

User Manual

NP Maps and **Topo Nomad** iOS apps

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About

These apps allow you to easily download official National Park Service(NPS) and United States Geological Survey(USGS) topographic maps for GPS* and offline use. The apps are subscription based, but you can download the first couple of maps for free to try it out.

NP Maps app: Optimized for the USA National Park Service maps and 24K scale USGS maps. A subscription period allows downloading all available maps and stops banner ads. Maps retain full use even after subscription period ends.

Topo Nomad app: Accesses the entire USGS Historical Topographic Map Collection of 24K to 250K scale high resolution maps, including the current US Topo 24K scale maps using the newer format. A key feature of the app is its ability to import geopdf maps, PDF files with embedded geospatial metadata of almost any datum and projection. Maps remain for full use even after subscription period ends.

*(**Note:** The **Topo Reader** app is end-of-life as of September 2018 and is replaced by the **Topo Nomad** app which is essentially the same app. If you have an active subscription, it carries over to the Topo Nomad and NP Maps apps. Maps installed by the Topo Reader app have their rasterized images group shared to view in the Topo Nomad and NP Maps apps. Maps with scales above 25K may have lower resolution when viewed by the other apps and need redownloading to regain the high resolution).*

Getting Started

Explore the app and plan about downloading additional maps you may need for offline use before you travel to regions without data service.

Use the familiar Apple Maps touch gestures for repositioning and zooming the map to your desired location. Touch with one finger and immediately drag it to move the map view. Using two fingers, touch and pinch outward and inward to zoom in and out, or to rotate the map orientation. A double tap using one finger zooms in 2X. A two finger double tap zooms out 2X.

Touch and hold a point on the reference map for one second to begin your selection of USGS topographic map selection for download (and NPS maps in the **NP Maps** app).

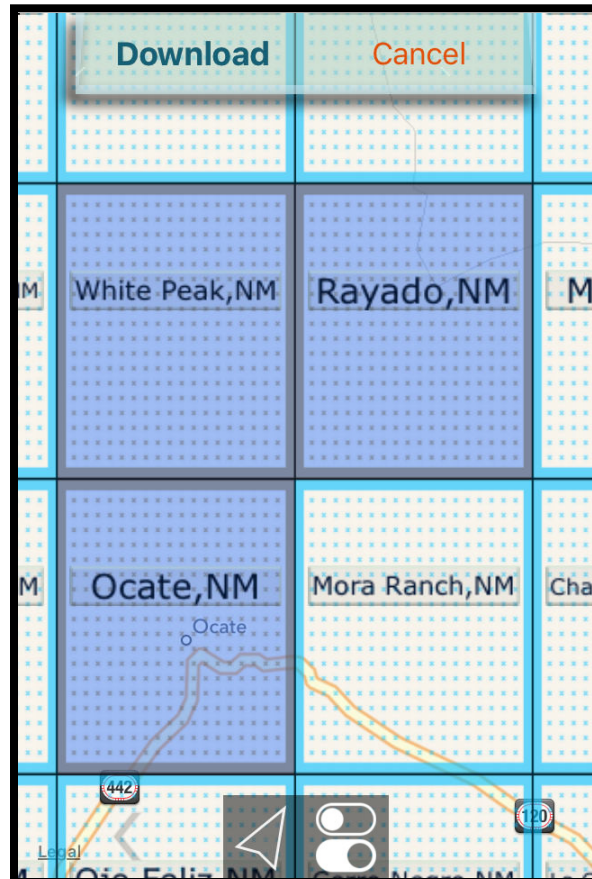
Select and Download Maps

The app indexes the USGS maps (National Park Service in NP Maps) for easy download selection. The indexes are displayed as quadrangle outlines of each map. (For user supplied maps outside the USA, see section "Importing Maps & GPX Files")

Zoom out until the colored grid of maps outlines appear, referred to as the map footprints. The map quadrangle name and state will appear in the footprint index when zoomed in for legible text. (Also, zoom in if viewing at state or country level)

Tap the name label of the map quadrangle, or touch and hold a footprint for a second to enable the map download selection mode. The **Download** and **Cancel** button platter will appear on top. Select up to 25 footprints by sliding your finger in a path or by single tapping. Unselect a footprint by tapping it.

Note: Map selection is disabled when zoomed out significantly, and the footprint grid is made invisible when the map view is rotated (if the orientation compass  is shown in the upper right corner).



Tap **Download** on the button plate to begin the process, or tap **Cancel** to exit.



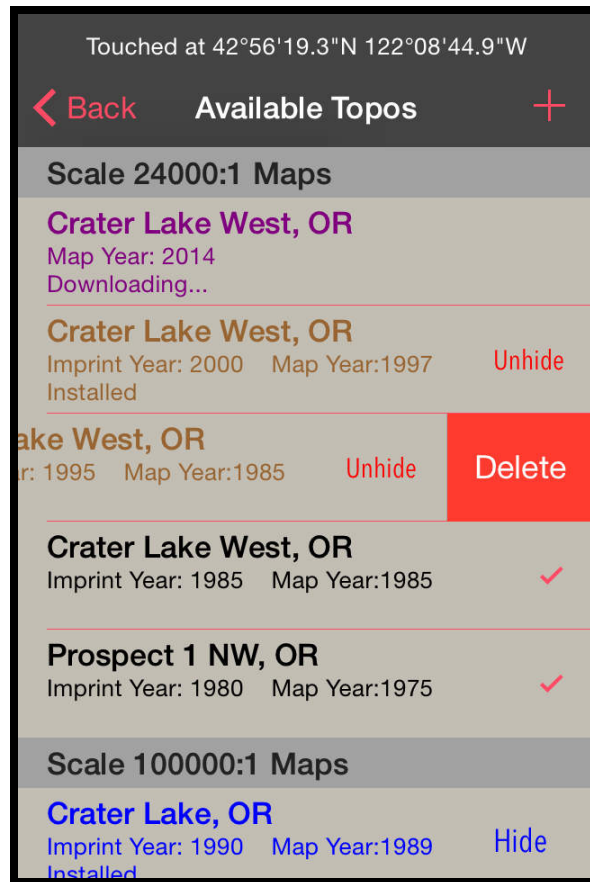
National Park Service index footprints are color coded by park type: **Green** - National park, **Purple** - Historical site, **Gold** - National recreation area, **Yellow** - Preserve/Reserve, **Blue** - Seashore, **Cyan** - Monument, **Olive** - NPS/FS/NRCan topography map, **Light Blue** - Scenic river/Parkway. The USGS map footprint color is bluish-green and may vary by state.


If a larger map footprint is layered on top of smaller ones, tap at the same point to toggle the selection from the smallest to largest map selection. A continuous path touch selects the smallest scaled maps.

Two internet connections queue the maps in the same order as selected. You can prioritize maps to the front of the queue by selecting them again and touching **Download**. This can be desirable on slow network connections.

To bring up a table of available maps for download at a particular location, touch and hold for 4 seconds a location on the screen.

For example, a 4 second long touch at **42°56'N 122°08'W** would show:



Checkmark desired maps and press the  button to queue the download.

Subscription

Purchasing a subscription period allows for downloading and installing any number of maps. No advertisements run during a subscription. And, enables the export and your GPS waypoints, tracks and routes over email and SMS text in GPX file format. The free mode of this app allows a limited number of maps to be downloaded and installed which is the sum of all maps shared between this app and its app family of proliferations such as **Topo Nomad**, **NP Maps**, **NP Maps Yellowstone**. Subscriptions are **not** auto-renewing, so there is no necessity to cancel. Maps remain fully functional after the subscription period ends. The subscription period is shared between your Apple devices and the app versions if the iCloud drive is enabled. Repurchased subscriptions are additive and extend from the expiration date of an active subscription.

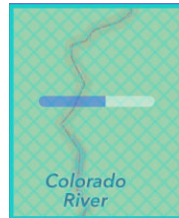
Subscription status and expiration date will appear in the subscription menu after a purchase had been made. The expire hour is midnight of the locale time. If the device was restored or is a new IOS device, purchase receipts can be reprocessed from an iTunes account by tapping the "Restore Prior Purchases" button at the bottom of the subscription menu. If the "Restore Prior Purchases" button is not visible, tap the menu title "Buy Full Download Access" to unhide it. The iCloud drive should be on to share the subscription between other IOS devices using the same iTunes account. A purchase can be made with the iCloud drive off. To sync the purchase with other devices, turn on the iCloud drive in the "Settings" app and then restore prior purchases to update the device expiration data on the iCloud. Devices sharing this subscription should see the new date. If not, then run restore prior purchases on them after running the restore on the device the purchase was made. Internet service is needed for iCloud to work. In the free mode (non-active subscription), existing installed maps can be swapped out for another, one at a time, by deleting one followed by selecting and downloading another. A limited number of swaps are allowed during within a time frame (about an hour). A subscription does not change the download queue size. Map data is not backed up,

app store submission restriction, and a subscription repurchase may be necessary to restore prior downloads.

Lifetime subscriptions are set as a 100 year period. Please understand that the life of this product, the company, service, support, maintenance, servers and USGS services, will not and cannot be expected to be anywhere near that long. It is an implementation function for a one time purchase of this app and subscription service.

Downloading Status

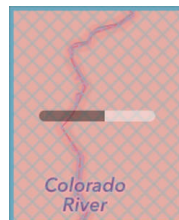
A footprint will display the four modes and progress to install a Topographic map. Two more statuses may appear due to network interruption and server access.



Download Queued and Progressing



Data Downloaded

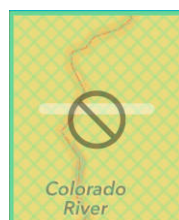


Rasterizing map image
(Peripheral maps may blur during this process)

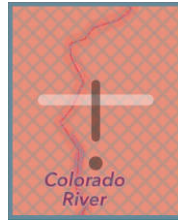


Map Installed

Violet thumbnail when zoomed out



No network connection or internet access
Resumes download when connected /w 5 minute timeout



Server error

Retries every 20 seconds /w 5 minute timeout

Data is unpacked one map at a time so not to overload memory resources.

Note: While rasterizing map images (done for pan and zoom performance), peripheral maps may blur in low-resolution to free cpu memory for this rendering process. If iOS issues a memory warning, the app may pop up an alert and zoom out and unload images to avert a memory crash. If this memory alert occurs you can zoom in and continue using the app. This alert action won't occur after all maps are rasterized and installed.

Coordinates Display and Entering a Coordinate

Three latitude and longitude coordinate formats are supported and the Military Grid Reference System (MGRS) and Universal Transverse Mercator (UTM):

45.340000°N 121.700000°W WGS84

ddd.dddddd°

45°20'00.0"N 121°42'00.0"W WGS84

dd°mm'ss.s"

45°20.400'N 121°42.000'W WGS84

dd°mm.mmm'

10TFR 01852 21543 MGRS

MGRS

10T 601852^mE 5021543^mN UTM/WGS84

UTM

Touch and hold for one second to set coordinates. Coordinates are based on the WGS84 datum. Minutes and seconds can be specified with the ' and " suffix or separated by a space. Both latitude and longitude need to use the same format:

42.9388 -122.146



(WGS84)

Latitude and longitude value can be suffixed with N or S and E or W respectively while delimited by whitespace or these , ' " ° characters. The parser algorithm counts the number of numbers to determine the format typed in. For example, to enter a coordinate with latitude: 34°1'54.8" and longitude: -116°8'0.0", you can type in **34 1 54.8, -116 8 0**. The parser latitude as the left number followed by the longitude coordinate on the right. If reversed, use the hemisphere N S E and W suffixes, for example, **116 8 0W 34 1 54.8N** and the parser will recognize longitude was entered before latitude.

MGRS is recognized automatically if first 4 or 5 characters match a MGRS grid zone. The grid zone comprises of two parts. First is a UTM grid zone number 1-60 followed by a latitude band letter. Second part is two letters for the *100,000-meter square identification* column and row. The third part of the MGRS is the *numerical location*, the easting and northing values which truncate to 10000 meters. For example, Christchurch, New Zealand, could be entered as "59GPM3221078797" for 1 meter accuracy, or "59G PM 32 78" for a 1km position. Another example, Las Vegas Nevada is "11SPA673044". White space is ignored. Note: This app displays the MGRS coordinate as three parts [5 digit MGRS grid zone (UTM + 100km square ID letters)] [5 digits easting numerical location] [5 digits of the westing numerical location].

A UTM coordinate is basically three integers. The first number, the UTM Zone, is the central meridian longitude of 6° numbered from 1 to 60 followed by a *latitude band* letter 'C' to 'X'. The other two numbers follow as easting and northing in meters. The latitude band letters 'C'-'M' are for the Southern hemisphere, and 'N'-'X' for Northern. (Note: 'S' is a Northern hemisphere zone, not Southern). The "mE" and "mN" letters are ignored. For example, Christchurch, New Zealand, could be entered as UTM coordinate: "59G 632210mE 5178777mN" or as "-59, 632210,5178777", or even as "-596322105178777". Likewise, Las Vegas Nevada is "11S 667300 4004400". The UTM Zone letter is optional and a "+" or "-" can be used for the Northern(+ or blank) and Southern(-) hemispheres instead. White space and punctuation characters act as value delimiters.

You can enter a MGRS/UTM *numerical location* coordinate as a single integer number. The app uses the current MGRS grid zone being viewed at the screen center, not your GPS location. The number of digits in the numerical location must be even: 2, 4, 6, 8 or 10, depending on the desired precision. A grid zone size is 100km X 100km (62.1 X 62.1 miles) square.

The  button retracts and hides the coordinates, crosshairs, and ruler if in use. It then flips as the  button to unhide.

Distance Key and Changing Units

The distance key become transparent when map motions stops. Touching the key will unhide it. In far North and far South latitudes the key bases distance off the center of the map view, not the upper left location where the key is drawn.

Tap the distance key when unhidden to change between metric and US Customary units used throughout the app. The units alternate in this order:

0 0.1 0.2 0.3 Miles Statute Miles


0 500 1500 Feet Feet

0 0.1 0.5 km Kilometer

0 100 300 Meters Meters

0 0.1 0.2 NMi Nautical Miles

GPS Location and Elevation

Location services are automatically enabled upon app start up. IOS devices without GPS capabilities such as WiFi only iPad and iPod devices may receive low accuracy location services though WiFi connections. Taping the location service button  controls turning on, off, and centering the map to your current location. The button indicates five(5) possible location statuses:



Location services off. Track recording disabled if on.
Saves battery power.



Location services on.

Tracking current location at map center.

GPS Elevation is shown right of coordinates, orient iPhones sideways in landscape to view. Waypoints dropped in this mode record elevation.

Devices with a compass show a black "N" orienting the arrow true North. The example below shows the user facing South. The "N" will flash if the accuracy of the compass sensors is very broad (over 60°).



Location services on.

Map not centered on current location.

Elevation reading is not shown and waypoint don't record elevation.



Reacquiring GPS signal. A location update hasn't been received for several seconds. A forest canopy or entering a building can cause signal loss.



Location services not available.

Airplane mode was turned on, or loss of GPS and WiFi signal.



No location data.



Location reading is stale and has not been updated for over a minute. Entering a large building or parking garage, and a cave or forest may do this.




The location \pm accuracy is in feet or in meters if the distance key is selected to metric units.



Note: Location services draw extra current when on and will shorten battery use time.

Location Indicator

When location services are enabled your current location is shown by this dot:




 User location. This shows a user's iPhone facing a true heading of 90°E. The  N points to North found on the map image, when displayed.

 User location. Map mode is tracking user's heading. The  N points to the user's true North, when displayed. To enter this mode, turn on GPS location then press and hold for 1 second the  button to toggle between this mode and normal track location mode.

 User location on a device without compass capabilities. The  points to map true North, when displayed.

Note about flip cases: Magnets may be embedded in some device cases which can cause erroneous heading and compass readings. Remove from case for better sensor readings.

Ruler

The ruler is toggled on and off by tapping the center of the crosshairs . The center turns green while the ruler is on . The ruler draws the distance from where its was initially enabled, the red dot , to the location the map is scrolled to. A radius circle is drawn around the initial point while in the "line" mode. The "path" mode show a dot line to the origin location. The path can be erased by carefully backing up the center dot, which will turn red, on the most previous segment.

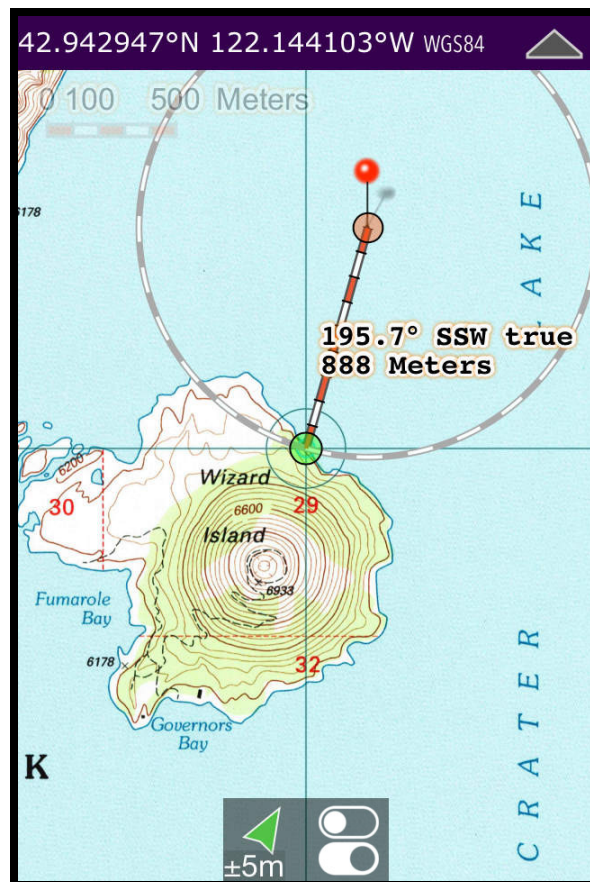
Tap the center dot to turn off the ruler. If turned off accidentally, quickly tap the center dot again before the ruler fades and loses its information.

Ruler controls are:

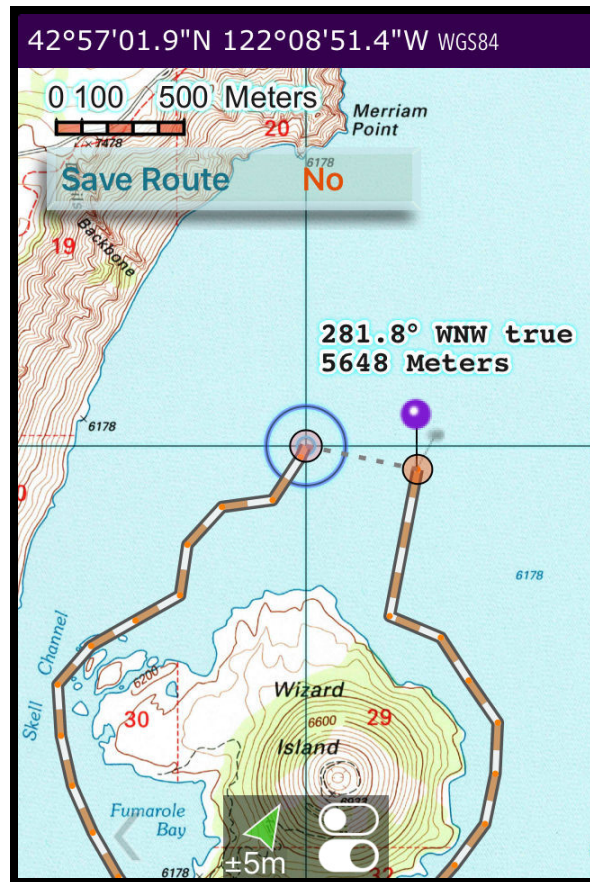
Units - Tap the distance key to change the ruler units of measurement.

Path & Line Ruler modes - Touch and hold the screen for 1 second to toggle between the path ruler and line ruler modes.

Below is an example of the **line** ruler:



Below is an example of the **path** ruler:






The ruler path mode will show the "Save Route" and "No" buttons to save the ruler as a route or not. Tapping Save Route will ask for a route name, or No to hide the buttons.

The ruler calculates the Earth orthodromic distance, the path of shortest spherical distance. The radius circle and the ruler lines are drawn as estimations and are not accurate radial and spherical path projections.

Back Button





Tap the back arrow button  to enable it if dimmed. This arrow backs through the map "camera" view history. The history limit is 3 by default and can be changed in iOS "Settings" app: {app}->"History Count:". Setting the count limit to 0 will disable and hide the back arrow, maximum is 99.

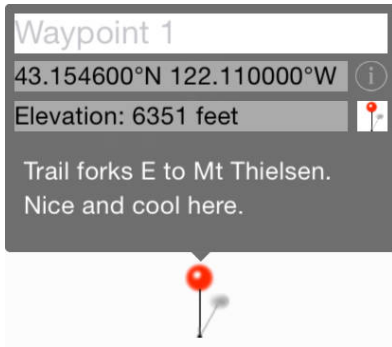
When backing through the history, the history count appears next to the arrow, . The arrow reverses direction and will double back when the end count is reached. The button becomes a red shade in color in the double back mode, .



Pressing and holding the back arrow button for 1 second will toggle the direction (touching the arrow and sliding your finger away will do the same).

Moving the map will record the current map camera view. If the follow user location mode is enabled (tracking current location), only the first and last locations are recorded into the history. Tapping the back arrow will disable the follow user mode and record the last location. The mode is also stopped by moving the map or turning off location services.

Waypoints

Add a waypoint from the settings menu  by tapping the [Add](#)  waypoint button. A new point is dropped at the map center with a popup callout:



The waypoint is given a placeholder name and an incrementing number shown as "Waypoint 1" here. If location service is on and tracking  then elevation is logged into the waypoint data. Tap the information button  to reveal elevation and notes. All of these fields can be edited when touched. Modifying the coordinate values significantly may cause the waypoint to vanish off the screen to the new location. Another waypoint cannot be added until the map is moved. Touching a waypoint pops out is callout. Changes to coordinate, elevation and name must be saved using the RETURN key, otherwise ignored. Tapping outside the callout view saves notes entries since a return is logged as a carriage return. However, tapping outside the callout view discards changes on other fields (name, coordinates or elevation).

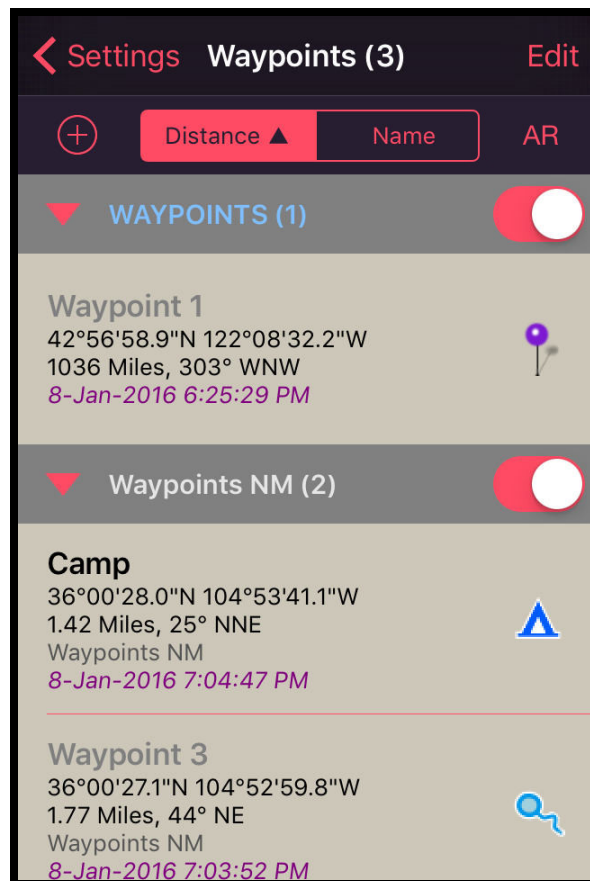
The waypoint notes support HTML formatted text or a web link to the text. HTML formatted text requires the first characters to be **<HTML** or **<!**. For a web link, the first characters must be **HTTP:** or **HTTPS:** and may require internet service to view.


Waypoint data is stored in the GPS Exchange Format. The files can be uploaded and downloaded using iTunes on a Mac or PC under the IOS Device Apps tab in the File Sharing category inside the 'Waypoints' folder. Each file is a waypoint group.

Note about adding waypoints while recording routes or tracks:

If you add a waypoint while building a route path, a new waypoint group is created and tagged with a prefix of "ROUTE: " in its name. Likewise for tracks, but, while viewing the current recording track path and only if the GPS is homed to following your current location, then adding a waypoint is put into a group named "TRACK: " appended the track name. Deleting a track or route will remove its corresponding waypoints group; if you need to keep those waypoints but delete the track/route, then first rename its waypoint group to disassociate it.

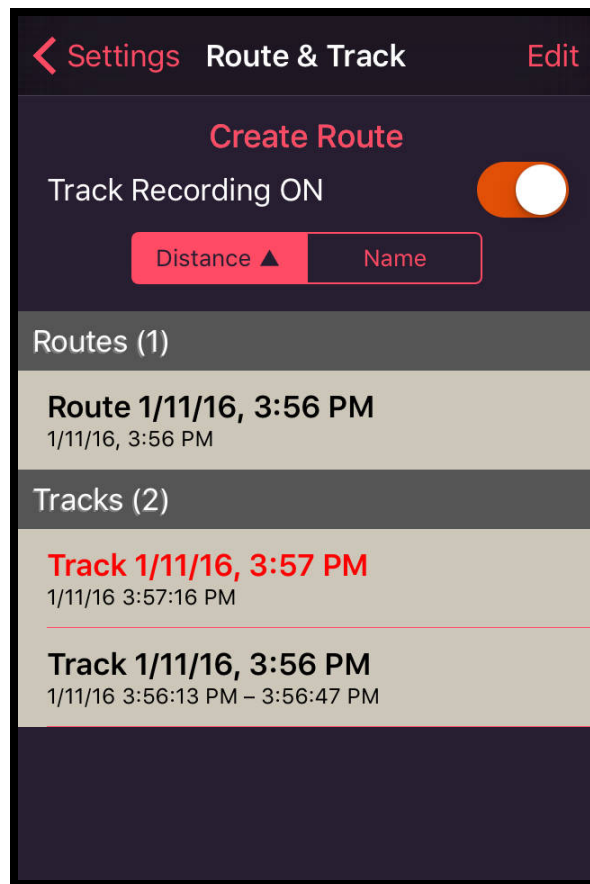
Waypoints Menu



Waypoints can be listed in the menu by distance from the map center or alphabetically by name. To center the map on a waypoint, double tap the waypoint table row. Waypoint groups are created by the addition button . A group must be given a name to create it. New waypoints are added to this group. Renaming a group is done by touching and holding for 2 seconds the group name header. If the new name matches an existing group then the two groups have the waypoints merged. Double tapping the group name selects that group for the addition of new waypoints. Tapping the triangle toggles hiding the list of waypoints. The switch hides the group waypoints from being shown on the maps. Tapping a waypoint symbol allows you to change its symbol and makes that symbol the default for new waypoints. Changing a waypoint to another group is not an implemented feature.

The AR button presents an augmented reality camera view for the waypoints. The slider at the bottom reduces the viewable distance of waypoints if too many are cluttering on the horizon. Five sensors mesh to create this feature. The sensors can be uncalibrated or getting bad readings so don't trust the direction or location of the waypoint objects. This is a "gimmick" feature, do not use for navigating or for direction. iPods and iPads without GPS don't have this AR feature.

Routes and Tracks



Routes and Tracks can be created and viewed from this menu.

A track records a trail of your current GPS locations from when track recording is turned on until turned off. When on, a track is recorded in the background while not using the app. Be aware that this may draw slightly more power from the battery even when the device is in sleep mode. The default name is "Track" with the date and time. The new track name is created and shown in red on top of the list. When turned off the current track name is retained for a few seconds incase off was not wanted. Then the "Track Recording OFF" will transition from red to white when a new track can be started. If the GPS is turned off for over 1 minute, the track recording will be stopped. Track recording is also turned off by terminating the app (double press the device home button and swipe the app image upward).

Note: The GPS and track recording may automatically turn off if the device location has not moved for a period of time. This is done by the IOS to save battery power and track recording may need to be switched back on.

A Route allows you to create and save a path image on a map. Tap the Create Route button to start the path from the current center of the map. Be sure that the center of the map cross hairs are positioned at the path start before creating. The app will leave the menu and resume to the maps view. Touch and move the map view to draw the route. A button platter will be visible to save the route or cancel it. Route are logged as point for each distance segment with orange dots. Zooming in and out or changing the units will affect the segment lengths on added route points. Carefully following backwards on a route will erase segments.


To view a track or route, double tap on the name.

To change the name, press and hold for a second the route or track name. If the name matches another, then the two routes or two tracks are merged. Track are scanned for timestamps and append older with latest. Route path merge by appending the newly renamed route to an existing named route.



To hide and end viewing a route or track on a map, tap its floating name and distance label. Only one track or route can be view at a time. Track and routes that are segmented (GPS was temporarily off) less than 1

mile or 1 km are joined.


Deleting Waypoints

Delete waypoints from the [Waypoints](#) table in the settings  menu. Waypoints are sorted by distance from the current map center location. Left swipe a waypoint entry to reveal the delete button, or alternatively select the [Edit](#) button for bulk delete. And entire group of waypoints can be deleted by left swiping the group name header which will prompt before doing so. Also, at the bottom of the table is a [Delete All Waypoints...](#) option. Delete cannot be undone. Waypoints are backed up if your device is backed up to iTunes or the iCloud.

Search

In the Settings menu  tap the  button to bring up the geocoding search bar. Geocoding searches are performed over the internet and will reposition the map region to the selected search result coordinate.


Deleting and Managing Maps


Deleting topographic maps from storage is done either from the **Maps** table found in settings  [Maps](#) or by touching and holding a point for 4 seconds to reveal the **Available Maps** table at that coordinate. In these tables, tap the [Edit](#) button in the upper right corner and select the maps and confirm delete, or alternatively you can swipe the map listing left to reveal the delete button.

Maps in the **Maps** table are sorted by distance from the map center and sectioned ascending by scale as default. At the top of the table are three sorting options: by scale group (ascending, descending, none), distance, and name.

Maps in the **Available Maps** table are sorted by date and sectioned by ascending scale.

Hidden Maps

The  purple ring in the crosshairs indicates one or more maps are hidden at that coordinate.

The  blue ring in the crosshairs indicates a smaller and higher detailed topo map is below the larger scale map shown. Zooming in will reveal the smaller map.

Touch and hold for 4 seconds on that point to bring up the table of maps for controlling map hidden attributes. Multiple versions of the same map can have only one version visible and the others are automatically hidden. Hidden attributes are,

Hidden Map is hidden (Topographic Maps table)

Unhide Map is hidden, tap to unhide

Hide Map is visible, tap to make hidden

For same scale map versions the latest map defaults as unhidden, the others hidden. The Settings controls will reveal the button [Clear Hidden Map Selections](#) to reset to hidden map defaults if any hidden attributes were changed.

Touch Gestures

There are three swipe gestures for hiding and unhiding maps using two fingers. Acts on the maps at the touched mid point.

TWO FINGER SWIPE LEFT or RIGHT - Hides the displayed map at the touch points, and, unhides all if all hidden there.

TWO FINGER SWIPE UP - Hides the displayed map and reveals the next older map version from smallest scale to largest, and, unhides the latest versions if all hidden.

TWO FINGER SWIPE DOWN - Reverse of two finger swipe up. Unhides the next newer hidden map version. No action taken if the latest versions are shown.

TRIPLE TAP - Hides all controls for fullscreen map view. Tap the triangle button in top right corner the exit this mode, or rotate the device. On iPhones, shaking the device will also enter fullscreen map view mode.

TWO FINGER LONG PRESS - Changes the map boarder crop-margins mode.

Settings

Automatic Map Download - When on, automatically downloads the topographic map for your current location. The location check is done every two minutes. Default is on.

Park Map Footprints, Topography Map Footprints - (*NP Maps* and *NP Maps-Yellowstone* apps) Shows the catalog of park and topographical maps available for selection download. When off, hides the footprint overlay and drawing performance may improve. Default is on.

Map Opacity - A slide control for the topographic maps transparency to see through to the reference Apple Map layer. Set to 0% to hides the topographical and park maps. Default it 100% opaque.

Crop Margins - Hides the boarders of the topographic map images which show the map key and USGS information. When set to **Yes**, the boarders are cut around the map so that adjacent maps will appear stitched together. The **Auto** mode automatically removes boarder margins when an adjacent map is in view. When set to **No** the clipping is off and the margins are always shown. The map in the center crosshairs is brought to the front of the map stack. Default mode is Auto. A TWO-FINGER PRESS HOLD for 1 second on the map transitions these modes.

Datum - The datum is the reference model of the Earth used to determine the coordinate values. The default setting is **WGS84** which is the datum GPS satellites use. The **NAD27** is the North American Datum of 1927 which a majority of USGS historical maps are based on. Recent USGS maps may use NAD83. This app handles the NAD83 datum as equivalent to WGS84. The **Maps's** setting displays the coordinate values based off the datum of the topographic map in the center crosshairs. In this mode the coordinate values match what is printed on the topographic map. If you are recording or sharing coordinate locations with others, unless otherwise instructed, it is recommended to use datum mode **GPS** (WGS84) and make note of the datum as WGS84 as this is one of the more universal and recent datum models. If the coordinates field and crosshairs are not hidden, the datum being used is shown in small font right of the coordinates. It may show WGS84, NAD27, NAD83, OHA, PUR, GUA for World Geodetic System 1984, North American Datum of 1927, North American Datum 1983, Old Hawaiian, Puerto Rico datum, and Guam datums respectively. Other datum acronyms may appear not listed here. Note: If NAD27 is selected and coordinates are MGRS or UTM then the map's datum is used in place of NAD27.

Reference Map Type - The map mode for the background Apple map layer. Default is **Standard** which is the graphics drawn road map. The **Hybrid** setting draws satellite aerial image with road overlay graphics. And, **Satellite** for just the aerial map.

Map Storage Used: - Bytes used by this app for storing downloaded map images and data.

Reset to Default Settings - Sets the above settings to the default values. No other states in the app are changed.

Clear Hidden Map Selections - If a topographic map was made hidden or an older map version unhidden then this button becomes visible. It resets all hidden maps settings to the defaults of revealing the latest map versions.

Sync \ Restore Maps

For restoring downloaded maps on a new iOS device or to synchronize installed maps between devices or to recover just deleted maps, use the **Sync \ Restore** button is found in the settings menu Maps table. Scroll down to the bottom of the list of maps. If the **Sync \ Restore** button is showing, then tapping this button will show a list of your devices from which maps can be synchronized. This device will be shown because if you had just deleted some maps, a restore can be made of those deleted maps (delete restore cleared upon app exit). Devices with zero differences have faded text. An iCloud connection is needed to sync device map sets.


Selecting a device to synchronize maps with will list map quadrangle names for download and confirmation. If an old device is listed, swipe its entry left to delete its listing. A subscription may be necessary to download maps. After starting a restore\sync of maps, unwanted downloads can be deleted from the download/install queue in the Maps table, or by pressing and holding for 4 seconds the map quadrangle progress overlay.

Importing Maps & GPX Files

GPX Waypoint, tracks, routes and PDF map files can be imported as email attachments, through iTunes, and as downloads from Safari web browser.

To import PDF and JPEG map files using iTunes, select your device Apps tab and copy files into the File Sharing Documents window. Waypoint files must have the **.gpx** extension while topographic maps must have the **.pdf**, or be PDF files zip archived with the **.zip** extension. There is limited support for importing KML\KMZ files to extract only placemarks\waypoints. JPEG files do not contain geospatial data. PDF files missing geospatial metadata, and JPEG files, are placed in the Atlantic ocean at coordinate 0°N 0°E.


Exporting GPX Waypoints Routes/Tracks

In the Waypoints and Routes + Tracks menus, an upload button  will be shown if exporting capabilities are available over email or SMS text messaging. The export file format is GPS exchange (GPX) format, an XML file type.

A cheap subscription purchase in freemium versions of this app may be required to enable GPX exporting.

Aligning Imported Maps


Imported JPEG map images, and PDF files missing geospatial metadata, can be aligned to WGS84 datum coordinates by adding four(4) special waypoints. Locate four points on the map image that can be assigned WGS84 coordinates, such as topo map hash marks, or even road or path intersections that can be seen on the satellite map for the coordinate. These four point need to be located in a rectangle or trapezoid formation:

1) Center the crosshairs on a map image point while zoomed in close for best accuracy. 2) In settings menu press and hold for 5 seconds the **Add**  waypoint button. This drops a special "ALIGN POINT: #" waypoint. The "#" count is used to determine these first four points. This # can be changed and can have a decimal fraction. 3) Selected the waypoint coordinate text field and type or paste in the WGS84 latitude and longitude coordinate. 4) Repeat for the remaining alignment points. 5) In the settings Maps menu, find the map in the table, press and hold for 2 seconds to segue to the Edit Map Info window and tap the "Apply

Alignment Waypoints" button.

Additional alignment points, five or more, can be used to fine tune non-linear maps, such as hand drawn insets. Also, topography maps should have the first four points near or in the map corners and a fifth alignment point placed in the map center to provide best alignment.

Adding "Neatline" points allow for cropping out the map margin boarder. Neatline points are optional and requires a minimum of four(4) alignment points. Neatline points must be put in each corner of the map image and along its outline. The placement order must be in a clockwise formation following the ascending # value of the "ALIGN POINT: # NL",

1) Drop an alignment waypoint, press and hold **Add**  button for 5 seconds. 2) Add the keyword 'NL' or 'NEATLINE' to the "ALIGN POINT: #" title, ie. "ALIGN POINT: 2.1 neatline". The NL or NEATLINE can be lower case. 3) In the Maps menu press and hold the map table cell for 2 seconds and tap the "Apply Alignment Waypoints" button in the Edit Map Info window.

Offline Use

This app is designed to display the downloaded topography and National Park Service maps anywhere at anytime without internet data service. However, the Apple Maps reference map layer require internet service to load map image tiles that are not cached and may not be visible when used offline.

The Apple Map tiles covered by topography or park map overlays are not loaded, unless, the Map Opacity setting is below 100%.

Apple Map Disable \ Internet Silence

To disable the Apple reference map layer and to prevent downloading Apple map tile images, run the "Settings" app and switch on *Settings->{app}->Disable Reference Map->ON*. This setting is cleared to off and Apple maps is reenabled by the "Reset to Defaults" in the app settings menu. When disabled, the Apple map layer displays as a blank grid.

To further prevent other extraneous internet data use by the app, disable the event logging: Select this app in the "Settings" app and in the options set the 'Event Logging Opt-Out' to ON.

Current US Topo vs. HTMC maps

Changing the default download selection between current US Topo or HTMC is done in the "Settings" app, select the "{app}" menu then set the switch "US Topo Format" to either on or off. The initial default is off since the HTMC format is faster and uses less power.

The Historical Topographic Map Collection (HTMC) from the USGS are map archives and do not get updated. These scans have smaller data size and faster rendering. The HTMC maps have a hand crafted appearance.

The "US Topo" map sets are regularly updated by the USGS. This format has larger download size and use more power to render. This app doesn't support sublayer controls.

Terms and Conditions of Use

BY USING THIS APP, YOU AGREE TO THESE TERMS AND CONDITIONS OF USE; IF YOU DO NOT AGREE, DO NOT USE THIS APP.

Travel and Navigation:

Always carry paper or hardcopy maps and compass calibrated for your regions of travel. Do **not** use this app

as a resource for navigation. Do **not** use this app for surveying.

Battery Use:

Pay attention to the device battery reserve. This app does not monitor battery reserve and does not warn of impending loss of power. Terminate this app if it is attempting downloads, network indicator swirl showing, without network access or on battery power by double clicking the home button to access the Task Manager and swipe the image of this app upwards. On restart this app will prompt to 'Forget' or 'Continue' the pending downloads, press 'Forget'. On battery power, minimize use, avoid and stop downloading of unnecessary maps, and sleep the device.

Maps:

Maps may and will show topography and features that no longer exist, changed location and route including roads, trails, bridges, buildings, elevations, lakes, streams, springs, wells, dates and other features natural and man made. The maps from the USGS Historical Topographic Map Collection are NOT updated and the information shown is dated by years, decades and over a century in age. Of the available collection of maps that can be downloaded, a small number of maps known and unknown may contain flaws in the accuracy and correctness for the imaging and metadata including neatline and coordinates projections and translations causing maps not to appear, display the wrong map, size, scale, coordinates, datum and user location. Maps may not download due to reasons unknown and due to changes in server, network, data indexing, metadata, software and data base updates or failure.

Backups:

Maps and map data is **not** backed up. Waypoints, Tracks and Route GPX data is backed up if the user backs up the device to the iCloud or iTunes. The map data size exceeds the Apple app submission requirements and is considered non-user generated and restore-able data. A subscription repurchase may be necessary to restore maps by re-downloading.

Security:

All URL requests are encrypted SSL connections. The network transactions this app performs are: (1) requests for map data files downloads in compressed and HTTPS formats, (2) plain-text pings to <http://www.apple.com> for network availability, (3) geocoding search requests that are transmitted using only secure HTTPS URL transactions, (4) event usage logging if not opt-out over SSL connections, (5) iTunes store purchases and receipt logging over SSL connections.

User Data and Privacy:

If event logging is enable, feature usage may be logged and periodically uploaded on an encrypted SSL connection. The data logged may include GPS locations, maps installed, map center coordinate and altitude, search text, vender device UUID, and device name and locale. No data beyond the scope of this app is logged. To opt-out and disable event logging, select this app in the "Settings" app and in options set the 'Event Logging Opt-Out' to on. Event logging is opt-in when the app installed. When event logging opt-out is enabled only subscription menu selection and purchases are logged. Purchases and user selection in the Subscription purchase menu are always logged and done over SSL connections.

Data Usage:

Downloading maps can induce a significant data usage on network plans. Downloading on WiFi networks with unlimited or high data limits is recommended. Download size can range from 2MB to 60MB with a median of 11MB and average of 13MB per topographic map.

Updates:

Future releases of this software reserve the right to make change to these terms and conditions.

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‡ Not all geospatial projections and metadata formats are fully supported. Please email support with geospatial PDF maps that incorrectly install.

* Some iPad models and iPod Touch models do not have GPS hardware for offline location service. Continued use of GPS running in the background can dramatically decrease battery life.

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US Forest Service www.fs.fed.us,

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