# Installation

1. Unzip the download file into a stable directory (I recommend C:\Program Files\GPX Plug-in if you have permissions to the system folders). ArcGIS does not make a copy of the plug-in. In between the register/unregister process, ArcGIS will look for the plug-in in the folder where it was registered. If it is delete or moved, the plug-in will cease to function.
2. There should be two batch files (reg.bat and unreg.bat) in addition to the plug-in (GpxPlugin.dll ). These batch files will register and unregister the plug-in with ArcMap. They will not work correctly if they are not in same folder as the plug-in.
3. Run reg.bat as a user (administrator) with permission to write to the ArcGIS folders.
4. Open ArcCatalog and browse to a folder with a GPX file or open ArcMap and Add Data by browsing to a folder with a GPX file.

# Uninstall

1. Close ArcMap and ArcCatalog
2. Run the unreg.bat as a user (administrator) with permission to write to the ArcGIS folders.
3. Delete the provided files (GpxPlugin.dll, reg.bat, and unreg.bat)

# Permissions

A simple installation file is not provided, so that those with draconian restrictions on their computer might have as much flexibility in getting this to work as possible.

* The file GpxPlugin.dll can live in any folder. If you have permissions, then you can put it in the C:\Program Files\GPX Plugin folder (which you must create).
* Neither the plug-n nor the registration (on ArcGIS 10) needs permission to read or write from the registry.
* The registration (on ArcGIS 10) requires write permission to C:\Program Files (x86)\Common Files\ArcGIS\Desktop10.0\Configuration.

# Features

* Each GPX file is a feature dataset with one or more feature classes (waypoints, routes, route points, closed routes, tracks, track points, closed tracks) depending on the data in the GPX file.
* Routes and tracks are polyline features. However sometimes, they represent a polygon boundary, so the route and track data is also provided as a polygon by connecting the first point in the route/track to the last point. This polygon representation is provided in the closed route and closed track feature classes.
* View GPX files natively in ArcCatalog and ArcMap without any conversion software.
* View all attributes and use the attributes to symbolize, filter, and label data
* Easily export the GPX files to a shapefile or geodatabase
* Drag and drop the GPS feature classes from ArcCatalog to ArcMap

# Limitations

* Only tested with ArcGIS 10.0. It should work with ArcGIS 9.x, however the registration process is different.
* If the XML file cannot be parsed by the .Net XML parser, the file will appear empty. This is typically caused by a file that uses an undeclared namespace (GPX files created by DNR Garmin). I hope to provide a workaround soon.
* Attributes cannot be used for labeling, symbology, or query definitions. This may be an inherent limitation of plugins, or I may be doing something wrong. The ESRI sample code mentions using the attributes for symbology, but I have not tested their code.
* If an attribute is not formatted correctly. i.e. lat=”61.234N” where the value in quotes is not a valid number, then the plugin will fail.
* If a feature has multiple link attributes, all but the first are ignored. Plan is to have link1,…, linkN as attributes. N is determined by the feature with the most links.
* If a feature uses extensions, all the extensions appear in one xml text field. It would be nice to break this down into a separate attribute for each sub-element.
* All the attributes declared by the GPX 1.1 schema format are provided, even if they are not used by the GPX file being viewed. Plan is to limit the attributes to just those attributes being used.
* ArcCatalog does not display the Type/Size/Modified date, etc for the feature claees in the GPX file.
* ArcCatalog does not support copy/paste/rename of GPX files. This is an easy fix.
* All tracks and route vertices render at one elevation, despite Z values on vertices (I expect polygons to have a single Z value, but not polylines). Point features from routes/tracks render correctly in 3D space.
* I am currently ignoring the name and type sub-elements of the link element
* Any extensions on a trkseg element are ignored. Track segments are individual polylines in a single multi-polyline (track) feature. In this way a track can contain multiple disconnected segments, which is the intent of the GPX format. However ArcGIS only allows attributes on the single track feature, not the constituent segments.
* The metadata element in the GPX 1.1 schema is ignored. Hopefully I could use this data to populate ArcGIS metadata.
* Since GPX files are feature datasets (i.e. they contain multiple feature classes, just like a geodatabase), you cannot drag and drop the GPX file onto ArcMap from windows explorer, just like you cannot drag and drop a geodatabase (\*.mdb or \*.gdb) onto ArcMap.