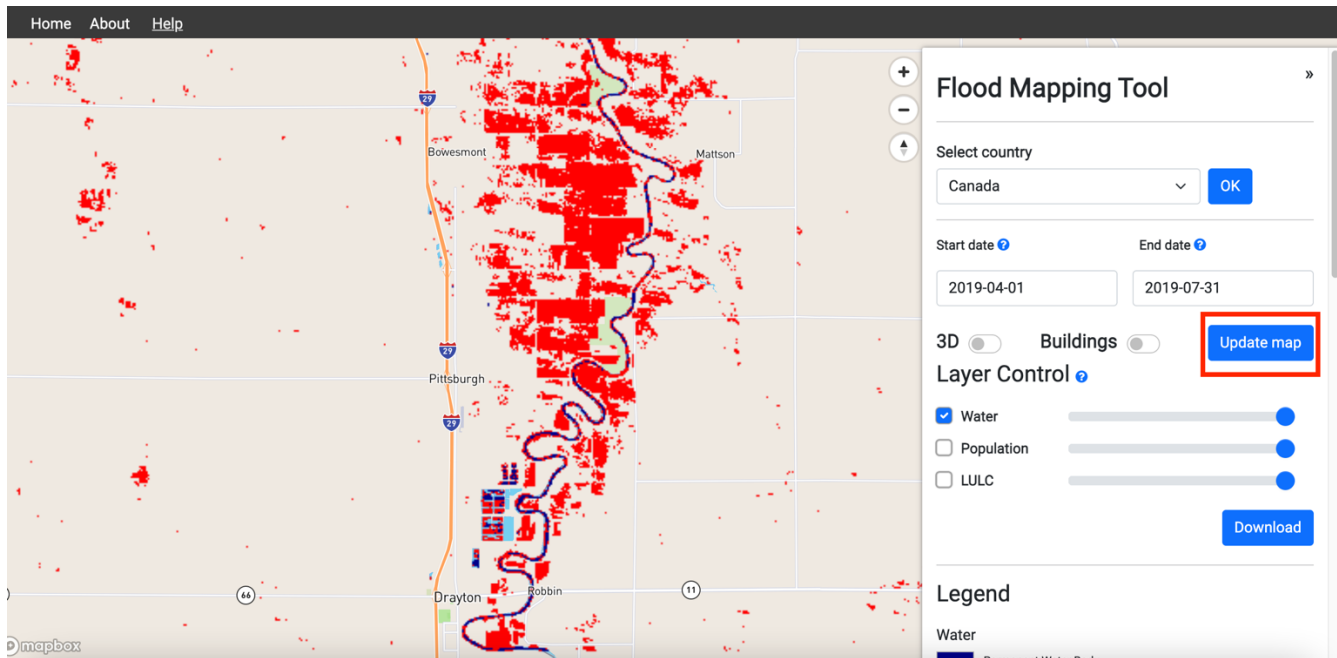
8. On the options panel, Click **Checkboxes** to turn on the population layer and the LULC layers, use the sliders to adjust the transparency
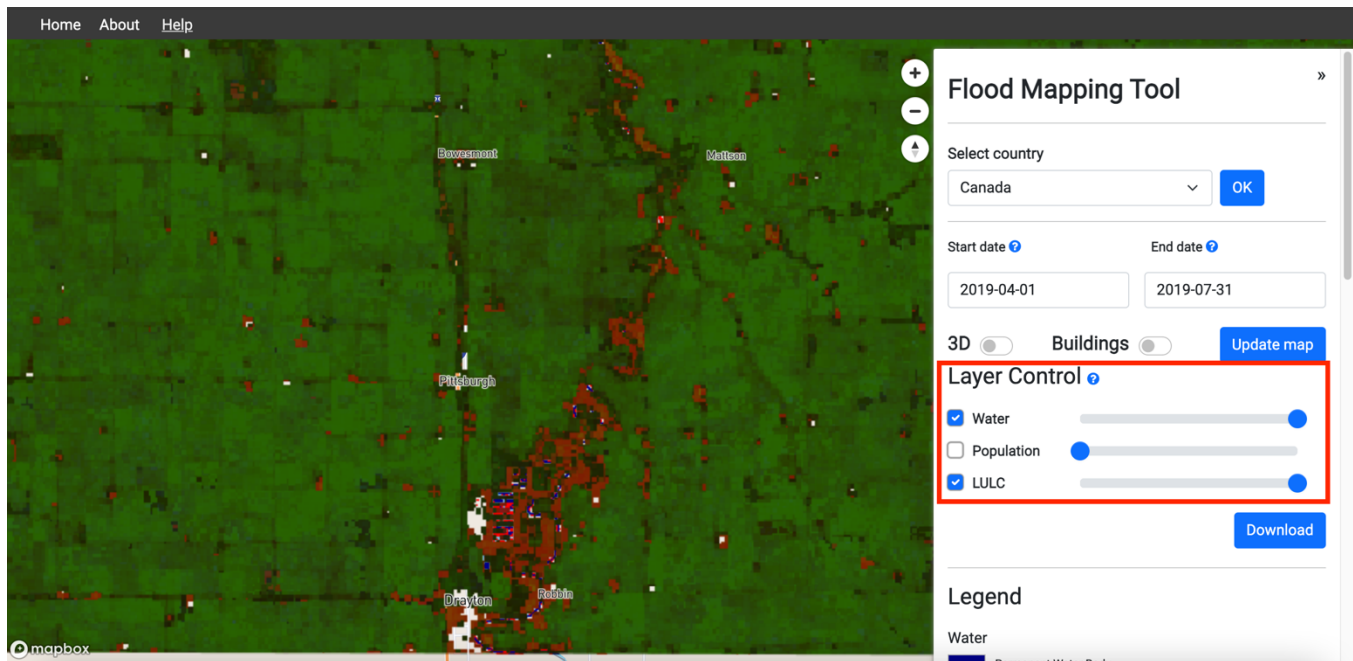
9. On the options panel, click the **Download** button to download the inundation map as a GeoTIFF file. When promoted, enter your Gmail email address. You will receive an email with the link to the Google Drive folder where you can download the GeoTIFF file
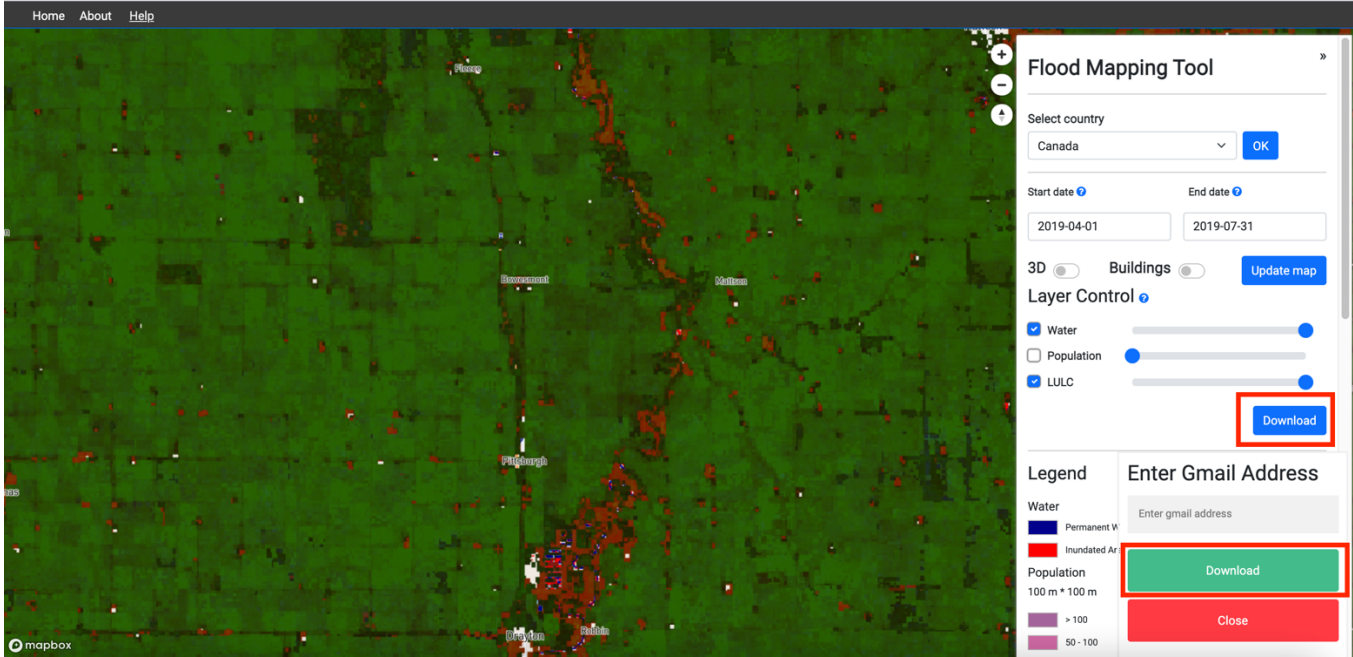
10. Use the **Toggle button** on the options panel to enable 3D view (hold CTRL when clicking and dragging to tilt and rotate the map)
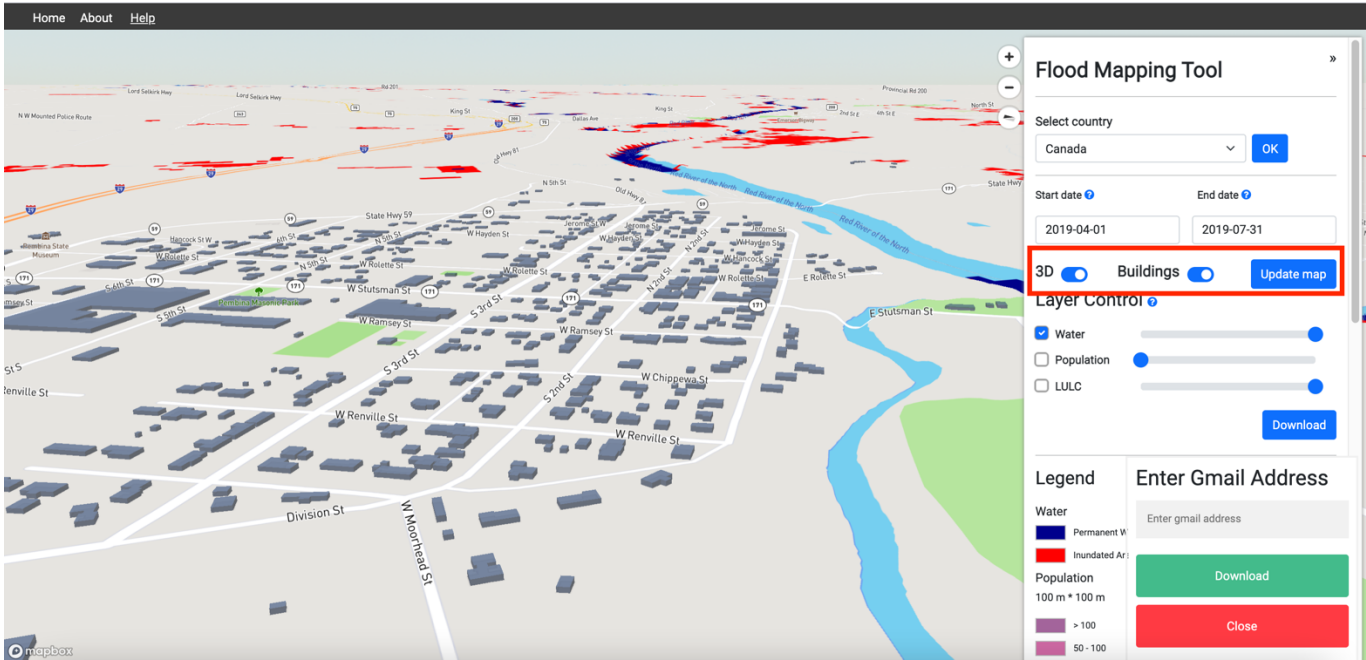
Acknowledgments and further reading

Acknowledgments:

Developers:

Hamid Mehmood, Duminda Perera, Sami Kurani, and Crystal Conway

Further reading:

Mapping of Flood Areas Using Landsat with Google Earth Engine Cloud Platform

A 30 m Resolution Surface Water Mask Including Estimation of Positional and Thematic Differences Using Landsat 8, SRTM and OpenStreetMap: A Case Study in the Murray-Darling Basin, Australia

High-resolution mapping of global surface water and its long-term changes