Gmap4 Help File

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Look for the tag "**(new)**"

1. Overview

Gmap4 is a map sharing service that runs online and is **100% free** (for non-commercial use). Gmap4 is all map all the time. There is nothing to buy, nothing to download, nothing to install. You launch Gmap4 by entering the Gmap4 link into your browser bar along with link parameters to control how your map looks when it first appears on the screen.

Do you have a smartphone? Since Gmap4 is a web-based application that runs in your browser, it does not matter where that browser is located. You can run Gmap4 in the browser on your phone, iPad, iPad, notebook, laptop, desktop, etc.

If you wish to use Gmap4 in support of a commercial activity, then there is a modest annual fee. Please see this page for more information:
http://www.mappingsupport.com/p/gmap4_commercial.html

If your use of Gmap4 is non-commercial but you would like to **donate**, then you will find more information here: http://www.mappingsupport.com/p/gmap4_donate.html
All donations are greatly appreciated and help keep Gmap4 ad-free.

You can build a link that will display your Gmap4 map and then use that link just like any other link. You can also embed a 'live' Gmap4 map on your website, blog, Facebook and some forums by running Gmap4 in an iframe.

Gmap4 is based on Google Maps and in addition to the normal map views provided by Google Maps, Gmap4 also displays the latest detailed topographic maps from http://caltopo.com and the U.S. Geological Society. **These maps have eye-popping quality that is superior to the scan quality of all other USA topographic maps that are available through a Google Map interface.** These high resolution topographic maps have no watermarks and no ads. They are all map all the time. You can even adjust the amount of hill shading you prefer. For more information, please search this Help file on CalTopo.

Gmap4 also displays topographic maps from http://www.mytopo.com. These maps cover the US at 1:24,000 and Canada at 1:50,000. One great feature about these topographic maps is that they include the updates produced by the US Forest Service and Bureau of Land Management to the USGS 1:24,000 quadrangles.

You can also view the new vector topographic maps provided by the government of Canada. These are often called "Toporama" maps.

You can display GPS data on the map and then **fly over that data in 3D**.

Gmap4 can read and display data from the following types of files:

- KML/kml files
- KMZ/kmz files
- GPX/gpx files
- TPO/tpo files

- TXT/txt and SSV/ssv delimited text files
- Google MyPlaces files (used to be called MyMaps)

Delimited text files must be organized as described later in this Help file. Also, you must first place your data file **online**. At the present time, **Gmap4 cannot read data files from your local hard drive**.

Each map can be identified with a clickable link which you can:

- Email to someone
- Add to a website
- Include in a trip report

If you need a way to put your files online, check out Google Sites. This 'Help' file includes step-by-step instructions for using this free service.

Maps based on KML files can include much more information than maps based on GPX files. This additional information includes icons that display text and/or clickable photo thumbnails. There are links in this 'Help' file to sample KML files that you can copy and use as templates for your own maps.

A map can display data from just one file or from more than one KML, KMZ and/or Google MyPlaces file.

You can place one marker on the map simply by using a link parameter. There is a search feature which lets you place markers at the results of your search. Maps can be printed right from your browser.

The maps can be displayed and printed with or without a UTM grid (WGS84 datum).

Gmap4 is produced and maintained by its author as a public service and a small way to 'pay it forward' to honor those who have provided its author with kindness and help in the past.

There is a lot of info in this help file so the advice is: **Start slow**. If you already have GPX files then start by putting them online using either the free service known as Google Sites or your own website. That's all you need to do in order to view your GPX files with Gmap4. Then later if you want to improve the quality of your maps you can come back to this 'Help' file and learn about:

- Converting your GPX file to a KML file
- Editing KML files
- Making delimited text files using a simple format that is unique to Gmap4

Thank you for looking at this 'Help' file and I hope you find these instructions to be informative and easy to follow. Please take a look at the "**Quick Start**" section since it might help you decide if Gmap4 can be useful to you. My primary browser is Firefox so any browser-specific instructions pertain to that browser. And keep in mind that conditions on the land and surrounding area may have changed since the aerial photos were taken and/or since the

topographic maps were made. When you head out to the field, remember to bring along your common sense.

2. Will Gmap4 help you?

Well, maybe not. You may already have a set of topo maps on cd or dvd for the state where you live and which adequately meet your needs. There is certainly room in the world for many different tools. But what if you want to view a detailed topographic map for a spot in a state where you don't own any such maps? Below is a link to a map of the USA. Just drill down on something that you want to see in the USA or Canada and when you find it then open the menu in the upper right and click 'MyTopo' in order to see a detailed topographic map for that spot:
http://www.mappingsupport.com/p/gmap4.php?ll=52.48278,-114.785156&z=3&t=m

Or perhaps you want to find your location on a detailed topographic map by using your smart phone. If your phone's browser can connect to the internet, then Gmap4 lets you do this (USA and Canada only).

Or maybe you have a bunch of TPO files that you want to view on the Google aerials. No doubt you know that Google Maps itself cannot display those files. Good news: Gmap4 can display them just fine.

Or your existing maps do not include a UTM grid. Gmap4 can display one and also show you the UTM coordinates for any spot on the map.

Or perhaps you would prefer to email or post a link to an interactive map with your GPS track instead of just a static jpeg map. Gmap4 lets you do that.

Does your other mapping software include a worldwide search feature? Gmap4 does.

3. Supported browsers and a word about fonts

Gmap4 uses version 3 of the Google Maps API (Application Program Interface). This API officially supports the following browser and operating system combinations.

This list is current as of **May 7, 2012**:
IE 7.0+ (Windows, compatibility view is not supported)
Firefox 3.0+ (Windows, Mac OS X, Linux)
Safari 4+ (Mac OS X, iOS)
Chrome (Windows, Mac OS X, Linux)
Android
BlackBerry 6
Dolfin 2.0+ (Samsung Bada)

Other browsers might work but are not officially supported

Firefox note: If you see a mostly blank screen then open Firefox Tools ==> Options ==> Content ==> Colors. Check the box captioned "Allow pages to choose their own colors, instead of my selections above". Click OK a couple of times and you should see your map. This may be a Google bug since earlier versions of the Google Maps API are not affected by this setting.

Internet Explorer v.8 note: A user reported that Gmap4 does not work on IE8 if you are using the "in private filtering" feature of IE8. You might try adding http://www.mappingsupport.com or http://www.mappingsupport.com/p/gmap4.php to IE's list of safe websites. If anyone can shed more light on this, please send me an e-mail.

Often times when you click something on the map, then more information is displayed. That information is displayed using your browser's default font. To change that font style and/or size, simply change the default font setting in your browser.

4. Embedded browsers - Features for software developers

A mobile app can include an "embedded" browser and Gmap4 can run in that browser. Special developer-oriented features have been added to Gmap4 to (1) comply with the relevant 3rd party terms of service and (2) improve the user interface when Gmap4 is used in this manner. These mobile apps can be both commercial and non-commercial. Keep in mind though that Gmap4 only works if the embedded browser is online to the internet.

Here is one idea. If you are managing a database of geospatial data then you could build a mobile app that would display **dynamically generated text files** which would display your data with Gmap4. In broad strokes, such an app would:

1. Let the user request data
2. Get the data from the database
3. Build a text file using the delimited format that Gmap4 can read
4. Host the delimited text file
5. Display the delimited text file with Gmap4 running in the embedded browser

Maps built with delimited text files can include symbol labels that are styled with your own css. For example, open the following map and then see how the labels change when you switch the map to one of the aerial views:
http://www.mappingsupport.com/p/gmap4.php?q=https://sites.google.com/site/gmap4files/p/delimited/teanaway_peaks_delimited.txt&ll=47.423678,-120.86048&t=t4&z=14

For more information on using Gmap4 in an embedded browser please send me an email before proceeding with your project. There is an important issue regarding 3rd party terms of service that has to be addressed.

5. Terms of Service

By using Gmap4 you agree that you are doing so entirely at your own risk. You acknowledge that there may be inaccuracies in the maps you see and data you obtain from Gmap4 and that there may be programming errors in any of the software that is part of Gmap4. You agree that you will not bring any claim of any nature or file any lawsuit against anyone that is in any way connected to your usage of Gmap4.

By using Gmap4 you further agree to be bound by Google's Terms of Service which includes but is not limited to the information at the following links:
http://www.google.com/accounts/TOS
http://code.google.com/apis/maps/terms.html
http://code.google.com/apis/maps/faq.html

Please do not post Gmap4 URLs in forums or on websites where the user is required to pay a fee to access the forum or website. Doing so most likely violates Google's terms of service. Also, as the software developer that wrote Gmap4 it is my intent that it be free. If you place Gmap4 links on a 'fee' part of a forum or website, then you are acting contrary to my intent.

6. Privacy policy and security issues

Gmap4 does not collect any personally identifiable information such as user names. If you use Gmap4 to view GPX or TPO files, then that file is converted into a KML file and that KML file is temporarily hosted on the Mapping Support server. A script will periodically delete those copies but that script has not yet been written. Deleting those temporary copies will not prevent anyone from viewing the GPX or TPO file with Gmap4 as long as the original data file is still wherever you placed it online. Gmap4 collects usage statistics with the statcounter software.

Since Gmap4 uses the Google Maps Application Program Interface (API), Google's privacy policy is incorporated by reference: http://www.google.com/privacy.html.

The internet security features of Gmap4 have been enhanced. When you ask Gmap4 to display a data file, that file is scanned in various ways by code running on the MappingSupport server before any map appears on your screen. If the scans find anything that is possibly suspicious, then that part of the data file is rendered harmless. All of the map will work fine except for the specific field (name, description, etc) that caused the error message. The map will still display along with a message telling you what the scanning process found. If you see a security message that you feel is a 'false positive', then please go to the Gmap4 contact page and email me a report including a link to the map that generated the security message.

If you edit your GPX, KML or other data file, then please do not add the characters < and > in your data file unless you are adding HTML tags to your file. If you ignore this rule then the internet security screening might display error messages when you view your file.

Google also does a certain amount of internet security screening. Depending on the type of data being viewed, security screening might be done by Google or by Gmap4 or by both.

If you use the 'My location' feature then Gmap4 does not retain that location information and does not share it with anyone.

7. Quick start guide

Here is a list of some of the things you can do with Gmap4 and basic instructions for doing them.

a. You want to use Gmap4 on your phone or other mobile device

Open Gmap4 in the browser of your mobile device just like you open Gmap4 in the browser on a desktop or laptop. Gmap4 is a browser app (not a 'native' app) and will run in most popular browsers, however the browser has to be online. **Special buttons** are automatically displayed when you open Gmap4 on a smartphone, iPod or Blackberry. Here is a quick way to start Gmap4:

1. Do a Google search for Gmap4.
2. Open the first 'hit'. It is the Gmap4 homepage.
3. Look right under the title and click "Start Gmap4". The default map will open.
4. Use zoom/pan and Menu ==> Search to find what you want.

b. You want to see the highest quality topographic maps for the USA

Zoom in or use the search feature.
Click the map view button (upper right corner) and select "t4 Topo High".
A few states are not ready yet. For more information, search this file on "CalTopo'.

c. You want to see the highest quality topographic maps for Canada

Zoom in or use the search feature. Then click the map view button (upper right corner) and select "t5 Canada". These maps are all digital. They are not scans of paper maps.

The "t2 MyTopo" also displays topographic maps for Canada. These maps are medium resolution scans that were made from the paper maps.

d. You want to see the direction water flows in Canada

1. Click Menu ==> Link to this map
2. Copy that link and paste it into any editor
3. Change &layers=off to &layers=1_all
4. Copy that revised link and paste it into a browser bar

e. You want to change the amount of hill shading

Click Menu ==> Hill shading.
This feature only applies to the very high quality USA topographic maps (t4 Topo High).

You can also use the new "&hillshade=" link parameter to set the amount of hill shading the map will have when it opens on the screen.

f. You want to get a link to reproduce the current map view

Click Menu ==> Link to this map.
If you paste that link into a second browser tab/window then you will see the exact same map view that you see in your first browser tab/window.

g. You want to automatically center the map at your current location

Click Menu ==> My location

h. You want to make a map and save a GPX file

1. Zoom in to your area of interest
2. Set the map view you want
3. Click Menu ==> Make a map
4. Click a few spots on the map. Distance in miles and kilometers is reported in the lower right corner.
5. Right click any point
6. Click "Download GPX file"
7. **Right click** the link to the GPX file and save it on your harddrive
8. Load the GPX file into your GPS

Each click you just made on the map sets a draggable (click-hold-drag) waypoint and routepoint. This is the Gmap4 default for this feature.

Please search this Help file on "Make a map" for more information on this feature.

i. You want to show one marker on the map

Paste the following command into your browser bar and replace "latitude,longitude" with the latitude,longitude where you want the marker to appear. Remember, do not let any spaces sneak into the command and in North America the longitude must have a minus sign.
http://www.mappingsupport.com/p/gmap4.php?ll=latitude,longitude&t=t2&z=14**&symbol=pr**

Your map will have a red paddle.

You can use either &symbol= or &icon=. They mean the same thing.

To obtain the latitude/longitude first find that spot with Gmap4. Perhaps the new 'Search' feature will be helpful. Then point the cursor to that spot and right-click. Copy the latitude/longitude displayed at the top of the message that appears.

For a list of the other icons that can be displayed by using the &symbol link parameter please see the section of this Help file titled "Link parameters control how the map first looks".

j. You want to search

Display any map on your screen and then click Menu ==> Search. You can search on (1) anything related to addresses including names of many settlements that no longer exist and (2) any reasonable way to write a latitude/longitude pair (WGS84 datum). To limit your search, include the name of a country/state/region/city. If you click "List" then you see all the results that Google generated in response to your search. If you click the gray button labeled "Search & Mark" or "Search", then the map you see will be based on the **first item** in the list of results.

Due to action by Google, the existing search tool no longer works well for place names. A second search tool will be added that is designed to work with place names.

k. You want to look at the default map

The default map displays a world map. Enter this into your browser bar and press your enter key:

http://www.mappingsupport.com/p/gmap4.php

l. You want to look at a file that is hosted on a website

Copy the complete link for the data file that you want to view with Gmap4. (See the Overview section of this Help file for a list of the file types supported by Gmap4.) Paste that file link into the following line where indicated:

http://www.mappingsupport.com/p/gmap4.php?q=**paste_the_file_link_here**

Copy the above line (with the link to the data file) and paste it into a browser bar.

File links that include spaces cannot be used with Gmap4.

Your map will appear and be zoomed such that all of your data appears on the screen. If your data file is quite large it might take a few seconds for your map to appear.

If you want more control over how your map initially appears, then read about "link parameters" in this 'Help' file. The default map that appears is the Google Terrain map. If the map is for part of the USA or Canada and you want the screen to show the detailed topographic maps when the map opens, then add this link parameter "&t=t2" to the string that you paste into the browser bar.

Example using a KML file:

http://www.mappingsupport.com/p/gmap4.php?q=http://www.mappingsupport.com/p/gmap4/helpfile/Stafford_Creek.kml&t=t2

Note: Gmap4 cannot display data files residing on your local hard drive. A data file must be online somewhere before it can be displayed by Gmap4. Google will host your data files for free on Google Sites and this 'Help' file shows you how. When you are naming your folders/directories/files, use an underscore instead of a space.

m. You want to look at a file with a '?' in the link for that file

Sometimes you will see a link for a file that includes a question mark. For example, below is a link for a KML file. Note that this file link includes a '?' character. This link will return a KML file with data showing locations in Minnesota where the public has 'walk in' hunting access:

http://maps1.dnr.state.mn.us/cgi-bin/mapserv60**?**map=WIA_MAPFILE&mode=nquery&qlayer=wia_polys&qformat=kml

Gmap4 can now display many (but not all) data files that include a '?' in the link for that data file. The file must be hosted on a site that does not require any kind of login in order to view files. You can test this type of file link by pasting the file link into your browser bar and hitting enter. If you are asked if you want to save the file, then most likely Gmap4 will be able to display that file.

Note: If the link for the data file includes a '?' character, then the **q= parameter must come last** when you build the Gmap4 link.

The following Gmap4 link will display the Minnesota 'walk in' hunting map. The map will open with a view that is zoomed in on a portion of the data. Note that there are four link parameters that tell Gmap4 how to display the data file and the **last one is the 'q' parameter**.

http://www.mappingsupport.com/p/beta/gmap4_817.php?**ll=**45.376335,-95.205377**&t**=t3**&z**=12**&q=**http://maps1.dnr.state.mn.us/cgi-bin/mapserv60?map=WIA_MAPFILE&mode=nquery&qlayer=wia_polys&qformat=kml

n. You want to look at a file that is hosted on Google Sites

Anyone can upload files to this free service. (See the Overview section of this Help file for a list of the file types supported by Gmap4.) Google provides a "download" link for each file. Here is an example download link:
https://sites.google.com/site/gmap4files/p/helpfile/County_Line_trail.kml?attredirects=0&d=1

Delete the "?" and everything that follows. The download link for the file now looks like:
http://sites.google.com/site/gmap4files/p/helpfile/County_Line_trail.kml

Paste that link into the following line where indicated:

http://www.mappingsupport.com/p/gmap4.php?q=**http://link_to_file**

You should now have the following Gmap4 link:

http://www.mappingsupport.com/p/gmap4.php?q=https://sites.google.com/site/gmap4files/p/helpfile/County_Line_trail.kml

Copy the above line (with the link to the KML/KMZ/GPX/TPO file) and paste it into a browser bar.

o. You want to look at a Google MyPlaces map

Using Google Maps, you can make a Google MyPlaces map. You can either make a MyPlaces map from scratch or you can 'import' a KML file from your local hard drive. Google assigns a unique file id code to each MyPlaces map. If you know the file id code then you can use Gmap4 to look at any MyPlaces map anyone has made.

The owner of the MyPlaces map can obtain that id code by (1) starting Google Maps, (2) displaying their MyPlaces map, (3) clicking the "link" button in the upper right of the screen, (4) copying the link that appears under the heading "Paste link in email or IM", (5) paste that link into Notepad, and (6) copy just the id code from that link.

Here is a typical link for a Google MyPlaces map. The id code is underlined:

http://maps.google.com/maps/ms?ie=UTF8&hl=en&msa=0&msid=105432215366276592381.0004897737811ac6a6a05&z=14

Paste that id code into the following line where indicated:

http://www.mappingsupport.com/p/gmap4.php?q=mymap,**id_code_assigned_by_google**

Copy the above link (with the file's id code) and then paste it into a browser bar.

Example:

http://www.mappingsupport.com/p/gmap4.php?q=mymap,105432215366276592381.0004897737811ac6a6a05&t=t2

p. You want to look at a specific latitude, longitude

Paste the following command into your browser bar, replace "latitude,longitude" with the latitude,longitude you wish to view, and press your enter key. The command should have **no spaces**. In North America the longitude has a **minus sign**.

http://www.mappingsupport.com/p/gmap4.php?ll=latitude,longitude

Here's Old Faithful, Yellowstone National Park
http://www.mappingsupport.com/p/gmap4.php?ll=44.461721,-110.832396&z=14&t=t2

Here's an example that displays a map of Mount Rushmore:
http://www.mappingsupport.com/p/gmap4.php?ll=43.877015,-103.45087&t=t2

q. You want to view files posted by others

This one is topping the list of under-utilized features. Are you researching a trip to a new area? Spend a little time searching for a data file that you can display with Gmap4. You might be surprised at what you find.

Also governmental bodies of all kinds have data files online that Gmap4 can display.

1. Google for what you want. For example: california kml hiking files
   (The Overview section at the start of this Help file lists the supported file types.)
2. Click one of the hits. For example:
   http://www.mikeonthetrail.info/pmwiki/pmwiki.php?n=Hiking.PCTDataFiles
3. Point to a KML or GPX file ==> Right click ==> Copy the link
4. Paste the link after the = sign in the following command:
   http://www.mappingsupport.com/p/gmap4.php?q=paste_link_here
5. Copy the entire command, paste it into your browser bar, hit enter.

Example from mikeonthetrail. This map shows **a track on the PCT starting at the south end**.
http://www.mappingsupport.com/p/gmap4.php?q=http://www.mikeonthetrail.info/tracks/PCT/Data/PCT-CAA1.gpx&t=t2

Remember that you can flip to aerial view ('satellite'), zoom in and count the cactus. See the file viewing tips later in this file.

r. You want to look at the content of a file that Gmap4 can display

Maybe you saw a cool feature on someone's Gmap4 map and you want to learn how to do the same thing with your own maps. You can download any file that Gmap4 displays and look at its contents.

GPX and KML files
1. Copy the link to the file, paste it into a browser bar and hit enter.
2. Save the file to your harddrive
3. Open the file with Notepad++ (**not** the windows 'notepad') or a similar editor

TPO files

This is a proprietary file format that is owned by National Geographic. You need the right version of the !TOPO software in order to open and look at the content of these files.

Google MyPlaces maps

These maps have q parameters that look like
q=mymap,210884365946431522523.0004aa95e258ece10202b
This part 210884365946431522523.0004aa95e258ece10202b is a unique identifier called "msid" that Google assigns to each MyPlaces map.

1. Copy the msid value from the Gmap4 link
2. Copy the following link and replace the underline with the msid value you copied
   http://maps.google.com/maps/ms?ie=UTF8&hl=en&msa=0 &z=14&output=kml&msid=____
3. Paste this link into a browser bar and hit enter.
4. Save the file to your harddrive. It will be a KML file.
5. Open the file with Notepad++ (**not** the windows 'notepad') or a similar editor

KMZ files

A KMZ file is a KML file that has been compressed.

1. Copy the link to the file, paste it into a browser bar and hit enter.
2. Save the file to your harddrive
3. Change the file extension to zip
4. Unzip the file
3. Open the unzipped KML file with Notepad++ (**not** the windows 'notepad') or a similar editor

Delimited text files

You can recognize these files since the file extension in the Gmap4 link is either .txt or .ssv.

1. Copy the link to the file, paste it into a browser bar and hit enter.
2. If the contents of the file appear on your screen then copy all the content and paste it into Notepad++ (**not** the windows 'notepad') or a similar editor.
   Note - If this file contains any HTML and/or CSS, then you might not be seeing the real source code yet. If you suspect this might be the case then you need to tell your browser to display the real source code. In Firefox 7 you do this by clicking Tools ==> Web developer ==> Page source. To see the real source code in IE8 click View ==> Source.
3. If a dialog box appears on your screen instead of the file contents, then save the file to your harddrive and then open it with Notepad++ (**not** the windows 'notepad') or a similar editor.

s. You want to look at maps for locations outside of the USA and Canada

Everything works exactly the same with only one exception. You will not see the detailed topographic maps for locations outside of the USA and Canada. Here is a map showing the 2010 Tour de France route:

http://www.mappingsupport.com/p/gmap4.php?q=http://paris.thover.com/images/blog/tdf/2010/tdf2010.kml

t. You want to get directions

1. Use Gmap4's search/zoom/pan features to find your destination
2. Point the cursor at the destination and rightclick
3. Click 'Directions to here'
4. Enter your starting location (address, place name or latitude longitude)
5. Click 'Get directions'

See later in this Help file for tips related to this feature.

u. You want to fly in 3D

Basic flying:

1. Open any Gmap4 map
2. Click the button in the very upper right corner of the map to open the 'map type' menu.
3. Click 'Earth (please read the notice that appears)
4. Click 'Continue' and wait for the map to re-load
5. Place your cursor just barely above the 'eye' (inside the top control at upper left corner) and click-hold to tilt the map some more.
6. Place your cursor just barely above the 'hand' (inside the middle control at upper left corner) and click-hold to fly.

Advanced flying:

You can do super-cooled flying by using the control that appears when you right-click-hold the map. For the most fun flying and the fastest trip up the learning curve, please take a moment to search this Help file for "Tips for flying". Anyone can easily learn to fly if you just take the time to read the tips. Those tips are your flight school.

v. You want to display UTM coordinates or no coordinates

If you are already looking at a map, then you can turn the UTM grid on and off by clicking Menu ==> UTM - LatLng - Off. A window will open where you can select 'UTM'.

If you want a map to open on the screen with the UTM grid displayed, then add &coord=utm to the map's link. For example:
http://www.mappingsupport.com/p/gmap4.php?q=http://www.mappingsupport.com/p/gmap4/helpfile/Stafford_Creek.kml&t=t2&coord=utm

To turn the coordinate display off, click Menu ==> UTM - LatLng - Off and then select 'off'. To open a map with the coordinate display already turned off, add &coord=off to the map link. For example:
http://www.mappingsupport.com/p/gmap4.php?q=http://www.mappingsupport.com/p/gmap4/helpfile/Stafford_Creek.kml&t=t2&coord=off

w. You want to get the UTM coordinates for a feature on the map

Place the cursor on that feature and right click.

x. You want to know the current magnetic declination

To display the present-day magnetic declination for the center of the map, click Menu==>Declination On/Off. This feature works **worldwide**. The value displayed is the current predicted declination as produced by software from:
http://www.ngdc.noaa.gov/IAGA/vmod/igrf.html combined with data from:
http://www.ngdc.noaa.gov/geomag/WMM/back.shtml
Thanks to NOAA staffer Manoj C. Nair for pointing me in the right direction.

Magnetic declination is always changing. If you compare the Gmap4 value to the declination stated on any printed map, you may be surprised to discover how out-of-date the declination on the map has become.

After you turn on the declination display then the value will automatically be updated as the center of the map changes. To turn off the declination display, click Menu==>Declination On/Off. This revised method for displaying the declination makes it easy to include the declination on maps that you print.

y. You want to orient a printed map so it points to true north)

Turn on the declination display and then print the map using the Print Preview feature of your browser. If you have trouble printing, try Firefox. The left and right edge of the printed map point to true north. Set the declination on your compass, place the edge of your compass along the left or right edge of the printed map and orient the map in the normal manner.
Need help? See: http://www.ehow.com/how_1774_orient-map.html

z. You want to use Google Earth to make KML files

Using Google **Earth** to make a KML file works fine:
1. Click path icon
2. Do **not** close the dialog popup
3. Draw your path

4. Go to the popup and adjust Name, Description and Style/Color
5. Click OK
6. Select your path in left sidebar
7. File ==> Save ==> Save place as ==> Save as type - select KML
8. Replace each space in the file name with an underscore: _
9. Save the KML file
10. Place your file online
11. Launch gmap4 and tell it where to find your file

aa. You want to use Google Maps to make KML files

You can use Google Maps to make a map. Your map can have lines and/or markers. There are two different ways that you can use Gmap4 to look at a map that you made with Google Maps. Your first option is to get the unique ID that Google assigned to the map and tell Gmap4 to display the map using that unique ID. See the section in this 'Help' file titled "You want to look at a Google MyPlaces map". Alternatively, you can use Google Maps to make a KML file.

Using Google **Maps** to make a KML file works fine:
1. Use the "MyPlaces" feature of Google maps to make your map
2. Click "Save"
3. Click the Google map 'link' button (just left of the map) and copy the link
4. Paste the link into a browser bar
5. Add this additional link parameter to the end of the link: &output=kml
6. Hit enter and save the KML file

If your browser asks if you want to save the KML file then great - do so.
But instead if Google Earth tries to start then you may wish to go into your browser's file associations and turn that behavior off for KML files. In Firefox these associations are found under Tools ==> Options ==> Applications.

Finally, put your KML file online and display it with Gmap4 by entering this in your browser bar:

http://www.mappingsupport.com/p/gmap4.php?q=http://link_to_your_kml_file

You need to replace "link_to_your_kml_file" with the actual link that points to wherever you placed your KML file online.

bb. Things you can do while viewing the map

- Get coordinates (UTM and latitude/longitude): right-click anywhere. The coordinates for the point you clicked will be displayed in various formats. All coordinates displayed by Gmap4 are based on the WGS84 datum unless labeled otherwise.
- Drag the map: left-click-and-hold then drag
- Zoom the map in/out: mouse wheel or control near upper left corner

Mouse-wheel-zoom is disabled when Gmap4 is running in an iframe.

- Center the map at cursor position: Point and then double-left-click
- Your browser settings can change the text size (Page ==> Text size; or View ==> Text)
- If you use Internet Explorer and the data added to the map appears to not agree with the aerial image, then check your Window's DPI setting. Control Panel ==> Display ==> Settings ==> Advanced ==> DPI Setting. Try using either 96 DPI or 120 DPI.

cc. Drop down 'Menu'

The following choices appear on the drop down 'Menu':

• Gmap4 Homepage	FAQ, lots of examples, contact, links and more
• Link to this map	Display the link for the map view on the screen.
• My location	Display your location
• Search	Display the search bar.
• Directions	Displays instructions for getting directions.
• Hill shading	Change hill shading for the 't4 Topo High' maps.
• UTM - LatLng - Off	Chose type of coordinate including UTM grid or turn coordinate display off.
• Declination On/Off	Display present-day magnetic declination for the map center.
• Data file On/Off	Toggle the map data on and off.
• Label On/Off	Toggle symbol labels on and off (except for KMZ files).
• Printing tips	Display tips for printing through your browser.
• Viewing tips	Display some tips for working with the map.
• Full screen	Open a new window and display Gmap4. Useful if you are seeing Gmap4 in a small iframe and want a larger view.
• Help	Open a new window and display this pdf Help file.
• About	Display the Gmap4 version number.
• Donate	Display information showing how to donate to support Gmap4.

You can always navigate by zooming out, panning the map (by dragging it) to somewhere of interest and then zooming in. This method of navigation will work faster if you first select the "Map" or "Terrain" view via the menu button in the upper right. You can shift back to the MyTopo (topographic) view after you adjust the map to show the area you wish to view.

8. Comparison of topographic maps

Gmap4 now displays five different sets of maps that show topographic information. When you open the dropdown list of map views (upper right corner) these map sets are named:

t1 Terrain	Widest coverage
t2 MyTopo	USA and Canada (scans of paper maps)
t3 Topo USGS	USA

t4 Topo High	USA partial, more will be added <== **Best quality**
t5 Canada	Canada (digital vector maps)

Below is a brief description of each one from lowest quality to highest.

t1 Terrain This is the same terrain map you see if you use POGM (Plain Old Google Maps). For the USA the contour lines appear to match the contour lines on the 1:24,000 scale USGS topographic maps. For Canada and many other countries the contour interval is 20 meters. Some countries do not have topographic data available.

t3 Topo USGS These are relatively **low resolution** scans of the 1:24,000 scale USA topographic maps. These maps are provided by the USGS via a project called "The National Map". In a few places these maps show old trails that do not appear on the other topographic map sets that Gmap4 displays. There is one **odd thing** about these maps. If you look at any location in California, then you see that same high resolution map that you see when you select the "t4 Topo High" maps. Prior to May 1, 2012 the "t3" maps displayed by Gmap4 came from a joint Microsoft/USGS project that used to be called Terraserver. Microsoft has terminated that service. The "t3" maps that you now see might display a bit faster and look a bit worse since they appear to be more heavily compressed

t2 MyTopo These are **medium resolution** scans (pixels per inch not published) of the 1:24,000 scale USA topographic maps and 1:50,000 scale Canadian topographic maps. This map set also includes the U.S. Forest Service updates including USFS road numbers.

t4 Topo High Most of these maps are **high resolution** scans made at 600 pixels per inch (ppi) of the 1:24,000 scale USA topographic maps. Some maps were scanned at 400 ppi. For more information on these maps please see the section on 'CalTopo' a short way below. In order to help control the cost that Amazon charges for delivering the "t4 Topo High" map tiles to your screen, these maps will not be displayed if you are zoomed out to far. Instead, you will see Google's terrain map. When that happens, simply zoom in and the "t4" maps will appear.

t5 Canada This is a new type of map that is based on 'vectors'. If you zoom in you will see that the topographic lines are not smooth curves but instead are a series of short straight lines. These maps are provided by the Canadien government and you can learn more here:
http://atlas.nrcan.gc.ca/site/english/maps/topo/index.html
When you use Gmap4 in the browser on your smartphone, iPod or Blackberry the phone-friendly menu buttons now include one to let you look at the 't5 Canada' topographic maps.

9. Comparison of Google's map viewer to the Gmap4 map viewer

Feature	Google map viewer	Gmap4 map viewer
Street map	yes	yes
Aerial photos	yes	yes
Terrain	yes	yes
3D view (Google Earth plug-in)	yes	yes
Topographic maps for USA from CalTopo.com and USGS	no	yes
Adjustable hill shading (only for the "t4 Topo High" maps)	no	yes
Topographic maps from the MyTopo (Trimble) Company (USA + Canada)	no	yes
Topographic maps for USA from USGS via "The National Map" project	no	yes
Topographic vector maps for Canada	no	yes
UTM grid and coordinates	no	yes
Magnetic declination	no	yes
Labels	no	yes
Search	yes	yes
Show all search results	no	yes
Directions	yes	yes
Read Google MyPlaces maps	yes	yes
Read KML files	yes	yes
Read KMZ files	yes*	yes
Read GPX files	yes	yes
Read TPO files	no	yes
Read delimited text files	no	yes

* During testing it was discovered that Gmap4 can display certain KMZ files that Google Maps refuses to display.

10. A special 'Thank You'

I am not connected with any of these entities other than as a happy user of their services.

a. CalTopo.com

The person behind CalTopo.com is Matt Jacobs and his site is running the 'civilian' version of a map tool that he originally wrote to support wilderness search and rescue (SAR) activity. Matt's desire for the **highest quality topographic maps** coincided with a massive project by the U.S. Geological Survey to make very high quality scans (mostly at 600 pixels per inch) of all the topographic maps they had previously published. These scans are online as ordinary PDF files, they are not the new GeoPDF file format.

A vast amount of work was done by Matt to invent a system that would process those new very high quality USGS scans into map 'tiles' suitable for display by software (like Gmap4) which uses the Google Maps API (Application Program Interface). These newly created map tiles are hosted on the Amazon servers. There are some blog posts on Matt's website that provide some insight into the processing steps needed in order to convert the USGS scans into high quality map tiles.

In late 2011 Matt contacted me and inquired if I would like to display his tiles with Gmap4. Since the **scan quality of these map tiles is significantly better than anything else available and the tiles do not have any watermarks or ads**, I quickly agreed. You can compare these map tiles (t4 Topo High) and the user-selected amount of hill shading (Menu ==> Hill shading) to any other online topographic maps and decide for yourself which maps look best.

Ultimately whether or not Gmap4 can continue to display these watermark-free state-of-the-art adjustable-hill-shading topographic maps will be up to you along with the other Gmap4 users. Amazon is charging Matt one fee to host all the map tiles and a second fee to transmit that data to you. Starting out, we have no idea how much load the Gmap4 community will place on Matt's Amazon account. But as time goes by, his server logs will shed light on that point.

> If you enjoy using Gmap4 and Matt's best-of-their-kind maps, please consider making a donation that I can share with Matt.

Note that the colors, particularly for forested land, are not consistent on these new maps. Those are the colors the USGS used to produce their maps. Matt did not attempt to change the USGS colors to a consistent shade of green, blue, etc. If you prefer to see consistent colors, then you can view the MyTopo maps.

All of the states except Alaska and Hawaii can now be viewed on these high resolution topographic maps. The states that recently became available are FL, LA, MA, MS, NH, RI, SD, VT and WY.

Also, as with any brand new huge dataset, you will see some problems from time to time. These problems could include:

- A map that is obviously a lower resolution image. (These are usually old Terraserver maps)
- A map that includes an aerial image.
- A map that is misaligned.

Here is how **you can help fix those problems**:

1. Rightclick the problem spot and copy the latitude longitude
2. Go to http://usgs01.srv.mst.edu/store3//digital_download/mapping_ap.jsp
3. Paste the latitude longitude into the search box and click 'Go'
4. After the map refreshes, click the marker on the map. A list of maps will appear.
5. The newest maps are labeled "US Topo" in the left column. Ignore those. Those are the new GeoPDF maps.
6. Find the newest map that is not a "US Topo" and click the file size to download the zipped PDF file.
7. Unzip your download, open the pdf file and view it at 100% size.
8. **Compare the map you unzipped to the "t4 Topo High" image you see on Gmap4.** If the unzipped image looks like it will fix the problem you saw on Gmap4 then please email me through my contact page and tell me:
   A. Latitude, longitude
   B. Map name and state
   C. The link for the zip file you downloaded. It will look something like this:
      http://ims.er.usgs.gov/gda_services/download?item_id=5442056&quad=Carp%20River&state=MI&grid=7.5X15&series=Map%20GeoPDF

I will compile those reports into a consistent format and periodically forward a batch to Matt.

b. MyTopo Company (now a part of Trimble)

In 2011 the Trimble company purchased MyTopo which is now a wholly owned subsidiary. At the present time, Gmap4 is still being allowed by Trimble to display the MyTopo topographic maps. However, two things have changed. When the MyTopo maps are on the screen you will notice (1) a heavier watermark on each map tile and (2) some Trimble ad buttons in one corner. Displaying those ad buttons (and thereby obtaining free advertising) is the 'price' that Trimble is charging for allowing software like Gmap4 to display the MyTopo maps at no cost. Trimble sent out a notice stating that all software that previously displayed MyTopo topographic maps must convert to this new system by mid-January in order to continue displaying MyTopo maps.

Full disclosure: If you click the "Print it" button and purchase a paper map from MyTopo then 15% of the purchase price comes back to me.

The MyTopo staff are still located in Billings, Montana (USA) and make the bulk of their living by selling prints of high quality topographic maps that **you** design. One nice thing about these maps is that they include any updates the U.S. Forest Service made to the USGS quadrangles. These updates include the Forest Service road numbers even for 2-tracks deep in the bush.

I ordered an 18"x24" map on waterproof paper and with a UTM grid. I don't think you can buy a higher quality map anywhere. I particularly like these maps since they show the current magnetic declination. The cost was reasonable and service was fast with the map arriving in under 1 week with standard shipping. Do you have some GPS data you would like to see on your printed map? You can upload your data to their site and see it on your map on the screen before placing your order.

You can check them out at http://www.mytopo.com/
Please consider using their map printing service the next time you need to purchase a waterproof paper map as a "must have" safety backup in case your GPS quits working, or the batteries run low, or you fumble it off a cliff, or....

c. GPSBabel

GPSBabel (http://www.gpsbabel.org/) is well known freeware for converting between GPS-related file formats. Gmap4 uses GPSBabel to convert your GPX file into a KML file before displaying your data on the map. This conversion step is essential since the only file format understood by the Google map engine is the KML format.

GPSBabel was originally written by Robert Lipe and is now supported by Robert plus a number of others. As I was installing this software on my server I ran into problems and posted questions on their mailing list. Robert was always generous with his time in helping me get the program installed and I was happy to send him a modest contribution to help support his project.

If you find yourself using Gmap4 to display your GPX files, then you are benefitting from the hard work by Robert and others. If you have the means, please consider making a contribution to support this project. Their main web page contains links that make it easy to donate.

11. Administration

a. Change log

The change log is now on the Gmap4 homepage under the menu item "What's New?".
http://www.mappingsupport.com/p/gmap4.html

b. Contact the author

For bug reports, typos and/or suggested enhancements, please contact Joseph Elfelt. For an email address please see http://www.mappingsupport.com/p/gmap4_contact.html.

Since Gmap4 is under active development, it is certainly possible that a new feature will accidentally break something that previously worked fine. I cannot fix it unless you tell me it's broken.

12. Converting your GPS data into KML or GPX files

A lot of recent GPS units automatically produce GPX files. Those files can be displayed by Gmap4 as described in this 'help' file without the need to do any file conversion. But if you have a GPS that does not automatically produce GPX files or if you simply want to use KML files (see below for advantages of KML files), then you will need to do a file conversion before you can view your data with Gmap4. Below are four tools that can do file conversions.

a. Software that is included with a GPS purchase

Every handheld GPS comes with some software. Take a look at that software and see if it will let you convert your GPS data into a KML or GPX file.

b. GPSBabel

This free program (http://www.gpsbabel.org/) runs on your computer and may well be the 'gold standard' for doing GPS-related file conversions. This program can read any GPS file format that you are likely to have and produce either a KML (recommended) or GPX file that you can then place online and view with Gmap4. You can run GPSBabel with a graphical interface or from the command line. In fact, **Gmap4 itself uses GPSBabel** to convert a GPX file to a KML file and then displays that KML file on the map.

Here are the options that Gmap4 uses when it executes GPSBabel to convert a GPX file into a KML file. If you are doing your own conversion to a KML file, then you can tweak these options to suit your needs. The option "**points=0**" will prevent each of your trackpoints from also becoming a waypoint in the KML file.

```
gpsbabel -i gpx -f path_to_gpx_file
-o kml,points=0,line_width=5,line_color=990000ff -F path_to_kml_file
```

When Gmap4 converts a GPX file to a KML file, the same symbol is used for all the waypoints in the file. That symbol used to be a red paddle and then was changed to be a blue flag. Gmap4 is going back to using a red paddle since the blue flags were too hard to see on too many maps.

c. GPS Visualizer

This free website lets you upload your GPS data and convert it online into either a KML file (recommended) or GPX file. Here are some tips:

- Use this page to convert to a KML file:
  http://www.gpsvisualizer.com/map_input?form=googleearth

- Under "General map parameters" change "Output file type" from kmz to kml

Tech tip: GPS Visualizer will include some tags in your KML file that mean something in Google Earth but do not mean anything in Google Maps. You can avoid this clutter by (1) using GPS Visualizer to convert your data and then (2) copying the coordinates from the resulting KML file and (3) pasting those coordinates into your own KML template file that only has the tags you want. Please see the Appendix-A for a basic KML template file that you can copy and use.

d. Google Earth

If you have the Google Earth software installed on your computer, then you can use that software to convert a GPX file to a KML file.

Step 1: Open your GPX file in Google Earth
Your file should be on your local drive.
File open ==> Files of type - click down arrow to open the list ==> All files ==> OK
Find your GPX file and click it to open

Step 2: Save your file as a KML file
File ==> Save ==> Save Place as ==> Set 'Save as type' to kml ==> save the file

13. Make a map with Gmap4 and save it as a GPX file

NOTE: See also the 'Quick Start' section of this Help file.

Whether you think of this tool as **trip planning** or map making, the idea is the same. You can now click the map to set draggable points and draw lines. You can then download and save your work as a GPX file. This tool is oriented toward making a standard GPX file that will be uploaded to a handheld GPS unit and used for hiking or other human powered recreation. You can also make a GPX file, place it online and then make a Gmap4 link that will display your file.

Please read the short section in the 'Quick Start' part of this file titled "make a map" and then turn this feature on and play with it. You will quickly discover that **Gmap4 includes trip planning features not found in most other free software.** For example, with one click you can set both a waypoint and routepoint that have identical coordinates. You can also assign a GPS

symbol name to each waypoint. In addition you can set a bunch of trackpoints and then go back and designate just certain ones to also be routepoints and/or waypoints. An elevation profile feature will be added in a future update.

The **first key design goal** for the Gmap4 trip planning feature was **"click once - write many"**. Most (?all?) other free online trip planning tools limit you to making only one type of point (waypoint or routepoint or trackpoint) when you click the map. Some of these tools will only make routepoints and will not make trackpoints at all, or vice versa. By contrast, Gmap4 provides checkboxes for each point that you can use to identify the point as a waypoint and/or routepoint and/or trackpoint.

The **second key design goal** for the Gmap4 trip planning feature was **"stickiness"**. In other words, the next point you make should have characteristics that are similar to the prior point. For example, if you are making waypoints then the default GPS symbol name will be the same as the GPS symbol name of the prior point. If you change the GPS symbol name then that new name will be used as the default for the next waypoint you make.

Garmin GPS units include many different symbols that can be displayed on the GPS screen at your waypoints. Garmin has assigned each symbol a different name. Most free trip planning software does not let you specify those symbol names as you plan your trip. As a result, all of your waypoints show the same default symbol when you view them on your GPS screen. By contrast, Gmap4 lets you edit any waypoint and provide a GPS symbol name. You might have to do a bit of research to learn the symbol names that are available on your GPS unit.

Key to Gmap4 trip planning symbols

Waypoint	Red circle
Routepoint	A circle (red or black) with at least one red line connected to it
Trackpoint	A circle (red or black) with at least one black line connected to it
Routes	Red lines
Tracks	Black lines

A symbol can be a waypoint and/or routepoint and/or trackpoint. If a symbol is connected to a red line, then it is a routepoint. If the same symbol is also connected to a black line, then that same symbol is also a trackpoint. If that symbol is a red circle instead of a black circle, then that same symbol is also a waypoint. Any symbol can be dragged (click-hold-drag).

Every time you click a symbol, the information displayed tells you if the point is a waypoint and/or routepoint and/or trackpoint.

Key to symbol clicks

Click a symbol to see information about that point
Right click a symbol to see a context menu listing some or all of the following actions:

- Edit this point
- Delete this point
- Insert point before
- Insert point after

Download GPX file
Display GPX file

When you click 'Edit this point" then different fields are displayed in the edit window depending on whether the point is a waypoint and/or a routepoint and/or a trackpoint. If you change one of the checkboxes at the top of the 'Edit' window, then the rest of the "Edit' window will be revised to only show you the fields that are relevant to the type of point you are editing. For example, if you are editing a point that is only a waypoint, then the 'Edit' window will not display the fields for route name or track name.

When you rightclick a point that is on a route and/or track, then the context menu includes choices to insert a new point either before or after the point you clicked. If you insert a point **after the last point** in a line (or **before the first point** in a line), then the new point is placed to the north and you can drag it where it needs to go.

When you insert a new point in between two existing points then the new point is formed according to the following rules:

A. If the new point is being added to a red line, then it will be a **routepoint**
B. If the new point is being added to a black line, then it will be a **trackpoint**
C. If the new point is being added to a line that is both red and black, then it will be both a **routepoint and trackpoint**
D. If the point you clicked is a waypoint, then the new point will also be a **waypoint**

There is a special case that will likely not arise very often. Assume you are inserting a point after the point you clicked. Also assume that both a route and track leave the point you clicked but go in different directions. Will the new point go on the route line (red) or on the track line (black)? Answer: The new point will go on the route line (red). You can insert a similar point on the track line (black) by clicking the next trackpoint and insert a new point before the point you clicked.

Tips and tricks

Here are some examples for how you might use this trip planning tool. Each example assumes that you have (1) turned trip planning on and (2) clicked the map to set one symbol and (3) have not done anything else.

1. To make just waypoints: Uncheck the routepoint box. Click Save & close. Continue clicking the map.
2. To make just trackpoints: Check the trackpoint box and uncheck the other two boxes. Click Save & close. Continue clicking the map.
3. To make just routepoints and then make just waypoints: Uncheck the waypoint box. Make all the routepoints you want. Click the map where you want just a waypoint. Rightclick the point you just made and select "Edit this point". Uncheck the routepoint box. Check the waypoint box. Save & close. Continue clicking the map to make just waypoints.
4. To make waypoints and routepoints and trackpoints: **Wrong way:** Check the trackpoint box (all three boxes are now checked). Save & close. Continue clicking the map. The black line (track) is on top of the red line (route) on the map and while that looks cool, this is most likely not a useful thing to be doing. **Right way #1:** First make just trackpoints. When you are done

making trackpoints then edit a few trackpoints and check the boxes to make them also waypoints and/or routepoints. **Right way #2:** First make just waypoints. Then click where you want to start making trackpoints. Edit that point so only the trackpoint box is checked. Make all your trackpoints. Then edit each point that you want to be on your route and add a check to the routepoint box.

GPX under the hood

A GPX file can include up to three kinds of points. They are: waypoints, routepoints and trackpoints. The software in your GPS does different things with these different kinds of points. What kind of points should you put in your GPX file so you get the most benefit from your GPS? Part of the answer depends on what kinds of features are provided by the software running in your GPS for these different kinds of points. A little careful experimentation by you will quickly shed light. However, for typical trip planning most people will likely want use Gmap4's default settings which creates a waypoint and routepoint each time the map is clicked.

NOTE: Some GPS units cannot read GPX files and do not have any way for you to load a route or track into the GPS. If you need help learning about your Garmin GPS then an excellent resource is the Garmin forums: https://forums.garmin.com

Routes v. Tracks

Here are a couple well-written articles describing the difference between routes and tracks.
http://gpstracklog.com/2010/03/handheld-gps-101-routes-vs-tracks.html
http://www.gpsmap.net/DefiningPoints.html

Mistakes to avoid

If you want to use Gmap4 to make a GPX file with trackpoints, then usually you want those points to **only** be trackpoints. It is almost certainly a mistake to make a waypoint and/or routepoint at each spot where you are making a trackpoint. In other words, you should probably not make every point a waypoint **and** routepoint **and** trackpoint. On the other hand, it is OK to first make all your trackpoints and then edit a few of those trackpoints to also make them into waypoints and/or routepoints.

Limitations

If you have started to make some routepoints, then you cannot make trackpoints. If you want to make routepoints and trackpoints both, then make your trackpoints first and then edit only those trackpoints that you also was to designate as routepoints.

If you are using Internet Explorer (IE) to do trip planning, then you may see a noticeable lag on your screen as you drag symbols and lines. I recommend you try the current version of Firefox or Chrome. You will likely see better performance.

14. Placing your files online

You can place your files online anywhere. If you are putting them online via your own website, make sure the 'permission' for the file lets other people read it. If you do not have your own website, then there are free options for placing your files online.

Spaces in file names: Please change any space in your file name into an underscore character. In other words, change your filename from: "Big valley hike.kml" to "Big_valley_hike.kml" Many websites will change a space in a file name into "%20" and Gmap4 then chokes on the "%" character when it shows up in the link.

a. Place your files online via Google Sites - It's free

If you do not have your own web site for hosting your files, then I recommend that you use Google Sites. It is free, easy and it works. Any of the file types that Gmap4 can read and display can be placed online by uploading them to Google Sites.

Step-by-step instructions for placing your files online via Google Sites

1. Get a Google account. It's free. http://docs.google.com/

2. Connect to Google Sites and login. http://sites.google.com/

3. Click "Create new site" and accept the default of "Blank template". In a few seconds the site will be created and you will be looking at a blank "Home" page

4. Click "Create page" near the upper right.

5. Change the "template" to "File cabinet".
   Give it a name.
   Decide if you want this folder under the "Home" or not.
   Click "Create page".
   The screen will change and show you the blank web page you just made.

6. Click "Add file". Browse to the file you want to upload to Google Sites, then click "upload".

7. After the file has uploaded, point to "Download", right click and select "Copy link location".

8. Paste the download link into Notepad. Delete the "?" and everything after it. For example:
   Change
https://sites.google.com/site/gmap4files/p/helpfile/county_line_trail.kml?attredirects=0&d=1
   Into
https://sites.google.com/site/gmap4files/p/helpfile/county_line_trail.kml

Note that the Google Site links all begin with https instead of http.

9. Paste the modified download link into the following line where indicated:
   http://www.mappingsupport.com/p/gmap4.php?q=**https://link_to_file**

10. Copy the above line (with the link to the data file) and paste it into a browser bar. Gmap4 will produce a map and display that data file.

Example using a GPX file:
http://www.mappingsupport.com/p/gmap4.php?q=http://sites.google.com/site/gmap4files/p/helpfile/Johnson_Ridge.gpx&t=t2

TIP: Let's say you just uploaded a file to Google Sites and then opened another browser tab and used Gmap4 to display your file. Oopsie - You spot a mistake. Edit the file and upload the revised copy. Do not change the file name. When the upload is complete then refresh the browser tab with Gmap4. You will see your revised map.

To learn more about Google Sites:
http://sites.google.com/support/?hl=en

b. Place your KML files online as Google MyPlaces maps - It's free

If you do not have your own website to host your KML files, then here is another free alternative for placing your KML files online. This option works with KML files. It might work with KMZ files. It does not work with GPX files.

1. Get a free Google account
   https://www.google.com/accounts/NewAccount?service=local

2. Start Google maps: http://maps.google.com/

3. My Maps ==> Create new map **or** My Maps ==> Get started

4. Click Import

5. Click Chose file and select your KML file and upload it

6. Click "link" (in upper right) and copy the link

7. Paste the link into Notepad. Here's an example ('id' code is underlined):
   http://maps.google.com/maps/ms?ie=UTF8&hl=en&msa=0&msid=105432215366276592381.0004897737811ac6a6a05&z=14

8. Find where it says: &msid= The 'id' code begins after the equal sign. Here is an example id code:

10543221536627659238 1.0004897737811ac6a6a05

Copy the 'id' code but do not copy the following '&' character.

You are now ready to launch Gmap4 and view the data that you placed online as a Google MyPlaces map. Paste that id code into the following line where indicated:

http://www.mappingsupport.com/p/gmap4.php?q=mymap,**id_code_assigned_by_google**

Copy the above link (with the file's id code) and then paste it into a browser bar.

You can include this link in emails, websites, trip reports, etc

Here is an example of the correct way to launch Gmap4 when your data is hosted online as a Google MyPlaces map:
http://www.mappingsupport.com/p/gmap4.php?q=mymap,10543221536627659238 1.0004897737811ac6a6a05

Tech note: There is one downside to using Google MyPlaces maps to host your KML files. Assume your KML file uses the <IconStyle> tag to point to the icon image you want your map to use for GPS waypoints. But after saving your MyPlaces map you decide you want to use a different icon. You cannot (to my knowledge) edit a Google MyPlaces map and change the contents of the <IconStyle> tag. Instead you will have to edit each waypoint marker and change the icon image. This comment applies to all types of styles in your KML file. This issue does not apply if you let Google host your files via Google Sites.

c. Other free options for placing your files online

If you use a free file hosting site to place your KML and/or GPX files online, then please let me know whether or not you can view your files with Gmap4 and I will update this section with that info (see below). Some free file hosting sites are not compatible with Gmap4. You can email me by going to http://www.mappingsupport.com/contact.html

This free file hosting sites appear to work OK with Gmap4

http://www.fileden.com/

This free file hosting sites do not appear to be compatible with Gmap4

http://www.tripod.lycos.com/

If you obtained an account at http://www.**dropbox**.com prior to July 31, 2012 then this site will work with Gmap4. Store your files in your "Public" folder. Accounts created after July 31, 2012 do not have a public folder. Only accounts with a public folder will work with Gmap4.
For more information see: https://www.dropbox.com/help/16/en.

15. User interaction with the map

There are two ways to interact with the map. First, you can use "link parameters" to control what you see when the map first appears on your screen. Second, there are a number of ways to interact with the map after it first displays on your screen.

a. Link parameters control how the map first looks

Many websites, including Gmap4, allow the user to specify 'link parameters' in order to control the behavior of the website. A link parameter is simply a way to pass information to an application. Each link parameter assigns a value to a variable. When the application executes, then it does something with those values.

Often when you click a link to go to a website, link parameters are already included in that link. Thus, you are already using link parameters but may not have realized it. Here is how to spot a link that uses link parameters: Look for a question mark in the link. Consider this hypothetical example:
www.mysite.com/dogs.html**?**breed=IrishSetter&age=3

That link has:
* The name of a web page that will display when you click the link: "dogs.html"
* Two link parameters. Each link parameter has (1) a variable name to the left of the equal sign and (2) a value to the right of the equal sign. In the above example, The variable breed is set to the value 'IrishSetter' and the variable age is set to the value '3'.

Often times just a single character is used for the name of link parameters.

Here's a link produced by Google maps for Pegasus Pizza in Kirkland, WA. Note the '?' followed by numerous link parameters.
http://maps.google.com/maps?f=q&source=s_q&hl=en&geocode=&q=pegasus+pizze+kirkland&sll=37.0625,-95.677068&sspn=53.167773,79.013672&ie=UTF8&hq=pegasus+pizze&hnear=Kirkland,+WA&t=h&ll=47.679331,-122.171606&spn=0.002698,0.004823&z=18

Gmap4 is designed to use some of the same link parameters that are used by Google maps. If you include any link parameters when you launch Gmap4 then the program will use that information to help determine how the map will look when it first appears on your screen. Here are the **most important** "link parameters" that you can use with Gmap4:

(none) You can launch Gmap4 without any link parameters at all by entering this into your browser bar: http://www.mappingsupport.com/p/gmap4.php
The default map will be displayed. This is a map of the world.

q The full http://... link to a KML/KMZ/GPX/TPO file that you have placed online.
OR
A pointer to a Google MyPlaces map file.

If you use the q parameter and do not use the ll or z parameters, then the map will automatically be centered and zoomed so that all of the data in your file fits on the screen.

ll Latitude,longitude in decimal degrees and WGS84 datum.
The map will be centered at this spot.
Make sure there is no space after the comma.
North America coordinates must have a minus sign in front of the longitude.
For example: 43.877015,-103.45087

t Map type. (Default: &t=t1) The allowable values are:

- m Street map from Google
- s Aerial photo from Google
- h Aerial plus street names from Google
- t1 Terrain from Google (default)
- t2 Topographic map from MyTopo (USA 1:24,000 & Canada 1:50,000)
- t3 Topographic map from USGS via "The National Map" service
- t4 Topographic map from CalTopo.com & USGS (USA 1:24,000) **t4 maps are the best quality**
- t5 Topographic vector maps for Canada

z Zoom level. (Default: &z=15).
Maximum zoom for MyTopo maps is 16.
Maximum zoom for 't5 Canada' maps is 17.
Maximum zoom for aerials is usually 18 but maybe higher in urban areas.

Below is a list of **additional** link parameters that you can use:

coord (Default: &coord=latlng) If this is set to 'utm' (&coord=utm) then when the map opens on the screen a UTM grid will be displayed on the map if the zoom level is 8 or higher. Also the lower right corner will always show the UTM zone and UTM coordinates for both the cursor and map center. If the zoom level is 7 or lower then a UTM grid will not be displayed but you will still see lines marking the edges of the UTM zones.

If this is set to 'off' (&coord=off) then no coordinates will appear in the lower right corner

The default setting is latlng. This setting causes the UTM grid to not be displayed and the coordinates in the lower right of the screen will be in decimal degrees.

directions (Default: &directions=off) Allowable values are: on off .

hillshade (Default: &hillshade=18) This setting controls the amount of hill shading when you view the 't4 Topo High' maps. Allowable values are 0 through 35.

icon — A symbol (i.e. marker) that will appear on the map.
One icon can be shown on the map. You do not need any kind of data file. However, you must also specify the "ll" parameter since that is the spot where the icon will be placed. The allowable values for the "icon" parameter are:

b	blank icon
c	Icon has letter "C". Mouse hover displays "Camp".
ch	Crosshair
pg	Paddle - green
pgs	Paddle - green -small
pr	Paddle - red
prs	Paddle - red - small (default for GPX/TPO files)
th	Icon has letters "TH". Mouse hover displays "Trailhead".

label — (Default: &label=off) Allowable values are: on off .
Waypoint names are displayed as labels.
This feature works for delimited text files.
This feature also works for KML, GPX and TPO files. This feature is not yet supported for KMZ files.

layers — Default: &layers=off) **Caution** - The method for displaying this information will likely change in the future. This parameter can be used to overlay little red arrows on the map showing the direction that water flows. **This data is only for Canada**. For a look ahead on how Gmap4 will display this data **and much more** in the future, please search this Help file on "WMS". Allowable values:

&layers=off	No red arrows
&layers=1_all	Red arrows on all map layers
&layers=1_t2_t5	Example showing how to turn the red arrows on for just two map views

mylocation — (Default: &mylocation=off) If this is set to 'on' (&mylocation=on) then the your approximate location will automatically be determined and the screen will be centered at that location.
Please see the following section for more details on this feature.

refresh — (Default: &refresh=0) Allowable values are: 0 1 .
See the section below titled "Using the 'refresh' link parameter"

screen — (Default: &screen=desktop) If this is set to 'phone' (&screen=phone) then the screen will show the special buttons that are designed to work well on very small screens. These special buttons are automatically displayed when Gmap4 is opened in the browser on a smartphone, iPod or Blackberry.

streetview (Default: &streetview=on) If this is set to 'off' (&streetview=off) then the upper left corner of the screen will not display the streetview pegman.

symbol This is another name for the icon link parameter.
&icon= and &symbol= do exactly the same thing.
Use one or the other.

Below is an example of how to specify multiple link parameters.

- A "?" comes before the first parameter
- A "&" comes before each additional parameter
- There are **no spaces** anywhere in the command
- The link parameters can be entered in any order (except the q parameter must be last if it is a file link that includes a '?' character)

http://www.mappingsupport.com/p/gmap4.php?q=http://www.mappingsupport.com/p/gmap4/helpfile/three_files.kml&ll=47.400482,-120.813062&t=h&z=13

TIP: The first time you look at one of your files with Gmap4, consider using just the q parameter. Then adjust the zoom and pan the map so your map looks the way you want it to look. Then the next time you want to view your map (or if you are posting/emailing a link) you can include one or more of the coord, ll, t and z parameters as part of the command that will launch Gmap4 and display your map. You can get the current zoom level by right-clicking the map anywhere. You can get the current map center by looking at the lower right corner of the screen. Also, **you can get the complete link that will let anyone replicate the exact way your map looks on your screen by clicking: Menu ==> Link to this map**.

REMINDER: The ll parameter must be in decimal degrees and the datum for those coordinates must be WGS84. UTM coordinates will not work.

Gotcha: Even though your map looks dandy on **your** screen with your carefully crafted z and ll parameters, keep in mind that other people will be using screens with fewer/more pixels than your screen.

b. Gmap4 for mobile users and the 'My location' feature

Gmap4 is not a 'native' app for your smartphone. Instead, the exact same code that runs in the browser on your desktop/laptop also runs in the browser on your smartphone, iPod, iPad and most other devices that have browsers. This means you do not need to download or install anything in order to use Gmap4 on your phone. Instead, simply open a Gmap4 link in the browser on your phone the same way that you open a Gmap4 link in the browser on your desktop/laptop. Note that your browser does have to be online to the internet in order for Gmap4 to work.

If you have used Gmap4 on your desktop/laptop to display GPX, KML and/or TPO files, you can display those same files on most smartphones and other mobile devices.

Tip: You can quickly start Gmap4 on your phone by saving one or more Gmap4 links as 'bookmarks' in your phone's browser.

Fast way to make a Gmap4 bookmark in your phone's browser:

1. Open your phone's browser. (Remember, that browser has to be online.)
2. Do a web search for Gmap4 - the first hit should be the Gmap4 homepage
3. Look just under the homepage title and find where it says "Start Gmap4". That link opens Gmap4 and displays the default map of the world.
4. Bookmark the Gmap4 link.
5. If you want that bookmark link to open Gmap4 and (a) start the 'My location' feature and (b) turn off the coordinate display in the corner and (c) turn off the streetview pegman and (d) display the "t4 Topo High" maps, then edit your bookmark link so it looks like: http://www.mappingsupport.com/p/gmap4.php?mylocation=on&coord=off&streetview=off&t=t4

Remember: Your browser has to be online to the internet in order for Gmap4 to work.

The 'My location' feature is intended for use primarily on smartphones and other mobile devices. Sure, you can use that feature on your desktop/laptop but most likely the accuracy will not be very good.

There are two ways to ask Gmap4 to find your location. First, if Gmap4 is already running then select Menu ==> My location. Second, if you are building Gmap4 links then include this link parameter: &mylocation=on

Starting with version 3.1, this feature works a bit differently than prior versions. When you use this feature, your location is displayed on the screen along with an accuracy distance in feet and meters. There is supposed to be a 95% probability that your true location is within that distance of the coordinates that are displayed. After your location is displayed you can either close the display or refresh your location.

Gmap4 uses a location feature that is built in to modern browsers. When you ask Gmap4 to show your location, Gmap4 asks your browser for your location and then displays it on the screen. As long as you have the location display open on your screen, your browser might provide Gmap4 with updates for your location. Gmap4 assigns each update a sequential number however **an updated location is not displayed on the screen unless you press the 'Refresh' button**. As a result, when you 'refresh' your position there may be a gap between the sequential numbers you see on your screen.

When you start the 'My location' feature, your browser might ask you for permission to share your location. That permission only applies to the Gmap4 program. Gmap4 does not save your location or share it with anyone. The only thing Gmap4 does with your location is show it on your screen.

Your browser will use some or all of the following to determine your location:

* Your IP address

* Cell towers
* Wi-fi hotspots
* Any GPS chip in your phone or other mobile device

Note: **Remember to turn on your GPS and wi-fi.** If your phone has a GPS chip please double check to make certain that the GPS has been turned 'on'. It takes battery power to run the GPS so that feature is usually 'off' by default on new phones. Also, if there is any chance that there might be a wi-fi signal in the area, please be certain that the wi-fi feature in your device is on. Any wi-fi can be used to help determine your location including ones that you do not have permission to access.

Here's an example showing how the 'My location' feature can work with a database. The SQL database in this example has information on over 600 wineries mostly in the State of Washington. Clicking the link below will launch Gmap4, center the map at your location (you might need to give your browser permission to locate you) and display symbols for the wineries near you. After your location is found you may need to zoom out to see some winery symbols. Of course if you are not in Washington State you likely will not see any symbols on the map!
http://www.terroir360.com/nearby/terroir_mobile.html

Note that commercial users of Gmap4 pay a modest annual fee.

c. Things you can do after the map is displayed

Basic map operations

Pan — Click-hold-drag.

Zoom — Use the mouse wheel (if you have one). Or use the control near the upper left corner of the map. To zoom in on a specific feature either (1) put the cursor on it and use the mouse wheel to zoom or (2) double-click the feature to center the map at that spot and then use the zoom control in the upper left of the screen.

Tech note: Mouse-wheel-zoom is disable if the map is being displayed in an iframe. This allows the mouse wheel to continue scrolling a page past an iframe that is holding Gmap4.

Button for map type (upper right corner)

Map	Street map from Google
Satellite	Aerial photo from Google.
Hybrid	Aerial photo plus street names and other labels
t1 Terrain	Terrain from Google (default

t2 MyTopo Topographic map from MyTopo). USA maps are 1:24,000. Canada maps are 1:50,000.
t3 Topo USGS Topographic map from USGS via "The National Map"
t4 Topo High Topographic map from CalTopo.com & USGS **<=== Best quality**
t5 Canada Topographic vector maps for Canada
Earth View the map with the Google Earth browser plug-in

The 'Earth' option is not displayed when you use Gmap4 on any mobile device (iPad, phone, etc). This feature uses the Google Earth browser plugin and that plugin does not work on mobile devices.

Button for menu (described in the Quick Start section)

Other map operations

Double click will center the map at the point clicked. The zoom level remains the same.

Right click anywhere to display the coordinates of the point clicked. The coordinates will be displayed in various formats all of which are in the WGS84 datum.

Drag the orange 'pegman' (near upper left corner) over any road to see if Google streetview is available at that location. Here is some information from Google on how to use streetview:
http://maps.google.com/intl/en/help/maps/streetview/learn/using-street-view.html
Support for this feature when viewing topographic maps will be added in a future update to Gmap4.

16. Some general things you need to know if you edit your files

a. Use the right tool to edit your GPX and KML files

If you edit a GPX or KML file then it must be saved with something called "UTF-8 encoding". Here is how to do that in Microsoft Word (2007 version):
Save as ==> Save as type, select "Plain text" ==> File name, change "txt" to "kml" ==> Save ==> Check "Other encoding" and select "UTF-8" ==> OK

Or you could do it the **much easier way** and use a tool designed to help you edit these types of files. One such tool is the freeware Notepad++ . You can get it here:
http://notepad-plus-plus.org/
This tool has special features to help with editing these types files. You can configure this program to automatically save your files with UTF-8 encoding.

Any editor intended for use with 'XML' files will also be much better than using Word.

b. Indentation

You should adopt the practice of using proper indentation in order to make your data files more readable. See the example KML files discussed in this 'Help' file.

c. HTML and CSS

Please do not use the characters < and > in your data file unless you are adding HTML tags to your file. If you ignore this rule then Gmap4's internet security screening might display error messages when you view your file.

In general, you should be able to use most inline HTML and CSS commands if you wish to edit your data file. Note the use of the CDATA tag. Here is an example of a two line map title that uses HTML to make the text bold text:

<name>**<![CDATA[**Misty Moon Lake Trail
Cloud Peak Wilderness**]]>**</name>

Or you could use CSS to style the font:

<name><![CDATA[Misty Moon Lake Trail
Cloud Peak Wilderness]]></name>

However, if you try something too fancy with your HTML and CSS, then Gmap4's internet security scanning might complain.

You can use inline HTML and CSS in the following places:

- The field that is used as a map name
  - KML file: <Document><name>
  - GPX file: <metadata><name>
- The 'name' for any waypoint or line
- The 'description' for any waypoint or line
- The additional 'label' field in delimited text files

d. Labels for waypoints

If a file includes some waypoints (and not just a GPS track) then you can tell Gmap4 to display all of those waypoint names as labels on the map. To tell Gmap4 to display a file with labels showing, simply add the link parameter '&label=on' to the Gmap4 link:

http://www.mappingsupport.com/p/gmap4.php?q=mymap,210884365946431522523.0004aa95e258ece10202b&t=t3**&label=on**

You can also toggle the labels by clicking Menu ==> Label On/Off.

Note - This feature does not yet work with KMZ files.

Are some of the labels covering up their symbols on your map? There is a simple solution. Each waypoint symbol has an "anchor point". The default location for a symbol's anchor point is the **middle of the bottom edge** of the symbol image. The labels are placed so that the **top left corner of the label is 20 pixels to the left of the anchor point**. If you look again at the map link just above you will see that the upper left corner of the labels is slid a bit to the left of the bottom of the waypoint symbols. This tells you that the anchor point for those symbol images is the middle of the bottom edge of the image.

By contrast, when the label covers part of the symbol, that tells you that the anchor point for that symbol **not** the middle of the bottom edge but instead is somewhere 'inside' the space the symbol image occupies on the map. This only seems to happen with certain symbol images that are hosted by Google. To fix this problem, simply copy those symbol images and put them online yourself. No website? No problem! There are step-by-step instructions in this Help file showing you how to upload files to Google Sites. Doing so is free, easy and it works. After you put those symbol images online yourself, then their anchor point will be the middle of the bottom edge.

In case you are wondering, here is the default CSS styling that Gmap4 applies to the labels:

position:relative; left:-20px; top:0px; white-space:nowrap; border:1px solid black; padding:2px; background-color:#FFFFCC; font-size:1em;

Do you want maximum control over the appearance of labels on your map? Then please take a look at the section in this Help file on delimited text files.

e. Including links in your file

Assume you want to code a waypoint description (or waypoint label, or map name) that includes a link. The best practice is to code that link so it opens in a new window. Here is the reason. If the link opens in the same window where Gmap4 is running then when the user clicks their 'back' button Gmap4 **reloads the original map view**. The user will lose the benefit of any panning and zooming they did before clicking that link. By contrast, if your links opens in a new window then when that new window (or tab) is closed the Gmap4 map looks exactly the same as when the user clicked the link.

f. Including clickable photo thumbnails on your map

This is soooooooo easy (once you know how). Look at the following map and click each camera icon. Notice how each thumbnail fits nicely within the white info balloon.

http://www.mappingsupport.com/p/gmap4.php?q=http://www.mappingsupport.com/p/gmap4/helpfile/Stafford_Creek.kml&t=t2

Here is a link that lets you download a copy of the KML file that produced the above map:

http://www.mappingsupport.com/p/gmap4/helpfile/Stafford_Creek.kml

Download the KML file, open it in an editor and find the section titled:

"This section has coordinates for each "Pic" icon"

Look inside the first <Placemark> ... </Placemark> tags and find the <![CDATA[...]]> tags. Notice that the CDATA section includes <table> ... </table> tags. These tags help define an html table. Google uses the html tags in this table to format the data that appears in the info balloon when someone clicks this icon on your map.

Notice also that the contents of the <![CDATA[...]]> tags can appear on multiple lines.

This table has 3 cells. The first cell has some text. The second cell is empty and just provides a bit of white space between your text and the photo thumbnail. The third cell holds the thumbnail (which is created automatically).

Notice that the third cell includes:

height="100px" width="133px"

This data will cause the thumbnail on the screen to be 100 pixels high by 133 pixels wide. Including both a **height and width** for each thumbnail is **essential** so that the white background of the info balloon is the right size to include both the text and the thumbnail.

You should use height and width values that maintain the aspect ratio of your photo. For example, 100 by 133 is the same aspect ratio as the 600 pixel by 800 pixel jpg that is displayed when someone clicks the thumbnail.

There are certainly other ways to write KML info balloons. But starting out, I recommend you adopt this three cell approach.

g. Using the "refresh" link parameter for GPX and TPO files

This section only applies if you are displaying your own GPX or TPO files with Gmap4. All the discussion in this section about GPX files also applies to TPO files.

Gmap4 uses the Google Maps engine. Since that engine cannot read GPX files, Gmap4 converts GPX files to KML files and then temporarily stores that KML file. Thus, if you revise one of your GPX files, then you have to tell Gmap4 that it needs to read the revised GPX file in order to make a new KML file. You do this with the "refresh" link parameter.

Let's assume you are viewing one of your GPX files with Gmap4 and you decide to delete one of the waypoints from that file. Here is the recommended workflow:

1. Edit your GPX file by deleting the waypoint.
2. Upload the edited GPX file to where ever your files are hosted online.
3. Go to the browser where Gmap4 is running and add the following to the end of the command in the browser bar:

   &refresh=1

   Make certain that you do not let any spaces get into the command in the browser bar.

4. Press enter. Gmap4 will display your revised map.

After you revise your data file, you only need to use the refresh parameter **one time**. Since the &refresh parameter causes additional processing, it should not be routinely used. It only needs to be used one time after a data file has been changed. While it will not do any harm, it is still bad practice to post a link that includes the "&refresh" parameter.

Did I mention that you should only use &refresh=1 **one time** after you edit a data file that you created?

NOTE: You cannot change the line width or line color of GPX files. Those values are hard-coded into the portion of Gmap4 that converts your GPX file to a KML file. If you wish to display your GPX file with a different line width and/or line color, then please first convert your GPX file to a KML file. You will then have complete control over how your map looks when displayed by Gmap4.

17. GPX files - Some details

The GPX format was initially developed by the Topografix company which describes it as follows:

> "GPX (the GPS Exchange Format) is a light-weight XML data format for the interchange of GPS data (waypoints, routes, and tracks) between applications and Web services on the Internet."

You can learn more here: http://www.topografix.com/gpx.asp

Many current handheld GPS units automatically save their data as GPX files. Since Gmap4 can read these files, you do not have to bother doing any file conversion unless you want the benefits that come from using KML files.

Here is a site where you can download a tool to check your GPX file and make sure it conforms to the specifications that all such files must meet:

http://www.topografix.com/gpx_validation.asp

Unless you have edited the content of your GPX file, you likely do not need to bother with this validation step.

If you want to edit the content of your GPX file, then I recommend the freeware editor Notepad++. Here is where to put a map title in a GPX file. Map titles display near the upper left screen corner:

```
<metadata><name>Put your map title here</name>
```

You can add inline HTML and CSS to your map title. Remember to wrap everything in CDATA tags:

```
<metadata><name><![CDATA[<b>Put your map title here<br />Line 2 of map
title</b>]]></name>
```

If you are viewing your GPX files with Gmap4 and happy with the way your map looks, then there is likely little reason for you to spend any time to learn about KML files. However, while GPX files are certainly convenient if they are automatically produced by your GPS, they do have a few disadvantages as compared to KML files when using Gmap4. These include:

- You cannot change the line width or line color of your GPS track
- You cannot chose different symbol images to display for your waypoints
- You cannot display information on your map from multiple GPX files

18. TPO files - Some details

TPO files are produced by certain versions of the popular TOPO! software from National Geographic. Gmap4 is on the short list of 3rd party software that can display TPO files without requiring the user to first convert their TPO file to some other file format (such as GPX).

TPO files use a non-disclosed proprietary file format and thus are creatures of mystery. If your TPO map looks weird/broken/ugly please send me a link to your tpo file or the file itself. I can't fix it if I don't know it's broken. For an email link see:
http://www.mappingsupport.com/p/gmap4_contact.html

Gmap4 uses GPSBabel to convert your TPO file into a KML file. It is that KML file that is used to actually produce the map that you see.

NOTE: If you display one of your TPO files with Gmap4 and then edit that TPO file, you will **not** see your edit on the map unless you use the $refresh=1 link parameter. Search this 'Help' file for more info about "refresh".

For TPO version 2 files, Gmap4 will only display GPS tracks. (Waypoints in TOPO version 2 are stored in TPG files.)

For TPO version 3 and 4 files, Gmap4 will display GPS tracks and any individual waypoints you set. In addition, if you also made any (1) map notes, (2) symbols, and/or (3) text notes using the TOPO software, then those items should also be displayed on your Gmap4 map as waypoints.

19. KML files - Some details

The KML (Keyhole Markup Language) format was originally developed by Keyhole, Inc. That company was acquired by Google in 2004. Here is Google's description of what KML is all about: http://code.google.com/apis/kml/documentation/whatiskml.html

If you want the most flexibility for how your data is displayed by Gmap4, then you will want to use KML files instead of GPX files. By using KML files and doing a bit of editing to your KML file you can:

- Add a caption to your map
- Change line width and/or color

- Use different icons for waypoints
- Break a GPS track into two parts and assign a different color to each part
- Add clickable markers to your map that display text and/or a photo
- Link to other KML files and include their data on your map
- and more I haven't thought of offhand

a. Easy way to make better KML files

The Appendix to this 'Help' file contains a listing for a basic KML file that displays a GPS track. You can (1) copy that listing, (2) replace the coordinates with your own coordinates, (3) place the edited file online and (4) view your data with Gmap4. It's just that easy. As you learn a bit more about KML you will be able to enhance your basic KML files with additional features.

You can also download any KML file referenced in the Appendix, open it with an editor and use it as a template for your own maps. For example: This link will display the map produced by KML Demo #1 in the Appendix:

http://www.mappingsupport.com/p/gmap4.php?q=http://www.mappingsupport.com/p/gmap4/helpfile/Boardman_Lake.kml&t=t2

Here is the KML Demo #1 file:

http://www.mappingsupport.com/p/gmap4/helpfile/Boardman_Lake.kml

OK, time to 'fess up. I did not actually hike that trail and record my GPS track (although I tried to ski it once). Instead, for demonstration purposes I just very quickly snapped some waypoints with my mapping software, exported the waypoints in the proper format and pasted them into the basic KML file you see in the Appendix as Sample #1.

Guess what? You can do the same thing. All you need is a simple list of the points in your GPS track that are in the right format: **longitude,latitude or longitude,latitude,altitude**
Once you have your list of points just paste them into the sample KML file that you copied from the Appendix.

As you work on formatting your coordinates and adding them to a KML file, keep these points in mind:

- In your **track** the **longitude** must come first
- Altitude is optional and will be ignored if present
- In North America longitude must have a minus sign
- Coordinates are in decimal degrees
- Coordinates must be in the WGS84 datum
- A space after each comma is OK but not required
- The coordinates can be on one looooong line in your KML file
- Coordinates must be surrounded by opening and closing tags as follows:
  <coordinates> insert list here </coordinates>
  or
  <coordinates>

insert list here
</coordinates>

Are you concerned whether you messed up the KML file with your edits? There are tools discussed below that will check your file.

b. Validate your KML file

If you have edited your KML file then it is likely a good idea to have your file checked by one of the validation tools in order to be sure that your file still is a valid KML file.

This validator can be used online. You simply upload your file and it will be checked.
http://www.kmlvalidator.com/home.htm

Here's another KML validating tool that Google has posted:
http://googlemapsapi.blogspot.com/2007/06/validate-your-kml-online-or-offline.html

You will likely save yourself time and grief if you validate your KML file after you make any edits and before you try to view that file with Gmap4.

c. Let Google Earth help you edit your KML files

Since your time is valuable you should use the best tool for helping you build your KML files in the least time. That tool is Google Earth (GE) since it can read your KML file from your local drive and display the contents on its earth map. You do not have to place your KML file online in order to view it with GE.

Now here's the best part. After you do another edit to your KML file you can go back to GE and do: File ==> Revert
GE will re-display your KML file with the latest edits you just made.
After you get your KML map looking right on GE, then you are ready to put it online so you can view it with Gmap4.

If you do not already have the GE software running on your computer, then consider adding it.
Note that GE requires a broadband connection of some kind.
System requirements: http://earth.google.com/support/bin/topic.py?hl=en&topic=17077
Download: http://earth.google.com/index.html

If you have included a map caption in your KML file, then that feature will not be displayed by GE. But it will appear on your map after you place your KML file online and view it with Gmap4.

d. Add a caption to your map

One of the simplest edits you can make to a KML file is to add some short text that will appear at the top of your Gmap4 map. Think of this as a caption or title for your map. All that is needed is a quick edit of your KML file. Here's the recipe:

Open your KML file and find the <Document> tag near the top of the file
Add a new blank line **right under** the <Document> tag
Enter this on that blank line: <name>My caption here</name>
Replace the text "My caption here" with the text you want as a caption on your map

Would you like your caption in bold? Do it like this:

```
<Document>
  <name><![CDATA[<b>My caption here</b>]]></name>
```

How about a two line caption? No problem:

```
<Document>
  <name><![CDATA[<b>Caption line1<br>Caption line2</b>]]></name>
```

As long as you use the special CDATA statement and square brackets as shown, then most html tags are allowed with your map caption. To read more about adding html to your KML files, and the CDATA tag, please open this link and scroll down a bit:
http://code.google.com/apis/kml/documentation/kml_tut.html

Demo KML file #1 in the Appendix already has a spot for your map caption. All you have to do is change the text.

e. Resources for learning more about KML files

The KML file specification includes a number of elements (for example, <altitude>) which mean something in Google Earth (a 3D app) but are ignored in Google Maps (a 2D app) and also ignored by Gmap4. If you are building KML files for the purpose of viewing them with Gmap4, then there is no reason to include tags that will be ignored.

In general, here is the list of KML elements that Google Maps and Gmap4 understand:

Placemarks
Icons
Folders
Descriptive HTML
Polylines and polygons
Styles for polylines and polygons, including color, fill, and opacity
Network links to import data dynamically
Ground overlays and screen overlays

Think of a GPS track as a polyline and a GPS waypoint as a placemark.

Tech note: If you want the precise techie details about which KML elements are understood by Google Maps and Gmap4, you can find them here:
http://code.google.com/apis/kml/documentation/kmlelementsinmaps.html

Now you don't need to waste any time learning about a KML element that is not going to do anything when you view your file with Gmap4.

Here is a great tool to help you learn about KML.
http://kml-samples.googlecode.com/svn/trunk/interactive/index.html
You can edit the short samples of KML code and immediately see the effect of your edit on the adjoining map. Note that this tool requires that your browser have the Google Earth plugin which you can find here: http://earth.google.com/plugin

Also, some of the interactive examples demonstrate KML elements that are only recognized by Google Earth. If you use this interactive tool, then the following examples will likely be the most useful ones:

Lines and Paths <== GPS tracks
Absolute

Placemarks (Points) <== GPS waypoints
Simple
Descriptive HTML

Balloons <== Popup text/pic when a waypoint is clicked
Simple

Styles
Shared

Here is the ultimate source of info for all things KML:
http://code.google.com/apis/kml/documentation/

20. Delimited text files - Some details

a. Build your first map step-by-step

Gmap4 can read delimited text files that are prepared as described in this section. This file format is much easier to understand and edit than GPX or KML files. If you want to build a data file 'by hand' that you can display with Gmap4, then the fastest way to do it is by using this delimited text file format.

How fast? Assume you want to make a map that displays a symbol at some of the parks near where you live. The only thing you need in your data file is the latitude longitude for each park. For example, a delimited text data file containing just these three lines:

47.659549,-122.127714
47.668306,-122.145073
47.672959,-122.115483

is online at: https://sites.google.com/site/gmap4files/p/delimited/delimited_04.txt
These coordinates are inside three different parks located at the City of Redmond, Washington State, USA. The following link displays that data file with Gmap4:
http://www.mappingsupport.com/p/gmap4.php?q=https://sites.google.com/site/gmap4files/p/delimited/delimited_04.txt

By contrast, you would need well over a 10 lines in either a GPX or KML file in order to make the exact same map. As you learn more about the delimited text file format that Gmap4 can display, then you can add additional features to your maps using a syntax that easy and fast to learn. In addition to the information you are reading here, the Gmap4 Examples page has some maps that display delimited text files.
See: http://www.mappingsupport.com/p/gmap4_examples.html
You can download the delimited text file used to produce each map, open it in any editor program and notice how the commands in that file control the map that you see.

Version 2.2 of Gmap4 includes a number of significant enhancements for delimited text files including extensive support for waypoint labels. **Instead of flagging each improvement as "new", this entire section has been rewritten**. An editor like the freeware Notepad++ (http://notepad-plus-plus.org/) is highly recommended for working with delimited text files.

Thanks to Robin Tivy of http://bivouac.com/ for his help in thinking about how this new file format should operate and assistance in testing the beta code. Get a free login and check out Robin's site. The links you see labeled "Topo" will launch Gmap4. Many of the maps you see are produced from delimited text files which Robin's code generates on-the-fly from his database.

Now let's take the simple map described above and add some features to it. Let's start by adding the name of each park.

47.659549,-122.127714; Westside Park
47.668306,-122.145073; Grass Lawn Park
47.672959,-122.115483; Anderson Park

The above file is online at:
https://sites.google.com/site/gmap4files/p/delimited/delimited_05.txt
and here is the map link:
http://www.mappingsupport.com/p/gmap4.php?q=https://sites.google.com/site/gmap4files/p/delimited/delimited_05.txt

Each row in this file represents a **waypoint**. If you hover your cursor over a waypoint symbol, then the name appears. Watch what happens when you click **Menu ==> Label On/Off**. And to

have all labels displayed on the map when it first appears on the screen, add the '**&label=on**' parameter to the Gmap4 link:
http://www.mappingsupport.com/p/gmap4.php?q=https://sites.google.com/site/gmap4files/p/delimited/delimited_05.txt&label=on

Labels on a map are good for information that you want people to see without having to click on anything. These labels are given a default style (light yellow background, 1 pixel border, etc) by Gmap4. A bit later in this Help file you will learn how to override that default style with your own HTML and CSS.

Here are a couple ideas for **useful maps you can make with this label feature**. You could make a map that shows the names of other people that live within a short walk of your home. In many places those names are available online via the county or city tax records. Or maybe you could help your child make a map showing where members of their sport team live.

Notice the semi-colon character in the above data file. That character is the default 'delimiter' and is used to separate the different fields of information. Let's add another delimiter and then a description for each waypoint:

47.659549,-122.127714; Westside Park; 5810 156 Ave NE
47.668306,-122.145073; Grass Lawn Park; 7031 148 Ave NE
47.672959,-122.115483; Anderson Park; 7802 168 Avenue NE

The above file is online at:
https://sites.google.com/site/gmap4files/p/delimited/delimited_06.txt
and here is the map link:
http://www.mappingsupport.com/p/gmap4.php?q=https://sites.google.com/site/gmap4files/p/delimited/delimited_06.txt&label=on

Click a marker and the description appears.

Note: A bit later in this Help file you will learn (1) how to specify a different character as the field delimiter and (2) why doing so is a very good idea.

Up to now this series of maps has displayed the default symbol image which is a small red paddle. Instead of continuing to use that default symbol image, the following data file specifies two different images that will be used for waypoint symbols. In order to use an image as a waypoint symbol, the image file must be online and the image must not be larger than 64 pixels by 64 pixels. Here is the revised delimited file which uses some symbol images that are hosted by Google:

// This section identifies waypoint images
symbol=http://maps.google.com/mapfiles/kml/pal2/icon4.png name=tree
symbol=http://maps.google.com/mapfiles/kml/pal2/icon2.png name=cabin
// This section lists the waypoint locations and related information
47.659549,-122.127714; Westside Park; 5810 156 Ave NE; tree
47.668306,-122.145073; Grass Lawn Park; 7031 148 Ave NE; tree
47.672959,-122.115483; Anderson Park; 7802 168 Avenue NE; cabin

The above file is online at:

https://sites.google.com/site/gmap4files/p/delimited/delimited_07.txt
and here is the map link:
http://www.mappingsupport.com/p/gmap4.php?q=https://sites.google.com/site/gmap4files/p/delimited/delimited_07.txt&label=on

The lines in the above file that start with // are comment lines. The above file uses the 'symbol=' **command** to (1) provide a link to each image and (2) provide a short name for each image. Each **coordinate** then has another delimiter added at the end of the line followed by one of those short names. You can have many different symbol images on a map as you want.

This page shows many symbols that Google is hosting:
http://hohonuuli.blogspot.com/2007/09/list-of-paddle-icons-for-kml-z-letters.html

Here is a large collection of 3rd party symbols. If you wish to use any of these you should download them and put them online yourself by uploading them to Google Sites or somewhere else:
http://mapicons.nicolasmollet.com

TIP: You can use Google Sites to build your own library of symbol images.

NOTE: 'Crosshair' symbols are not presently supported. All symbols will usually be placed on the map such that the **middle of the bottom edge** will be at the specified latitude longitude point (i.e. anchor point). The exception to this rule is certain symbols that are hosted by Google and which have their anchor point somewhere 'inside' the image.

You can also use delimited files to add lines to your maps. The following revised data file has two lines. The first one uses the default line color (red) and default line width. The second line specifies the color green and a width of 5 pixels:

```
// This section has identifies waypoint images
symbol=http://maps.google.com/mapfiles/kml/pal2/icon4.png  name=tree
symbol=http://maps.google.com/mapfiles/kml/pal2/icon2.png  name=cabin
// This section lists the waypoints
47.659549,-122.127714; Westside Park; 5810 156 Ave NE; tree
47.668306,-122.145073; Grass Lawn Park; 7031 148 Ave NE; tree
47.672959,-122.115483; Anderson Park; 7802 168 Avenue NE; cabin
// This section contains data for linepoints
line=on
47.658768,-122.132607
47.654202,-122.132477
47.654087,-122.134666
47.654751,-122.140030
line=off
line=on width=5 color=#00FF00
47.654751,-122.140030
47.655010,-122.143250
47.663334,-122.143204
```

47.669060,-122.143120
47.669086,-122.143250

The above file is online at:
https://sites.google.com/site/gmap4files/p/delimited/delimited_08.txt
and here is the map link:
http://www.mappingsupport.com/p/gmap4.php?q=https://sites.google.com/site/gmap4files/p/delimited/delimited_08.txt&label=on

The data file listed above uses the 'line=' command to (1) show where lines start and stop, (2) override the default line width, and (3) override the default line color. Color must be in a six character code. For example:

color=#FF0000	red
color=#00FF00	green
color=#0000FF	blue

To learn more about HTML color see http://www.w3schools.com/html/html_colors.asp. For a color picking tool (there are many others) see: http://www.colorpicker.com/.

Notice that the **default field delimiter** (semi-colon) is not used on the **command** lines. Instead, it is only used on the waypoints and sometimes on the linepoints.

Key concept: A row in a delimited text file can be one of four things:

1. Command (Example: symbol=, line=
2. Waypoint
3. Linepoint (including points on a GPS track)
4. Comment

Congratulations! You now know how to build delimited text files. To view a delimited text file with Gmap4 all you need to do is:

1. Build the text file
2. Place the text file online (Google Sites works great)
3. Enter the Gmap4 link into your browser bar along with the link for your text file

When you save your file be sure to give it a file extension of either **txt or ssv**. But wait - there's more. The next section will dig deeper into the delimited file syntax and show you additional features you can add to your map.

b. Beyond the basics

In addition to the information you are reading here, the Gmap4 website has some example maps that use delimited text files.
See: http://www.mappingsupport.com/p/gmap4_examples.html
Remember, you can always download any data file that Gmap4 is displaying and view the contents of that file with a suitable editor program. So if you see a map that is displaying labels or some other feature in a cool way, it is very easy to learn the secrets for how to do the same thing with your own maps.

1. First line in your file

The old rule was that the first line in your file had to be something like “pc;” or “mac”. That restriction has been removed. Although your delimited text files do not need to start with this line, Gmap4 is backward compatible with your existing delimited files that do include that line.

2. Changing the default field delimiter

You learned above that (1) the default field delimiter is now the semi-colon and (2) field delimiters are only needed on lines that start with coordinates. (The default field delimiter used to be a tab.) The “delimiter” command lets you specify a delimiter to use instead of the semi-colon. If you wish to use a tab as the delimiter, then you need to spell out the word ‘tab’. If you use the "delimiter" command then that line must be the **first line** in your file.

Examples:

```
delimiter=^
delimiter=tab
```

It is highly recommended that you do not use the default field delimiter (semi-colon). Using a semi-colon as the field delimiter might cause conflicts with the enhanced internet security screening in Gmap4. You can easily avoid that problem by using a different character for a field delimiter. It must be a character that will never be part of your actual data. A good choice is to use the ^ character as your field delimiter. See the example file a few sections below.

Also, if you plan to either (1) use inline CSS or (2) use the semi-colon character as part of the grammar in your data file, then the semi-colon character **cannot** also be used as the field delimiter and you must specify a different field delimiter.

3. Add a title to your map

Use the ‘title=’ command to add a title to your map. That title will appear near the upper left corner of the screen. Example:

```
title=Some Redmond city parks
```

Remember, you can use inline HTML and CSS with your map title. See the section in this Help file on HTML and CSS.

4. Line width and line color are sticky

The settings for line width and line color are now ‘sticky’ until they are changed in your file. For example, assume your file looks like:

```
line=on  width=1  color=#00ff00
```

47.0,-122.0
47.3,-122.3
line=off
line=on
46.5,-100.9
46.9,-100.7

The second line on the map will also be 1 pixel wide and green.

5. Short symbol names are sticky

In prior sections of this Help file you learned that a delimited text file can have four different types of lines. One type of line starts with coordinates. That type of line can have the following fields: Coordinates Name Description Short symbol name

In the following file notice that (1) the default field delimiter is overridden and (2) the last coordinate line does not have a description and **does not have a short symbol name**.

delimiter=^
// This section has identifies waypoint images
symbol=http://maps.google.com/mapfiles/kml/pal2/icon4.png name=tree
symbol=http://maps.google.com/mapfiles/kml/pal2/icon2.png name=cabin
// This section lists the waypoints
47.659549,-122.127714^ Westside Park^ 5810 156 Ave NE^ tree
47.668306,-122.145073^ Grass Lawn Park^ 7031 148 Ave NE^ tree
47.672959,-122.115483^ Anderson Park^ 7802 168 Avenue NE^ cabin
47.673425,-122.123143^ Downtown

The above file is online at:
https://sites.google.com/site/gmap4files/p/delimited/delimited_09.txt
and here is the map link:
http://www.mappingsupport.com/p/gmap4.php?q=https://sites.google.com/site/gmap4files/p/delimited/delimited_09.txt&label=on

Examine the above map link. Will the labels appear on the screen when the map opens? Now open the above map and notice that the cabin symbol appears both at Anderson Park and downtown. The **general rule** is:

- Each waypoint will have a symbol on the map
- That symbol will be either (1) the most recently used 'short symbol name' in the file or (2) Google's default symbol.

In the above map the downtown waypoint has a cabin symbol since it is the most recently used short symbol name in the file.

6. Make a label that does not have a symbol

This section describes an **exception** to the general rule that each waypoint has to have a symbol. Use this exception when you want to have a label on your map without an associated waypoint

symbol. To use this exception, put the keyword '**nosymbol**' in the field where the short symbol name would go:

```
delimiter=^
// This section has identifies waypoint images
symbol=http://maps.google.com/mapfiles/kml/pal2/icon4.png  name=tree
symbol=http://maps.google.com/mapfiles/kml/pal2/icon2.png  name=cabin
// This section lists the waypoints
47.659549,-122.127714^ Westside Park^ 5810 156 Ave NE^ tree
47.668306,-122.145073^ Grass Lawn Park^ 7031 148 Ave NE^ tree
47.672959,-122.115483^ Anderson Park^ 7802 168 Avenue NE^ cabin
47.673425,-122.123143^ Downtown^ ^ nosymbol
```

The above file is online at:
https://sites.google.com/site/gmap4files/p/delimited/delimited_10.txt
and here is the map link:
http://www.mappingsupport.com/p/gmap4.php?q=https://sites.google.com/site/gmap4files/p/delimited/delimited_10.txt

When you open the above map you will not see any labels. That is because the default for the label link parameter is label=off. After the map opens, turn labels on by clicking Menu ==> Label On/Off. The downtown label appears even though there is not any waypoint symbol at that location.

6. Write coordinates with the longitude first

The default way to write a coordinate is latitude, longitude. The "coordinate" command lets you override this default. Example:

```
coordinate=longitude,latitude
```

Later in the same file you could change back to the default way of writing coordinates by including the command:

```
coordinate=latitude,longitude
```

Why might you care? The syntax for a KML file uses the form **longitude**,latitude. If you have a KML file with a GPS track in it, then you can copy the **longitude**,latitude values for that track and paste them into a delimited text file.

7. Style your labels with inline HTML and CSS

Now let's make the label for Anderson Park and Downtown use bold text.

```
delimiter=^
// This section has identifies waypoint images
symbol=http://maps.google.com/mapfiles/kml/pal2/icon4.png  name=tree
symbol=http://maps.google.com/mapfiles/kml/pal2/icon2.png  name=cabin
// This section lists the waypoints
```

47.659549,-122.127714^ Westside Park^ 5810 156 Ave NE^ tree
47.668306,-122.145073^ Grass Lawn Park^ 7031 148 Ave NE^ tree
47.672959,-122.115483^ Anderson Park^ 7802 168 Avenue NE^ cabin
47.673425,-122.123143^ Downtown^ ^ nosymbol

The above file is online at:
https://sites.google.com/site/gmap4files/p/delimited/delimited_11.txt
and here is the map link:
http://www.mappingsupport.com/p/gmap4.php?q=https://sites.google.com/site/gmap4files/p/delimited/delimited_11.txt

Now hover your cursor over the symbol for Anderson Park. The waypoint name will be displayed along with the raw HTML codes. That is certainly not attractive! Fortunately there is a **better way** to add **inline** HTML and CSS to labels.

In addition to the four fields already described (coordinate, name, description and short symbol name) a **fifth field can be used to hold a label**. That 5th field can either have the same text as the 'name' field or completely different text. Now we can revise the prior data file to look like:

delimiter=^
// This section has identifies waypoint images
symbol=http://maps.google.com/mapfiles/kml/pal2/icon4.png name=tree
symbol=http://maps.google.com/mapfiles/kml/pal2/icon2.png name=cabin
// This section lists the waypoints
47.659549,-122.127714^ Westside Park^ 5810 156 Ave NE^ tree
47.668306,-122.145073^ Grass Lawn Park^ 7031 148 Ave NE^ tree
47.672959,-122.115483^ Anderson Park^ 7802 168 Avenue NE^ cabin^ Anderson
47.673425,-122.123143^ ^ ^ nosymbol ^ Downtown

Here is the map link:
http://www.mappingsupport.com/p/gmap4.php?q=https://sites.google.com/site/gmap4files/p/delimited/delimited_12.txt

Label rule: If there is data in the 'label' field, then that data will be used for the label. If there is no data in the 'label' field, then the 'name' field will be used for the label.

One way to style a label with **inline css** is to use a span tag:

47.672959,-122.115483^ Anderson Park^ 7802 168 Avenue NE^ cabin^ Anderson

Note the semi-colon after the word "bold." **Because a semi-colon is part of the CSS syntax, that character cannot also be used as the field delimiter when you have CSS in your file.**

7. Override the default CSS style for labels

Here is the default CSS style that Gmap4 applies to labels:

position:relative; left:-20px; top:0px; white-space:nowrap; border:1px solid black; padding:2px; background-color:#FFFFCC; font-size:1em;

You can override that default with your own **inline** CSS. For example, to make the label for Anderson Park appear on a light blue background and with a larger font, you might write:

47.672959,-122.115483^ Anderson Park^ 7802 168 Avenue NE^ cabin^ Anderson

8. Make a label a clickable link

The following code shows a good way to turn a label into a clickable link. This link will not be underlined and it will not change color. The cursor will still change appearance when it is over the link. Everything that has a yellow background goes into the 'label' field in your delimited text file.

47.672959,-122.115483^ Anderson Park^ 7802 168 Avenue NE^ cabin^ Anderson Park

9. Two ways to turn labels off for some points

You can use the 'label' command to turn labels off for some points. If your file includes the line:

label=off

then points after that command line will not have any labels. You can turn labels back on for subsequent points by including the command line:

label=on

You can also put the keyword 'nolabel' in the label field in order to turn the label off for just that point.

10. Style many labels at once with CSS

You have already learned that the label command can turn the display of labels off and on for waypoints that come after the command. In addition, the label command can specify two different sets of CSS statements that will be applied to all of the following labels. You can have many label commands in your file. The basic syntax is:

label=on css=_____ satellitecss=_____

Why are there two sets of CSS? This approach solves a problem that pops up if you want to have labels on your map with a **transparent background**. When you shift the map to an aerial view then a label with black text and a transparent background is impossible to see if the aerial image happens to have a black shadow where your label is located. The satellitecss= statement can be

used to give your labels a **solid background** when the map is displaying one of the aerial views. Perhaps you will think of another use for this feature.

Both of these CSS statements are optional. If you use both CSS statements, then **they must be in the order shown**. Each of these css statements is limited to 150 characters.

To make all labels bold:

label=on css=font-weight:bold;

To make all labels have bold font, smaller font, no border, no padding, transparent background for non-aerial and yellow background for aerial. This all goes on one line in your file (**see next section for example map**):

label=on **css=**font-weight:bold;font-size:0.8em;border:none;padding:0px;
background-color:transparent; **satellitecss=**background-color:#ffffcc;

To use the default CSS that is built into Gmap4 for the following labels, put this command in your file:

label=on

Here's a peek under the Gmap4 hood to help you understand how this works. Each time a 'label' command appears in your file, Gmap4 generates two groups of css statements:

#1. Default CSS in Gmap4 (already described) + css
#2. Default CSS in Gmap4 (already described) + css + satellitecss

The first group of CSS is used when the map view being displayed **is not** one of the aerial views. The second group of CSS is used when the map view being displayed **is** one of the aerial views. If the same CSS statement appears in a group, then **the last statement overrides earlier statements**. An example of CSS to be used with one of the aerial map views might look like:

position:relative; left:-20px; top:0px; white-space:nowrap; border:1px solid black; padding:2px; **background-color**:#FFFFCC; font-size:1em; font-weight:bold; font-size:0.8em; border:none; padding:0px; **background-color**:transparent; **background-color**:#ffffcc;

The red part is the default CSS built into Gmap4. The black part would come from css= and the blue part would come from satellitecss=. The statement "background-color" appears three times in this group. Since the **last statement overrides the earlier ones**, any labels styled with this group of CSS will have a light yellow background.

Each 'label' command stands on its own and does not inherit any CSS statements from previous label commands in your file.

11. Move the label location

The default CSS contained in Gmap4 will place labels such that the upper left corner of the label is 20 pixels to the left of the coordinates stated on that same line of the delimited text file. You can override that position by adding your own positioning CSS to the 'label' command. (Inline CSS will not work for changing the label position.) Use the following CSS statements to change the label position:

left:___px; Number > 0 move label right. Number < 0 move label left.
top:___px; Number > 0 move label down. Number < 0 move label up.

Below is the content of a delimited text file that demonstrates:

- Labels moved so they are next to (instead of below) their symbols.
- Labels that have either a transparent or solid background depending on which map view is being displayed.
- A label (Downtown) that goes back to using only the default CSS built in to Gmap4.

Thee underlined portions of this data file are all on one line. Note that the Anderson Park label is a clickable link.

delimiter=^
// This section has identifies waypoint images
symbol=http://maps.google.com/mapfiles/kml/pal2/icon4.png name=tree
symbol=http://maps.google.com/mapfiles/kml/pal2/icon2.png name=cabin
// This section lists the waypoints
label=on css=**left:20px;top:-25px;**font-weight:bold;font-size:0.8em;border:none;padding:0px; background-color:transparent; satellitecss=background-color:#ffffcc;
47.659549,-122.127714^ Westside Park^ 5810 156 Ave NE^ tree
47.668306,-122.145073^ Grass Lawn Park^ 7031 148 Ave NE^ tree
47.672959,-122.115483^ Anderson Park^ 7802 168 Avenue NE^ cabin^ Anderson Park label=on
47.673425,-122.123143^ ^ ^ nosymbol ^ Downtown

The above file is online at:
https://sites.google.com/site/gmap4files/p/delimited/delimited_13.txt
and here is the map link:
http://www.mappingsupport.com/p/gmap4.php?q=https://sites.google.com/site/gmap4files/p/delimited/delimited_13.txt

12. A few reminders

When you make a map, you can decide which of these building blocks you want to include:

- Map title
- Symbols (i.e. markers/icons)

- Balloons that open when a symbol is clicked and contain text/images/links
- Labels
- Lines

All latitude longitude values must be in the WGS84 datum. For points in the western hemisphere, longitude must have a minus sign. For points south of the equator, latitude must have a minus sign.

A **waypoint** can have up to five fields of information. These fields are called coordinate, name, description, short symbol name, label. A **linepoint** usually will only have a coordinate field but the other fields are also allowed if you wish to use them.

Maybe you do not need to use the label field at all. You only need to use the label field if either (1) the text for the label is different than the text that is already in the name field or (2) you are going to style the label with any **inline** HTML or CSS.

Do not use any **inline** HTML or CSS in the name field. You will see the raw HTML code when you hover over such a symbol.

A label does not have to be text. The content of a label could be an **image**. The image does have to be online somewhere. To use an image as a label, the label field should look like:

You need to tweak the items inside the quotes.

If you want to assign a name, description and/or symbol short name to a **linepoint**, you can certainly do so. Remember to use a delimiter character to separate the different fields even if a field is empty.

To add a comment line in your file, start that line with either two slashes (//) or a semi-colon (;). Blank lines in the file are OK.

c. Including photos in a delimited text file

The 'description' field can include photo thumbnails that can be clicked to display the photo full size. There are two important things to keep in mind:

1. You do not need to create a thumbnail image. Google will do that on-the-fly. Both the href= and src= must point to your photo.
2. You should specify both height= and width= for the thumbnail size you want. Otherwise the balloon will likely not be seized correctly. These values should have the same ratio as your photo.

One approach is to make a table with 1 row that has 3 cells. The first cell has some text, the second cell is just a spacer and the third cell holds the photo thumbnail. **All of this gets entered as a waypoint 'description' on a single line.** Here is an example of a waypoint description. It is shown on multiple lines for clarity:

```
<table><tr>
<td>Trail junction<br>at about 5,000'<br><br><font color="red">Click the
pic<font><br><br></td>
<td width="5px"></td>
<td><a href="http://farm3.static.flickr.com/2519/4241732074_2f05842a56_o.jpg"><img
src="http://farm3.static.flickr.com/2519/4241732074_2f05842a56_o.jpg" height="100px"
width="133px"></a></td>
</tr></table>
```

d. Summary of syntax for use in delimited text files

Command lines

coordinate=latitude,longitude (default) coordinate=longitude,latitude
Specify whether latitude or longitude comes first for the following coordinates.

delimiter=; (default) Value can be any single character that will not also be actual data in your file, or the word 'tab'. If used, this command must be the first line in your file.

label=on (default) label=off
Specify whether or not labels will be displayed for the following coordinates.

line=off width=2 color=#FF0000 (defaults) When line=on then the following coordinates will be joined with a line. Width is in pixels. Color is any valid 6 character color code.

symbol= name= Symbol is the link to an image not exceeding 64x64 pixels. Google seems to prefer png images, but jpgs will work. Name is a short name which will also be used on the coordinate lines.

Waypoint fields

Coordinate (required), name, description, short symbol name, label

Linepoint fields

Coordinate (required), name, description, short symbol name, label
Most people will just use the coordinate field.

Special keywords

Nosymbol	Prevent one waypoint from showing a symbol image. One use is to have a label on the map without any related symbol. Such a label could be used for a logo, your mug shot, or anything else.
Nolabel	Prevent one waypoint from showing a label

21. Tips for viewing files

You might want to read this topic in the "Quick Start' section if you have not done so already.

In order for Gmap4 to read a file, the link pointing to the file must not contain:

- A space
- A "%" character

If you try to display a KML/KMZ file and the screen remains blank then it is possible that the file contains errors. You could try downloading the file to your local harddrive and then uploading it to this free tool to check for errors:

http://www.kmlvalidator.com/home.htm

The rest of this section is **(New)**.

Gmap4 really only displays two kinds of files: (1) KML files and (2) a delimited text file format as described in this Help document. KMZ files are simply KML files that have been compressed. Google MyPlaces files are already KML files. GPX and TPO files are converted to KML files by Gmap4 before being displayed on the map.

If there is a problem with a delimited text file then Gmap4 displays a detailed error message.

If there is a problem with a KML file then either (1) the screen will remain mostly blank or (2) you should see an error message. If the screen remains mostly blank then the content of the file likely does not comply with the allowable syntax for KML files. You could try downloading the file to your local harddrive and then uploading it to this free tool to check for syntax errors:

http://www.kmlvalidator.com/home.htm

Below is a list of error messages produced by Google when a KMl file does not display.

DOCUMENT_TOO_LARGE

The maximum size for a KML/KMZ file is 3MB. When a KMZ file is uncompressed the resulting KML file cannot exceed 10MB.

TIMED_OUT

The KML file failed to load within about 4 seconds. Try hosting your data file on Google Sites. It is free and features fast servers. There are step-by-step instructions in this Help file showing you how to upload files to Google Sites.

LIMITS_EXCEEDED

The file has too much content. A file cannot have more than 50,000 "features". A GPS track with many points is still only 1 "feature". However, each waypoint counts as a feature.

FETCH_ERROR

NOTE - As of late August 2012 there is a problem at Google's end that sometimes prevents Google MyPlaces files from being displayed. If you see this error message that is likely the reason. Google is reported to be working on a fix.

DOCUMENT_NOT_FOUND

If the owner of the file has deleted it then you might see this message

INVALID_DOCUMENT

The file is not a valid KML or KMZ file.

INVALID_REQUEST

This is an internal error that you will likely never see.

UNKNOWN

The file failed to load for an unknown reason.

22. Tips for searching

To open the search bar click Menu ==> Search. Type something you want to search for and press enter or click one of the buttons in the search bar. In general, you can search on:

- A broad range of things related to addresses
- Certain kinds of place names

  Google did something at their end and as a result this feature does not work quite as well as it used to. One of the next updates to Gmap4 will include a second search tool that is designed to do an excellent job of searching on place names.
- Any reasonable way to write a latitude longitude (WGS84 datum).

a. Searching addresses

Gmap4 sends your search request to Google where it is processed by a geocoder. Hopefully this geocoder sends back one or more coordinates. Since Google's geocoder performs a **special type of search** you will have better results if you experiment with it a bit by trying different searches and looking at the list of hits. Gmap4 shows you all the 'hits' that are returned by Google's geocoder.

Here is a statement from Google about searching on addresses:

"Generally, addresses are returned from most specific to least specific; the more exact address is the most prominent result..... Note that we return different types of addresses,

from the most specific street address to less specific political entities such as neighborhoods, cities, counties, states, etc."

b. Searching place names

Here is a quote from a Google document that sheds light on the kinds of place names that should be searchable:

- "street_address indicates a precise street address.
- route indicates a named route (such as "US 101").
- intersection indicates a major intersection, usually of two major roads.
- political indicates a political entity. Usually, this type indicates a polygon of some civil administration.
- country indicates the national political entity, and is typically the highest order type returned by the Geocoder.
- administrative_area_level_1 indicates a first-order civil entity below the country level. Within the United States, these administrative levels are states. Not all nations exhibit these administrative levels.
- administrative_area_level_2 indicates a second-order civil entity below the country level. Within the United States, these administrative levels are counties. Not all nations exhibit these administrative levels.
- administrative_area_level_3 indicates a third-order civil entity below the country level. This type indicates a minor civil division. Not all nations exhibit these administrative levels.
- colloquial_area indicates a commonly-used alternative name for the entity.
- locality indicates an incorporated city or town political entity.
- sublocality indicates an first-order civil entity below a locality.
- neighborhood indicates a named neighborhood.
- premise indicates a named location, usually a building or collection of buildings with a common name
- subpremise indicates a first-order entity below a named location, usually a singular building within a collection of buildings with a common name
- postal_code indicates a postal code as used to address postal mail within the country.
- natural_feature indicates a prominent natural feature.
- airport indicates an airport.
- park indicates a named park.
- point_of_interest indicates a named point of interest. Typically, these "POI"s are prominent local entities that don't easily fit in another category such as "Empire State Building" or "Statue of Liberty"."

Source: http://code.google.com/apis/maps/documentation/geocoding/index.html

c. Searching coordinates

You can search on all the common ways of expressing latitude longitude, including:

- 48° 6' 43" -121° 6' 55"

- 48d 6m 43s -121D 6M 55S
- 48:06:43-121:06:55
- N 48° 6.718' W 121° 6.923' **<== Popular geocaching format**
- 48.111962,-121.115385
- N48.111962 W121.115385
- 48.111962N,121.115385W

If you search on a coordinate and then look at the list of hits, the first item in that list will place a marker at that exact coordinate. The other items in the list were generated by Google's geocoder. Google states:

> "Reverse geocoding is an estimate. The geocoder will attempt to find the closest addressable location within a certain tolerance; if no match is found, the geocoder will return zero results."

Coordinates south of the equator must use a minus sign or S with the latitude. Coordinates east of the principal meridian must have a longitude that is either positive or marked with an E. Coordinates west of the principal meridian must have a longitude that is either negative or marked with an W.

Coordinates must be balanced. If your latitude is DMS then your longitude must also be DMS even if the seconds are zero.

If the search feature fails to work with your favorite way of expressing latitude/longitude, please let me know.

A future Gmap4 update will include search support for UTM coordinates.

Buttonology

Pressing Enter after typing in the search bar is the same as clicking List.

If there is only one hit in response to your search, then pressing Enter will display the map instead of displaying a list (since the list only contains one hit).

If you click the 'Search & Mark' or 'Search' button, then you will see a map based on the first item in the list of hits. If you searched on a coordinate, then clicking one of these buttons will take you right there since the location of the coordinate will always be the first item in the list of hits. However, if you searched on a place name then the first item in the hit list may or may not be what you were searching for. Maybe the item you were searching for is #3 on the list of hits, or #4 or....

Items in the list of hits are clickable.

In response to your search request, the map will automatically resize to contain all the markers that you ask to have placed on the map. If you rest the cursor briefly on a marker then you will see the same text that is shown in the list of hits.

If you are looking at a topographic map when you ask to have your search results displayed on a map, then the map will change to the Google Terrain view if (1) any marker on the map lies outside of the USA-Canada combined or (2) the map has to zoom out to zoom level 9 or less in order to include all the markers you requested. (To find out the current zoom level, right-click the map.)

23. Tips for flying in 3D

In order to use the Earth view, your browser must have the Google Earth plug-in installed. (This browser plug-in is not the same thing as the standalone Google Earth application.) You also need a broadband internet connection and a reasonably modern computer. Since Earth view uses a large amount of data, you may have a better experience if you can use a computer that is hard-wired to the internet instead of one with a wireless connection. And since this feature works **anywhere in the world**, you might find the **search feature** (Menu ==> Search) of Gmap4 to be a useful way to display a map where you wish to start flying. After you learn to use the **right-click-hold** and **shift-left-click-drag** controls (see below) then you can put the map into Terrain view, search for Montreux, strap on a jet pack and fly at low altitude through the Swiss Alps. Wheeeeeeee!

Earth view displays three controls in the upper left corner of the map. Move your cursor over any control and they all become active. From top to bottom these controls are called:

Look
Move
Zoom

Want to slow down the action while you learn to fly? If you place your cursor very close to the center of the Look control or the Move control (and then click-hold), then those controls operate more slowly.

Look control

This control does not change your position in the sky. When you click-hold the Look control, think of yourself as hovering in space and looking up, down and around.

Click-hold cursor location	Action
Directly above Look center	Tilt the view up
Directly below Look center	Tilt the view down
Directly left of Look center	Rotate the view clockwise
Directly right of Look center	Rotate the view counter-clockwise

If you place your cursor in between these four main positions, then you can get a dizzying combination of actions.

Move control
This control flies you through the sky while maintaining your altitude. It also maintains the direction and angle of your view. Click-and-hold close to the center of the control and in the direction that you want to fly. While flying you can move your cursor around inside this control to change the direction that you are flying. Note that this control does not change the direction you are looking. This means that you can easily look to the north while you fly to the south.

You can also fly by simply left-click-hold the map and dragging it.

Zoom control
This control zooms in/out based on the center of the map. Think about drawing a line between your position in the sky and the center of the map. If you zoom in then this control flies you closer to the ground along that line. And if you use this control to zoom in **all the way** then as you approach the ground the **view will tilt up**. Think of this flight path like a plane coming in for a landing.

Example: To fly along through a valley you could first look down, zoom in part way, tilt the view back up with the Look control and then use the Move control to fly. If you want to fly along at a lower altitude, then repeat these steps.

Right-click control (coolest way to fly)
To activate this control, right-click-hold anywhere on the map. With this control you can fly in three dimensions. CAUTION - This control is highly sensitive! A very small change in the position of your cursor can have a large effect on the map. To see how this control works, please open the following map. This map displays a KML file showing the approximate location of the John Muir Trail (JMT) in California. Thanks to http://www.jmt-hiker.com for posting that file. The map is zoomed in with Mt Whitney at the center and the JMT is bright green.

http://www.mappingsupport.com/p/gmap4.php?q=http://www.jmt-hiker.com/extras/John_Muir_Trail.kml&ll=36.578541,-118.292112&t=t2&z=14

After the map opens, click MyTopo ==> Earth
Wait a couple seconds for the labels to appear.
Place your cursor a bit to the left of Mt. Whitney and right-click-hold to open the control.
Keep holding the right button down and just barely move the cursor straight down on your screen.

You should now be flying toward the control and losing altitude as you get closer to it. As you approach the summit of Mt. Whitney you can right-click closer to the summit to refine your flight path so you are heading right for the summit. As your flight path gets really close to the summit, your view will **automatically tilt up**. When you can see the horizon, release the mouse button.

Double-click the 'N' that is part of the Look control. Your view rotates so you are now looking due north.

Place your cursor a very small amount to the right of the center of the Look control and click-hold. You are now standing on the summit of Mt. Whitney (actually you are likely hovering in the air close to the summit) and shuffling your feet as you keep turning to the right admiring the view. As you keep turning in place, you can move the cursor a very small amount up/down so the horizon always remains in view.

When the view has rotated so you are looking south, you will see the green JMT descending down the ridge and the name "Mt. Muir". Keep rotating the map until you see Guitar Lake and the JMT way down below. Keep rotating until these features are about in the middle of your screen and then release the mouse button.

Now the fun part.
Point to the mountains in the distance and right-click-hold.
Move your cursor straight down a very small amount. **You are now flying toward the control and watching the JMT pass beneath you.**
To fly in reverse, move the cursor straight up a very small amount.

Wait - there's more.
You can also fly in an orbit around the right-click control.
Right-click-hold the map and then drag the cursor a very small amount either left or right.

If you do this just right, then you will fly in an orbit around the control and with your direction of view fixed on the control. This will take some practice. At first you will most likely fly in a spiral since you will be orbiting and also moving closer to or father from the control symbol. The **secret** is to drag the cursor up/down just a bit so your distance to the control symbol remains the same as you fly in a circle with your view always on the control.

Now let's say you are flying along a valley at an elevation that is below the top of an adjacent ridge. You decide to right-click-hold on a peak along that ridge and then orbit around that peak. But, remember - the ridge and it's peak are higher than you are. No worries. As you fly in your orbit you will magically be teleported through the earth and emerge safely on the other side of the ridge. Tickles, doesn't it? Even if the control disappears behind some land as you orbit, just keep a steady hand on the controls of your personal jet pack and eventually the right-click control will re-appear.

Here is a tip for flying around obstructions. In addition to dragging the cursor straight down a small amount, also move it to the left or right a bit. Your flight path will now curve around to the right or left while still moving you closer to the right-click control.

The key thing to remember about the right-click control is that its main purpose is to let you fly toward the control. Therefore to fly down to a lower altitude, you should right-click a spot on the map that appears to be below your current elevation. By contrast, to fly along more-or-less at your present altitude, then try to right-click something on the far horizon.

Shift-left-click control

The same control symbol appears on the screen that is used by the right-click-control. However, this control affects your flight in a different manner.

NOTE: This control (it is Google's code, not mine) might have a bug. You have to continue dragging your cursor for the control to work.

Drag down	You fly straight down and the view tilts so you look up more. The horizon will come in to view.
Drag up	You fly straight up and your angle of view tilts down
Drag left/right	Same as right-click. You fly an orbit around the control and your view remains fixed on the control.

Comparison of the last two controls

Right-click	Orbit while flying closer in and further away
Shift-left-click	Orbit while flying up and down

CTRL-left-click control

If you open this control and continue holding the mouse button down, then you can drag the cursor and change your view just like the Look control. In other words, you can hover at the same spot in the air and look up, down and around.

Keyboard shortcuts

n	Look north
u	Look straight down
r	Look straight down with north at the top of your screen

If your mouse has a scroll wheel, you can tilt the view by pressing the SHIFT key and scrolling DOWN to tilt the Earth to top down view, or scrolling UP to tilt the Earth for horizon view.

Here is a page from Google with the keyboard shortcuts for the regular Google Earth program. Some of them do not work with the Google Earth browser plug-in which Gmap4 uses.
http://earth.google.com/support/bin/static.py?page=guide.cs&guide=22358&topic=22362

Sources for more information

Video on using the Look Move Zoom navigation controls
http://earth.google.com/support/bin/static.py?page=guide.cs&guide=22358&topic=22361&answer=148186#navcontrols

Tutorial on using the Look Move Zoom navigation controls
http://earth.google.com/support/bin/answer.py?answer=176674

Information on the Google Earth browser plug-in
http://www.google.com/earth/explore/products/plugin.html

Background on the 'Earth' feature

Beginning with the September 12, 2011 update, Gmap4 includes the 3D 'Earth' map view which uses the **Google Earth browser plug-in**. After that update a few users reported that when they tried to use Gmap4 all they saw was a blank screen. As of version 2.1.6 dated September 17, 2011 this problem has been fixed. Below is a description of what happens 'under the hood' when you ask to see the 3D 'Earth' view of the map.

First, Gmap4 checks to see if your system is compatible with the Google Earth browser plug-in. As of September 17, 2011 Google says:

> "The Google Earth Plugin is currently supported on the following platforms:
> Microsoft Windows (XP, and Vista)
> Google Chrome 5.0+
> Internet Explorer 7.0+
> Firefox 3.0+
> Flock 1.0+
> Apple Mac OS X 10.5 and higher (Intel)
> Google Chrome 5.0+
> Safari 3.1+
> Firefox 3.0+
> Although the plugin and API may work correctly on other browsers that support NPAPI with npruntime extensions, these browsers are not officially supported."

Source: http://code.google.com/apis/earth/documentation/index.html

If your system does not pass this test then you see an informative message. You can continue using all the other features of Gmap4 except the 'Earth' view.

Next, Gmap4 checks to see if your system already has the Google Earth browser plug-in installed. If this plug-in is installed, then your screen should display the 3D Earth view along with any data (such as a GPS track) that Gmap4 was displaying. If your computer system does not have this plug-in installed, then you will see a message containing that information and a link to Google where you can download the plug-in if you decide to install it. If you decide to install the plug-in, please follow the instructions in this message. If you decide to not install the plug-in, simply close the message window. You can continue using all the other features of Gmap4 except the 'Earth' view.

If you install the plug-in and then later decide to uninstall it, please do so as follows:

1. Windows: Select Start > Programs (or All Programs) > Google Earth > Uninstall Google Earth Plug-in.
1. Mac: Delete /Library/Internet Plug-ins/Google Earth Web Plug-in.plugin before restarting your browser.

After the plug-in is uninstalled then:

2. Close the browser (if it is open)
3. Open the browser
4. Clear the browser's cache

Be careful that you only clear the cache. You do not want to clear other items.

24. Tips for using directions

You can form a link that will open Gmap4 with the directions sidebar already displayed and the location of the trip destination already filled in. This is useful if you want to e-mail or post a link so that multiple people can get directions to a common meeting location. To make this work your Gmap4 link must include (1) an &ll parameter that is set to the latitude longitude of the destination and (2) the parameter &directions=on.

Here's an example. The destination is the main trailhead for hiking up Mt. Whitney in California.
http://www.mappingsupport.com/p/gmap4.php?ll=36.586962,-118.239968&t=t1&z=13&directions=on&icon=pgs

Zooming the map out a bit and using the terrain view makes a pleasing map for directions. The above link does not use the &label= and &coord= link parameters so they will have their default values of &label=off and &coord=latlng. Also, the &icon= parameter was used to place a symbol at the center of the map to help people see the destination.

Do you want to place your own symbol at the center of the map and include a label with the symbol? The absolute quickest/easiest way is to learn how to make a **delimited text file** that Gmap4 can read.

If you do not already know the latitude longitude for your destination then try using Gmap4's search feature and enter a town or place name that is close. Then zoom/pan the map and when you find it then point to it and right click. You can copy the latitude longitude from the window that appears.

After a route is displayed on the map then you can change the route by dragging. Simply point to any part of the route and drag the symbol that appears. When you release your mouse button then the text directions will be automatically updated. To restore the original route and directions, click the 'Get directions' button.

If you click any part of the written directions, then the map zooms to that location.

25. Printing

If you need a high quality printed waterproof topographic map please consider ordering one from

http://www.mytopo.com. After all, the Trimble company (they own MyTopo) allows Gmap4 (as well as other software) to show you the MyTopo topographic maps online at no cost. We should return the favor by giving them our business when we need to purchase paper maps.

You can print maps, including topographic maps, right from your browser. None of the Gmap4 code is involved in this process. This is all handled by Google's code and your browser.

Note - If your map had the Gmap4 search bar open then you might need to close that search bar before trying to print.

In Firefox and IE, click File ==> Print Preview. A preview screen should appear that shows some controls at the top and all or part of your map. Use those controls to:
1. Display the map in landscape mode
2. Adjust the print scale so the map nicely fills the page

If you want the current magnetic declination to appear on the printed map then click Declination On/Off. The declination will appear in the lower left corner.

26. Miscellaneous technical trivia

a. Map pan/zoom or zoom-only control

This control lives in the upper left corner of the map. If the map fills your screen then you likely will see a 'big' control with both pan and zoom ability. But if you shrink the map so it is less then about 700 pixels **wide**, then you will see a much smaller zoom-only control. This switch is based on map width (and not map height) in order to maximize the amount of space available for a map name. Map names appear to the right of this control.

27. Adding WMS data to Gmap4

Up until now Gmap4 has focused on making it easy for you to display data contain in certain file formats that Gmap4 can read. These files can be built, edited and managed by ordinary people that enjoy knowing a bit about technology. In addition to these individual files, there is also a large and growing amount of data produced mostly by governmental agencies around the world and mainly intended to be displayed as layers using GIS software. Much of this data is stored on **WMS servers**. Just do a Google search on 'list wms servers' and you will likely be amazed at the amount and variety of data that is available.

Surprise! It is possible for an application like Gmap4 to display many of these layers. One such layer has been hardcoded into Gmap4. That layer displays little red arrows on the map showing the direction that water is flowing in Canada. For example, this information might be quite useful to people planning canoe trips. Here is a sample map for a random spot in Ontario:
http://www.mappingsupport.com/p/gmap4.php?ll=49.050973,-91.399763&t=t5&z=13&layers=1_all

(For more information on controlling the display of this layer, please search this Help file on 'layers'.)

I am planning to add a feature to Gmap4 to make it easy for anyone to tell Gamp4 to display one or more layers that they have found on a WMS server. This feature will make use of the "delimited" file format that Gmap4 can read. The specification for that file format will be expanded so you can specify the 2 (or maybe 3) pieces of information that Gmap4 needs in order to display the layer(s) you want to see on the map. In most cases you will only need to specify two things in the delimited file:
1. Link pointing to the WMS server
2. Name of the data layer(s) that you want to display

In other words, Gmap4 could become a **generic WMS viewer**. Anyone could add one or more WMS layers to their maps just by making a simple "delimited" text file and then building a Gmap4 link to display that file. (Such a delimited text file could also include your own GPS data.) The notion of providing a generic WMS viewer on top of Gmap4 is fascinating. I certainly have not seen anyone provide such a generic viewer on top of Google maps yet. The only thing I have seen are apps where one or more specific WMS layers are hard-coded into the app like I did with the Canada red water flow arrows.

Realistically though, I am focused on finishing a commercial app related to property line maps and will not be able to do much with WMS ideas until next winter when the monsoon season returns to the Pacific Northwest.

28. Possible future enhancements

In no particular order, here are some ideas for future enhancements. If you have a suggestion for an enhancement please let me know. You will find my email address here: http://www.mappingsupport.com/contact.html

- Better search on place names
- Allow additional icons to be displayed on the map via link parameters
- Allow search on UTM coordinates
- Allow GPX and KML files to be saved as delimited text files
- Display a latitude longitude grid
- Display the USA national grid

29. Appendix

a. Demo KML file #1 - Basic KML file for a GPS track

You can make your own KML file by copying this file and substituting your own (1) coordinates, (2) map caption, (3) track name, and (4) track description. It's OK for the coords to be on one long line. Validate your file!

```
<?xml version="1.0" standalone="yes"?>
<kml xmlns="http://www.opengis.net/kml/2.2">
  <Document>
    <name><![CDATA[<b>Map caption here</b>]]></name>
    <!-- ========================================================== -->
    <!-- style section -->
    <Style id="TrackColorWidth">
      <LineStyle>
            <!-- Reminder - colors defined in this order:  Opacity-Blue-Green-Red -->
        <color>ff0000ff</color>
        <width>4</width>
      </LineStyle>
    </Style>
    <!-- ========================================================== -->
    <!-- track section -->
    <Placemark>
      <name><![CDATA[<b>Track name here</b>]]></name>
      <visibility>1</visibility>
      <description><![CDATA[Track description here]]></description>
      <styleUrl>#TrackColorWidth</styleUrl>
      <LineString>
        <coordinates>
-121.685141, 48.033517
-121.684997, 48.032726
-121.683245, 48.030907
-121.683627, 48.030011
-121.684002, 48.029423
-121.684006, 48.027997
-121.684695, 48.027917
-121.684541, 48.027543
-121.686380, 48.025940
-121.686774, 48.024585
        </coordinates>
      </LineString>
    </Placemark>
  </Document>
</kml>
```

b. Demo KML file #2 - Proposed 5 part organization

While there certainly are rules that a KML file must follow, it is also possible to write a valid KML file in several different ways and produce identical maps. Below is a link to a KML file that is divided into five parts with ample comments describing the purpose and operation of each part. If you are new to KML and have not yet adopted a method to organize and label the contents of these files, then you are encouraged to give the method in this demo file a try.

Here is the demo KML file:
http://www.mappingsupport.com/p/gmap4/helpfile/Stafford_Creek.kml

And here is the map produced by this demo file:
http://www.mappingsupport.com/p/gmap4.php?q=http://www.mappingsupport.com/p/gmap4/helpfile/Stafford_Creek.kml&t=t2

Please feel welcome to copy this KML file and use it as a framework for your own data. Keeping your KML files internally well-organized will speed your workflow and result in fewer mistakes with less frustration. Remember that when you are editing KML files they must be saved with UTF-8 encoding.

Also, this demo file shows how you can:

- Use **different kinds of icons on the same map**
- Use more than one color for tracks/trails

The comments in the file include links to **hundreds of icons** that are available for you to use on your maps.

c. Demo KML file #3 - Combining multiple KML files

You can produce a Gmap4 map that displays data from more than one data file. Being able to produce a map that shows data from several files is an **extremely intriguing** idea with great potential. If you experiment with this feature and make an interesting combo map, please send me a link. I would enjoy seeing how people use this ability. My contact page has an email link:
http://www.mappingsupport.com/p/gmap4_contact.html

Here is a sample map that shows data from three different files:
http://www.mappingsupport.com/p/gmap4.php?q=http://www.mappingsupport.com/p/gmap4/helpfile/three_files.kml

Here is the KML file that produced this map:
http://www.mappingsupport.com/p/gmap4/helpfile/three_files.kml

In order to write a 'master' (I made up this word) KML file that refers to an existing **KML file**, then include the following lines in your 'master' KML file. Substitute the link to your KML file in place of the link that is underlined in this example:

```
<NetworkLink>
  <!-- (consider adding a comment here to help you stay organized) -->
  <Link>
    <href>http://www.mappingsupport.com/p/gmap4/helpfile/Teanaway_Peaks.kml</href>
  </Link>
</NetworkLink>
```

In order to write a 'master' KML file that refers to an existing **Google MyPlaces map file**, then include the following lines in your 'master' KML file. Substitute the ID code for your MyPlaces map in place of the ID code that is underlined in this example:

```
<NetworkLink>
  <!-- (consider adding a comment here to help you stay organized) -->
  <Link>
<href>http://maps.google.com/maps/ms?ie=UTF8&amp;hl=en&amp;msa=0&amp;output=nl&a
mp;msid=105432215366276592381.0004897737811ac6a6a05</href>
  </Link>
</NetworkLink>
```

That's all there is to it.

The <NetworkLink> ... </NetworkLink> tags need to be inside of <Document><Folder> tags, but they should not be inside of any other tags. See the example KML file.

If you look at the 'master' KML data file used in this example then you will see it has three <NetworkLink> tags. Each NetworkLink section refers to a different data file. Here are links that will let you download the three data files:

http://maps.google.com/maps/ms?ie=UTF8&hl=en&msa=0&msid=105432215366276592381.0004897737811ac6a6a05&z=14&output=kml

http://www.mappingsupport.com/p/gmap4/helpfile/County_Line_trail.kml

http://www.mappingsupport.com/p/gmap4/helpfile/Teanaway_Peaks.kml

If you want to build a KML file that has placemarks for the mountain summits in your area, or coffee shops, or whatever, just copy the "teanaway_peaks.kml" file and substitute your own data.

Remember, even if you do not have your own website you can still do all this stuff. Put your individual KML files online using **Google Sites**. Then write your 'master' KML file.

Finally, if you hike in the Washington state Teanaway area, feel welcome to include the Teanaway_Peaks.kml file as a network link on your own maps.

- Enjoy -