

USING THE CALTOPO MAP PROGRAM WITH HPS MAPS

MAP PROGRAMS- BACKGROUND

There are MANY excellent map programs available, both free and paid. These are used to display maps, GPS tracks, and elevation profiles, draw routes and waypoints, print or save maps, transfer GPS data to and from GPS units or smartphones, and share with others. There are as many different file formats to save information as there are GPS manufacturers, which can often create a huge mess. However, ALL programs and GPS units can use the universal GPX format files found on our web site, and many can use the Google Earth KML format as well.

If you don't have a GPS unit or you do but wish to use a different map program (many of these proprietary programs have limited map choices, or charge for maps), there are a lot of options. They have varying degrees of complexity and advanced features, but all have the basic functions described here. A more complete list can be found at http://www.topografix.com/gpx_resources.asp. Our HPS veterans have used National Geographic Topo for many years. It is an outstanding program, and our maps were created and are edited in Topo. However, Topo is no longer available, hence the need to make our maps available in GPX format and recommend a way to view them.

CALTOPO

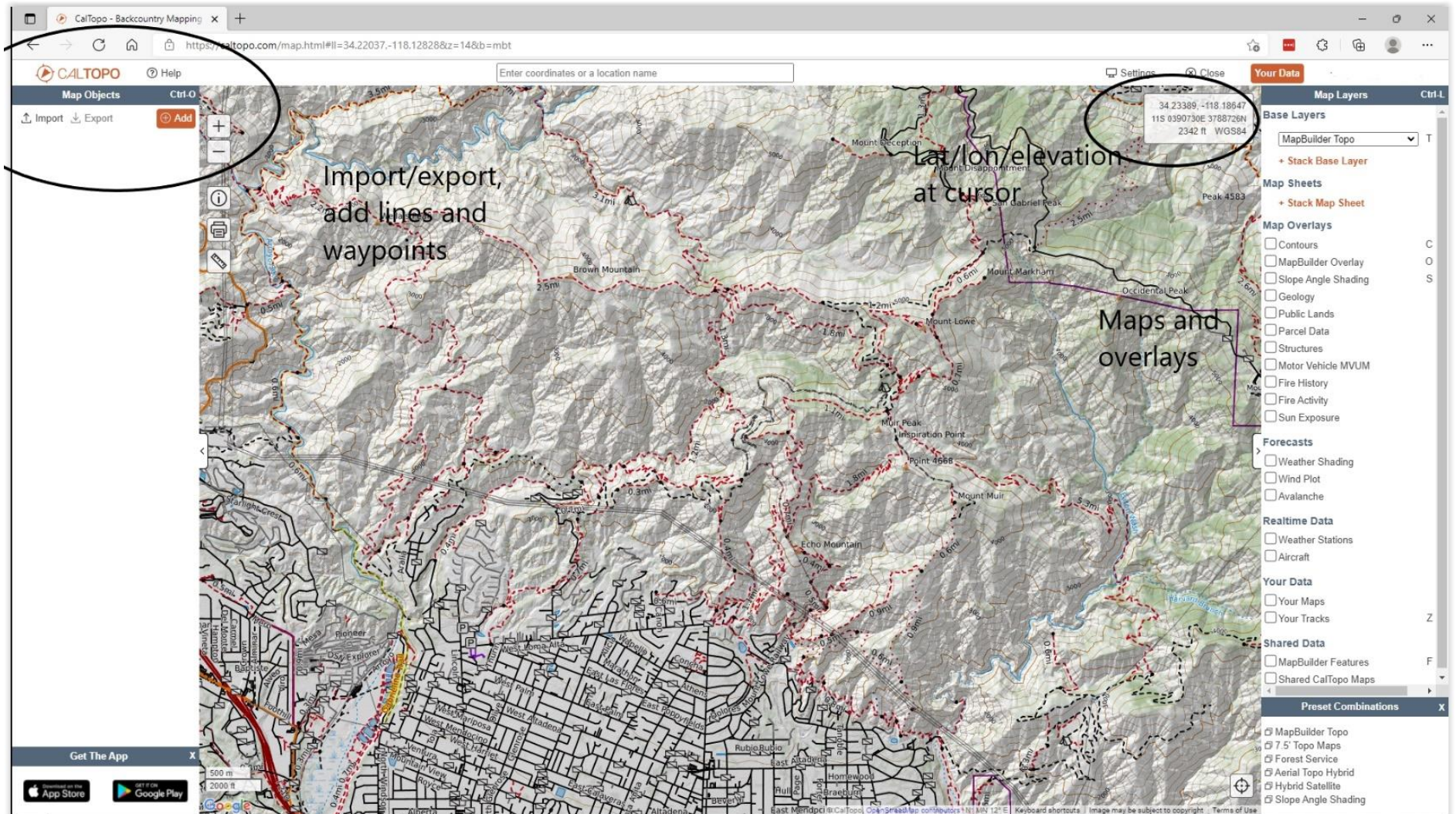
In looking for a map program that is free, full-featured and easy to use, we recommend the basic version of CalTopo, found at www.CalTopo.com. They have lots of map types to choose from, with additional features with a paid account. It is straightforward to use, and has some particularly useful advanced features. CalTopo is a great starting place for those new to this as well as for experienced folks, and most people will never outgrow it. For convenience we have provided a link on each peaks web page opens our map directly in CalTopo for your convenience.

For the first-time user, here is a quick tutorial on how to import, view, print, edit and save custom maps using CalTopo. CalTopo is easy, you'll be up and running in a few minutes.

Further information about using CalTopo can be found at <http://caltopo.com/about.html>.

USING CALTOPO

Open CalTopo at www.caltopo.com. Here is the CalTopo main page showing controls to open files, set map layers, import or export GPX or KML files, and print. As you can see, access to the basic features is straightforward. Coordinates and elevation at the cursor are displayed. Right click anywhere to get info about that location.



IMPORTING A GPX OR KLM FILE IN CALTOPO

From the main page, select “Import” at the top left, and select the saved GPX file you want to import. CalTopo will show you a list of routes and waypoints to be imported; select the ones you want and click “Import.”

If you clicked on the “[Routes as shown on CalTopo](#)” link from the HPS website it will open automatically but you will need to select “Copy to new map” on the export menu if you want to modify it.

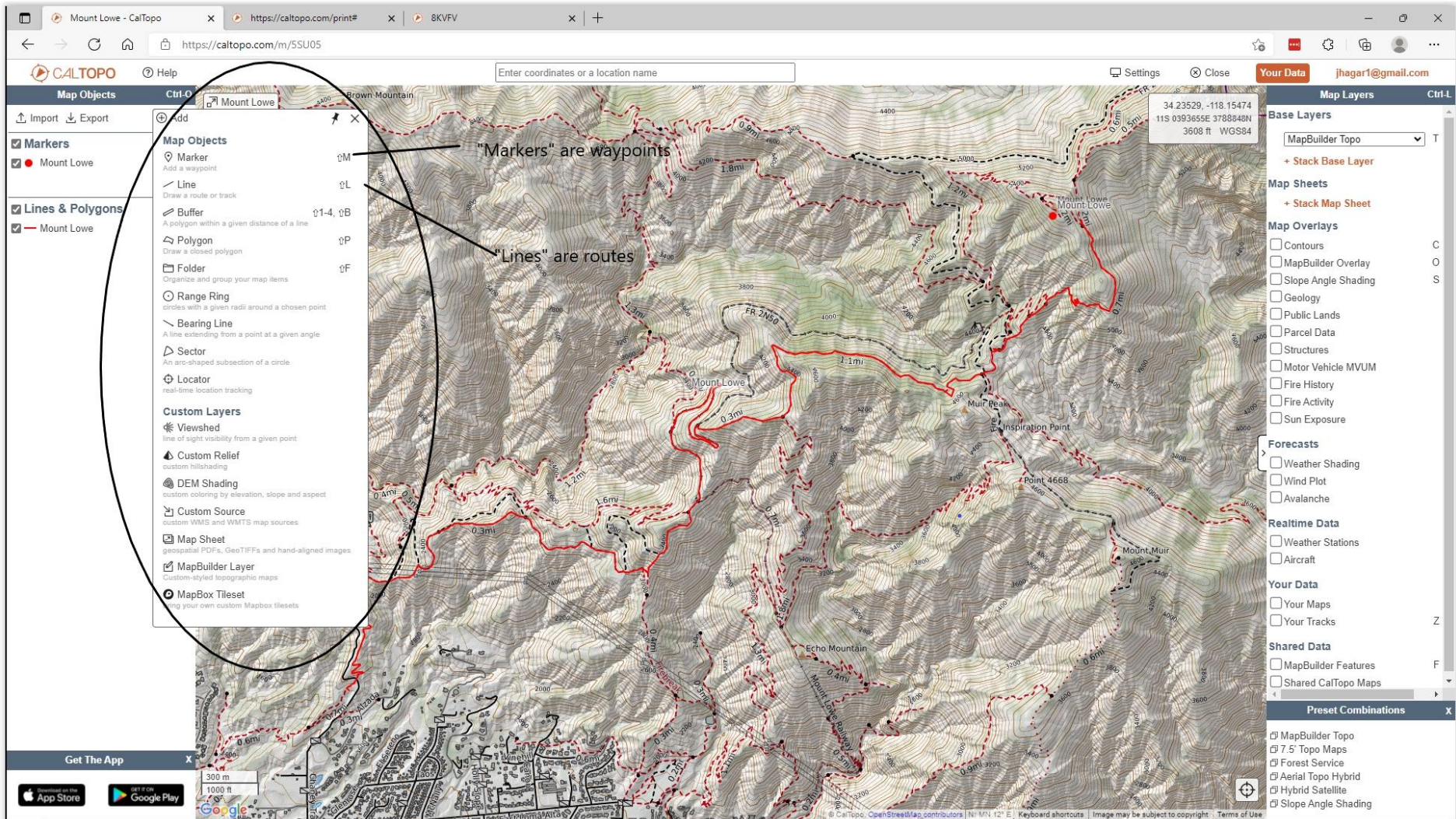
The screenshot displays the CalTopo web application interface. The main map area shows a topographic map with several routes and waypoints. A dialog box titled "Import Data" is open, listing the items to be imported:

Item	Status	Coordinates
<input checked="" type="checkbox"/> Check/Uncheck All		
<input checked="" type="checkbox"/> Marker		
<input checked="" type="checkbox"/> Bump 3870'	on map	34.22908, -118.14149
<input checked="" type="checkbox"/> Mount Lowe	on map	34.23161, -118.10630
<input checked="" type="checkbox"/> Shape		
<input checked="" type="checkbox"/> Mount Lowe	on map	8.99 km, 5.59 mi
<input checked="" type="checkbox"/> side trip to bump 3870'	on map	7.18 km, 4.46 mi

The dialog box has "Cancel" and "Import" buttons at the bottom right. The background map shows a topographic map with various routes and waypoints, including "Brown Mountain", "Mount Lowe", "Mount Markham", and "Echo Mountain". The interface includes a search bar at the top, a "Map Objects" menu on the left, and a "Map Layers" menu on the right. The user's name "jhagar1@gmail.com" is visible in the top right corner.

CREATING ROUTES AND WAYPOINTS

Clicking the “Add” button shows the add menu where you can add waypoints (“markers”) and routes (“Lines”) and other features. Click to place a waypoint or start drawing a route.



DRAW A ROUTE

Click to start a route; existing trails are in yellow and Caltopo will follow it when you hover over it. For a freehand route, click along the path you want; give it a name and double click to end.

The screenshot displays the Caltopo web application interface. The main map area shows a topographic map with a red route drawn over yellow trails. A text box on the map reads: "Existing trails appear in yellow, click the start point then hover over your destination. Click once to fix the route, double click to end." The interface includes a search bar at the top with the text "Enter coordinates or a location name". The right-hand panel contains a "Map Layers" section with various options like "Base Layers", "Map Sheets", "Map Overlays", "Forecasts", "Realtime Data", "Your Data", "Shared Data", and "Preset Combinations". A "Settings" dialog box is open in the bottom right corner, showing options for "Lines & Polygons", "Track", "Line Weight", "Line Opacity", and "Style".

34.23125, -118.10466
11S 0398262E 3788349N
5356 ft WGS84

Existing trails appear in yellow, click the start point then hover over your destination. Click once to fix the route, double click to end.

Get The App

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500 m
2000 ft

Google

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EDITING YOUR MAP

Left click on a route or waypoint to edit it, modify it or open an elevation profile. You can also do this from the left sidebar.

The screenshot displays the CalTopo web application interface. The main map area shows a topographic map with contour lines and several routes. A context menu is open over a red route, listing various editing options. The left sidebar contains a 'Map Objects' panel with a 'Bulk Ops' button circled in red. The right sidebar shows a 'Map Layers' panel with various map overlays and data layers. The top of the browser window shows the URL 'https://caltopo.com/m/5SU05' and a search bar.

Map Objects (Ctrl-O)

- Import
- Export
- Adit
- Bulk Ops

Map Layers (Ctrl-L)

- Base Layers
 - MapBuilder Topo
 - + Stack Base Layer
- Map Sheets
 - + Stack Map Sheet
- Map Overlays
 - Contours
 - MapBuilder Overlay
 - Slope Angle Shading
 - Geology
 - Public Lands
 - Parcel Data
 - Structures
 - Motor Vehicle MVUM
 - Fire History
 - Fire Activity
 - Sun Exposure
- Forecasts
 - Weather Shading
 - Wind Plot
 - Avalanche
- Realtime Data
 - Weather Stations
 - Aircraft
- Your Data
 - Your Maps
 - Your Tracks
- Shared Data
 - MapBuilder Features
 - Shared CalTopo Maps
- Preset Combinations
 - MapBuilder Topo
 - 7.5' Topo Maps
 - Forest Service
 - Aerial Topo Hybrid
 - Hybrid Satellite
 - Slope Angle Shading

Context Menu:

- Mount Lowe
- 8.99 km, 5.59 mi
- Edit
- Profile • Terrain Stats
- Travel Time (+)
- Modify (-)
- Extend
- Split
- Reverse
- Resample
- Join
- Create Points
- Copy (+)
- Delete

Annotations:

- Also edit from here (points to Bulk Ops)
- Edit waypoints (points to a red route)
- Show elevation profile (points to a red route)
- Extend a route already drawn (points to a red route)
- Split and join routes (points to a red route)

EDITING A ROUTE OR WAYPOINT

Move the points around, you can delete then by right clicking and selecting “Delete vertex”.

The screenshot displays the CalTopo web application interface. The main map area shows a topographic map with contour lines and a red trail route. A text overlay on the map reads "Edit route: Drag the waypoints around". The interface includes a search bar at the top with the text "Enter coordinates or a location name". The sidebar on the left contains "Map Objects" and "Map Layers" sections. The sidebar on the right contains "Map Layers", "Map Sheets", "Map Overlays", "Forecasts", "Realtime Data", "Your Data", "Shared Data", and "Preset Combinations" sections. A properties panel for the selected route is visible at the bottom right, showing details for "Mount Lowe" such as "Line Weight", "Color", and "Style".

Mount Lowe - CalTopo

https://caltopo.com/m/5SU05

Enter coordinates or a location name

Settings Close Your Data jhagar1@gmail.com

Map Objects Ctrl-O

Import Export Add

Lines & Polygons

Mount Lowe

Bulk Ops

Edit route: Drag the waypoints around

Mount Lowe

34.22535, -118.11967
11S 0396872E 3787710N
4361 ft - WGS84

Map Layers Ctrl-L

Base Layers

MapBuilder Topo T

Stack Base Layer

Map Sheets

Stack Map Sheet

Map Overlays

Contours C

MapBuilder Overlay O

Slope Angle Shading S

Geology

Public Lands

Parcel Data

Structures

Motor Vehicle MVUM

Fire History

Fire Activity

Sun Exposure

Forecasts

Weather Shading

Wind Plot

Avalanche

Realtime Data

Weather Stations

Aircraft

Your Data

Your Maps

Your Tracks Z

Shared Data

MapBuilder Features

Shared CalTopo Maps

Preset Combinations X

MapBuilder Topo

7.5' Topo Maps

Forest Service

Aerial Topo Hybrid

Hybrid Satellite

Slope Angle Shading

Label Mount Lowe

Comments

Folder Lines & Polygons

GPS Type Track

Line Weight 2

Line Opacity Solid

Color

Style

Cancel OK

Get The App

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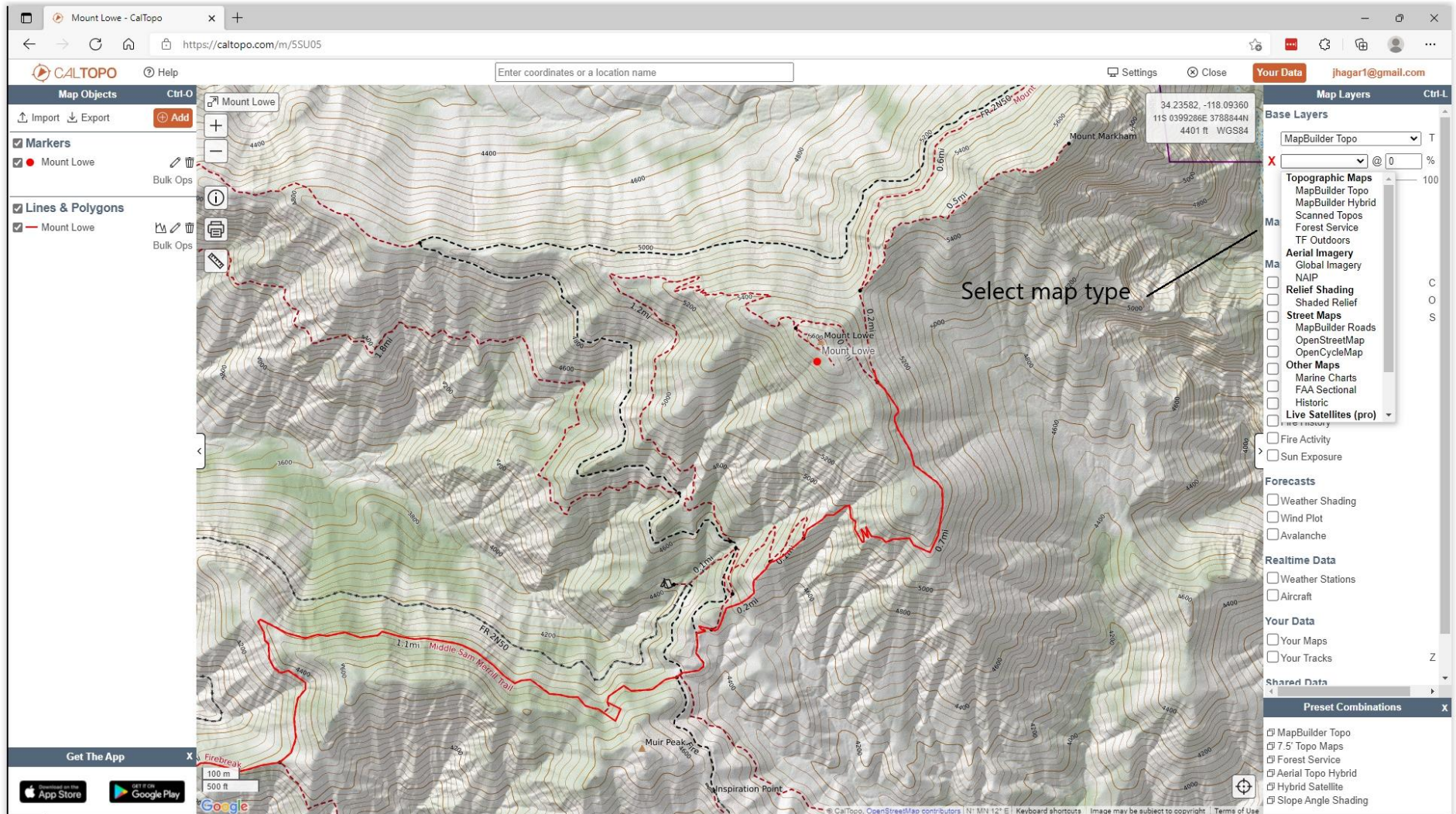
300 m

1000 ft

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SELECTING MAP LAYERS

You can select the base map to use from the right sidebar. The default is Map Builder topo but you can also select 7.5' USGS or USFS topographic maps, as well as US Forest Service, terrain, ArcGIS, shaded relief, road or satellite maps and more. You can also add contours (see inset), slope, and other overlays on the base map. On hybrid maps, opacity can be varied. The paid version has more of these features.



ELEVATION PROFILE

Open the elevation profile from the left sidebar or from the edit menu. Moving your mouse along the profile to see its location on the map.

The screenshot shows the CalTopo web application interface. The main map area displays a topographic map with a red line path and a blue line path. A black circle highlights a specific point on the red line. A tooltip above this point shows coordinates: 34.20724, -118.14053, 11S 0394928E 3785723N, and 1691 ft WGS84. The elevation profile at the bottom shows a red line graph with a cursor at 3499' at 2.18mi, a range from 1718' to 5401', a gross elevation change of +3794' -122', and a sampling interval of 100' w/ 1.2x vertical exaggeration. The profile length is 5.6mi. The interface includes a sidebar with map objects, a top navigation bar, and a right sidebar with map layers and overlays.

Map Objects (Ctrl-O)

- Import Export Add
- Markers
 - Bump 3870'
 - Mount Lowe
- Lines & Polygons
 - Mount Lowe
 - side trip to bump 3870'

Map Layers (Ctrl-L)

- Base Layers
 - MapBuilder Topo
 - + Stack Base Layer
- Map Sheets
 - + Stack Map Sheet
- Map Overlays
 - Contours
 - MapBuilder Overlay
 - Slope Angle Shading
 - Geology
 - Public Lands
 - Parcel Data
 - Structures
 - Motor Vehicle MVUM
 - Fire History
 - Fire Activity
 - Sun Exposure
- Forecasts
 - Weather Shading
 - Wind Plot
 - Avalanche
- Realtime Data
 - Weather Stations
 - Aircraft
- Preset Combinations
 - MapBuilder Topo
 - 7.5' Topo Maps
 - Forest Service
 - Aerial Topo Hybrid
 - Hybrid Satellite
 - Slope Angle Shading

Mount Lowe

cursor: 3499' at 2.18mi range: 1718' to 5401' gross: +3794' -122' sampling interval 100' w/ 1.2x vertical exaggeration expand

5.6mi

3684'

OK

USING OVERLAYS

You can overlay several map layers and set its opacity, in this case an aerial map over a forest service map. Common combinations can be selected from the right bottom sidebar.

The screenshot displays the CalTopo web interface. The main map area shows a topographic map of a region with contour lines, trails, and various overlays. The map is titled "Mount Lowe" and includes a search bar at the top. The sidebar on the right, titled "Map Layers", contains several sections:

- Base Layers:** Includes "Forest Service" (selected), "FS Topo 2016 (green)", "NAIP" (set to 2013-2015), and a "Stack Base Layer" button.
- Map Sheets:** Includes a "Stack Map Sheet" button.
- Map Overlays:** Includes checkboxes for "Contours", "MapBuilder Overlay", "Slope Angle Shading", "Geology", "Public Lands", "Parcel Data", "Structures", "Motor Vehicle MVUM", "Fire History", "Fire Activity", and "Sun Exposure".
- Forecasts:** Includes checkboxes for "Weather Shading", "Wind Plot", and "Avalanche".
- Realtime Data:** Includes checkboxes for "Weather Stations" and "Aircraft".
- Your Data:** Includes a "Your Maps" section.
- Preset Combinations:** Includes a list of preset combinations such as "MapBuilder Topo", "7.5' Topo Maps", "Forest Service", "Aerial Topo Hybrid", "Hybrid Satellite", and "Slope Angle Shading".

Annotations on the map include:

- "Base map" pointing to the topographic map.
- "Map to overlay, with opacity setting" pointing to the Forest Service map overlay.
- "Overlays to main map" pointing to the NAIP aerial map overlay.
- "Common overlay combinations" pointing to the "Preset Combinations" section in the sidebar.

The map also shows various geographical features and labels, including "Mtn", "Tom Sloane Trail", "Grand Canyon", "Saucer Branch", "Mount Lowe", and "TRAIL". The map is overlaid with a grid of coordinates, including "2N50.1" and "111S 0396872E 3788662N".

PRINTING MAPS

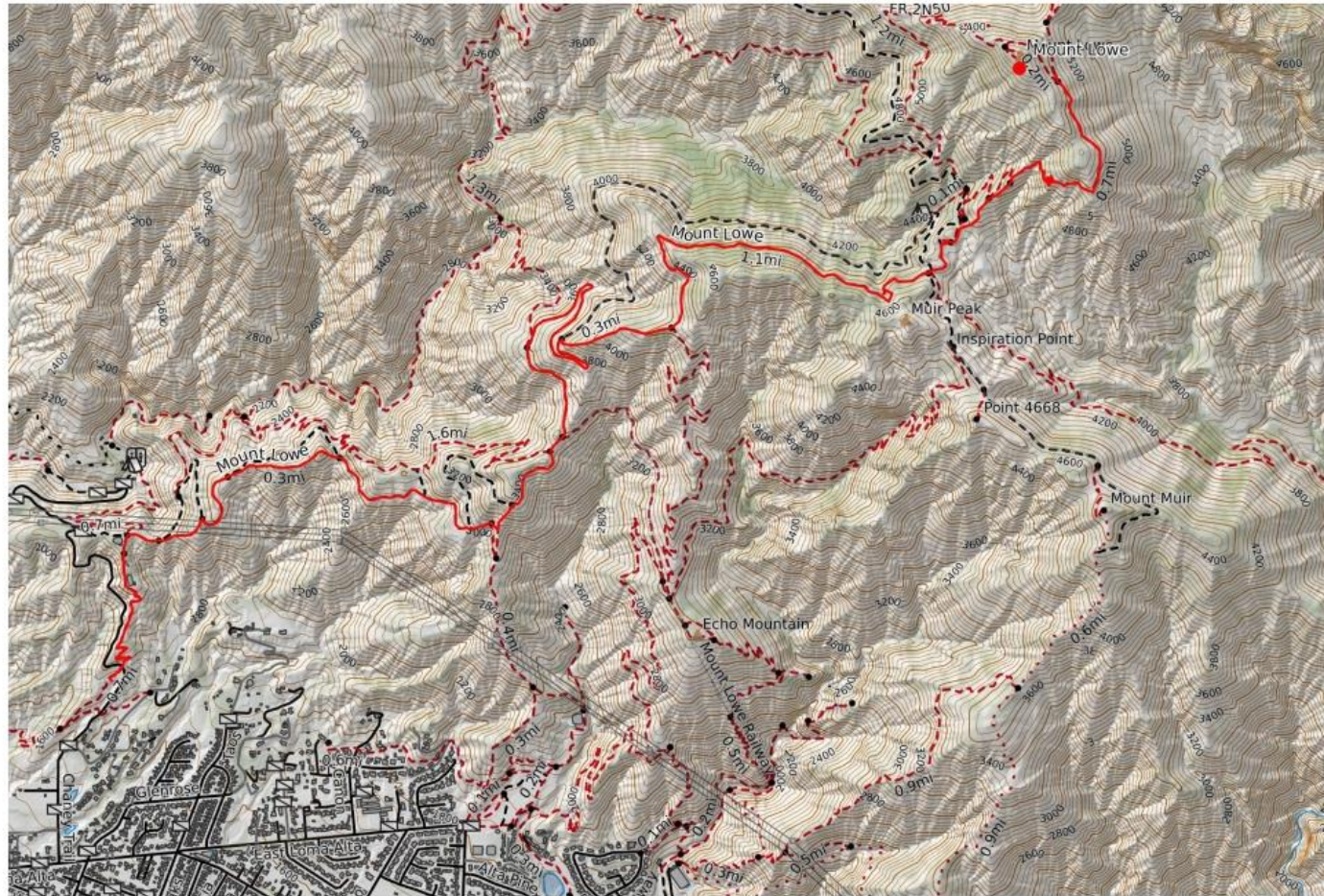
Select the “Print” icon to open a print window. Move the corners of the print box to cover the area you want to print, and set parameters such as orientation, datum, scale and grid. You can change the map type at this stage without going back. To make a multipage map click “Add page”. When you click “Generate PDF” it generates a high-resolution map in a new window with a unique URL. You can save or print from here and also keep the link, which stays active for 90 days.

The screenshot displays the CalTopo web application interface for printing a map. The interface is divided into several sections:

- Top Bar:** Includes the CalTopo logo, navigation links for "Print A Coordinate List" and "Order A Paper Map", and user information for "Your Data" (jhagar1@gmail.com).
- Left Sidebar (CalTopo Printing):**
 - Format:** Set to "Geospatial PDF".
 - General Settings:** Page Size (8.5x11), Scale (Not Fixed), DPI (200dpi), and Title (empty).
 - Grid Lines:** Options for UTM, Lat/Lng in Degrees, Datum (WGS84), and Icon Size (1x).
 - PDF Management:** Save To (Your Account), Keep For (7 Days), Load From (--), and Save As (New URL).
 - Customization:** QR Code field and Custom Corner Images link.
 - Pages:** Table showing Page 1 with Scale 1:21682 and Orientation Portrait. Includes "+ Add Page" and "X Start Over" buttons.
 - Generate PDF:** A prominent orange button at the bottom.
- Central Map:** A topographic map of a mountainous region with a red rectangular print box overlaid. The map shows contour lines, roads, and various peaks like Brown Mountain, Mount Lowe, and Mount Muir. A blue line indicates a trail or path.
- Right Sidebar (Map Layers):**
 - Base Layers:** MapBuilder Topo (selected).
 - Map Sheets:** Stack Map Sheet.
 - Map Overlays:** Contours, MapBuilder Overlay, Slope Angle Shading, Geology, Public Lands, Parcel Data, Structures, Motor Vehicle MVUM, Fire History, Fire Activity, Sun Exposure.
 - Forecasts:** Weather Shading, Wind Plot.
 - Preset Combinations:** MapBuilder Topo, 7.5' Topo Maps, Forest Service, Aerial Topo Hybrid, Hybrid Satellite, Slope Angle Shading.

YOUR PRINTED MAPS

The maps generated look like this. This is a USGS topo map; the map contains scale, declination, etc. You can add UTM or Lat/Lon grids from the Settings option on the main page or print page.



Mercator Projection
WGS84
UTM Zone 11S




EXPORTING ROUTES AND TRACKS

From the export menu you can save in various formats. GPX is a universal standard for handheld GPS units and smartphone apps, KML is used for Google Earth. You can also make a new copy in a new window as a new map.

The screenshot displays the CalTopo web interface with the 'Export Selection' dialog box open. The dialog box contains the following information:

- Format:** Copy to New Map (dropdown menu)
- Checkpoints:** GeoJSON (full backup), KML (Google Earth), Copy to New Map
- Markers:** GPX (handheld GPSs), GPSIO Plugin (older Garmin GPSs)
- Mount Lowe:** on map 34.22908, -118.14149; on map 34.23161, -118.10630
- Shape:** on map 8.99 km, 5.59 mi; on map 7.18 km, 4.46 mi

The background map shows a topographic view of a mountainous area with contour lines. A red dashed line represents a route, and a black dashed line represents a track. A coordinate popup is visible on the map, showing the coordinates 34.22615, -118.14156 and 11S 0394857E 3787820N, with an elevation of 3633 ft WGS84. The interface includes a sidebar with 'Map Objects' (Markers, Lines & Polygons), a 'Map Layers' panel on the right, and a 'Get The App' section at the bottom left.

SAVED MAPS

Maps are saved to your Gmail or other or email account. Clicking “Your Data” allows you to manage your saved maps.

The screenshot shows the CalTopo web interface. The 'Your Data' panel is open, displaying a table of maps saved to the user's account. The table has columns for Name, Description, Sharing, Account, and Updated. The background shows a topographic map of a mountainous region.

Name	Description	Sharing	Account	Updated
Mount Lowe		View with URL	Your Account	1/31/2022
Mount Wilson		View with URL	Your Account	1/31/2022
emmas		View with URL	Your Account	1/27/2022
test		View with URL	Your Account	1/27/2022
Emmas		View with URL	Your Account	1/27/2022
Smith peak2		View with URL	Your Account	1/24/2022
Smith peak		View with URL	Your Account	1/24/2022
jmt plans		View with URL	Your Account	1/18/2022
Lowe		View with URL	Your Account	12/9/2021
Temp		View with URL	Your Account	12/9/2021
Crafts showshoe		View with URL	Your Account	12/8/2021
Lookout 2		View with URL	Your Account	11/6/2021
Thorn		View with URL	Your Account	10/25/2021
pinos		View with URL	Your Account	10/21/2021
Nelson Lake 9-21		View with URL	Your Account	9/2/2021
JMT complete		View with URL	Your Account	8/15/2021
2020 fires		Publicly Viewable	Your Account	8/5/2021
10k		View with URL	Your Account	7/30/2021
costa rica		Publicly Viewable	Your Account	7/21/2021
copter		View with URL	Your Account	7/1/2021
southern sierra loop complete		View with URL	Your Account	5/27/2021
southern sierra loop		View with URL	Your Account	5/27/2021
hildreth		View with URL	Your Account	5/13/2021
gleason		View with URL	Your Account	4/28/2021
antsell south apache 4-17-21		View with URL	Your Account	4/16/2021
antsell spitler apache 4-15-21		View with URL	Your Account	4/15/2021