



# Monitoring and Predicting Floods Using Earth Observations for Planning and Preparedness

Exercise 1: Examine Recent Flood Event in South Sudan using Global Flood Product

# Recent Flood in South Sudan

- South Sudan has experienced severe flooding the past several years, with severe seasonal flooding during May and June 2026, displacing approximately 375,600 people and impacting over 1.35 million ([FEWS NET](#)).
- The most affected areas are in the states of Jonglei and Unity ([Reliefweb](#)).
- In this exercise we will examine flooded areas in South Sudan observed from Global Flood Product using [Worldview](#).

## Important Notes:

- After going through this exercise, you will save the link to the Worldview page in a document for further use after the next training session.
- **Some of your homework questions will be based on this exercise.**



# Open and Explore Features of Worldview

## 1. Open [Worldview](#)

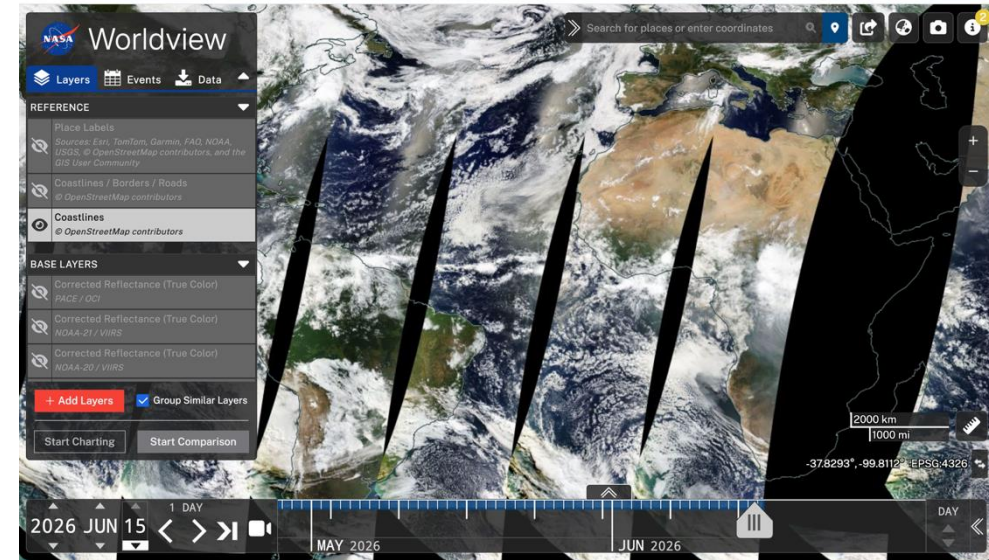
The screenshot shows the NASA Worldview interface with several features highlighted by red boxes and labels:

- REFERENCE Layers:** A red bracket on the left side of the 'REFERENCE' layer list.
- BASE Layers:** A red bracket on the left side of the 'BASE LAYERS' list.
- Select Data Layer:** A red arrow pointing to the '+ Add Layers' button.
- Select Location:** A red box around the search bar containing the text 'Search for places or enter coordinates'.
- Share this map:** A red arrow pointing to the share icon in the top right toolbar.
- Take a snapshot:** A red arrow pointing to the camera icon in the top right toolbar.
- Zoom In/Out:** A red box around the zoom controls (+ and - buttons).
- Coordinates at Computer Cursor:** A red box around the coordinate display showing '-37.8293°, -99.8112° EPSG:4326'.
- Select Time:** A red box around the time navigation controls at the bottom, showing '2026 JUN 15' and '1 DAY'.



# Add Reference and Base Layers

1. Open [Worldview](#)
2. From the left panel under the **Layers** tab:
  - Click on the eye symbol to activate **REFERENCE** → **Place Labels** and **Coastlines / Borders / Roads** to help you navigate & orient yourself.
  - Similarly, activate the following **BASE LAYERS**:
    - Corrected Reflectance (True Color) NOAA-21/VIIRS
    - Corrected Reflectance (True Color) NOAA-20/VIIRS
    - Corrected Reflectance (True Color) Aqua/MODIS
    - Corrected Reflectance (True Color) Terra/MODIS
3. Zoom in/out to focus on any area of your interest.
4. Click the timeline arrows at the bottom left to explore daily True Color images for May–June 2026. Explore other years.



# Add Global Flood Product Data Layers

5. In the left panel click on **+ Add Layers**.  
This will open a layer selection window
6. In the **Search** window at the top, type **Flood**. Several data options will appear in the layer window.
7. Select the following layers:
  - Flood (2-Day Window) NOAA-20 and NOAA-21/VIIRS
  - Flood (3-Day Window) NOAA-20 and NOAA-21/VIIRS
  - Flood (2-Day Window) Terra and Aqua/MODIS
  - Flood (3-Day Window) Terra and Aqua/MODIS
8. Close the window by clicking **X** to the right of the Search window.

← Reset Flood

Showing 9 out of 1265

| Filter Category | Filter Option                  | Count |
|-----------------|--------------------------------|-------|
| COVERAGE        | Available 2026 MAY 15          | 6     |
|                 | Always Available               | 3     |
| CATEGORY        | Floods                         | 9     |
|                 | Terrestrial Hydrosphere        | 9     |
|                 | Human Dimensions               | 3     |
|                 | Severe Storms                  | 3     |
| MEASUREMENTS    | Flood                          | 6     |
|                 | Flood Hazard                   | 3     |
|                 | Surface Water Extent           | 2     |
| SOURCE          | NOAA-20 and NOAA-21/VIIRS      | 2     |
|                 | Terra and Aqua / MODIS         | 2     |
|                 | DSWx-HLS                       | 1     |
|                 | DSWx-S1                        | 1     |
|                 | Flood Hazard Frequency and ... | 1     |
| + More          |                                |       |
| PERIOD          | Daily                          | 6     |

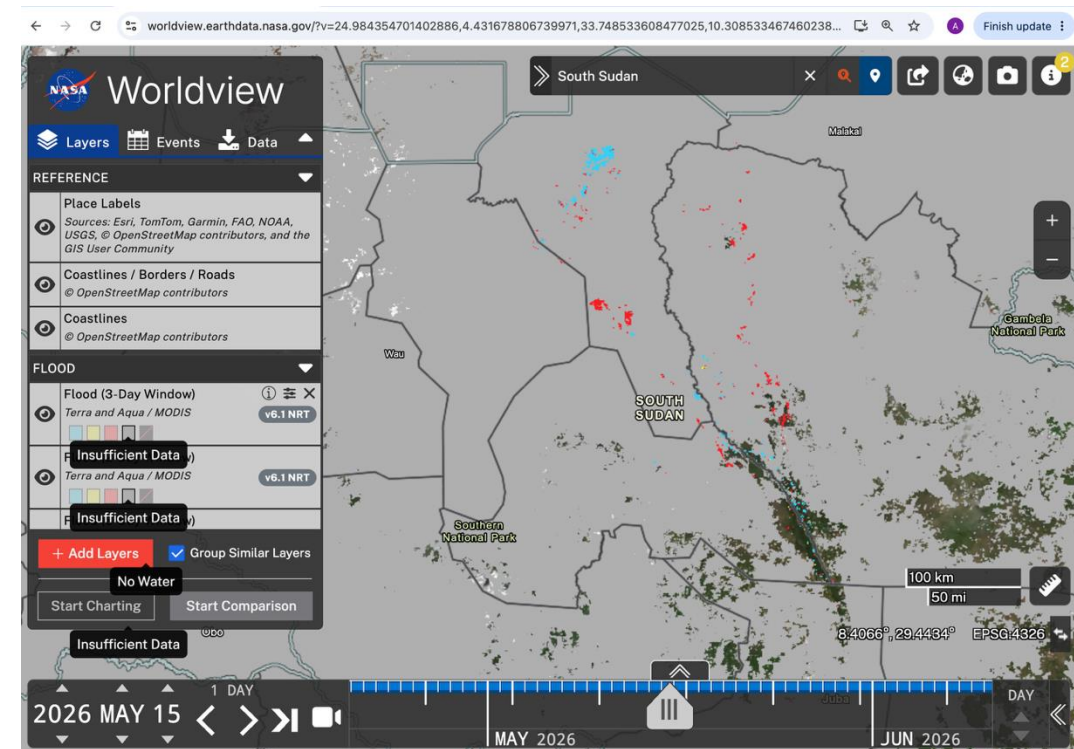
  

| Layer Name                               | Source   | Status       |
|--|--|--------------|
| OPERA Dynamic Surface Water Extent (L3)  | DSWx-S1  | Not Selected |
| OPERA Dynamic Surface Water Extent (L3)  | DSWx-HLS   | Not Selected |
| Flood (2-Day Window)                     | NOAA-20 and NOAA-21/VIIRS                                | Selected     |
| Flood (3-Day Window)                     | NOAA-20 and NOAA-21/VIIRS                                | Selected     |
| Flood (2-Day Window)                     | Terra and Aqua / MODIS                                   | Selected     |
| Flood (3-Day Window)                     | Terra and Aqua / MODIS                                   | Selected     |
| Flood Hazard: Frequency and Distribution | Flood Hazard Frequency and Distribution, v1 (1985-2003)  | Not Selected |
| Flood Hazard: Mortality Risk             | Global Flood Mortality Risks and Distribution, v1 (2000) | Not Selected |





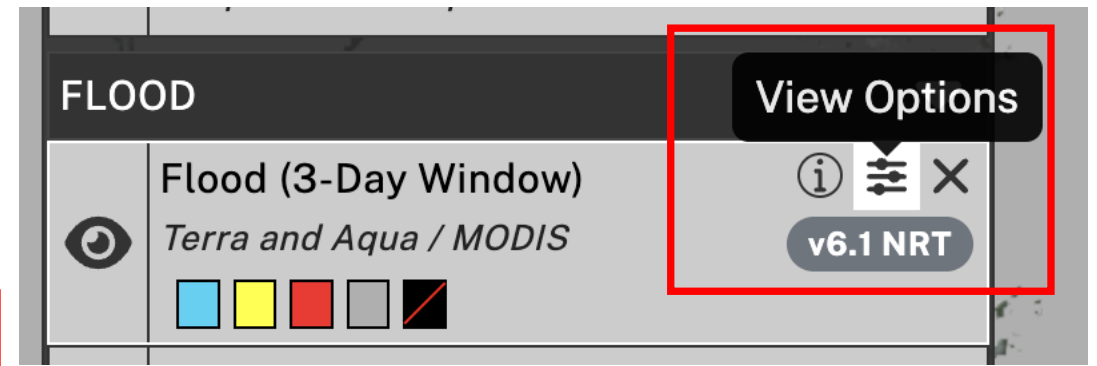
# Examine the Global Flood Product Layers

9. First navigate to 15 May 2026 using the timeline at the bottom.
10. In the **Search for places or enter coordinates** type **South Sudan** and click return. The map will zoom to South Sudan.
11. Examine each Flood layer (2-day and 3-day window layers from NOAA-20 & -21/VIIRS, and Terra & Aqua/MODIS) one at a time using the eye icon to turn the layers off and on.
12. Click through May 15 to 31 while repeating Step 11 to see flooded areas in red. Notice how different products capture flooded areas and see which areas portions show insufficient data (in grey).



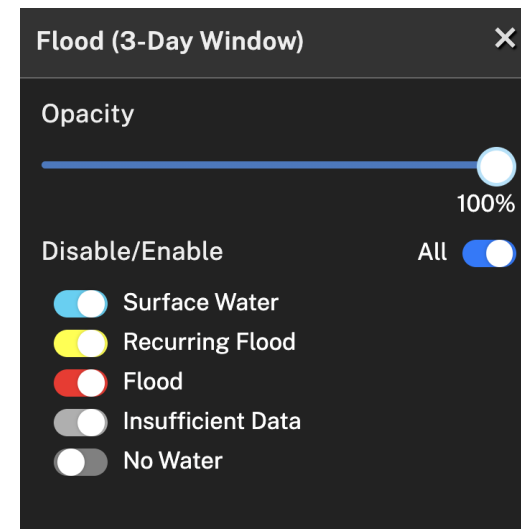
# Examine the Global Flood Product Layers

13. Hover over any Flood Layer to get the **View Options**.
- Click on  for information about the data layer.
  - Click on  to see the color legend for the layer.



14. Navigate to 31 May. Zoom in to examine details of flooded areas, comparing each Flood layer.

**Question:** Which product shows maximum flooded area in South Sudan, and which product has maximum insufficient data to detect floods?



# Save the Worldview Link

15. Finally, click on the arrow at the top right to get **Share** window. Select **Shorten link** and then click **copy**.

- You will see a message: **Copied!**
- Now open a word document on your computer, paste the link and save the document. **You will be using this link in your next exercise.**

