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Worldview
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OVERVIEW

NASA's Earth Science Data and Information System (ESDIS) Worldview mapping application provides the capability to interactively browse over 1,200 global, full-resolution satellite imagery layers and then download the underlying data. Many of the available imagery layers are updated within three to four hours of observation, essentially showing the entire Earth as it looks "right now." This supports time-critical application areas such as wildfire management, air quality measurements, and flood monitoring. Imagery in Worldview is provided by NASA's Global Imagery Browse Services (GIBS).

For low bandwidth access to a selection of the most commonly used satellite imagery layers, users may want to try Worldview Snapshots as an alternative. Worldview Snapshots is a lightweight tool to rapidly create and download static images for users who may not need an interactive map and additional capabilities of the full Worldview application.

KEY FEATURES

- Daily, global imagery is generally available within three to four hours of satellite observation. Imagery from the year 2000 to present is available.
- Discover and add relevant layers by science discipline, by natural hazard, or by entering a keyword.
- Polar stereographic views for the Arctic and Antarctic regions provide a "full globe" perspective.
- Story-based tour stories highlight notable events, provides interesting information about the imagery, and contain tutorials on how to use Worldview.
- View current natural hazards and events using the Events tab which reveals a list of natural events, including wildfires, tropical storms, and volcanic eruptions.
- Take a snapshot of imagery/event for a single point in time. Image output formats include: JPEG and PNG with worldfile, GeoTIFF, and KML.
- Animate imagery over time — create animated GIFs to view events as they develop.
- Compare imagery from two different dates, or two sets of imagery from the same date, or even two set sof imagery from different dates with the Comparison feature.
- Share your maps using the share and link shortener functionality. Embed Worldview into a web page, StoryMap, or other web-based product.
- Browsing on smart phone and tablet devices is supported for mobile access to the imagery.

HOW TO USE WORLDVIEW

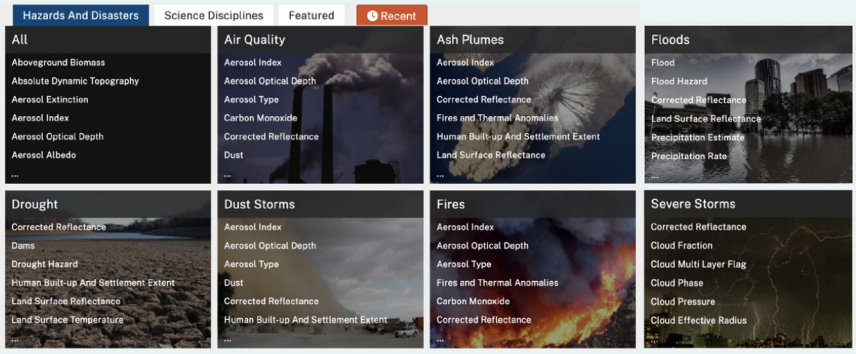
https://worldview.earthdata.nasa.gov/

Before you get started, first pan and zoom to your region of interest on the map.

Add Imagery Layers

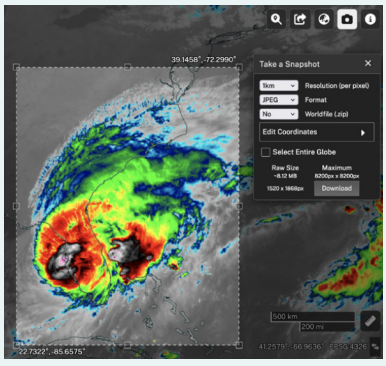
- Click on "Add Layers"
- Next you can either 1) Enter a keyword into the search bar 2) Click on the "Hazards and Disasters" tab or 3) Click on the "Science Disciplines" tab or 4) Click on the "Featured" tab
- Add layers to the map by checking the box.
- Change the date by selecting or typing in the date in the date box in the lower left corner, or click on the desired date in the timeline.

Tip: For information about imagery layers, click on the "i" icon in the layer list. To turn on/off layers, click on the eye icon in the layer list.

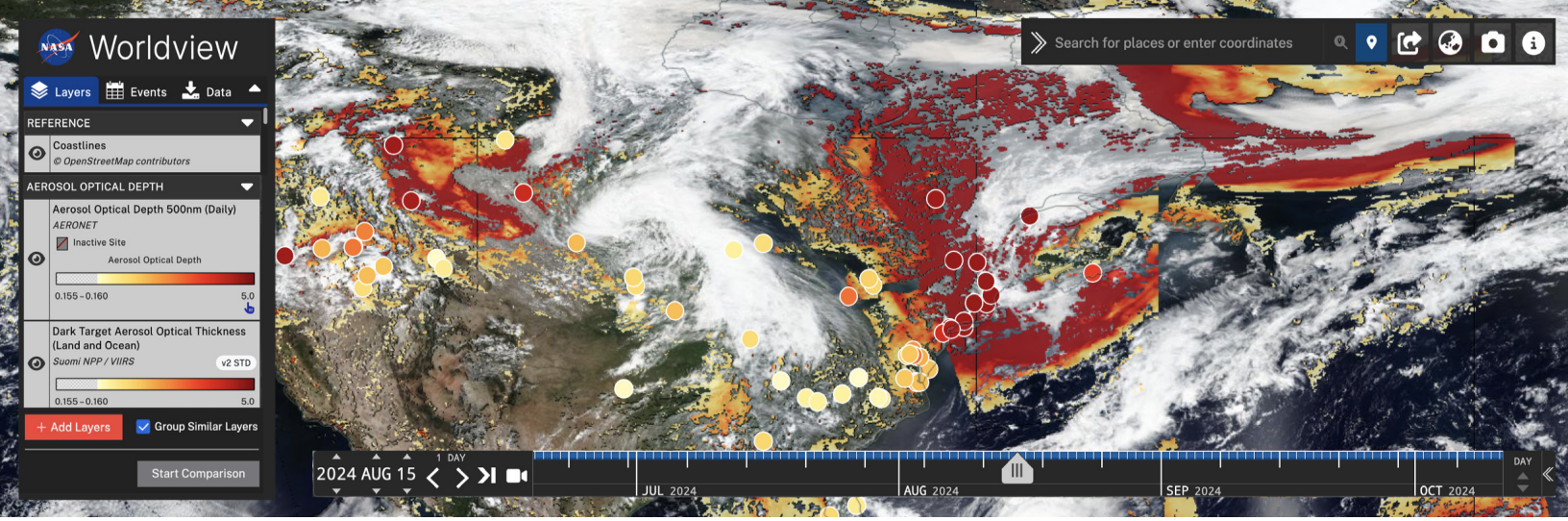


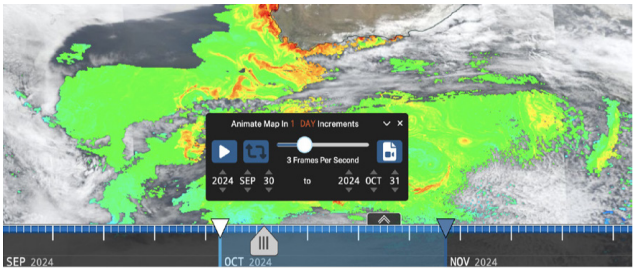
Take a Snapshot

- Click on Camera icon in the upper right corner.
- Select your area by dragging/ adjusting sides of the box.
- Select resolution and file format.
- Click the download button and your snapshot will open in a new window.



Tip: Select a coarser/lower resolution if your image is over the maximum size. You can also download a snapshot as a GeoTIFF, JPEG or PNG with Worldfile, and KMZ and bring it into your own GIS client.





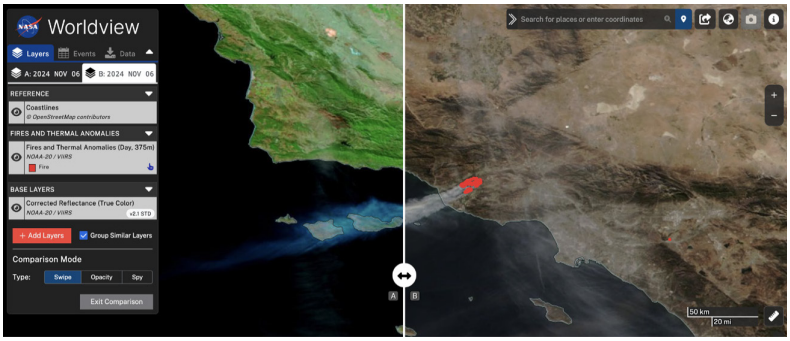
Create an Animated GIF

- Pan/zoom to your geographic region of interest.
- Click on “Add Layers” to filter by discipline, keyword, or natural hazard.
- Select your layer(s) of interest.
- Click on the video camera icon on the lower left corner.
- Select your desired date range using the up/down arrows in the animation menu bar, or drag the start and end date indicators on the timeline. Select the desired date increments to create subdaily, daily, monthly, yearly animations.
- You may also change the speed at which your animation plays by adjusting the frames per second; you can also ensure that the animation loops/automatically replays by clicking on the “Loop video” icon.
- You can play the animation directly in the browser or click the “Create an animated GIF” video camera icon in the animation widget to download the GIF to your computer. Select your area of interest by dragging/adjusting sides of the box.
- Select your desired resolution and whether you would like the date stamps included in the animated GIF.
- Click on “Create GIF” button to create the GIF.
- Click “Download” to save your animated GIF to your computer.

Compare Imagery

- Click on “Start Comparison” and the screen and the layer list splits into two sides, the A and B sides.
- Add layers and change the date for the A side in the layer list by clicking on the active/highlighted A tab. Do the same for the B side.
- Click on the Swipe icon in the center of the screen and drag the icon back and forth sideways to see the differences between the A and B side.
- You can also change the compare mode to “Opacity” where you fade between A and B and “Spy” where a spyglass is shown over the map and the tab that is active is the map, and the spyglass is the inactive tab.
- Click on “Exit Comparison” to return to the regular view.

Tip: Compare imagery from two different dates, or compare two sets of imagery layers from the same date, or even two sets of imagery layers from different dates.



Share Your Maps

- Click on the “Share this map” icon in the upper right corner.
- Copy the link in the “Copy URL to share link” box and/or click on the “Shorten Link” checkbox to get a shorter link to share.

Tip: You can share the map with certain features activated too. If you’re in comparison mode, you can share the direct link to that comparison. If you have the animation set up for specific dates and layers, you can share a direct link to that animation in Worldview. If you’ve selected a specific event, you can share the link with others and the link will take them directly to that event.

Useful Layers for Highlighting Specific Hazard and Disaster Events

SEVERE STORMS

- Corrected Reflectance (True Color) from Terra/MODIS, Aqua/MODIS, Suomi-NPP/VIIRS, NOAA-20/VIIRS, and NOAA-21/VIIRS
- Black Marble Nighttime At Sensor Radiance (Day/Night Band) from Suomi NPP/VIIRS, and NOAA-20/VIIRS
- Black Marble Nighttime Blue/Yellow Composite (Day/Night Band) from Suomi NPP/VIIRS, and NOAA-20/VIIRS
- IMERG Precipitation Rate

Tip: Add the corresponding Orbit & Track overpass time layers to find the approximate time the image was retrieved. If you are viewing Corrected Reflectance from Terra/MODIS, add the Terra daytime orbit tracks.

FLOODS, BURN SCARS

- Corrected Reflectance (Bands 7-2-1) from Terra/MODIS, and Aqua/MODIS
- Corrected Reflectance (Bands M11-I2-I1) from Suomi-NPP/VIIRS, NOAA-20/VIIRS, and NOAA-21/VIIRS
- Flood 2-Day Window and 3-Day Window from Terra and Aqua/MODIS

WILDFIRES

- Corrected Reflectance (Bands 7-2-1) from Terra/MODIS, and Aqua/MODIS)
- Corrected Reflectance (Bands M11-I2-I1) from Suomi-NPP/VIIRS, NOAA-20/VIIRS, and NOAA-21/VIIRS
- Fires and Thermal Anomalies (Day and Night) from Terra/MODIS, Aqua/MODIS, Suomi-NPP/VIIRS, NOAA-20/VIIRS, and NOAA-21/VIIRS

Tip: The Fires and Thermal Anomalies show actively burning fires as orange or red points. Sometimes you can see the actively burning fire front in the false-color imagery (Bands 7-2-1 from Terra/MODIS and Aqua/MODIS, and Bands M11-I2-I1 from Suomi-NPP/VIIRS, NOAA-20/VIIRS, NOAA-21/VIIRS) as bright red spots at the leading edge of the fire.

NIGHTTIME LIGHTS IMAGERY

- Black Marble Nighttime At Sensor Radiance (Day/Night Band) from Suomi NPP/VIIRS, and NOAA-20/VIIRS
- Black Marble Nighttime Blue/Yellow Composite (Day/Night Band from Suomi NPP/VIIRS, and NOAA-20/VIIRS

CAVEATS

- When applying Base Layers, only the top, visible layer with the eye icon is viewable on your map.
- The animated GIF can only be comprised of 40 frames i.e. 40 days.
- The lack of sunlight during winter causes the polar "hole" in the Arctic and Antarctic regions in the daily, global imagery.
- Some imagery, like the daily, global MODIS Reflectance, have regularly spaced swath gaps as it has narrower viewing swath; the VIIRS instrument aboard the joint NASA/NOAA NOAA-21, NOAA-20, and Suomi NPP satellites have wider viewing swaths with approximately 15% overlap between consecutive orbits.
- Remember to use the corresponding base layer imagery to the overlays. For example, use the Terra/MODIS Corrected Reflectance imagery base layer with the Terra/MODIS Fires and Thermal Anomalies layer overlay. This will provide more contextual information such as showing areas with cloud cover that may obscure fire detection.

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Worldview Snapshots

https://wvs.earthdata.nasa.gov/

The Worldview Snapshots application allows users to rapidly produce images from daily MODIS and VIIRS global imagery for any place on Earth (including the poles). Worldview Snapshots is ideal for users with low/limited bandwidth access or for users who want to rapidly retrieve satellite imagery of the same area each day.

CREATE A WORLDVIEW SNAPSHOT

- Select a base layer from the dropdown menu and select the desired overlay layers.
- Select the desired map projection (Geographic, Arctic Polar Stereographic, and Antarctic Polar Stereographic).
- Select a region on the map using the "Select Region" option in the upper right corner of the map, or select from a list of Countries/Regions and include 0-20% padding around the preset region. You may also set your own bounding box using coordinates.
- Select desired image file options — spatial resolution, file format, and whether you would like the image to be autoscaled (for higher latitudes in the Geographic projection, this creates a better looking pseudo-equal area image).
- Click on the red "Preview" button to preview the image. You may also save/bookmark the URL in the "Share Image" box in the Preview pane.
- Click the checkbox next to either "Always show today" or "Always show yesterday." "Always show today" will display what imagery the satellite has collected so far but might not return an image if the satellite has not yet passed over that area or the imagery has not yet been processed; "Always show yesterday" may be useful if you are in a different time zone and you would like to always get an image. Every time you come back to the link, you will get today's or yesterday's imagery!
- Click on blue "Download Image" to download the desired image.
- You can also view the map parameters selected in Worldview Snapshots in Worldview, the fully featured, interactive mapping application to browse full-resolution imagery and add more than 1,200 additional data layers. See the "Click Here to view the selected map parameters in Worldview" link in the lower right corner of the main Worldview Snapshots page.

Tip: You can also download a snapshot as a GeoTIFF, JPEG or PNG with Worldfile, and KMZ and bring it straight into your own GIS client.

TUTORIALS

- Worldview Video: NASA's Worldview: Two decades of Earth Data at your Fingertips - **https://youtu.be/X16cfGPL2wA**
- Worldview Tutorial: How to View and Share your Planet with Worldview - **https://youtu.be/LI3aVTNhCKU**

ACCESS

- Launch Worldview: **worldview.earthdata.nasa.gov**
- Launch Worldview Snapshots: **https://wvs.earthdata.nasa.gov/**
- Access Frequently Asked Questions: **https://go.nasa.gov/4hJMjB6**
- Contact us: **earthdata-support@nasa.gov**

EARTHDATA

Connect with our program

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