

Collect Earth Online Module 2

Base Imagery Sources in Collect Earth Online

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Prerequisites & Requirements

Requirements

Before taking this course, you will need the following:

- A basic understanding of optical remote sensing
- A computer
- Connection to the internet
- A Collect Earth Online account
- Be a member of the “ITC: NRM2” Collect Earth Online Institution

Prerequisites

- It is recommended that you take Collect Earth Online Module 1 prior to taking this module. [Click here to view Collect Earth Online Module 1.](#)
- Additionally, some basic knowledge of the Google Earth Engine platform is required.
 - If you have never worked with Google Earth Engine before, you will need to register. [Click here to register for Google Earth Engine.](#) Once your account has been approved, you will receive an email with additional instructions to complete the registration.
 - It is recommend taking the following Google Earth Engine tutorials
 - “Introduction to JavaScript for Earth Engine”. [Click here to take the Intro to JavaScript for Earth Engine Tutorial.](#)
 - “The Earth Engine API”. [Click here to take the Earth Engine API tutorial.](#)

Learning Objectives

By the end of this module, you will...

- Understand what base imagery sources are readily available in Collect Earth Online.
- Be able to add additional base imagery sources to your institution in Collect Earth Online.
- Understand the characteristics and limitations of the built-in imagery sources in Collect Earth Online.
- Be able to import off-the-shelf image collections from Google Earth Engine into Collect Earth Online.
- Import personal image assets from Google Earth Engine into Collect Earth Online.

Default Base Imagery Sources in CEO

Collect Earth Online has several default imagery sources that are automatically available for each institution. These data sources include MapBox, OpenStreetMaps, and Planet NICFI Public.

Mapbox Imagery

Mapbox uses different imagery sources based on the zoom level in Collect Earth Online and geographic availability. While Mapbox imagery has very high spatial resolution (<50 cm), the imagery is not timestamped. The imagery comes from numerous different sources, from both commercial providers and open data from the U.S. government. The raw imagery is color-corrected and composited together into a single raster tileset. The imagery comes from a variety of sources depending on the zoom level at which you are examining the data in Collect Earth Online.

Zoom levels 0-8 use de-clouded data from NASA MODIS satellites, Zoom levels 9-12 use a combination of Maxar satellite imagery, and NASA/USGS Landsat 5 & 7 imagery in some locations. Zoom levels 13+ use a combination of open and proprietary sources, including Maxar's Vivid product for most of the world, Nearmap aerial imagery over US cities, and open aerial imagery for Denmark, France, and Germany.

The advantage of mapbox imagery lies in its very high resolution and global coverage. The Maxar Vivid Basic product – which is what Mapbox sources imagery from at high zoom levels for most of the world – has 50 cm native resolution.

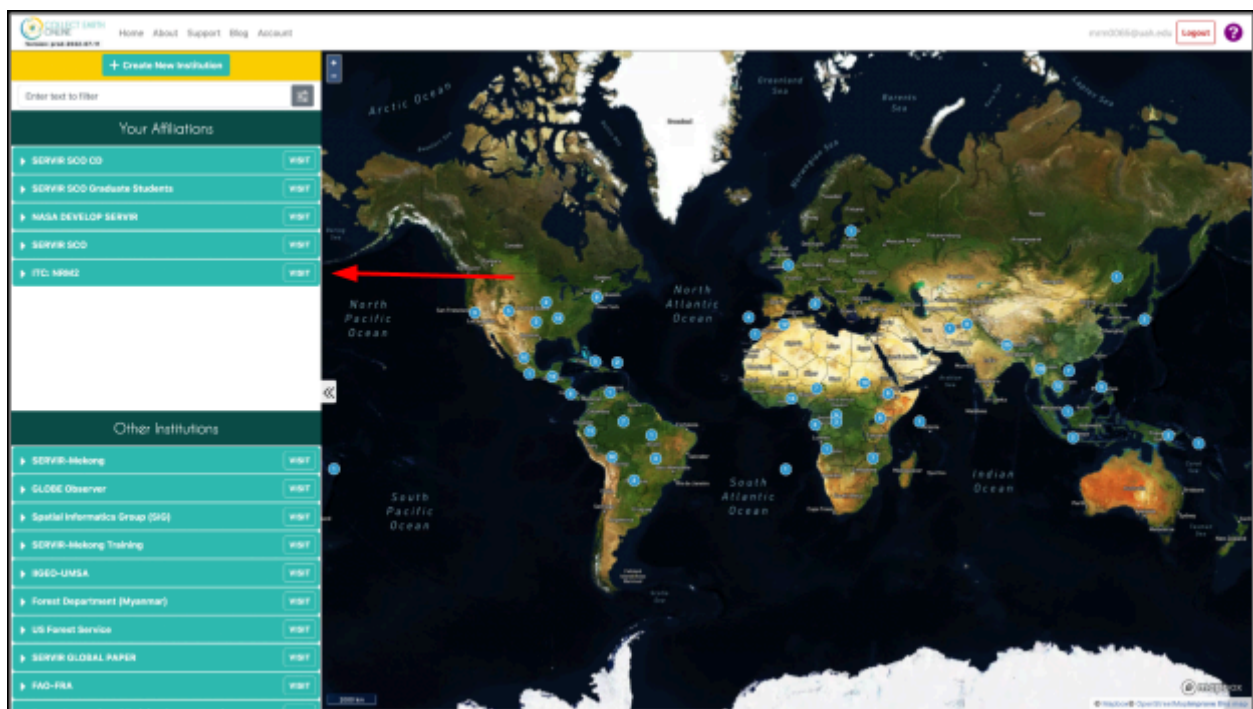
Planet NICFI

Planet data provided by NICFI – Norway's International Climate and Forest Initiative – is referred to in Collect Earth Online as Planet NICFI data. This data is available for most longitudes, and covers the tropics (30°S - 30°N). While this data has relatively low resolution (~5 m) compared to Mapbox, its advantage lies in the fact that it is timestamped. There are biyearly composites from December 2015 to June 2020, a three-month composite from June 2020 to August 2020. After August 2020, there is a composite for each month to present day (with a latency of about two months).

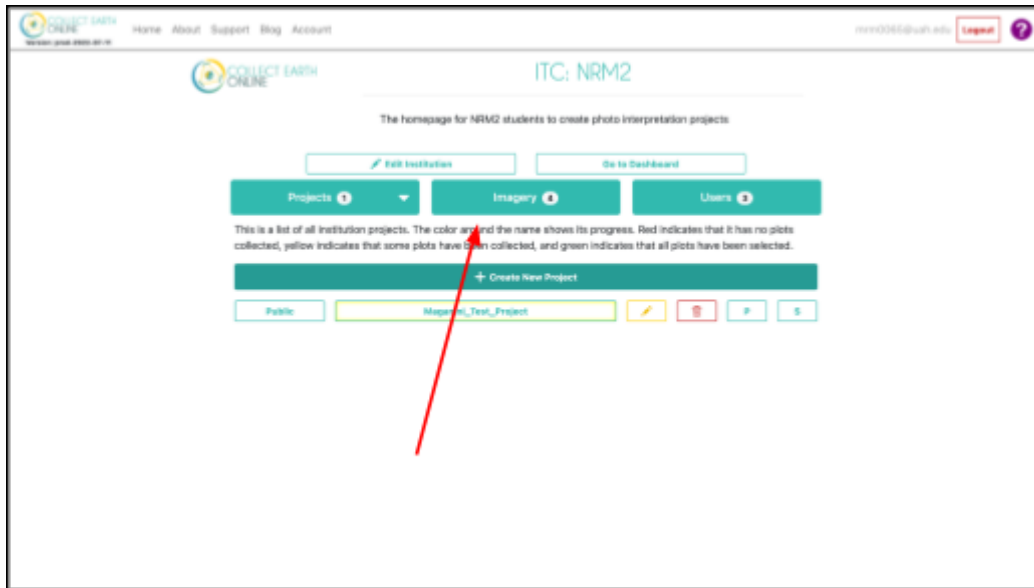
Navigating to the “Add New Imagery” Page

There are several other remote sensing datasets available in Collect Earth Online. However, these other datasets are not automatically present in every institution. ***To add these datasets to your institution, you must be an “Admin” in your institution. Contact mrm0065@uah.edu to be made an “admin” for your institution if you wish to add additional imagery to your project.*** We can add these additional imagery sources to our institution by navigating to the “Add New Imagery” Webpage, which resides in our Collect Earth Online Institution page.

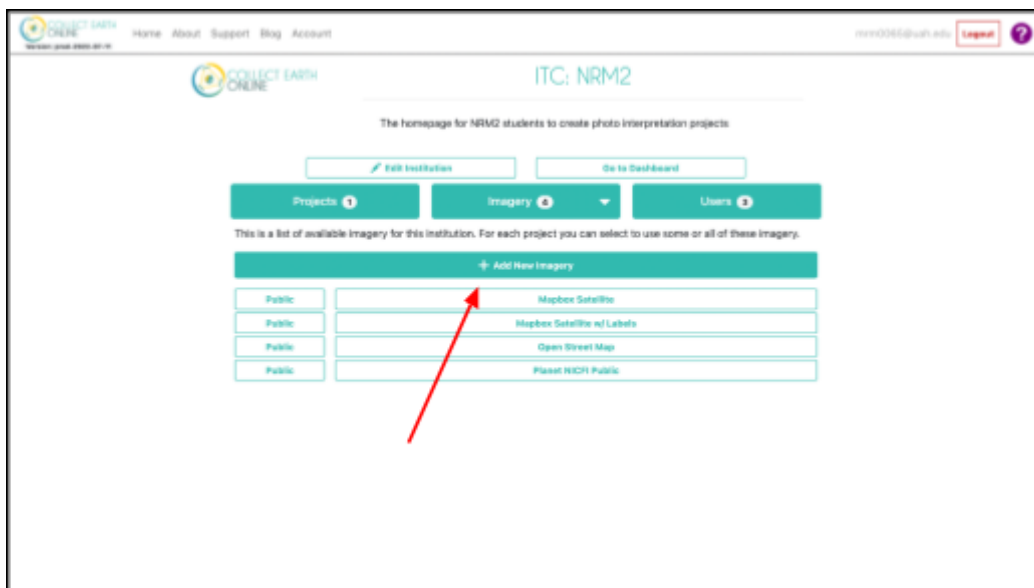
To do this, navigate to your institution homepage on the left taskbar of the Collect Earth Online Homepage by clicking the **“visit”** button (indicated by the red arrow in the image below).



After clicking the **“Visit”** button, your screen will look similar to the screenshot below. Click on the green **“Imagery”** button (indicated by the red arrow in the image below).



Now, click the Green **“Add New Imagery”** button, again indicated by the red arrow in the image below.



Your screen will now appear similar to the one shown below.

The screenshot displays the 'Collect Earth ONLINE' web application interface. At the top, the header includes the logo, navigation links (Home, About, Support, Blog, Account), a user email (mm0065@uah.edu), and a 'Logout' button. Below the header, there are two buttons: 'Edit Institution' and 'Go to Dashboard'. A teal navigation bar contains three tabs: 'Projects 1', 'Imagery 4', and 'Users 1'. The 'Imagery' tab is selected, showing a form for adding new imagery. The form includes a 'Select Type' dropdown menu (currently set to 'WMS Imagery'), a 'Title' text input field, an 'Attribution' text input field, a 'WMS URL' text input field, a 'WMS Layer Name' text input field, and an 'Additional WMS Params (JSON format)' text input field. At the bottom of the form, there are two checkboxes: 'Proxy Imagery' and 'Add Imagery to All Projects When Saving'. Below the checkboxes are two buttons: '+ Add New Imagery' and 'Cancel Changes'.

Collect Earth
ONLINE
Version: 2020-02-25 07:11

Home About Support Blog Account

mm0065@uah.edu Logout ?

Edit Institution Go to Dashboard

Projects 1 Imagery 4 Users 1

Select Type
WMS Imagery

Title
|

Attribution
|

WMS URL
|

WMS Layer Name
|

Additional WMS Params (JSON format)
|

☐ Proxy Imagery
☐ Add Imagery to All Projects When Saving

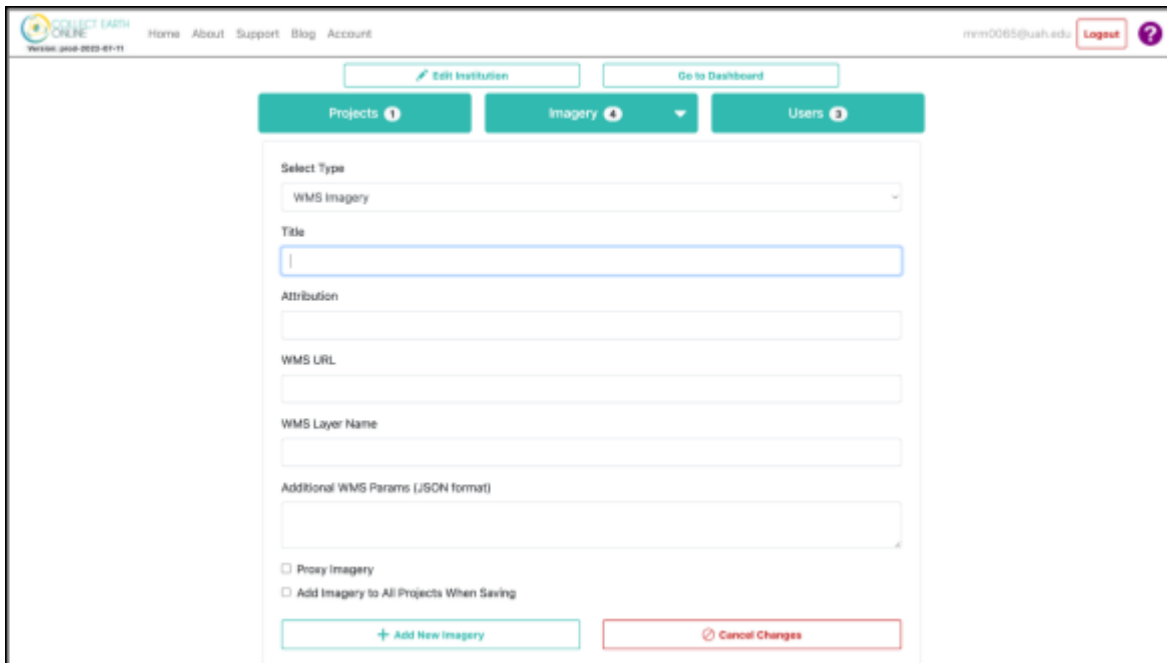
+ Add New Imagery Cancel Changes

Adding Built-In Base Imagery to your CEO Institution

Among the datasets included in Collect Earth Online are the Sentinel 1 Synthetic Aperture Radar (SAR) dataset, and the Sentinel-2 optical dataset.

Adding Sentinel 1 Imagery to Your Institution

Sentinel-1 is a Synthetic Aperture Radar (SAR) dataset, meaning it collects data from wavelengths outside the visible spectrum. However, we are able to assign these wavelengths to the red, green, and blue wavelength channels to visualize this non-optical data. Sentinel-1 information is available from April 2014 to present. If multiple images are available for the region and dates selected, the median reducer is used to produce a single image. To add Sentinel 1 Imagery to your institution, navigate to the “Add New Imagery” Page in your Collect Earth Online Institution Page. If you need a refresher regarding how to find this page, [click here to visit the “Navigating to the Add New Imagery Page” section](#). Your screen will now appear similar to the screenshot below.




The screenshot displays the 'Add New Imagery' page in the Collect Earth Online interface. At the top, there is a navigation bar with links for Home, About, Support, Blog, and Account. Below this, a header section contains buttons for 'Edit Institution' and 'Go to Dashboard'. The main content area features a teal sidebar with tabs for 'Projects 1', 'Imagery 4', and 'Users 3'. The 'Imagery' tab is selected, showing a form titled 'Select Type' with a dropdown menu set to 'WMS Imagery'. The form includes input fields for 'Title', 'Attribution', 'WMS URL', 'WMS Layer Name', and 'Additional WMS Params (JSON format)'. At the bottom of the form, there are two checkboxes: 'Proxy Imagery' and 'Add Imagery to All Projects When Saving'. The form is flanked by two buttons: a teal '+ Add New Imagery' button and a red 'Cancel Changes' button.

Fill in the data entry fields by following the instructions below:

1. Under the text that says **"Select Type"**, click **"Sentinel 1"** from the dropdown menu.
2. Under the text that says **"Title"**, type in a title for this imagery. This will be the name that displays when you collect your image interpretation data in Collect Earth Online. Enter your last name, followed by Sentinel 1, and whatever other information you would like to include here.
3. Under the text that says **"Default Year"**, type in a number between 2014 and 2022. This is the default year that will be displayed when you are collecting data.
4. Under the text that says **"Default month"**, type in a number between 1 and 12. This is the default month that will be displayed when the map loads when you are collecting data.
5. Under the text that says **"band combination"**, select the combination of polarization states to assign to each band (i.e. red, green, and blue channels), from the dropdown menu.
 - a. VH and VV are single polarization modes. VH/VV and HH/HV are dual polarization. You can find more information about SAR acquisition modes from the Sentinel documentation. [Click here to learn more about Sentinel-1 Acquisition Modes](#)
6. Under the text that says **"Min"**, type in a value. This is the minimum value you expect for bands and will get mapped to 0 for visualization.
 - a. This value can be as low as -50, but 0 is frequently used.¹
7. Under the text that says **"Max"**, type in a number value that will be mapped to 255 for visualization. To understand why 255 is used as the maximum value, visit GISGeography.com's explanation of bit depth. [Click here to visit GIS Geography's article "What is Bit Depth for Satellite Data"](#).
 - a. This value can be as high as 1, but 0.3 is frequently used.²
8. Your screen should now appear similar to the screenshot below. Once you have filled out all of the fields, click the **"Add New Imagery"** button (indicated by the red arrow in the image below).

¹ Collect Earth Online, "Collect Earth Online Institution & Project Creation Manual", Spring 2022, https://www.collect.earth/wp-content/uploads/2022/11/CEO_Manual_InstitutionProject_EN_20220708.pdf

² Collect Earth Online, "Collect Earth Online Institution & Project Creation Manual", Spring 2022, https://www.collect.earth/wp-content/uploads/2022/11/CEO_Manual_InstitutionProject_EN_20220708.pdf



COLLECT EARTH
ONLINE


Version: prod (2020-05-21)

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nrm0066@uah.edu

Logout

?



COLLECT EARTH
ONLINE

ITC: NRM2

The homepage for NRM2 students to create photo interpretation projects

✎ Edit Institution

Go to Dashboard

Projects 1

Imagery 4

Users 3

Select Type

Sentinel 1

Title

Maganini Sentinel 1 June 2020

Default Year

2020

Default Month

6

Band Combination

VH/VV/HV/VV

Min

0

Max

0.3

☐ Add Imagery to All Projects When Saving

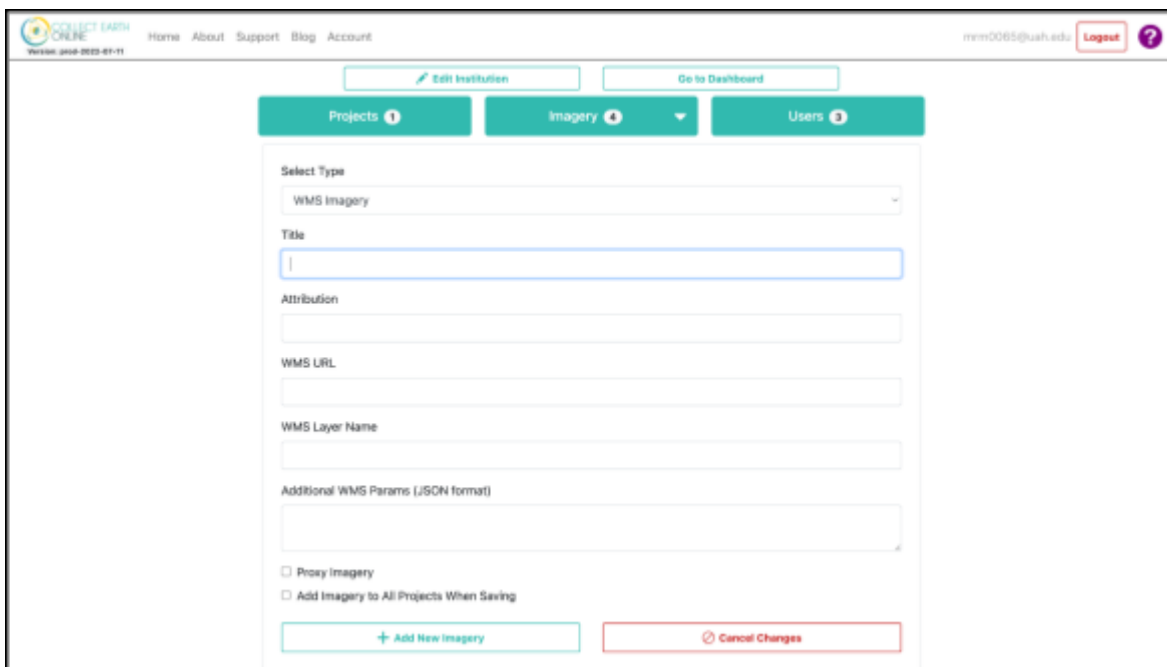
+ Add New Imagery

Cancel Changes

Adding Sentinel 2 Imagery to Your Institution

Sentinel 2 imagery consists of high-resolution optical images which are available from June 2015 - present. If multiple images are available for the region and dates selected, the median reducer is used to produce a single image. We can add Sentinel 2 imagery to our Collect Earth Online institution through GEE by following the instructions below.

First, navigate to the “Add New Imagery Page” in our Collect Earth Online institution. If you need a refresher regarding how to find this page, [click here to visit the “Navigating to the Add New Imagery Page.”](#) Your page should now look like the image below.



The screenshot displays the 'Add New Imagery' interface within the Collect Earth Online web application. The top navigation bar includes links for Home, About, Support, Blog, and Account, along with a user profile and a Logout button. Below the navigation bar, there are three main tabs: Projects (1), Imagery (4), and Users (3). The Imagery tab is currently selected. The main content area contains a form with the following fields and options:

- Select Type:** A dropdown menu currently set to 'WMS Imagery'.
- Title:** A text input field.
- Attribution:** A text input field.
- WMS URL:** A text input field.
- WMS Layer Name:** A text input field.
- Additional WMS Params (JSON format):** A text input field.
- ☐ Proxy Imagery
- ☐ Add Imagery to All Projects When Saving

At the bottom of the form, there are two buttons: a green '+ Add New Imagery' button and a red 'Cancel Changes' button.

Fill in the data entry fields by following the instructions shown below.

1. Under the text that says **“Select Type”**, select “Sentinel 2” from the dropdown menu.
2. Under the text that says **“Title”**, give this imagery a name. This should be your last name, followed by **“Sentinel 1”**, followed by whatever other information you would like to include here. This will be the name displayed by Collect Earth Online when you select the imagery for your image interpretation project.

3. Under the text that says **“Default Year”**, enter a value between 2015 and 2022. This is the default year that will be displayed when you are collecting data.
4. Under the text that says **“Default Month”**, enter a value between 1 and 12. This is the default month that will be displayed when you are collecting data.
5. Under the text that says **“Band Combination”**, select a combination of bands from the dropdown menu. [Click here to learn more about false color images.](#)
 - a. “True Color” assigns the red light to the red band, blue light to the blue band, and green light to the green band
 - i. Band Combination:
 1. Red band: Red light (Band 4 for Sentinel 2)
 2. Green band: Green light (Band 3 for Sentinel 2)
 3. Blue band: Blue light (Band 2 for Sentinel 2)
 - b. “False Color Infrared” is meant to emphasize healthy and unhealthy vegetation through the use of the near-infrared band, which is especially good at reflecting color. It is most commonly used to assess plant density and health, as plants reflect near-infrared and green light while absorbing red. Since they reflect more near-infrared than green, plant-covered land appears deep red. Denser plant growth is darker red. Cities and exposed ground are gray or tan, and water appears blue or black.³
 - i. Band Combination:
 1. Red band: Near infrared light (Band 8 for Sentinel 2)
 2. Green band: Red light (Band 4 for Sentinel 2)
 3. Blue band: Green light (Band 3 for Sentinel 2)
 - c. “False Color Urban” uses short wave infrared, near-infrared, and blue. This composite is used to visualize urban areas more clearly. Vegetation is visible in shades of green, while urban areas are represented by white, gray, or purple. Snow and ice appear as dark blue, and water bodies are blue or black.⁴
 - i. Band Combination:
 1. Red Band: Short wave infrared 2 (Band 12 for Sentinel 2)
 2. Green Band: Short wave infrared 1 (Band 11 for Sentinel 2)
 3. Blue Band: Red light (Band 4 for Sentinel 2)

³ EOS Data Analytics, “False Color Satellite Imagery”, 2022, <https://eos.com/make-an-analysis/false-color/>.

⁴ EOS Data Analytics, “False Color Satellite Imagery”, 2022, <https://eos.com/make-an-analysis/false-color/>.

- d. "Agriculture" uses Short Wave Infrared 1, Near-infrared, and blue. This band combination is mostly used to monitor the health of crops. This is because both short-wave infrared and near-infrared are particularly good at highlighting dense vegetation. Dense vegetation appears as dark green.
 - i. Band Combination:
 1. Red band: Short Wave Infrared 1 (Band 11 for Sentinel 2)
 2. Green band: Near-infrared (Band 8 for Sentinel 2)
 3. Blue band: Blue light (Band 2 for Sentinel 2)
 - e. "Healthy Vegetation"
 - i. This option uses a single band consisting of the normalized difference vegetation index – or NDVI. The formula for NDVI is $\frac{(B8 - B4)}{B8 + B4}$
 1. High values suggest dense canopy whereas low or negative values indicate urban and water features.
 - f. "Short wave Infrared" uses Short Wave Infrared 2, Near Infrared, and red. This color scheme highlights the presence of vegetation, clear-cut areas and bare soils, active fires, and smoke. Vegetation appears green whereas bare soils appear purple or magenta. Active fires appear as red, and smoke plumes appear as light blue.⁵
 - i. Band Combination:
 1. Red band: Short Wave Infrared 2 (B12 for Sentinel 2)
 2. Green band: Near Infrared (B8A for Sentinel 2)
 3. Blue band: Red (B4 for Sentinel 2)
6. Under the text that says "**Min**", type in a value that will be mapped to 0 for visualization. This should be a single number. 0-100 are commonly used values.
 7. Under the text that says "**Max**", type in a value that will be mapped to 1 for visualization. This should be a single number. 2800-3200 are commonly used values.
 8. Under the text that says "**Cloud Score**", type in a value between 0 and 100. This will be the maximum percentage of cloud cover for each Sentinel 2 scene that is allowed to be imported into Collect Earth Online.

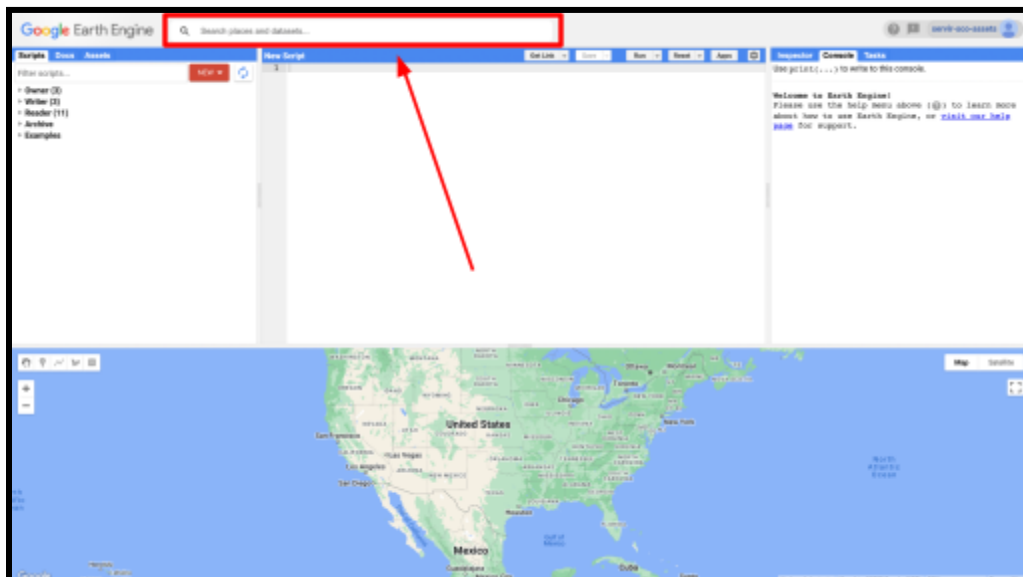
⁵ EOS Data Analytics, "False Color Satellite Imagery", 2022, <https://eos.com/make-an-analysis/false-color/>.

Adding Additional Basemap Imagery

Depending on the objectives of your image interpretation project, the built-in imagery in Collect Earth Online may not suit your needs. For example, you may desire to have imagery that is both very high resolution and time stamped. For this reason, Collect Earth Online allows you to upload imagery from various different sources to your institution. This includes imagery from Google Earth Engine, BingMaps, Mapbox, WMS imagery, and XYZ Tile imagery. If you have an API key for Planet or Maxar Securewatch Imagery, you are also able to import these imagery sources in Collect Earth Online. Since there is a financial cost associated with importing imagery from commercial providers such as Planet and Maxar, we will look at how to import high-resolution imagery free of charge using Google Earth Engine.

Google Earth Engine

There are two ways to import imagery from Google Earth Engine (which we will refer to as GEE). The first is an image asset, where we import a singular image from GEE. The second is an image collection asset, which refers to multiple images. In GEE, there are two types of assets. First, there are assets which we can search in the GEE search bar (indicated by the arrow in the image below); we will refer to these assets as “off-the-shelf” assets. Second there are personal assets, which we can upload from a separate geospatial platform such as QGIS, ArcGIS, or ENVI. We can see later that we can take an off-the-shelf asset from Google Earth Engine, filter it spatially and temporally, and export it to a personal GEE asset, so we have a dataset customized for our project needs in Collect Earth Online.

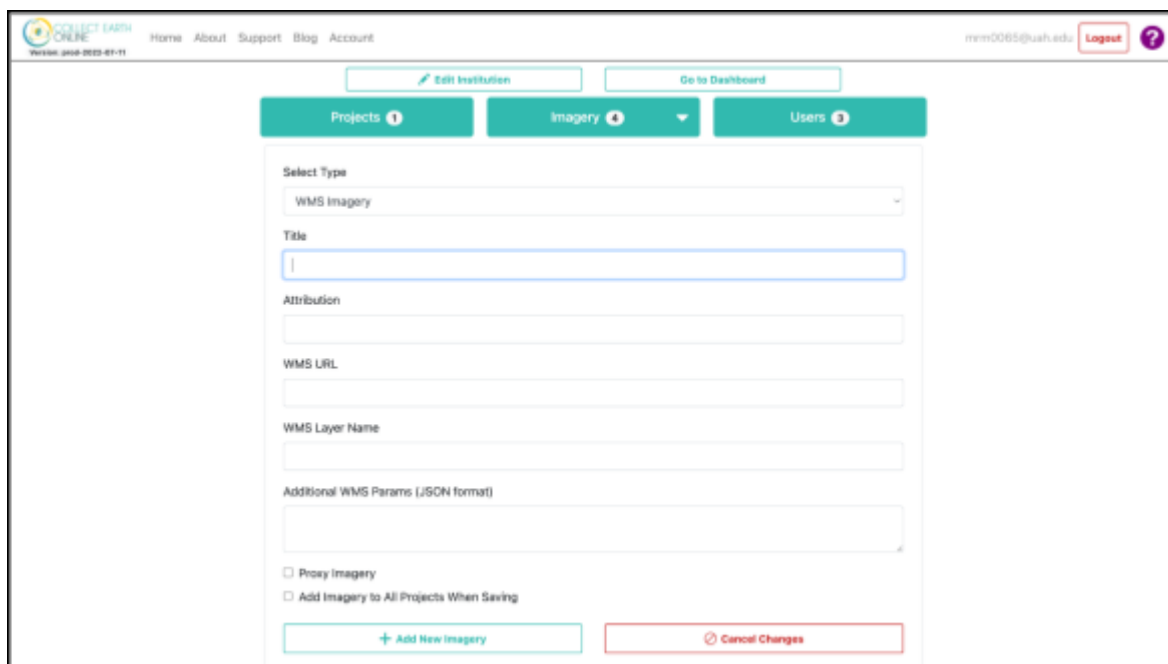


GEE “Off-the-Shelf” Image Asset

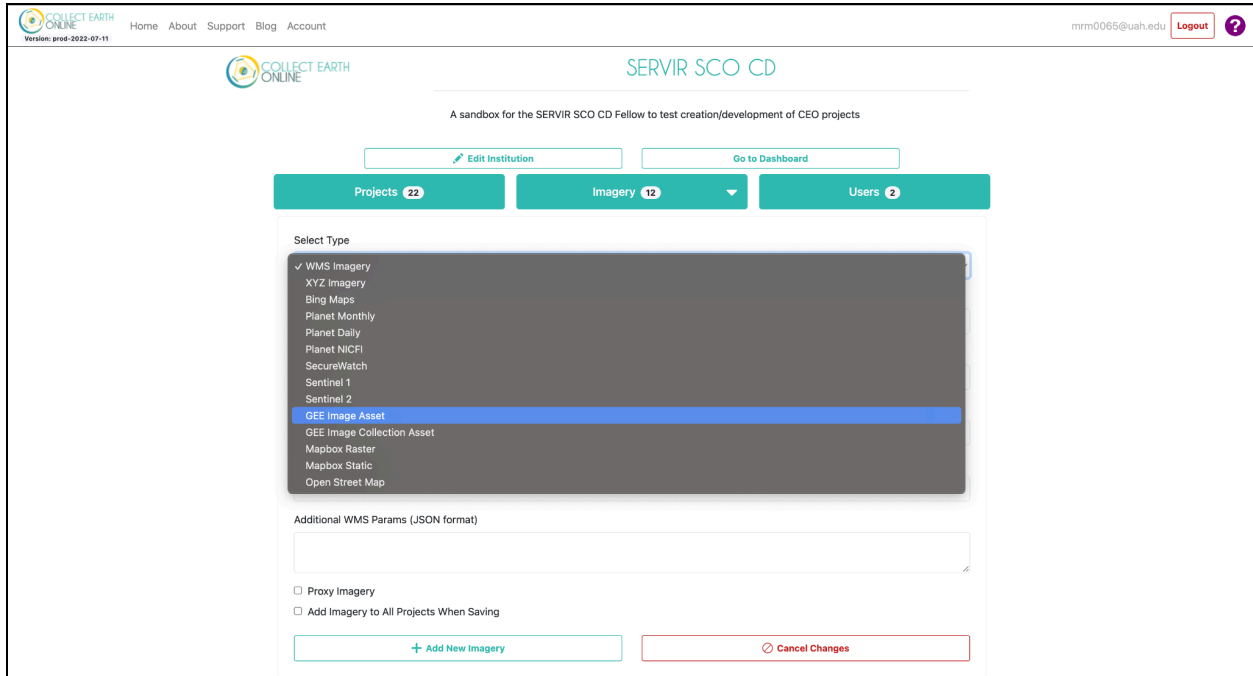
In this example we will import a single image asset from Google Earth Engine to our Collect Earth Online Institution. In order to do this, we need to know the Asset ID of our image of interest, as well as know the visualization parameters of our image. [Click here to view a guide on how to see the asset ID of an image and determine visualization parameters.](#)

After following the guide linked above, you should have an asset ID for your image, as well as some visualization parameters. These visualization parameters will have three components: bands for visualization, along with a minimum and maximum brightness value (representing radiance, reflectance, or backscatter, depending on the data being imported).

First, navigate to the “Add New Imagery Page” in our Collect Earth Online institution. If you need a refresher regarding how to find this page, [click here to visit the “Navigating to the Add New Imagery Page.”](#) Your page should now look like the image below.

The screenshot shows the 'Add New Imagery' page in the Collect Earth Online interface. At the top, there's a header with the Collect Earth Online logo, navigation links (Home, About, Support, Blog, Account), a user profile (mem0065@uiah.edu), and a Logout button. Below the header, there are three main tabs: Projects, Imagery (which is active and has a dropdown arrow), and Users. The Imagery tab is selected, and the form for adding new imagery is displayed. The form includes a 'Select Type' dropdown menu currently set to 'WMS Imagery', a 'Title' text input field, an 'Attribution' text input field, a 'WMS URL' text input field, a 'WMS Layer Name' text input field, and an 'Additional WMS Params (JSON format)' text input field. There are also two checkboxes: 'Proxy Imagery' and 'Add Imagery to All Projects When Saving'. At the bottom of the form, there are two buttons: 'Add New Imagery' and 'Cancel Changes'.

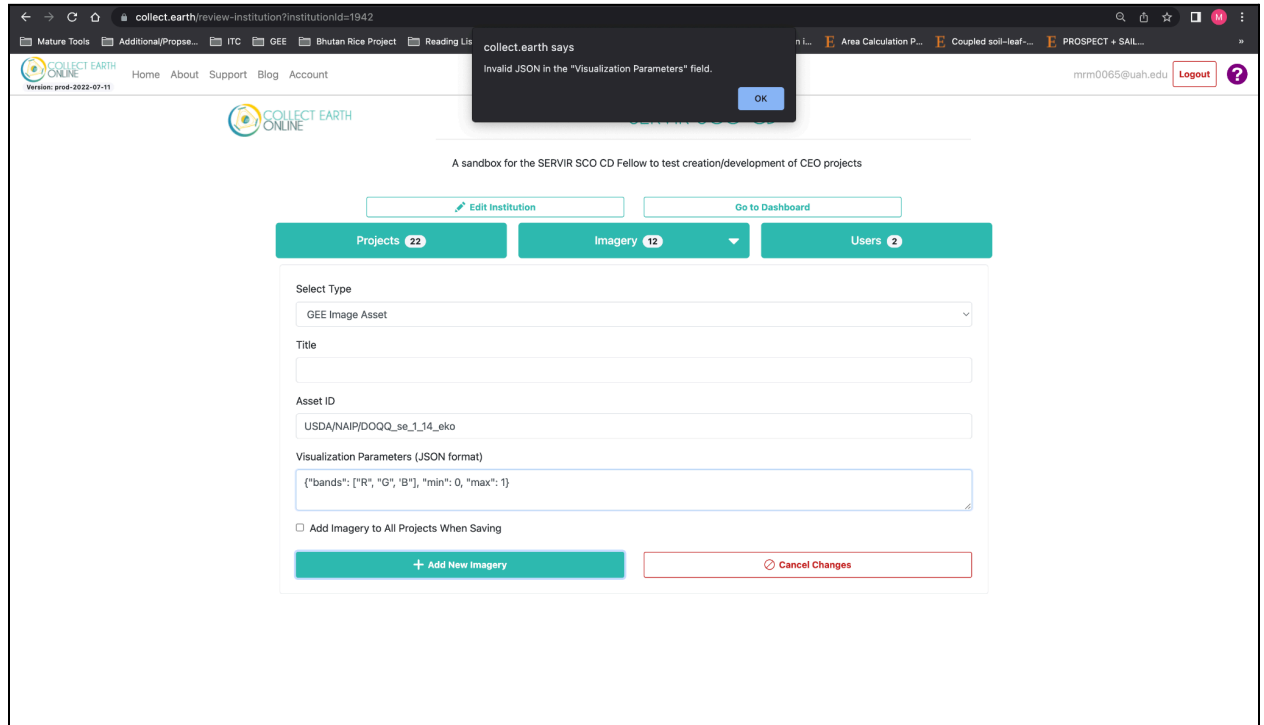
Click on the dropdown menu (where it currently says “WMS Imagery” under the text that says “Select type”), then click “GEE Image Asset” from the dropdown menu (as indicated by the image below).



Now fill out the fields by following the instructions below:

1. Under the text that says **"Title"**, enter a title for this imagery. This should consist of your last name, the satellite or sensor of the imagery you are importing, and any other information you would like to include. This will be the name displayed by Collect Earth Online for this imagery when you are collecting data.
2. Under the text that says **"Asset ID"**, enter in your image asset id. Your image id will look similar to:
 - a. projects/planet-nicfi/assets/.....
3. Under the text that says **"Visualization Parameters (JSON format)"**, type in your visualization parameters.
 - a. We have to format our visualization parameters in JSON (JavaScript Object Notation). This will take the following form:
 - i. `{bands: ["Red_Band", "Green_band", "Blue_band"], "min": [insert_min_value], "max": [insert_max_value]}`. Below you can find an example of visualization parameters in JSON:
 1. `{"bands": ["R", "G", "B"], "min": 424, "max": 1735}`
4. Click **"Add New Imagery"**: If you see a popup similar to the screenshot below, you have entered in your visualization parameters incorrectly. This usually means you forgot to add a quotation mark, or used a single quote (') instead of a double quote(""). For example, in the image below, a single quote was used (before the B in

the bands section), which is why Collect Earth Online threw this error message. If you do not receive an error message and are returned to the institution page after clicking “Add New Imagery”, you have successfully added your imagery!



GEE “Off-the-Shelf” Image Collection Asset

In this example we will import an image collection asset from Google Earth Engine to our Collect Earth Online Institution. An image collection is exactly what it sounds like, a group of images. In order to do this, we need to know the Asset ID and visualization parameters of our image collection of interest. [Click here to view a guide on how to see the asset ID of an image/image collection and determine visualization parameters.](#)

The Google Earth Engine public data catalog contains many open source image collections, and also has example scripts with suggested visualization parameters. [Click here to view the GEE Data Catalog.](#)

After determining the asset ID of your image collection as well as adequate visualization parameters, we are ready to upload this imagery to Collect Earth Online. These visualization parameters will have three components: bands for visualization, as well as a

minimum and maximum brightness value (representing radiance, reflectance, or backscatter, depending on the data being imported).

The screenshot shows the 'Add New Imagery' form in the Collect Earth ONLINE interface. The form includes a 'Select Type' dropdown menu currently set to 'WMS Imagery'. Below this are input fields for 'Title', 'Attribution', 'WMS URL', 'WMS Layer Name', and 'Additional WMS Params (JSON format)'. There are also checkboxes for 'Proxy Imagery' and 'Add Imagery to All Projects When Saving'. At the bottom of the form are two buttons: '+ Add New Imagery' and 'Cancel Changes'.

Click on the dropdown menu (where it currently says “WMS Imagery” under the text that says “Select type”), then click **“GEE Image Collection Asset”** from the dropdown menu (as indicated by the image below).

This screenshot shows the same 'Add New Imagery' form, but with the 'Select Type' dropdown menu open. The dropdown menu lists various imagery types, including 'WMS Imagery', 'XYZ Imagery', 'Bing Maps', 'Planet Monthly', 'Planet Daily', 'Planet NCFI', 'SecureWatch', 'Sentinel 1', 'Sentinel 2', 'GEE Image Asset', 'GEE Image Collection Asset' (which is highlighted in blue), 'Mapbox Raster', 'Mapbox Static', and 'Open Street Map'. The rest of the form and buttons remain the same as in the previous screenshot.

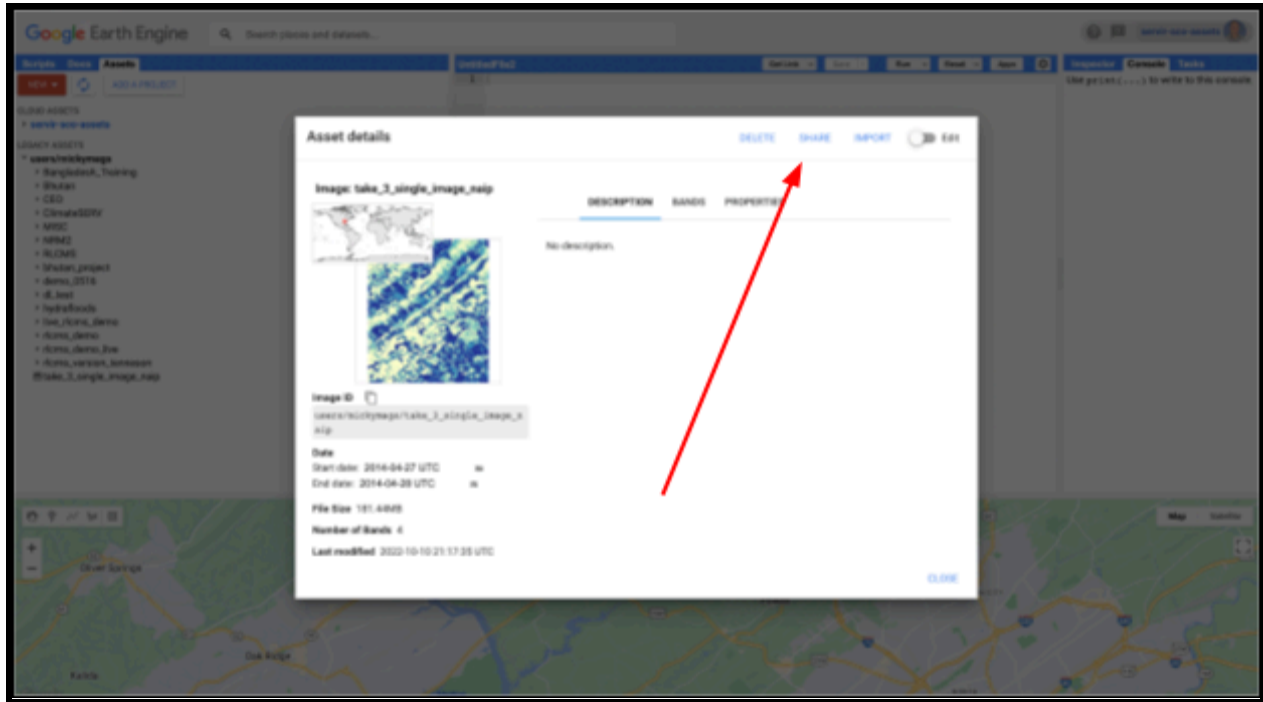
Fill out the text fields as per the instructions below:

1. Under the text that says **"Title"**, type in a title for your image collection. This should include your last name, the dataset provider, and any other information you would like to include. This will be the name displayed by Collect Earth Online for this imagery when you are collecting data.
2. Under the text that says **"Asset ID"**, enter in the Asset ID of your image collection
3. Under the text that says **"Start Date"**, enter in the start date of your image collection.
4. Under the text that says **"End Date"** enter in the end date of your image collection.
5. Under the text that says **"Visualization Parameters"**, type in your visualization parameters in JSON format.
 - a. We have to format our visualization parameters in JSON (JavaScript Object Notation). This will take the following form:
 - i. `{bands: ["Red_Band", "Green_band", "Blue_band"], "min": [insert_min_value], "max": [insert_max_value]}`. Below you can find an example of visualization parameters in JSON:
 1. `{"bands": ["R", "G", "B"], "min": 424, "max": 1735}`
6. Click **"Add New Imagery"**. If you do not receive an error message and are returned to the institution page after clicking the "Add New Imagery" button, you have successfully added your imagery!

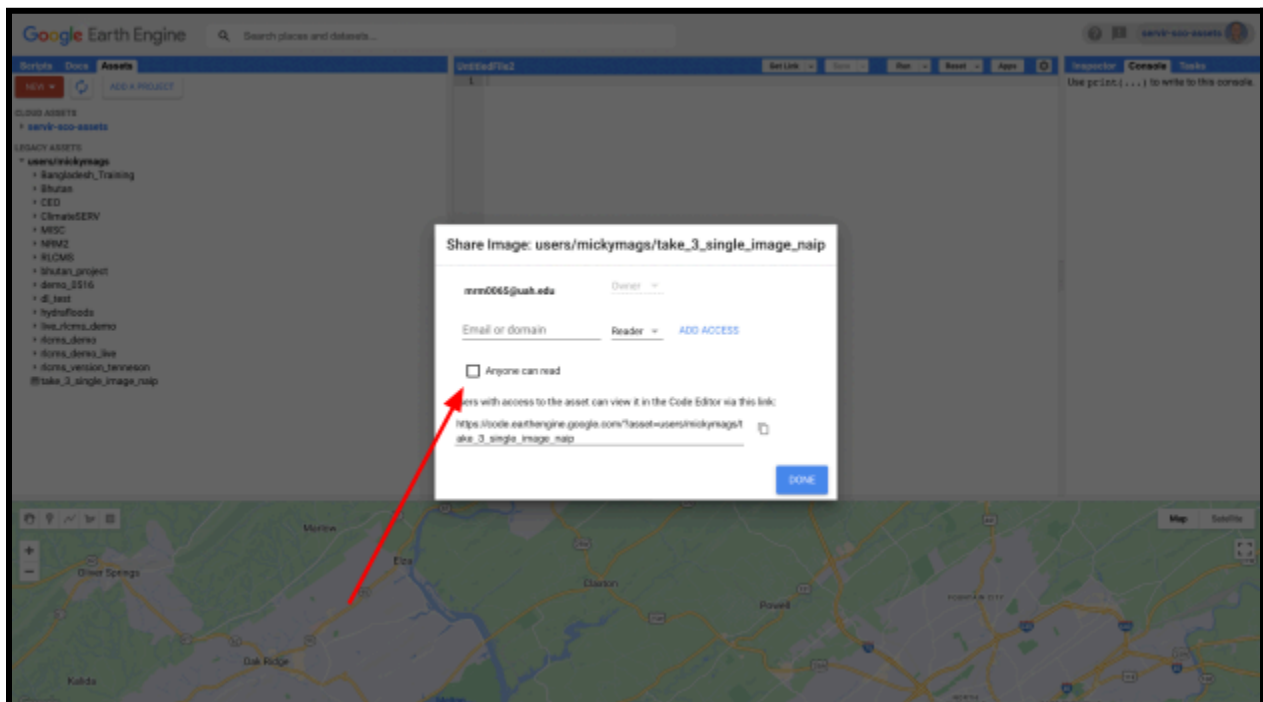
GEE Personal Image Asset

Just as we have added images and image collections which are publicly available within Google Earth Engine, we can also upload Assets that live within our Google Earth Engine Assets Folder. We will refer to these assets as personal assets. These can be images that we upload directly from our computer to GEE, or images that we have obtained from GEE, manipulated, then exported to our assets folder.

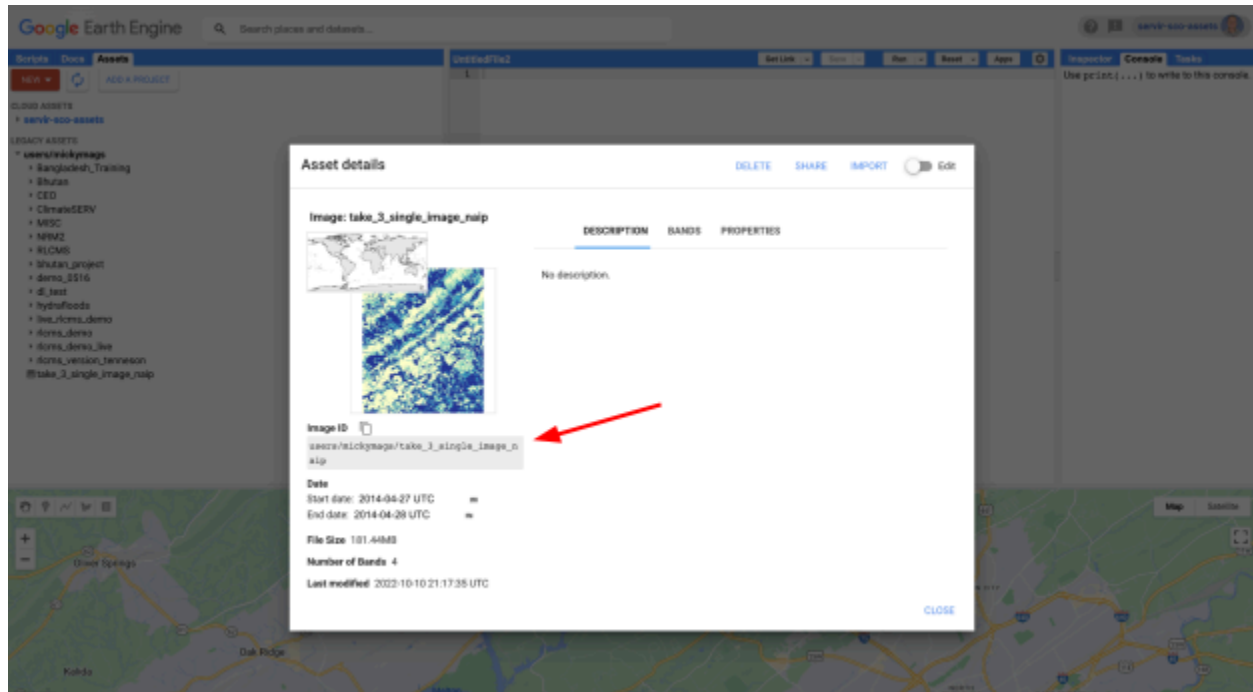
Our first step is to make the asset public. To do this, navigate to the assets page in Google Earth Engine by clicking where it says **"Assets"** in the top left corner of the screen. Then, click on the asset you want to import. This will bring up a screen similar to the screenshot shown below. Then, Click the blue **"Share"** button towards the top right of this window (indicated by the red arrow in the image below).



This will cause GEE to show another window. Now click the box next to the text that says **“Anyone can read”** indicated by the arrow in the image below. After clicking, a blue checkmark will appear in this box. Now Collect Earth Online will be able to access this image when we import it.



Next, we need to determine the asset ID of our image. We can do this by clicking on the asset of interest. This will show the asset ID towards the left side of the window (indicated by the arrow in the image below).



Finally, determine the visualization parameters you would like to use for this image. [Click here to view a guide on how to determine adequate visualization parameters for an image.](#)

Now that we have an asset ID and visualization parameters for our image, and have made our image asset public, we are ready to import it within Collect Earth Online.

First, navigate to the “Add New Imagery Page” in our Collect Earth Online institution. If you need a refresher on finding this page, [click here to visit the “Navigating to the Add New Imagery Page.”](#) Your page should now look like the image below.

Collect Earth ONLINE
Version: prod-2022-07-11

Home About Support Blog Account

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Edit Institution Go to Dashboard

Projects 1 Imagery 4 Users 3

Select Type
WMS Imagery

Title

Attribution

WMS URL

WMS Layer Name

Additional WMS Params (JSON format)

☐ Proxy Imagery
☐ Add Imagery to All Projects When Saving

+ Add New Imagery Cancel Changes

Click on the dropdown menu (where it currently says **“WMS Imagery”** under the text that says **“Select type”**), then click **“GEE Image Asset”** from the dropdown menu (as indicated by the image below).

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SERVIR SCO CD

A sandbox for the SERVIR SCO CD Fellow to test creation/development of CEO projects

Edit Institution Go to Dashboard

Projects 22 Imagery 12 Users 2

Select Type

- ✓ WMS Imagery
- XYZ Imagery
- Bing Maps
- Planet Monthly
- Planet Daily
- Planet NCFI
- SecureWatch
- Sentinel 1
- Sentinel 2
- GEE Image Asset**
- GEE Image Collection Asset
- Mapbox Raster
- Mapbox Static
- Open Street Map

Additional WMS Params (JSON format)

☐ Proxy Imagery
☐ Add Imagery to All Projects When Saving

+ Add New Imagery Cancel Changes

Fill out the entry fields as per the instructions below:

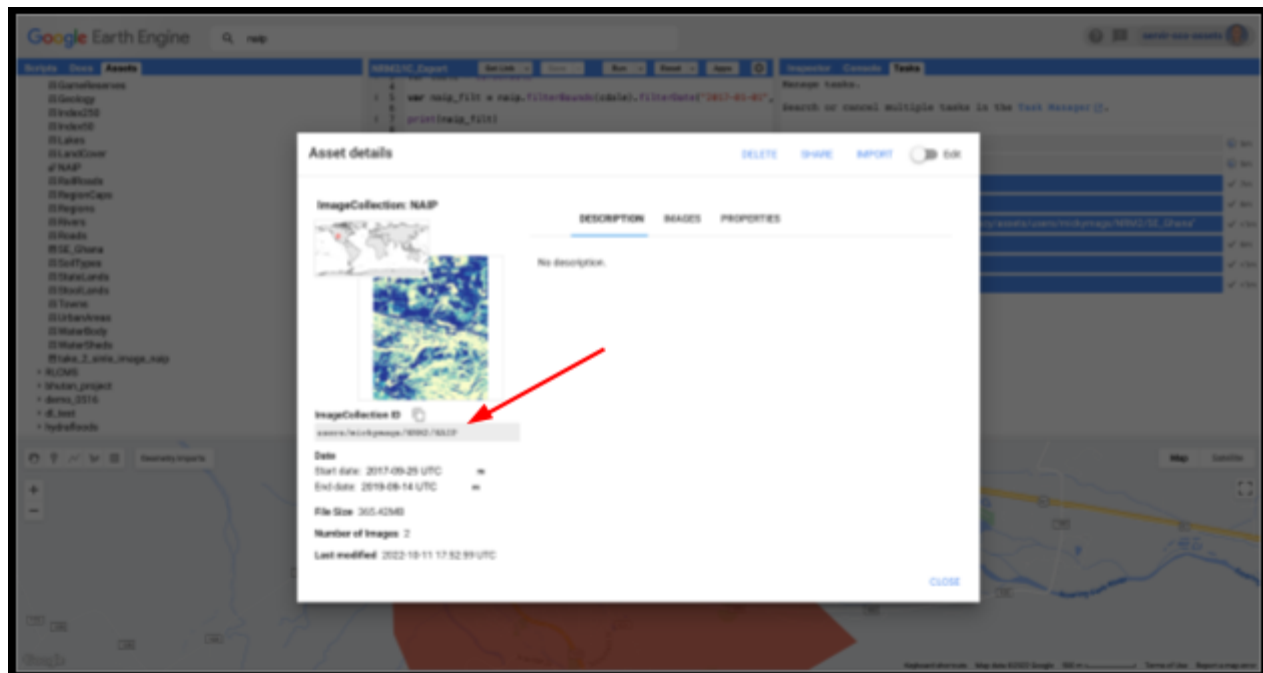
1. Under the text that says **"Title"**, type in a title for this imagery. This should consist of your last name, the satellite or sensor of the imagery you are importing, and any other information you would like to include. This will be the name displayed by Collect Earth Online for this imagery when you are collecting data.
2. Under the text that says **"Asset ID"**, enter in your image asset id. Your image id will look similar to:
 - a. users/<your_username>/<your_asset_name>
3. Under the text that says **"Visualization Parameters (JSON format)"**, type in your visualization parameters
 - a. We have to format our visualization parameters in JSON (JavaScript Object Notation). This will take the following form:
 - i. {bands: ["Red_Band", "Green_band", "Blue_band"], "min": [insert_min_value], "max": [insert_max_value]}. Below you can find an example of visualization parameters in JSON:
 1. {"bands": ["R", "G", "B"], "min": 424, "max": 1735}
5. Click **"Add New Imagery"**. If you do not receive an error message and are returned to the institution page, you have successfully added your imagery!

GEE Personal Image Collection Asset

In addition to having images as assets in Google Earth Engine, you may also have an image collection hosted as an asset. Again, our first step here is to make our asset public. [Click here and follow the steps shown on pages 22-23 of this document to make this asset public.](#) Next, we need to determine the following parameters before importing this image collection asset into Collect Earth Online:

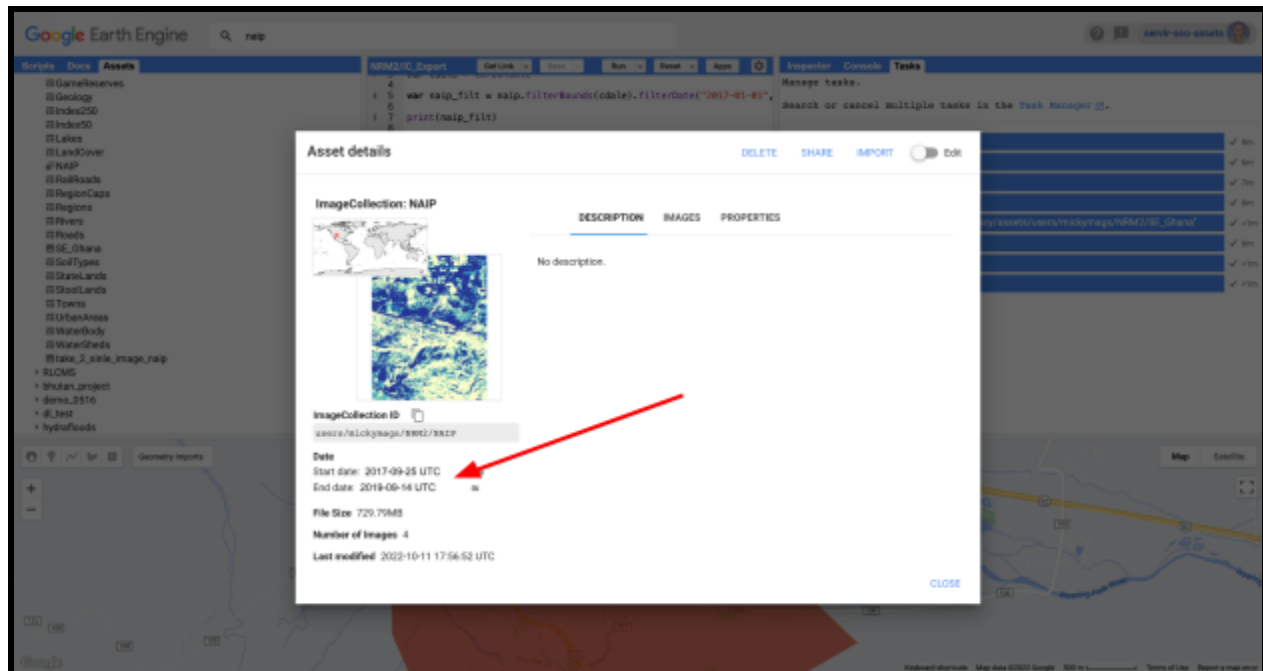
1. Asset ID
2. Visualization Parameters
3. Start Date
4. End Date

In order to determine the asset ID of your asset, click on the asset itself. You will then see the asset ID appear towards the bottom left of the popup window (as shown by the arrow in the screenshot below).



Our next step is to determine suitable visualization parameters for our image collection. [Click here to view a guide on how to determine adequate visualization parameters for an image.](#)

Now all that is left is to determine the start date and end date of the image collection of interest. We can do this by clicking on the asset. GEE will then display a popup window, and you can see the start date and end date in YYYY-MM-DD format (as shown in the image below). If you do not see dates here, that means that your image collection is not time-stamped.



Now that we have our asset ID, visualization parameters, and start and end date, we are ready to import the imagery within Collect Earth Online.

First, navigate to the "Add New Imagery Page" in our Collect Earth Online institution. If you need a refresher regarding how to find this page, [click here to visit the "Navigating to the Add New Imagery Page."](#) Your page should now look like the image below.

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Edit Institution Go to Dashboard

Projects 1 Imagery 1 Users 1

Select Type
WMS Imagery

Title

Attribution

WMS URL

WMS Layer Name

Additional WMS Params (JSON format)

☐ Proxy Imagery
☐ Add Imagery to All Projects When Saving

+ Add New Imagery Cancel Changes

Click on the dropdown menu (where it currently says **“WMS Imagery”** under the text that says **“Select type”**), then click **“GEE Image Collection Asset”** from the dropdown menu (as indicated by the image below).

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SERVIR SCO CD

A sandbox for the SERVIR SCO CD Fellow to test creation/development of CEO projects

Edit Institution Go to Dashboard

Projects 23 Imagery 13 Users 2

Select Type

- ✓ WMS Imagery
- XYZ Imagery
- Bing Maps
- Planet Monthly
- Planet Daily
- Planet NICFI
- SecureWatch
- Sentinel 1
- Sentinel 2
- GEE Image Asset
- GEE Image Collection Asset**
- Mapbox Raster
- Mapbox Static
- Open Street Map

Additional WMS Params (JSON format)

☐ Proxy Imagery
☐ Add Imagery to All Projects When Saving

+ Add New Imagery Cancel Changes

Fill out the text fields as per the instructions below:

1. Under the text that says **"Title"**, type in a title for your image collection. This should include your last name, the dataset provider, and any other information you would like to include. This will be the name displayed by Collect Earth Online for this imagery when you are collecting data.
2. Under the text that says **"Asset ID"**, type in the Asset ID of your image collection
3. Under the text that says **"Start Date"**, enter in the start date of your image collection.
4. Under the text that says **"End Date"** enter in the end date of your image collection.
5. Under the text that says **"Visualization Parameters"**, type in your visualization parameters in JSON format.
6. We have to format our visualization parameters in JSON (JavaScript Object Notation). This will take the following form:
 - a. {bands: ["Red_Band", "Green_band", "Blue_band"], "min": [insert_min_value], "max": [insert_max_value]}. Below you can find an example of visualization parameters in JSON:
 - i. {"bands": ["R", "G", "B"], "min": 12, "max": 132}
7. Click **"Add New Imagery"**. If you do not receive an error message and are returned to the institution page, you have successfully added your imagery!

Congratulations! You can now import several different kinds of imagery within Collect Earth Online. You are ready to create your first image interpretation project. [Click here to view a guide to creating a Collect Earth Online Project.](#)

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Sources

- Development Team: <https://sams.servirglobal.net/detail/7>
- All other info: <https://www.collect.earth/about/>