



NASA Earth Observation Workshop Series – Session 1

Hands on Exercises – Sunday July 19th, 2026

1. Worldview Exercise

Step 1. Navigate to Worldview:

<https://worldview.earthdata.nasa.gov/>

Step 2. Choose a flooding event location from the provided list and locate it in Worldview

1. Upper Midwest (Southern Minnesota to Northwest Iowa) June 16th-23rd, 2024
2. Fort Lauderdale Flash Flood April 12th-13th, 2023
3. Hill Country Texas (Kerr County) July 4th, 2025
4. Pacific Northwest Atmospheric River (Whatcom County) Dec 2nd, 2025

Step 3 Explore the data

- Variables to explore:
 1. True Color Base Layers and Reference Layers

2. GPM IMERG
 3. SMAP Soil Moisture
 4. Land Surface Reflectance: Terra MODIS (Bands 1-2-1)250m or Landsat 8 & 9/ OLI (Vegetation Analysis False Color, Bands 6-5-4)30m
- Tools to explore:
 1. Temporal comparison tool
 2. Charting tool
 3. Generating an animation
 4. Snapshot tool

2. Rangeland Analysis Platform Exercise

Step 1. In small groups or individually select a rangeland ecosystem of interest explore

- *Large ranching areas in the U.S.:* Doughboy, NE, Falfurrias, TX, Scoville, ID, or Anselmo, NE
- *National Grasslands:* Pawnee National Grassland near Greeley, CO; Curlew National Grassland near Pocatello Idaho; or Cimarron National Grassland near Elkhart, KS

Step 2. Navigate to <https://rangelands.app/>

Step 3. Explore features and tools such as:

- RAP Web map (vegetation covers, different resolution products, export csv files)
- Production Explorer

1. Time series of herbaceous vegetation production
(explore different reports, plot different years,
download plot as a PNG)
 2. Explore historical production and Calculate
stocking rates
- Herbaceous Production Report
 1. County level assessments, printing reports
 2. Deviation from historical average

3. STREAM / OpenET Exercise

Step 1. In small groups or individually, select either STREAM or OpenET

Step 2. Explore your selected tool

1. STREAM features to explore:

- Explore data availability for Sentinel-2 vs. Landsat grids for:
- Harmful Algal Blooms (HABS) with Chlorophyll-a: Lake Erie in Late June 2024; Oneida Lake, NY in mid August 2025
- Total Suspended Solids (TSS): Mississippi Delta; Missouri River, Coosa River
- Apply the true color layer for cloud pixel contamination
- Run time series analysis tool for preferred location

2. OpenET features to explore:

- Explore differences in evapotranspiration trends between different crop types using the field view explorer: Denver, CO; Lubbock, TX; Walla Walla, WA
- Explore the relationship between ET and additional variables such as precipitation and NDVI for both field and raster view
- Run time series analysis with customized polygons in raster view; explore data download
- Add fields to the FARMS tool, generate a report

Hands on Exercise Discussion Questions

- What tool did you choose to explore?
- Which products or layers did you select?
- Did you find any difficulties with the tools or data?
- Did you see anything interesting or notable?
- How might this apply to your work/how might you use these resources in the future?