GPXl8r - GPX to GPX or KML translation

**GPSxl8r allows you to translate GPX data from various vendors for use on other GPS units or for viewing in Google Earth.   Don't let the main screen intimidate you.
Most of the information on form is read-only. Click on links for more information.**

Reading GPX files

Press **Input File** to start the "Open File Dialog" and read a GPX data file.
Some file statistics/information will be displayed based on file data
Waypoint information will appear in window and "Apply" button will be enabled.
Any supported variations of the vendor's products will populate the "In Set" list box.

Select input subset (if any) from "In Set" list box.

In Set:
Garmin Touch
Garmin CX
Garmin Older
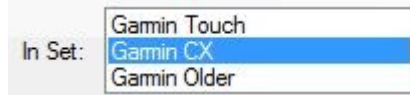
(e.g. "Garmin CX" era models)

If you are unsure how well the input file data matches the "In Set", press the **Test In Set** button. Any waypoint symbols in the file that are not in the translation input set specified will be displayed. Any unknown symbols will default to the "default symbol" of the output translation set when translation is applied.

Don't bother editing waypoint information before applying the translation, as output symbol hasn't been determined yet.

Selecting Output Type and applying Translation

Select the vendor /set you want to translate to in the "Out Set" list box.

Out Set:
DeLorme PN 60/40+
DeLorme PN 20/40
Lowrance Endura
KML GeoBiking
KML Google
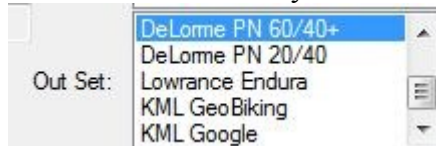
(e.g. "DeLorme PN 60 series and 40 series with 2.8 or later firmware")

Press **Apply** to execute the translation.
Translated symbol information will appear.
If KML output is selected and auto coloring is checked (on preference page); then colors on Preferences page will be updated.
You may now select waypoints to edit and set preferences.

Saving to File

Press **Save** To open the "Save File Dialog" screen to save translated data to file.
After the file is saved, the button is disabled until another translation is applied

Edit Menu
The "Edit Menu" allows you to edit preferences and waypoint data.

Tools Menu
The Tools Menu may in the future allow editing Translation File or selecting another.

Waypoint Editor

Translation must be applied to use this feature!

Waypoint Name ▸ Can be changed, but still must be unique. May cause issues on route name sorting if another route point in input file has same name. Moral: be careful if this may be an issue.

Latitude & Longitude ▸ Modifiable, units set on [Preference](#) screen.

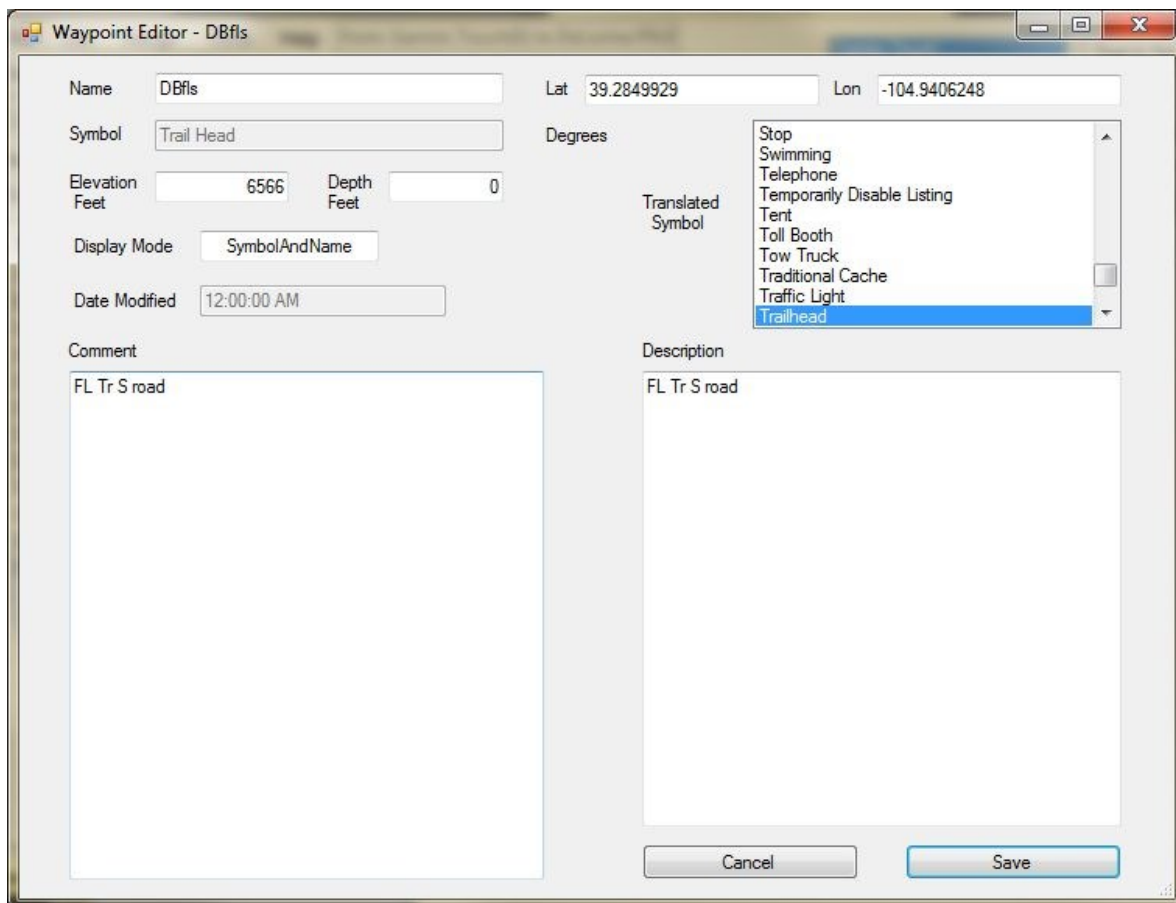**Waypoint Symbol** ▸ Existing, can't be changed.

Elevation & Depth ▸ Displayed and modifiable, units set on [Preference](#) screen.

Translated Symbol ▸ Select from available symbols in output set.

Display Mode ▸ Garmin Specific

Date Modified ▸ Displays waypoint date information

Comment and Description ▸ Fields can be modified, *Description* is set to *Comment* value on input if empty.

Tools Menu

The Tools Menu currently has only one functioning selection.

Generate Validation File ▶ Generate a GPX or KML file of all symbols in that translation set.

Allows you to specify:
- Vendor set to display
- A starting location (Latitude and Longitude)
- Row spacing   (Must be < 1 degree)
- Column spacing (Must be < 1 degree)
- Number of columns to create
- Option to sort symbol names in set
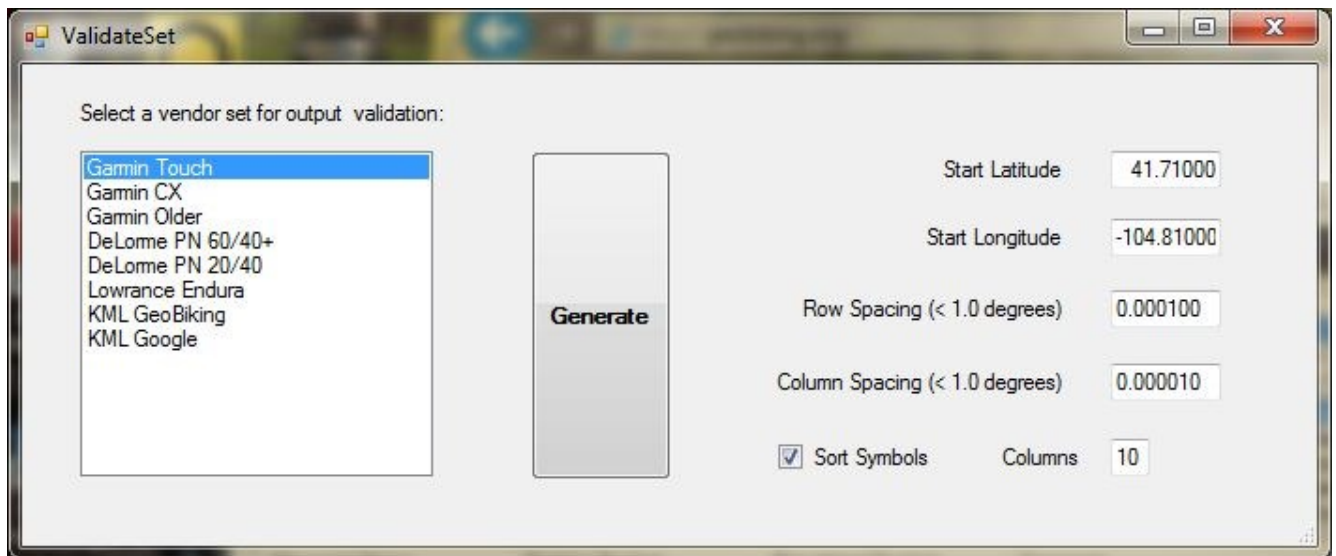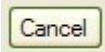
Pressing will open a "Save File Dialog" to specify validation file name and location.

You can view part of DeLorme PN60 Validation [File here](#) as displayed in Topo NA.

[Translation Table Structure](#) is shown via this link.

Preferences Screen
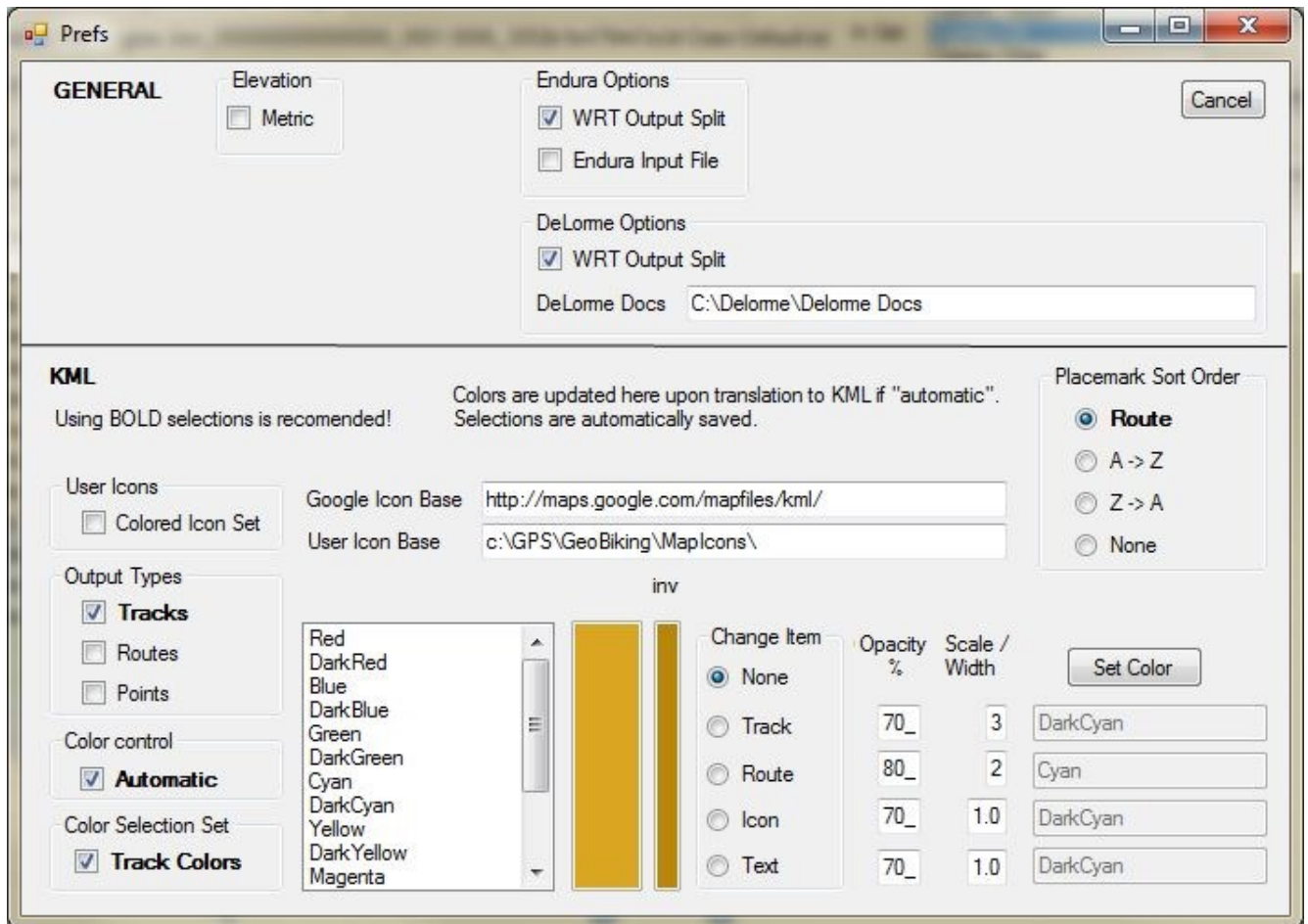
Settings here are automatically saved unless you press Cancel.

This screen is divided into two main sections: *General* and *KML*

General settings control display of:

- Elevation and coordinates on waypoint edit screen

- Lowrance Endura options

- DeLorme PN options

DeLorme and Lowrance use separate Waypoint, Route and Track files in GPX format.
If "WRT Output Split" box is checked, "_Wpt", "_Rte" or "_Trk" will be added to the specified output file name for each type in the file.
(DeLorme PN GPS units can read in a combined data file for any of the three uses. Their mapping software automatically splits combined file appropriately, the GPS ignores the extra data.) The DeLorme Docs value is used as a starting point for opening/writing their files.

Lowrance Endura .gpx files specify GPX version 1.0, but can be read as 1.1 which the software I use requires. If one of these files is read in, the user is informed and the "Endura Input File" box is checked. Subseque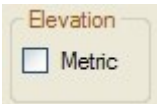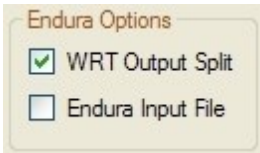nt file reads will modify line 2 of input files to 1.1 and the file reads in fine. Please reset to unchecked after working with Lowrance files.

KML settings control translation and saving of the KeyHole MarkUp Language for Google Earth and Google Maps.

Use of the settings in bold face are highly recommended!

Google earth has an extremely limited set of icons, so I allow for a user defined set. Additionally, I allow you to have the icons to be drawn with color specified on top of existing color, or to use a colored icon set. (In latter case, icon color is automatically specified as white.)
I use icons from http://mapicons.nicolasmollet.com/ . They provide an extensive set of icon symbols in settable colors. This use requires using "Track Color Set" as all colors are used as subdirectory names. I use the "simple" style for to keep Google Earth screen as clean as possible. The sets I colored can be downloaded from GeoBiking.Org as a zip file for use on your computer. The icons will also be available directly on my new site directly (unless hosting company later decides otherwise). Use from your computer should be faster.

I like to have routes and tracks in related but different colors, with route being thinner, but more opacity. This screen reflects that, showing selected color and its "inverse".
Colors must be a known "system" color. (DarkYellow isn't one, but I translate that.)

I use Garmin track colors for my color set as they have the widest variety I've seen (and widest use).
"Auto coloring" will translate input set color to closest match.
The translation table also contains a list of colors and their "inverse" for use if "Track Colors" is unchecked.

Waypoints normally are stored alphabetically on the input data. However, normal use is "Route order". I allow sort options to handle this. Waypoints only appear once in Google Earth regardless of how many times they appear in route. Waypoint that are not in a route are displayed after route points in Google Earth.

KML Controls

Please use recommended settings! (In bold) makes things easier for all.
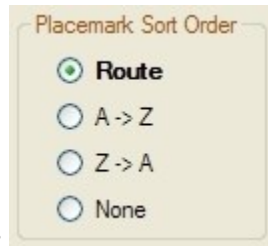
Place Mark Sort Order controls ordering of points in Google Earth place mark listing. I prefer to list in order visited. If not all points are part of the route, you may want to move them in Google Earth.

Colored Icons Set indicates that place mark color is provided by the icon itself.

Google Icon Base specifies base directory for their icons.
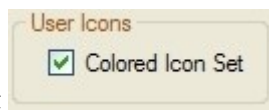

User Icon Base specifies base directory for user supplied icons. This location can be local or internet based.
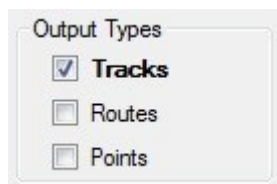
Output Types allows you to limit which KML elements are output when the file is saved. This is useful to reduce clutter if the output is to be used in "Google Maps". (It doesn't recognize the <visible> tag that allows Google Earth users to control what's seen.
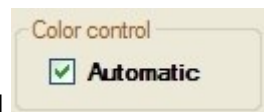
Color Control if "automatic", sets colors according to track color of input data. You can still modify between "apply" and "save" operations.

Color Selection Set uses Garmin track colors if set (automatic colors require setting this), alternate set if not.

You can view/ edit colors in the following section of the screen:
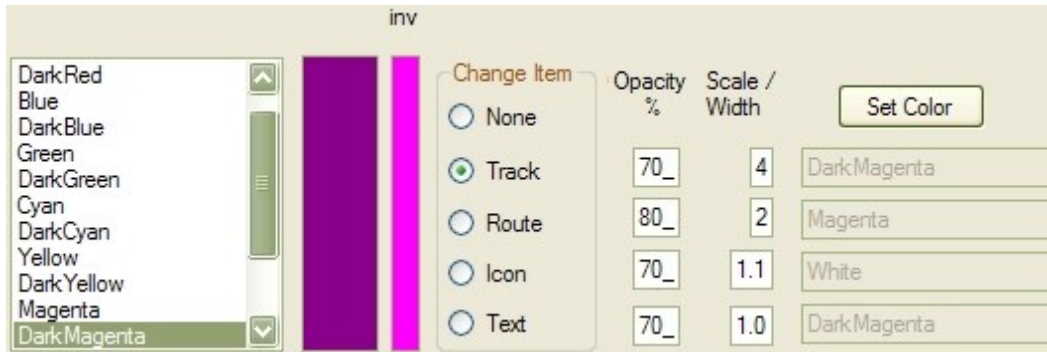
Change Item controls which item you are modifying when selecting colors in list box.
Both selected and "Inverse color" are shown to left.

Opacity controls opacity percentage (10 - 100)

Scale / Width Controls line width in pixels for routes and tracks, Scale for icons & text.
Normally I set scale to 1.0 for text & icons (1.1 for icons if "Colored Icon Set" is used.
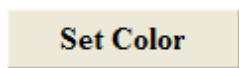
Set Color Applies the selected color to selected "Change Item".

PART OF SAMPLE PN 60 VALIDATION FILE AS DISPLAYED IN TOPO NORTH AMERICA

Arrow Down Left · Arrow Down Right · Arrow Left · Arrow Right · Arrow Up · Arrow Up Left · Bicycling · Binoculars · Birch Tree · Bird · Bird Tracks · Blue Dot · Building · Buoy · Cache In Trash Out Event · Camera · Camper · Canoeing · Crane Truck · Cross-Country Skiing · Dam · Danger · Dark Blue Dot · Dark Blue Flag · Dark Green Dot · Dark Green Flag · Dark Green Map Pin · Dark Red Dot · Dark Red Flag · Dark Red Map Pin · Dark Yellow Flag · Dark Yellow Map Pin · Deciduous Tree · Deer · Deer Tracks · Dining · Duck · EarthCache · Enable Listing · Event Cache · Evergreen Tree · Exclamation · First Aid · Fish · Fishing Pole · Flower Garden · Forest Fire · Gas Station · Gray Dot · Gray Flag · Gray Map Pin · Green Dot · Green Flag · Green Map Pin · House · Ice Fishing Trap Set · Ice Fishing Trap Up · Ice Skating · Information · Jeep · Letter D · Letter E · Letter F · Letter G · Letter H · Letter I

Translation Table Structure

The Translation Table is a pipe separated text file. I use an excel spreadsheet to manage this data for now, saving as tab separated file, then substituting pipe symbol "|" for the tabs. All entries are case sensitive!

First row lists "Vendor" names. Garmin must be first vendor, "KML" used for Google Earth data must be last, followed by keyword "Vendor"

Second row lists "Set" names. Under "Vendor" column it must have keyword "Set" and "Google" must be last set before keyword.

Third Row contains default symbol for each translation set. Under the Vendor/Set column must be keyword "Default".

 Columns are used for translation sets. Vendor/Set column uses keywords or optional symbol group name. Symbol names (as used in GPX files) are entered. Empty entries are translated to default symbol for that set.

 Underscore Symbol Names are used to translate to remaining part of that name, but are not used in translation from that set (as they don't exist in that set). (e.g. school & school bus depending on translation direction)

Color Translations follow waypoint translation data. All colors must be a "known" color name with the exception of "DarkYellow", that I translate for in code.

Default Track Color is specified for each vendor in row, Vendor/Set = "Default Trk"

Default Route Color is specified for each vendor in row, Vendor/Set = "Default Rte"

Inverted Color Name for translated color is specified under Vendor/Set column

Google Earth Color is specified in KML/Google column in bbggrr hex format.

My Colors start after row with Vendor/Set = "My Colors". These colors are available for use if "Track Colors" KML preference is unchecked. These colors are not translated, but still require an "inverted" color to be set. Modify preferences after translation is applied.