

# Two Trails 2

## Documentation

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## Setup GPS

(also laser if used as input)

1. From the Main Menu , Go to the **Settings** Tab and select

### **GPS and Laser Connections**

2. Use choice A if possible, otherwise, use choice B

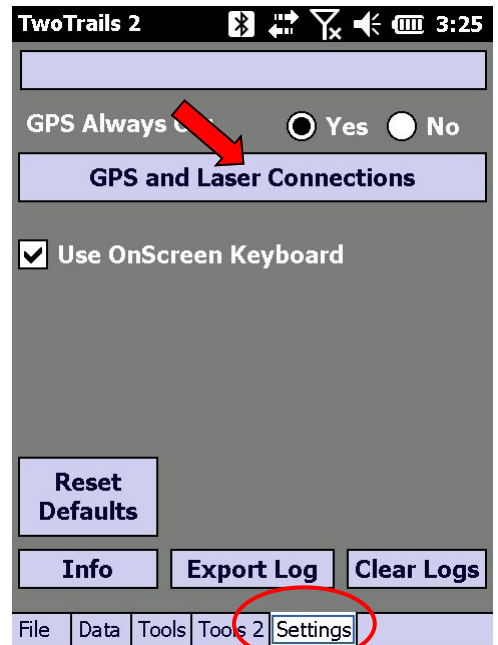
A. If you know your settings for your mobile device enter them here by clicking on the **Port** button and the **Baud** button. Then press **Check** to make sure the settings are valid. Checking the settings may take a minute while the device looks for a valid signal from your GPS.

B. If you do not know your mobile device settings click on the **Auto GPS/Laser** button to start the search for the correct COM port and baud for your device. This operation may take a few minutes. (Note: this operation may not work on all mobile devices.) Then press **Check** to make sure the settings are valid. Checking the settings may take a minute while the device looks for a valid signal from your GPS.

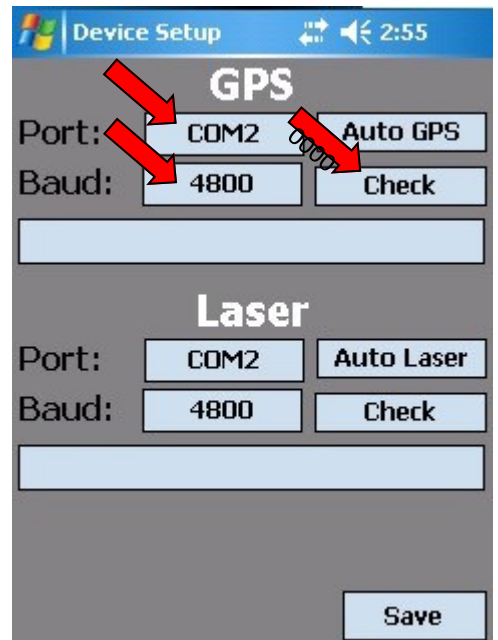
3. Once you have successfully obtained your device settings click the **Save** button.

4. Setting the Laser communication is similar to doing the GPS settings. Important, once you click **Check** you must take a shot using your range finder to finalize.

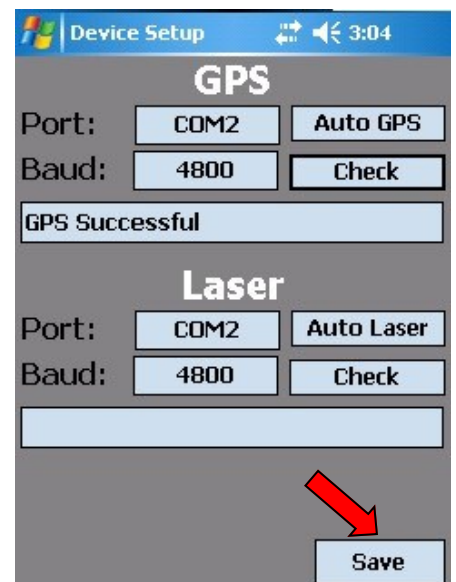
1.



2.



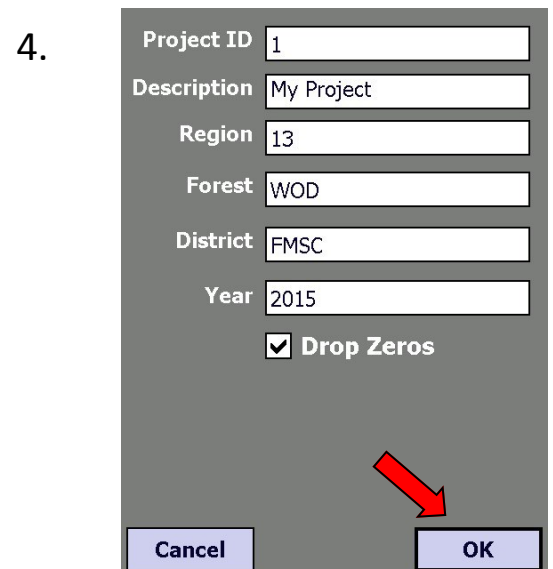
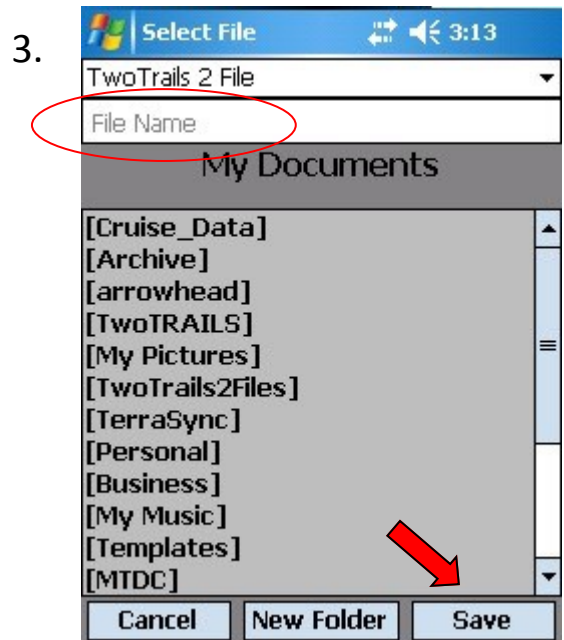
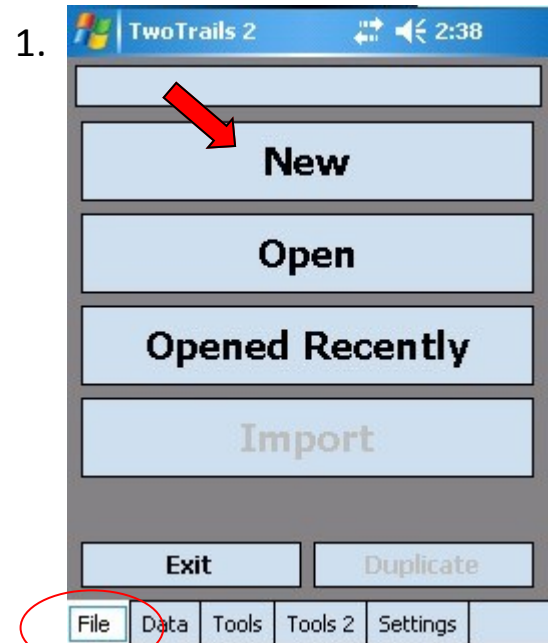
3.



## Create New File

1. On the **File** page — Click **New**.
2. Navigate to your selected folder and then Enter the name of what you want to call your file. (Optional: Create a new folder by selecting the **New Folder** button.)
3. Once you have named your file and selected where you want to save it click **Save**.
4. The Project Info form will automatically pop up. Fill in the information about your new project. When you are done with filling out the form select **OK**.  
(Note: This form will keep the entries you have made as a default for your next project.)

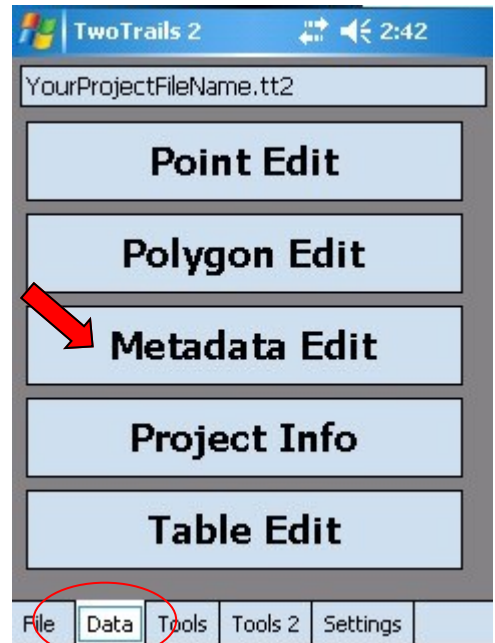
**Drop-Zeros:** This setting will drop created points automatically where the values of the points are all 0 or invalid.



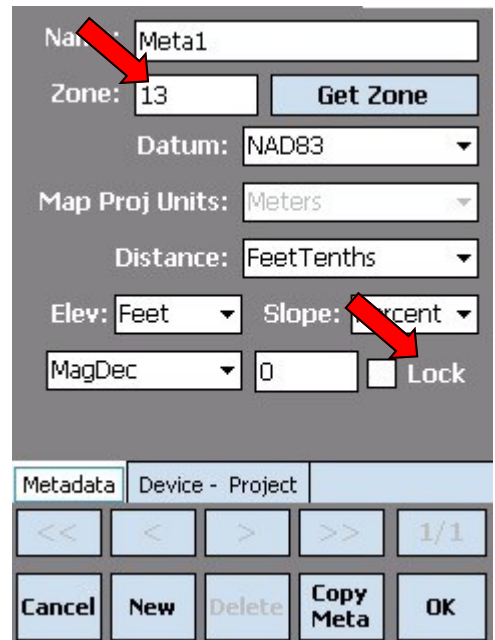
## Create/Edit Metadata

1. Go to the **Data** Tab and select **Metadata Edit**.
  2. In this form you can fill out your metadata for your project. The Default Meta "Meta1" cannot be deleted (it can be renamed). To start editing the fields click on the Lock checkmark to unlock the fields. Be sure to set your **UTM Zone** before you start collecting points. It is best to set the UTM zone manually. You can try to get it automatically by pressing the **Get Zone** button. (Your GPS must be connected and communicating with TwoTrails to use **Get Zone**). This will only work if the satellites are broadcasting this information and will only be correct if you are standing in the zone you want to use. Set your Magnetic Declination (**MagDec**) appropriately. Remember to set it relative to your compass declination setting (e.g. set TwoTrails to zero if you have your declination set on your compass).
  3. Click the **Device - Project** tab to fill out more information. By clicking on a **List** button you can see common devices used out in the field to auto-populate the text field. Clicking the **Set as Default Metadata** button saves the information as the default for future projects.
  4. Click **OK** to save.
- Notes: **Copy Meta** button will copy the current metadata into a new metadata definition. Useful when only one thing changes,(e.g. receiver dies and you switch to another one).

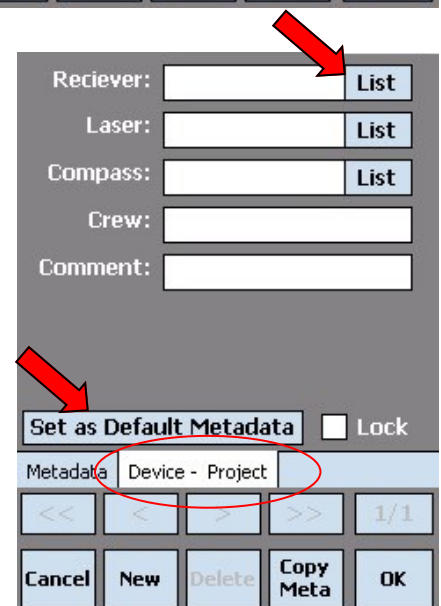
1.



2.



3.



Create, Edit or Modify A Polygon  
(Polygon means Unit, Polyline, or Points)

Go to the **Data** Tab and select **Polygon Edit**.

ALWAYS click the **New** button to create a new polygon.

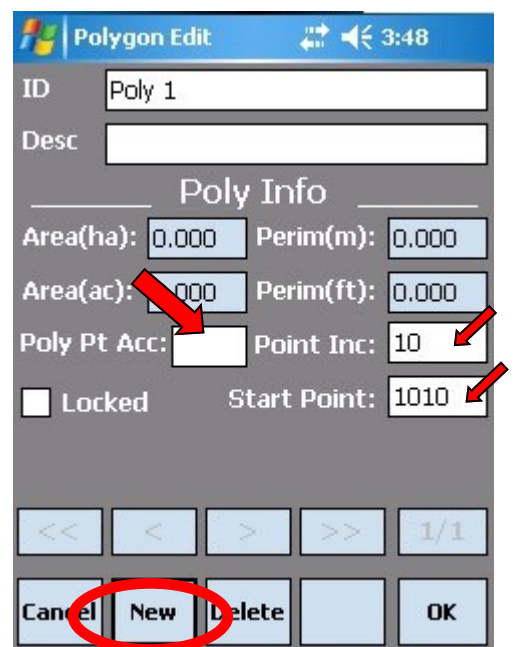
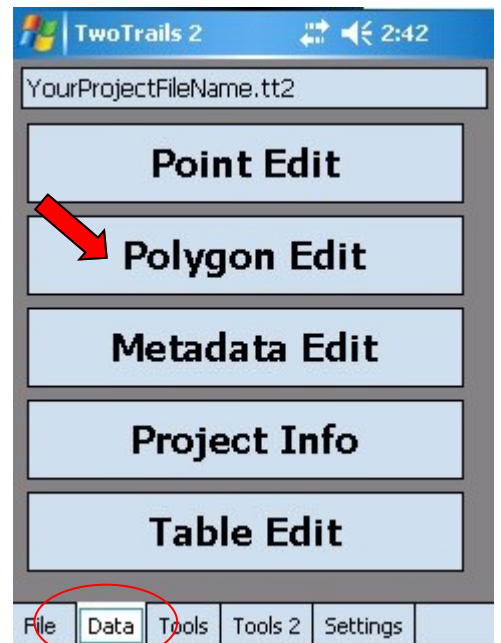
Type a polygon ID and description.

Though rarely needed, you can choose to change the start index of the points in the polygon by changing the **Start Point** value. You can also change how points are incremented by changing the value of **Inc**.

(Note: You must increment points by at least 1 and it is suggested to have each polygon start 1000 higher than the previous polygon which helps when mapping units at the same time.)

Generally, the MTDC GPS accuracy value is put in the **Poly Pt Acc** field.

When you are done filling out the information click **OK** to save.





## Create Points

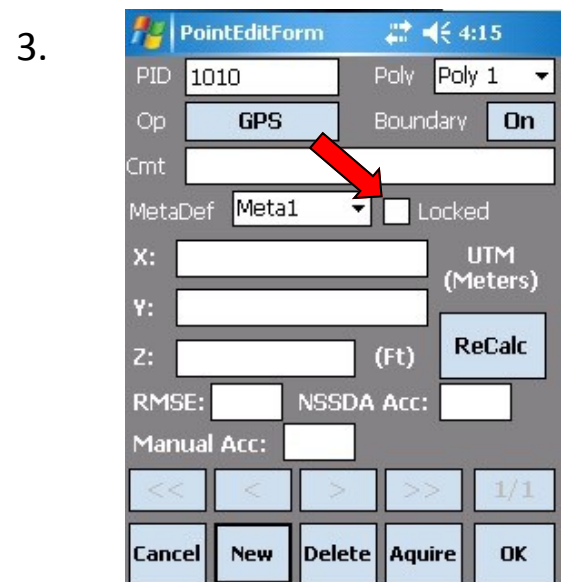
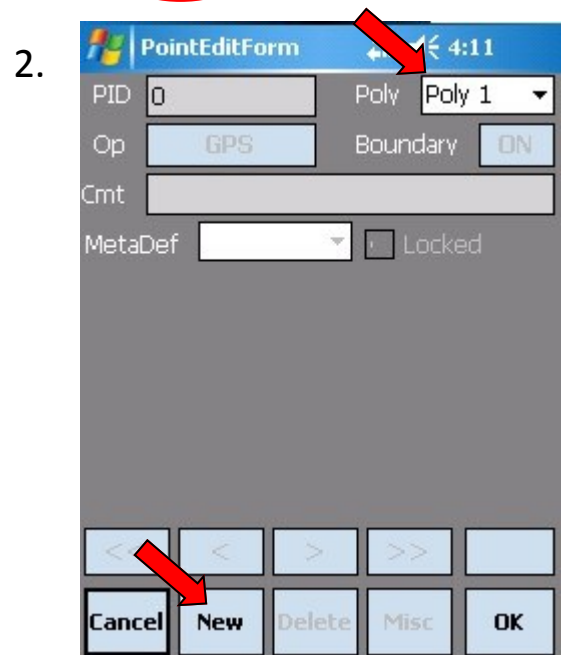
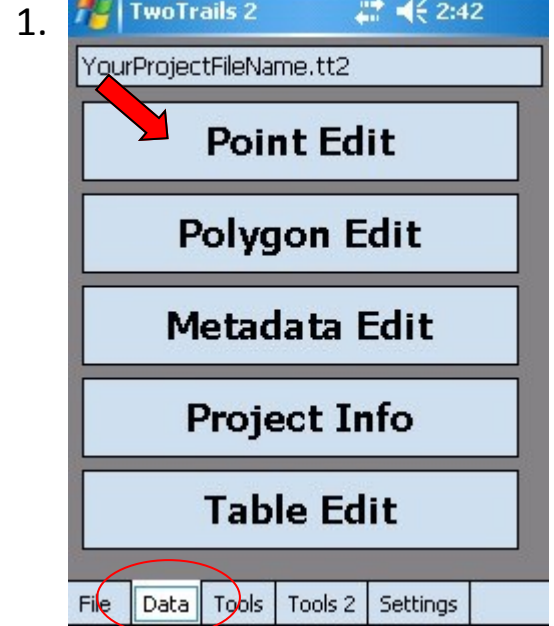
1. Go to the **Data** Tab and select **Point Edit**.
2. Select the polygon into which you want to create or edit points in by selecting the correct polygon from the combo box in the top right corner of the page. Then to create a new point select **New** on the bottom of the page.  
To change the type of point operation click the Op button located under the PID textbox.  
To change whether a point is on or off boundary click the boundary button

## Edit Points

To edit a point first unlock it by checking the **Locked** box. Edit the fields.

Note:

Changing the point type can not be undone when switching from a GPS type to a Sideshot or a Quondam type point.



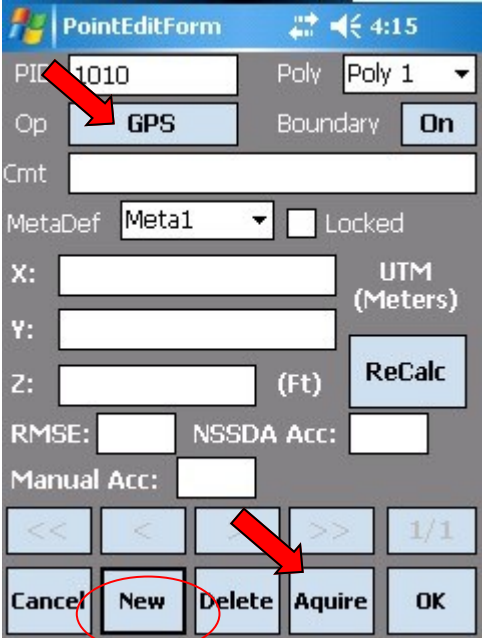
## Point Edit - GPS Point / Way Point

1. In the Point Edit Form create a new point. Select the **Op** of **GPS**. Click on the **Acquire** button located between OK and Delete. This will take you to the GPS logging page.
2. In the GPS Logging page see the satellite information being received. When the data looks good, click the **Log GPS** button. At anytime you have to ability to pause and resume collecting data. When you feel you have collected enough data press the **Calculate** button to move on to the calculation form.
3. On the calculation form select your filters. You can also change the group size to help see the quality of the data. Click on the **Calculate** button on the bottom of the page to calculate or recalculate the position measurements. (Ordinarily, you want to use all the data. But sometimes you need to eliminate beginning measurements, or other in-between measurements of bad reception, which may be done with the checkboxes.)

### Notes:

- Your filters will be saved to the device and applied throughout the program until you change them.
- At anytime you can come back to a point that was generated with NMEA data and recalculate it via the **ReCalc** button in the Point Edit form (Image 1).

1.



PointEditForm 4:15

PI: 1010 Poly: Poly 1

Op: **GPS** Boundary: On

Cmt:

MetaDef: Meta1 Locked

X: UTM (Meters)

Y:

Z: (Ft) ReCalc

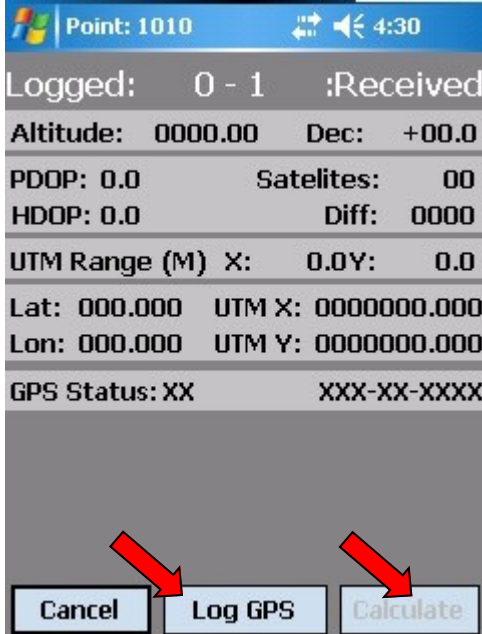
RMSE: NSSDA Acc:

Manual Acc:

<< < > >> 1/1

Cancel **New** Delete Acquire OK

2.



Point: 1010 4:30

Logged: 0 - 1 :Received

Altitude: 0000.00 Dec: +00.0

PDOP: 0.0 Satellites: 00

HDOP: 0.0 Diff: 0000

UTM Range (M) X: 0.0Y: 0.0

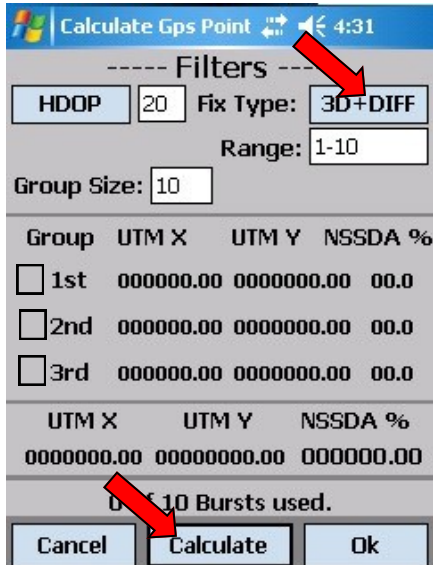
Lat: 000.000 UTM X: 0000000.000

Lon: 000.000 UTM Y: 0000000.000

GPS Status: XX XXX-XX-XXXX

Cancel Log GPS Calculate

3.



Calculate Gps Point 4:31

Filters

HDOP: 20 Fix Type: 3D+DIFF

Range: 1-10

Group Size: 10

Group	UTM X	UTM Y	NSSDA %
<input type="checkbox"/> 1st	000000.00	0000000.00	00.0
<input type="checkbox"/> 2nd	000000.00	0000000.00	00.0
<input type="checkbox"/> 3rd	000000.00	0000000.00	00.0

UTM X UTM Y NSSDA %  
0000000.00 00000000.00 0000000.00

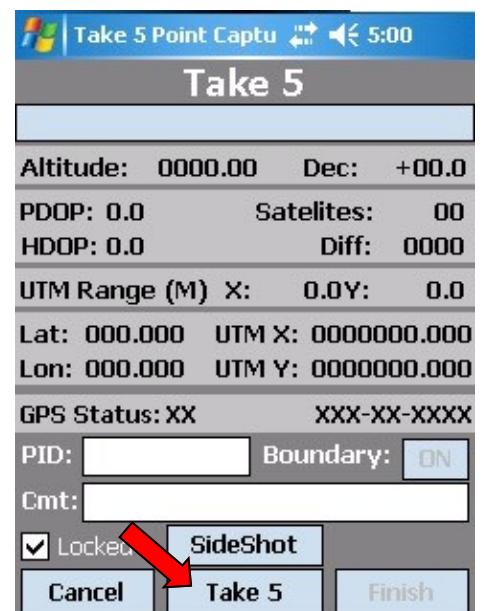
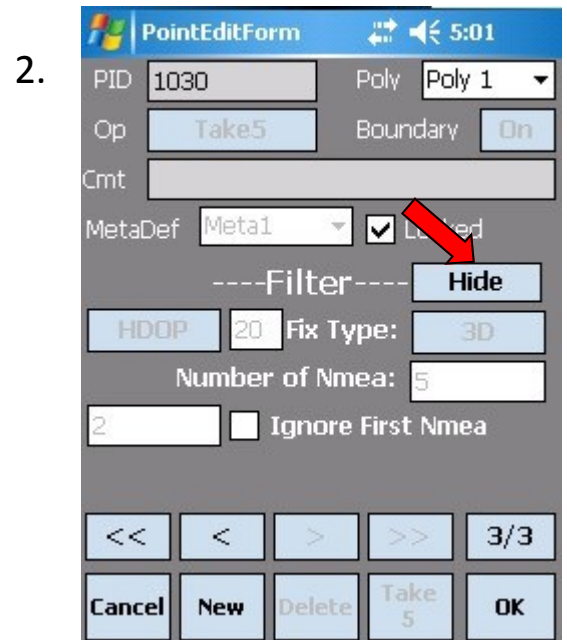
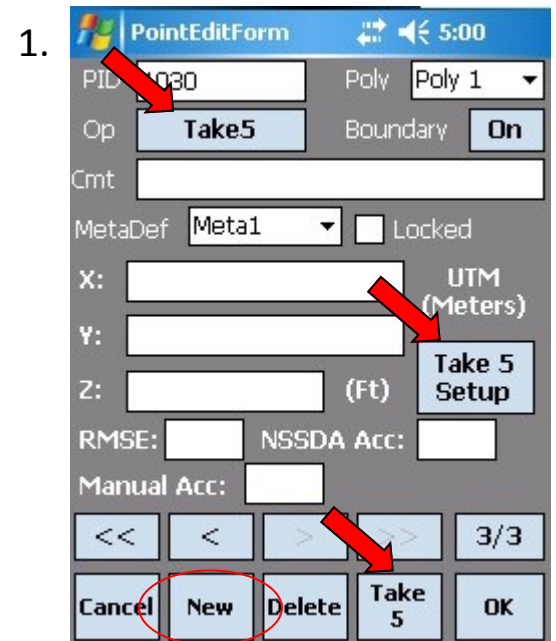
10 Bursts used.

Cancel Calculate Ok

## Point Edit - Take5

1. In the Point Edit Form create a **New** point and then select the operation of **Take5**. (Unlike the GPS operation, the Take5 filters data before it is calculated and the measurements cannot be recalculated). The filters need to be initially set using the **Take 5 Setup** button (NOT THE Take5 BUTTON). If you do not setup set your filters the default values will be used which is shown in image 2 (3d; 5 averaging; and HDOP of 20). From the filter you can click **Hide** to return to the point data. Click the **Take 5** button to begin. You can return to the settings at any time.

2. From the Take 5 form you can simply obtain a point that has been pre-filtered and automatically calculated by pressing the **Take 5** button on the bottom of the page. The top bar will fill up until you have collected all the NMEA needed. You can take as many points as you want while on this page. When you have collected all the points you need simply click Finish to return to the Point Edit page.





## Point Edit - Take5 continued..

3. From the Take 5 form you can simply obtain a point that has been pre-filtered and automatically calculated by pressing the **Take 5** button on the bottom of the page. The top bar will fill up until you have collected all the NMEA needed. You can take as many points as you want while on this page. When you have collected all the points you need simply click Finish to return to the Point Edit page.

4. If needed there is a simple way to add a Sideshot while in the Take 5 form. By pressing the **SideShot** button a form will pop up to add a point. Fill in the information and click **Add SS** to add the point. By clicking cancel or SideShot you can cancel creating the Sideshot.

### Notes:

1. After you create a Take 5 point you can unlock the form and edit the point's PID and add a comment to the point.
2. If the top bar is not moving when you are collecting data, check your filters, they may be set too high.

3.

Take 5 Point Captu 5:00

### Take 5

Altitude: 0000.00 Dec: +00.0  
PDOP: 0.0 Satellites: 00  
HDOP: 0.0 Diff: 0000  
UTM Range (M) X: 0.0Y: 0.0  
Lat: 000.000 UTM X: 0000000.000  
Lon: 000.000 UTM Y: 0000000.000  
GPS Status: XX XXX-XX-XXXX  
PID:  Boundary:  ON  
Cmt:   
 Locked **SideShot**  
**Cancel** **Take 5** **Finish**

4.

Take 5 Point Captu 5:01

### Take SideShot

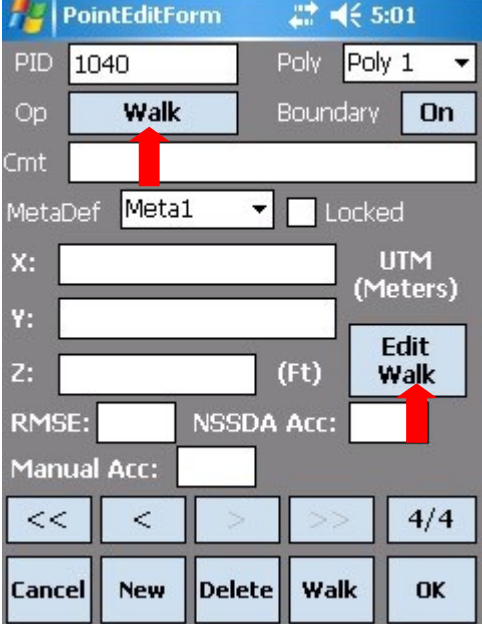
FAz:  BAz:   
SlpDist:  SlpAng:   
Mag Decl Used:   
PID: 1030 Boundary:  ON  
Cmt:   
 Locked **SideShot**  
**Cancel** **Add SS** **Finish**

## Point Edit - Walk

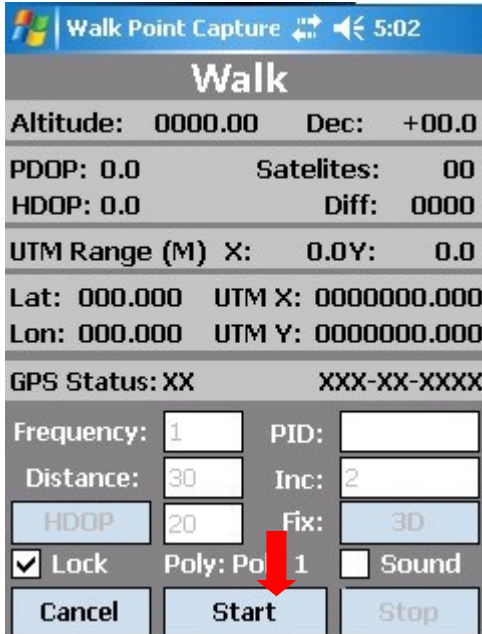
1. In the Point Edit Form create a new point and then select the operation of **Walk**. Unlike the GPS or Take5 operation the Walk only collects 1 piece of NEMA data per point. Click the **Walk** button to begin.
2. In the Walk Page uncheck **Lock** to edit the walk settings. You can edit the frequency of the walk points collected which is how often you collect the NMEA data. You can also set a minimum distance between each point as well as how well the point fix is. When you are ready to begin the Walk click the **Start** button. You are able to pause and resume your walk if needed. When done press the **Stop** button.
3. After a walk is created you are able to edit walk information such as setting a Manual Accuracy to all the walk points or Adding a specific point to a walk. You are also able to delete the entire walk if wanted.

### Notes:


- When setting the Frequency note the NMEA data broadcast interval. If the interval is 1 second and you set the Frequency to 10, every 10 seconds you will collect a point. If the Interval is 2 second you will collect a point every 20 seconds.
- You will see a white circle in the top left corner of the screen every time a point is collected. With sound turned on you will also hear a beep.

1. 

The screenshot shows the 'PointEditForm' interface. The 'Op' field is set to 'Walk', and a red arrow points to this button. Other fields include PID (1040), Poly (Poly 1), Boundary (On), Cmt, MetaDef (Meta1), Locked, X, Y, Z coordinates, UTM (Meters), (Ft), RMSE, NSSDA Acc, Manual Acc, and navigation buttons like '<<', '<', '>', '>>', '4/4', 'Cancel', 'New', 'Delete', 'Walk', and 'OK'.

2. 

The screenshot shows the 'Walk Point Capture' interface. The title is 'Walk'. It displays various GPS and UTM data: Altitude: 0000.00, Dec: +00.0, PDOP: 0.0, Satellites: 00, HDOP: 0.0, Diff: 0000, UTM Range (M) X: 0.0, Y: 0.0, Lat: 000.000, UTM X: 0000000.000, Lon: 000.000, UTM Y: 0000000.000, GPS Status: XX, XXX-XX-XXXX. Below this are input fields for Frequency (1), PID, Distance (30), Inc (2), HDOP (20), Fix (3D), Lock (checked), Poly: Poly 1, and Sound. A red arrow points to the 'Start' button. Other buttons include 'Cancel', 'Stop', and 'HDDOP'.

3. 

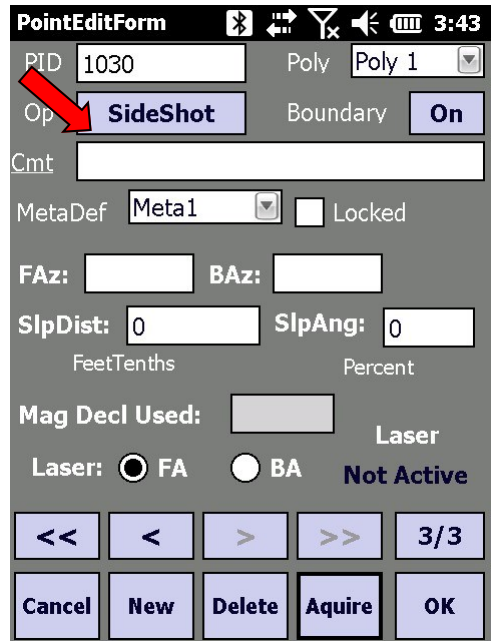
The screenshot shows the 'PointEditForm' interface with the 'Edit Walk' button highlighted by a red arrow. The 'Op' field is set to 'Walk'. Below the 'Edit Walk' button is a 'Walk Name' field. There are buttons for 'Add To Walk', 'Delete Walk', and 'Set ManAcc'. Navigation buttons include '<<', '<', '>', '>>', '4/4', 'Cancel', 'New', 'Delete', 'Walk', and 'OK'.

## Point Edit - SideShot / Traverse Point

(Traverse to Points or Doing Sideshots have similar data entry and are both explained here.)

1. In the Point Edit Form create a new point and then select the Op of **SideShot / Traverse**. Proceed to fill in the information for the forward and/or backward Azimuth manually with information from your compass and tape or laser. Horizontal distance is entered in the **SlpDist** cell with zero in the **SlpAng** cell.

1.



The screenshot shows the 'PointEditForm' interface. At the top, there are status icons for Bluetooth, signal strength, and battery, along with the time '3:43'. The main form contains the following fields and controls:

- PID:** 1030
- Poly:** Poly 1
- Op:** SideShot (highlighted with a red arrow)
- Boundary:** On
- Cmt:** (empty text field)
- MetaDef:** Meta1
- Locked:** (checkbox, unchecked)
- FAz:** (empty text field)
- BAz:** (empty text field)
- SlpDist:** 0 (with 'FeetTenths' label below)
- SlpAng:** 0 (with 'Percent' label below)
- Mag Decl Used:** (checkbox, unchecked)
- Laser:** FA (selected), BA (unselected), Not Active

At the bottom, there are navigation buttons: '<<', '<', '>', '>>', '3/3', 'Cancel', 'New', 'Delete', 'Acquire', and 'OK'.

(You can automatically fill in the information using the **Acquire** button located between OK and Delete. This will use a connected Laser Range Finder to fill in as much data as it can. The Bluetooth connections often fail during work and a wired connection gets tangled — **automatic operation is rarely practical**. (i.e. most of you are using a laser that does not give azimuth or if it does, it is frequently unreliable.) If using a distance meter, check the status of the connection on the bottom right of the screen above

### Notes:

- You must enter at least a Forward or Backward azimuth to continue.
- The Magnetic Declination for the measurement is obtained from the metadata defined in the **Metadata Edit** button in the main menu under the **Data** tab.
- A Traverse must start and end with a GPS or Quondam type point.
- A red number indicating azimuth error will show next to the backward azimuth when the forward and backward azimuth are not exactly 180 different. Up to 3 degrees is usually acceptable (ordinarily the lengths are not very long).

## Point Edit – Quondam Point

(Quondam: That which formerly exists.)

1. In the Point Edit Form create a New point and then select the Op of **Quondam**. You will now select an existing point (parent point) whose exact position values will be used for this point. To select a parent point select the polygon that the parent point is in, in the left list box. Then select the PID of the point on the right list box.

2. (Legacy - see note below) To retrace several points select the **Retrace** button to enter the Quondam Retrace form. Within the Quondam Retrace form select the polygon which has the starting and ending point. Proceed to select the start and end point and then select the direction of your retrace. When you have selected all your information press the **Retrace** button to add several Quondams to your polygon.

Note: Retracing can also be done in the Multi Point Edit form which is the preferred method.

1.

PointEditForm 5:02

1040 Poly Poly 1

Op **Quondam** Boundary On

Cmt

MetaDef Meta1 Locked

Polygons	Points
Poly 1	1010
	1020
	1030

Retrace Convert

<< < > >> 4/4

Cancel **New** Delete OK

2.

Quondam Retrace 2:56

**Retrace**

Polygon: Poly 1

1010
1020
1030

Dir:  1010 to 1030  1010 to 1020

1010
1020
1030

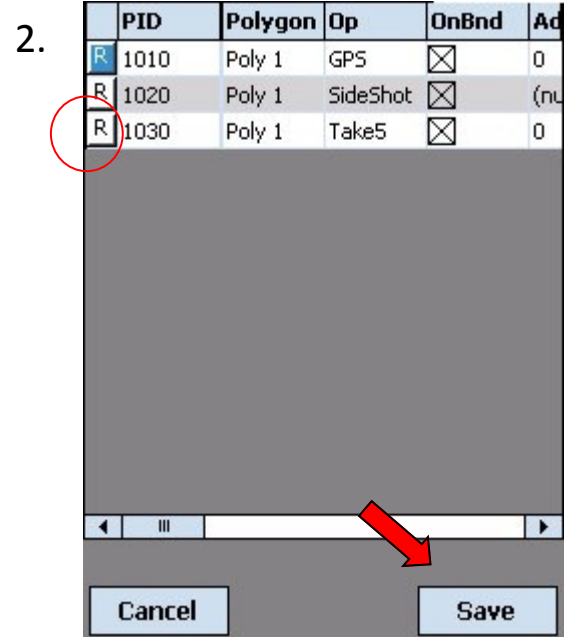
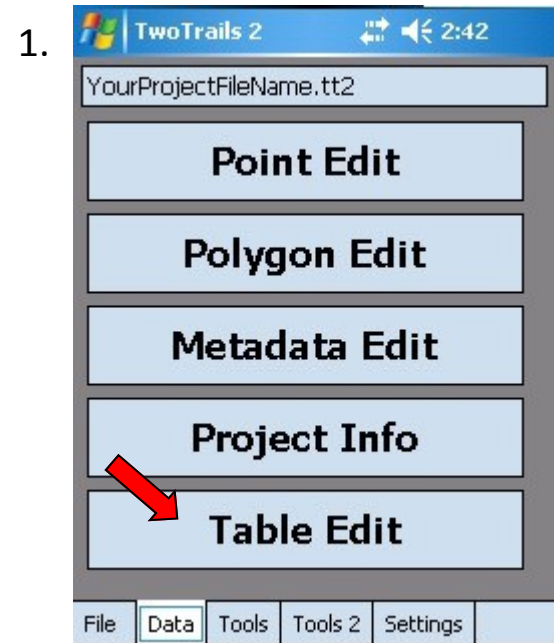
Cancel **Retrace**

## Table Edit

1. To Edit points via the **Table Edit** go to the Data Tab and select **Table Edit**.

2. Within the Table Edit form you can modify point information.

If needed, you can reset a point to its original values by selecting the 'R' button in the first field on the left of the table. No point changes will be saved until you click the **Save** button. If you forget to save, you will be prompted to do so as you leave this form.



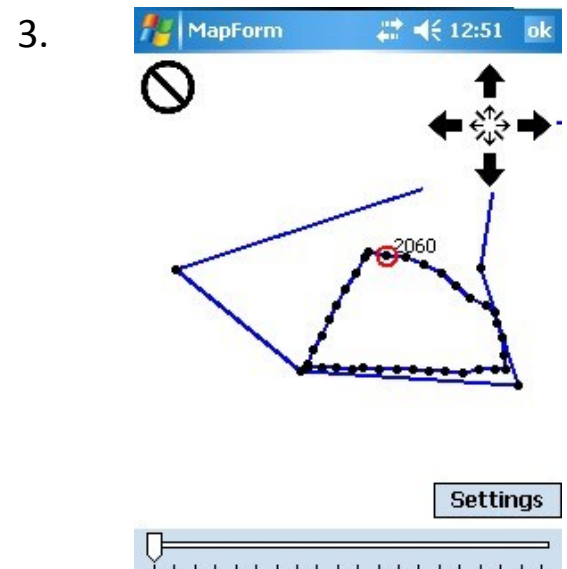
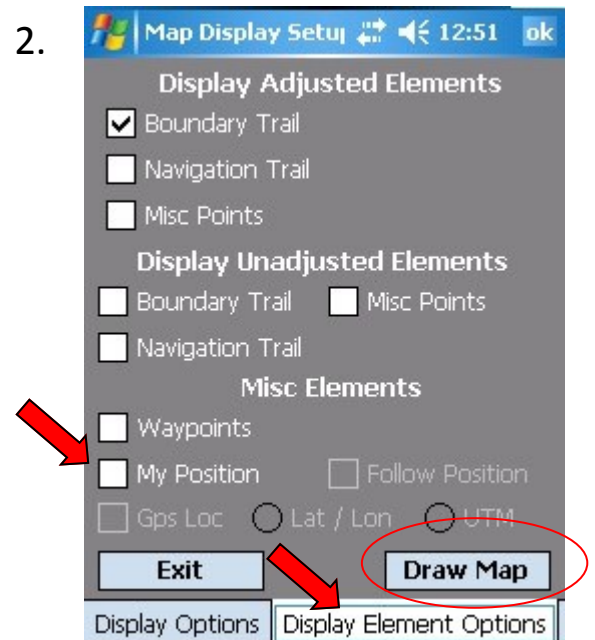
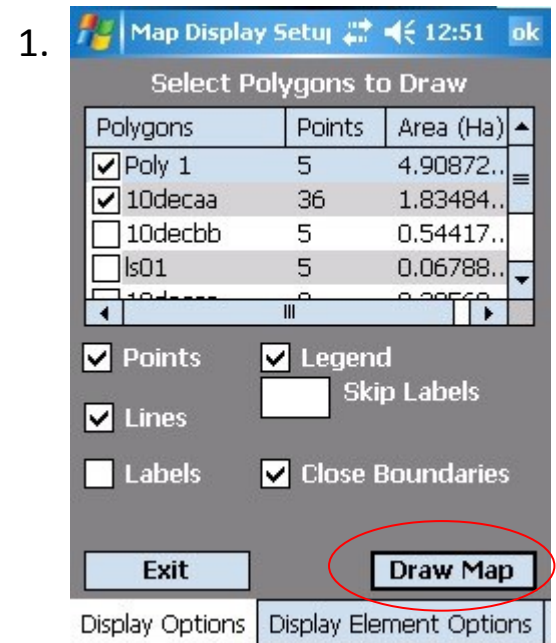


## Draw Map

1. In the Tools tab select **Draw Map**. In this form you can select the polygons which you want to show visually. There are many settings on this page including showing points and lines of a polygon as well as labels for the points.
2. Clicking the **Display Element Options** tab will bring more options which you can select. (On this page you also have the option to show your current location and the GPS coordinates used.)
3. Once you have selected your options click **Draw Map** to enter the Map Form. Here you can use a mouse, pen or arrows to move the polygon(s) around. You can also use a mouse wheel and the zoombar to zoom in and out. To hide or show the zoombar, arrows and exit button, double click anywhere on the map. The button in the center of the arrows will center your polygon(s).

### Notes:

1. If labels are disabled you can click on a point to see its PID.
2. Selecting the Legend option will show what the different line colors mean.

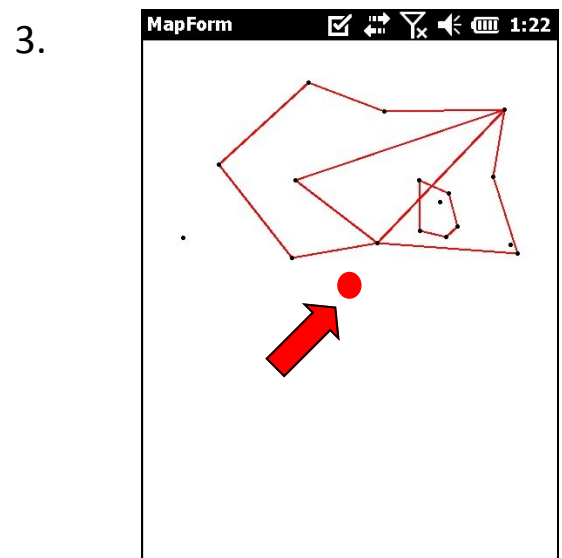
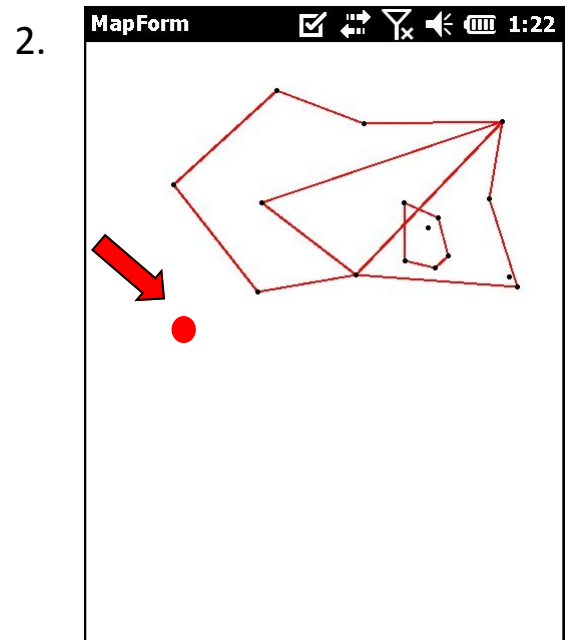
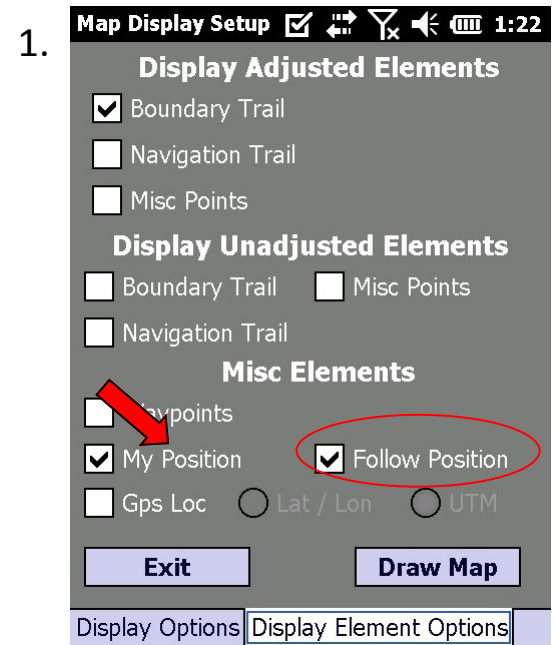


## Navigation using Draw Map

1. From within the Draw Map form set Display Element Options tab to My Position. Then press Draw Map to show the map.

2. This will show your position on the map as seen in figure 2.

3. By checking the **Follow Position** option, polygons will follow you around the map. In this case you are the center dot as seen in figure 3.

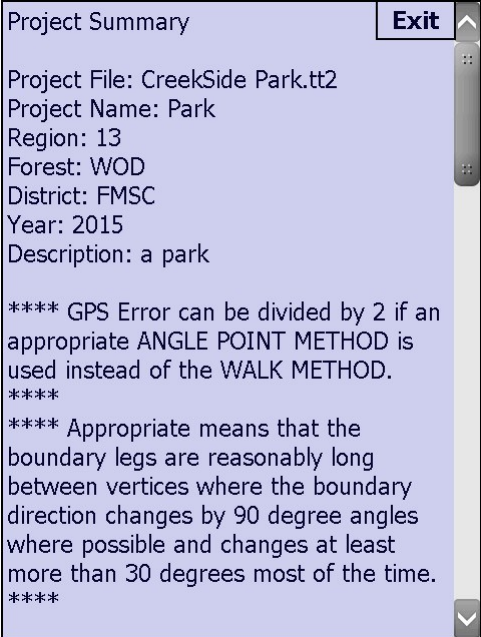


## How Am I Doing?

In the Tools tab select **How am I doing?**. In this form you will see the results of your work and the details and accuracy of the points as well as the area errors of the polygons.

### Notes:

On the PC version of TwoTrails you can save your results to a text file. You can also show/hide the points by click the **Toggle Points** button in the bottom right of the form.



Project Summary Exit

Project File: CreekSide Park.tt2  
Project Name: Park  
Region: 13  
Forest: WOD  
District: FMSC  
Year: 2015  
Description: a park

\*\*\*\* GPS Error can be divided by 2 if an appropriate ANGLE POINT METHOD is used instead of the WALK METHOD.  
\*\*\*\*

\*\*\*\* Appropriate means that the boundary legs are reasonably long between vertices where the boundary direction changes by 90 degree angles where possible and changes at least more than 30 degrees most of the time.  
\*\*\*\*

## Where Is

1. In the Tools tab select **Where Is**. From this form you can calculate the direction and distance between points or your location.
2. To Calculate the distance between two points select **Point** in the **From** section then **Point** in the **To** section. From here you can then select the polygon which the point resides and the point in that polygon. From here simply hit Calculate to get the distance from the first to the second point. The information will be displayed according to the metadata you have chosen, which is shown on the bottom of the page.

You can manual enter coordinates if you want.

### (Navigation can be done here or using the Map)

In this form to display the navigation select the **Navigate** button. This will show an arrow based on your location. The longer the arrow is the further your target it from your position. The arrow will also rotate towards the target from the direction you are walking. If the arrow turns red you are more than 45° off from your intended direction.

A message will pop up when you are within 5 meters of your target. Press **Stop** to enter the navigation.

1.

**From**

My Location  UTM  Point

X: 0.00000 Poly 1

Y: 0.00000 1010

**To**

UTM  Point

X: 0.00000 Poly 1

Y: 0.00000 1020

Meta1 Azimuth: True Mag

Distance: [ ] [ ] [ ]

Exit Navigate Calculate

2.

↑

Dist To Go:

Meta1 Azimuth: True Mag

Distance: [ ] [ ] [ ]

Exit Stop Calculate

## Export

1. In the Tools 2 tab select **Export**. In this form you will be able to export your project in a multitude of formats.

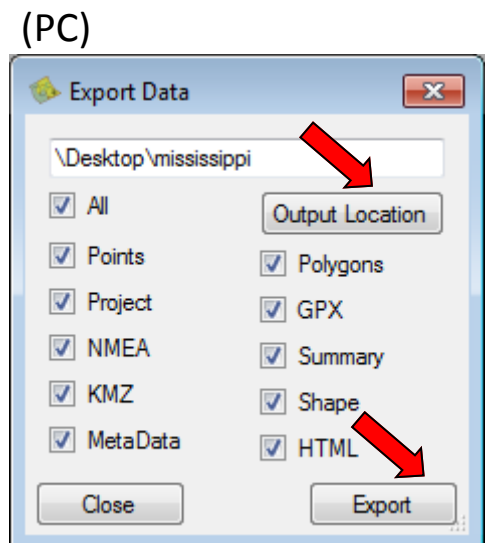
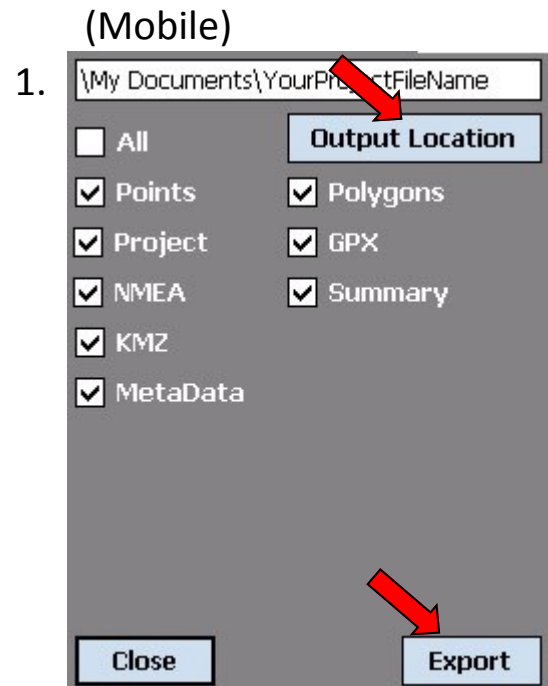
2. First select the **Output Location** of your project files.

3. Continue to select what you would like to export. Points, Project, NMEA, Polygons and MetaData will be exported into CSV files. Summary will be sent out as a text file and KMZ and GPX will be sent out in their own formats. On the PC version of TwoTrails you will also have the option to export Shapefiles for use in ArcMap and a HTML file which can be viewed in a web browser which uses Google Maps.

4. Press Export to generate and save the files to the output location.

Note:

Select or deselect all according to the options on the page.





## Rename Points (Rearrange Points)

(This operation is best done later in the office)

1. In the Tools 2 tab select **Rename Points**. In this form you can rename and rearrange points.
2. Select the polygon you want to work in by clicking and selecting the polygon in the top right corner.
3. You can rename all the points by selecting **Auto**, the points will be renamed according to the polygon naming structure (found within the polygon form, fig 2), starting from the start point index, increasing by the point increment number. For example you could name 1010 to 4010 and increment by 2 and then go back to the rename form.
4. To rearrange points select the point you want to edit by clicking on the point. To move the point use the **First, Up, Down** and **Last** buttons. To rename the point simply enter the new name into the textbox.
5. When you are done press **Save** to save all your points. Failing to press save will discard your changes.

1.

Rename / Move Po 5:07

Polygon: Poly 1

1010  
1020  
1030

First Up Down Last

1010

Cancel Auto Save

2.

Polygon Edit 3:48

ID Poly 1

Desc

Poly Info

Area(ha): 0.000 Perim(m): 0.000

Area(ac): 0.000 Perim(ft): 0.000

Poly Pt Acc: Point Inc: 10

Locked Start Point: 1010

<< < > >> 1/1

Cancel New Delete OK

## Plot Grid

1. In the Tools 2 tab select **Plot Grid**. In this form you can add sample points to your polygon.
2. First select inside or outside the polygon. By default this is within your polygon.
3. Then select which polygon you would like to add sample points to. (This create a new polygon with only sample points, the polygon will have the name of '[your polygon]\_plts').
4. Select unit-of-measurement between sample points.
5. You may select the start point to rotate your points around, otherwise leave the option as Random.
6. Select the grid interval (space between your points). This will be measured in the units you selected before.
7. Select the tilt angle for the grid axis.
8. Press Plot to generate the points.

### Notes:

- You may repeatedly do this operation with different values. Previous values will be deleted unless you choose otherwise.
- You also have the option to take a random sample of the systematic points by clicking and completing the sample box entries.

1.

Plot Grid 5:07

### Make Plot Grid

Generate Location:

Polygon:

Distance:

Start Point:

Grid Interval:  x

Tilt Y axis (-45 to +45):

Delete Old Plot Grid

Sample

### Notes continued:

- For large polygons with lots of points this process can take a considerable amount of time. Please be patient with the program. If needed you can cancel the operation by clicking the close button.

## Multi Point Edit (Mobile)

1. In the Tools 2 tab select **Multi Point Edit**. In this form you can edit whether a point is on boundary, convert a quondam its parent point and switch multiple points between polygons.

2. Select the points that you want to edit by checking the check boxes.

3. You can then turn those points on or off boundary by pressing the **On/Off** button on the top of the page.

4. If you wish to switch the polygon these points reside in select the **Switch polygon** button on the bottom of the page.

5. If these points are Quondams, you can convert them to their linked point by selecting **Convert Quondam** button located next to the switch polygon button.

6. To delete points select **Delete**.

7. When done making changes select the **Save** button. If you do not click save your changes will be discarded.

Note: The Multi Point Edit on the PC is much easier to use as well as more capable.

1.

Point	Polygon	Type	On/Off
<input type="checkbox"/> 1010	Poly 1	GPS	On
<input type="checkbox"/> 1020	Poly 1	SideShot	On
<input type="checkbox"/> 1030	Poly 1	Take5	On

## Multi Point Edit - PC

(Reference pictures on next page)

**Duplicate the project or copy the file before using this tool.**

1. In the Tools 2 tab select **Multi Point Edit**. In this form you can edit almost everything about a point.

Edit Point: To edit a point select the point you wish to edit inside the point view window. Then proceed to edit the details of the point on the right window which displays the point's values.

Edit Multiple Points: When multiple points are select you will be editing all of said point's values. If the points are not of the same op type only similar values (like a comment or metadata) will be editable. If a field is colored or a drop down box does not show a value it means that points do not share the same value.

Filter: The top section in this form is a filter which you can filter points in the point view window. The basic filters which you can use are Polygons, Op Type, MetaData used, Groups, PIDs and descriptions/comments.

By selecting Show More Options you can filter by more exact information.

Under **General and GPS Types** you can filter points by their X Y and Z values, manual accuracy, RMSEr and whether the point in on or off boundary. Under **Traverse and Sideshots** you can filter points by their forward and backward azimuth, slope distance and slope angle. Under **Quondams** you can filter points based on whether they have linked points (Quondams) attached to them. For any of the extra filters you must specify if the filter should be used by checking the **Use Filter** in the top right of the filter box.

Editing: The Mass Point Edit form on the PC remembers what you have done with the points you edited. This allows you to use **Ctrl + Z** to undo an action you have done to one or several points. You can also use **Ctrl + Shift + Z** to redo an action that you have undone. If you wish to reset the values of one or many points to the last save you can press **Ctrl + Shift + R** to reset a point's value.

Under Edit you can also Reset all of the points.

Multi Point Edit

File Edit Tools Macros Close

**Polygons**

- All
- Poly 1
- Poly 2
- Poly 3
- Poly 4
- Poly 4\_PtCtr

**Op Type**

- All
- GPS
- Traverse
- WayPoint
- Quondam
- SideShot
- Walk

**PID Between**

and

Search Description

Show More Options

**MetaData**

- All
- Meta1

**Group**

- All
- No Group
- Take5\_2ef48ae5

**Center:** X: 493294.65, Y: 4490155.44  
**Average:** X: 493294.65, Y: 4490155.44  
**North:** 4490155.44 **South:** 4490155.44  
**East:** 493294.65 **West:** 493294.65  
**Min Alt:** 16451.52 **Max Alt:** 16451.5 (Ft)  
**Total Dist:** (M) (Ft)  
**Azimuth:** Area: (Ha)

Point ID	Poly Name	Operation	Index	OnBnd	AdjX	AdjY	AdjZ	Group Name	Comme
1010	Poly 1	GPS	0	False	493294...	449015...	5014.4...	No Group	
1020	Poly 1	Take5	1	True	493352...	449018...	5009.9...	Take5_2ef48ae5	
1030	Poly 1	Take5	2	True	493394...	449015...	5017.1...	Take5_2ef48ae5	
1040	Poly 1	Take5	3	False	493463...	449015...	5026.6...	Take5_2ef48ae5	
1041	Poly 1	SideShot	4	True	493466...	449014...	5026.6...	No Group	
1050	Poly 1	Take5	5	True	493454...	449018...	5005.3...	Take5_2ef48ae5	
1060	Poly 1	Take5	6	True	493459...	449022...	5011.6...	Take5_2ef48ae5	
1070	Poly 1	Quondam	7	True	493352...	449018...	5009.9...	No Group	
2010	Poly 2	Quondam	0	True	493459...	449022...	5011.6...	No Group	
2020	Poly 2	Traverse	1	True	493398...	449022...	5012.9...	No Group	
2030	Poly 2	Traverse	2	True	493359...	449023...	5013.7...	No Group	
2040	Poly 2	Traverse	3	True	493313...	449019...	5015.0...	No Group	
2050	Poly 2	Traverse	4	True	493350...	449014...	5016.2...	No Group	
2060	Poly 2	Traverse	5	True	493394...	449015...	5017.1...	No Group	
2070	Poly 2	Quondam	6	True	493394...	449015...	5017.1...	No Group	
3010	Poly 3	GPS	0	False	493427	4490174	0	No Group	
3020	Poly 3	SideShot	1	True	493431...	449017...	0	No Group	
3030	Poly 3	SideShot	2	True	493435...	449016...	0	No Group	
3040	Poly 3	SideShot	3	True	493430...	449015...	0	No Group	
3050	Poly 3	SideShot	4	True	493416...	449015...	0	No Group	
3060	Poly 3	SideShot	5	True	493416...	449018...	0	No Group	
3070	Poly 3	Quondam	6	True	493431...	449017...	0	No Group	
4010	Poly 4	Quondam	0	True	493459...	449022...	5011.6...	No Group	
4020	Poly 4	Quondam	1	True	493398...	449022...	5012.9...	No Group	

**Point ID** 1010

**Polygon** Poly 1

**Index** 0

**Op** GPS

**Meta** Meta1

**Group** No Group

**OnBound**

**X** 493294.651

**Y** 4490155.444

**Z** 5014.423

**Man Acc**

**Fwd Az**

**Back Az**

**Slp Dist**

**Slp Angle**

**Qndm Link**

**Comment**

Data Loaded 1 / 50

General and Gps Types Traverse and Sideshot Quondams

**UnAdjusted**
 **Adjusted**
 **GPS**
**Manual Accuracy**
 **Use This Filter**

**X**  > < 
 **OnBnd**

**Y**  > < 
**RMSEr**
**RMSEr** 0.321

**Z**  > < 

**NSSDA Acc** 0.556

General and Gps Types Traverse and Sideshot Quondams

**Forward Az**  > < 
**Slope Distance**
 **Use Trav Filter**

**Backward Az**  > < 
**Slope Angle**
**Horizontal Distance**

**Declination**

General and Gps Types Traverse and Sideshot Quondams

**Points With Links**



## Mass Point Edit (PC) Continued

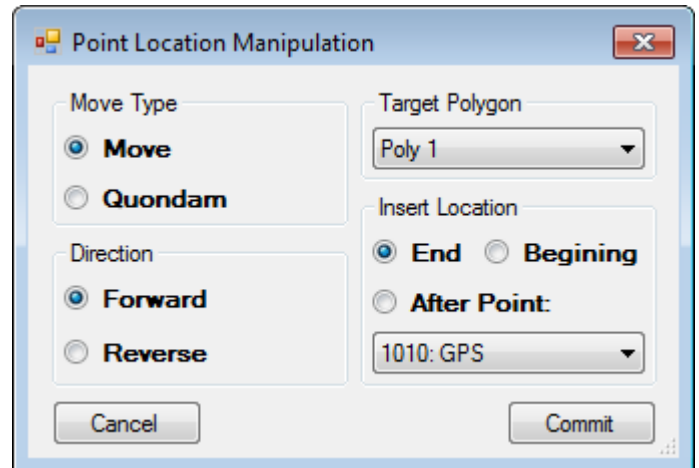
**Duplicate the project or copy the file before using this tool.**

Change Polygon: To change the location of points into a different polygon right click a point and select **Change Polygon**.

Here inside the **Point Location**

**Manipulation** form you will select which polygon you wish to move your point to, then where in the polygon you wish to set your point(s). You have the options to set your point(s) at the end

or beginning of the polygon as well as after a specific point. You also must select a direction. By selecting reverse all the points that are select will be inserted in the opposite direction. Click Commit to change the location of your points.

The image shows a software dialog box titled "Point Location Manipulation". It has a standard Windows-style title bar with a close button (X) in the top right corner. The dialog is divided into several sections. On the left, there is a "Move Type" section with two radio buttons: "Move" (which is selected) and "Quondam". Below this is a "Direction" section with three radio buttons: "Forward" (selected), "Reverse", and "After Point:". On the right side, there is a "Target Polygon" section with a dropdown menu currently showing "Poly 1". Below that is an "Insert Location" section with three radio buttons: "End" (selected), "Beginning", and "After Point:". At the bottom of the "After Point:" section is another dropdown menu showing "1010: GPS". At the very bottom of the dialog are two buttons: "Cancel" on the left and "Commit" on the right.

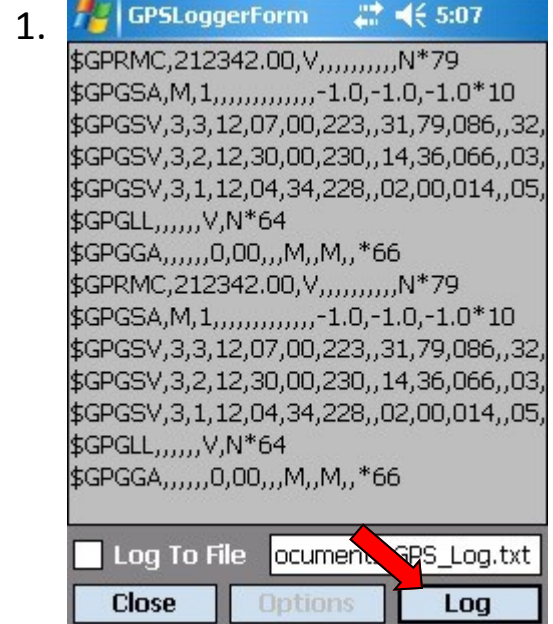
Quondam Points: In the Point View Window select the points you wish to quondam then right click **Quondam Points**. Here you will see the **Point Location Manipulation** form. You have the options to quondam your point(s) at the end or beginning of the polygon as well as after a specific point. You also must select a direction. By selecting reverse all the points that are select will be inserted in the opposite direction. Click Commit to quondam your points into another polygon.

Notes:

1. In the Mass Point Edit form some actions can not be undone within the form. Some of these include creating new Polygons and Groups. When you reset a point you also lose the ability to undo the reset.
2. When you save within this form you also can not undone any of the actions. After saving and then editing when resetting a point it will be reset to the save point.
3. After deleting a point then saving you are unable to recover said point. Do not delete points unless you are absolutely sure you do not need it. It may be better to just take the point off boundary.

## GPS Logger

1. In the Tools 2 tab select **GPS Logger**. In this form you can log NMEA data.
2. To log NMEA data first make sure your GPS device is setup and connected. Then click the **Log** button.
3. If you wish you can save the NMEA data to a file. To do this you can click on the textbox to select your location then check the **Log To File** checkbox. Click Log now will save the data to a file.
4. When done logging press **Stop**. Without pressing stop the device will continue logging the data in the background.

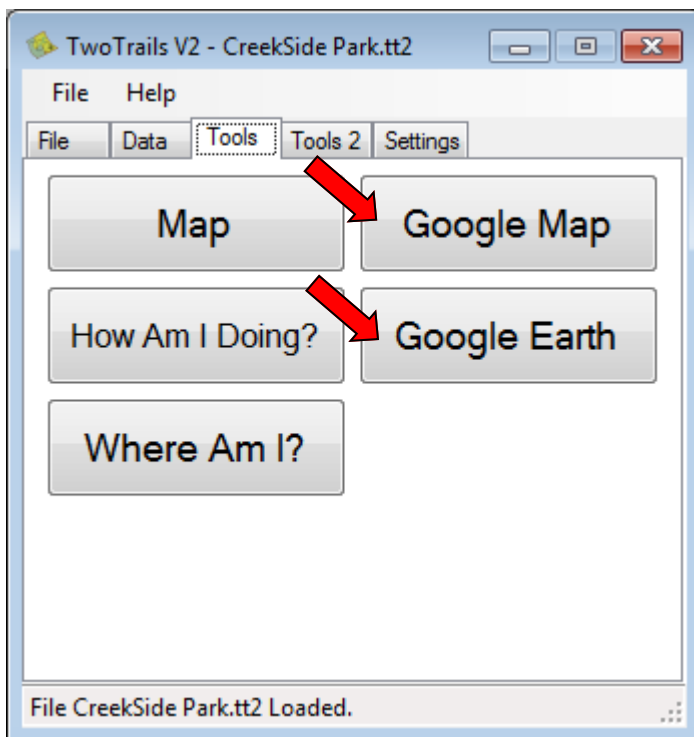


## Google Map / Google Earth (PC)

1. In the Tools 2 tab you have the option to view your data in Google Map and Google Earth.
2. Selecting Google Map will open your data up in a web browser.
3. Selecting Google Earth will open up your data using the Google Earth program.

Notes:

You must have a compatible web browser to use the Google Map feature. Google Earth must also be installed to use the Google Earth feature.



## Group Edit (PC)

1. In the Tools 2 tab Go to the Group Edit. In this form you can edit, add and remove groups. Groups are ways to associate a number of points in order to edit them together.
2. First select the group you want to edit. Then you can edit the name or description of the group by select the name or description textbox and editing them.
3. To delete a group press the **Delete** button. Note that when you delete a group it does **NOT** delete the points inside the group. It does however delete the group permanently. If you delete a group the only way to recreate it is to add another group and move points into it manually.
4. To Add a group select the **Add** button.
5. The Change of names, descriptions and types will need to be saved. Without clicking **Save**, all changes will be discarded.



## Polygon Transformation (PC)

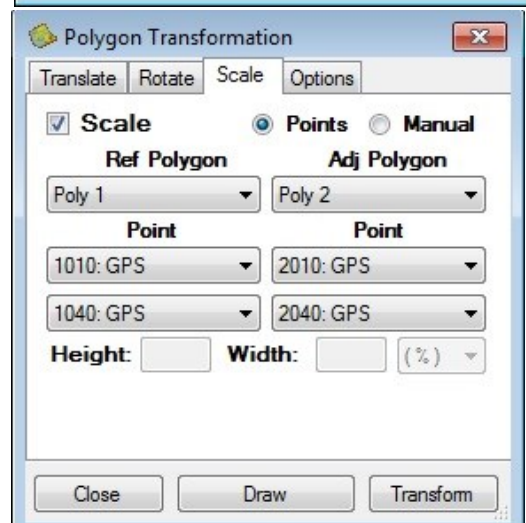
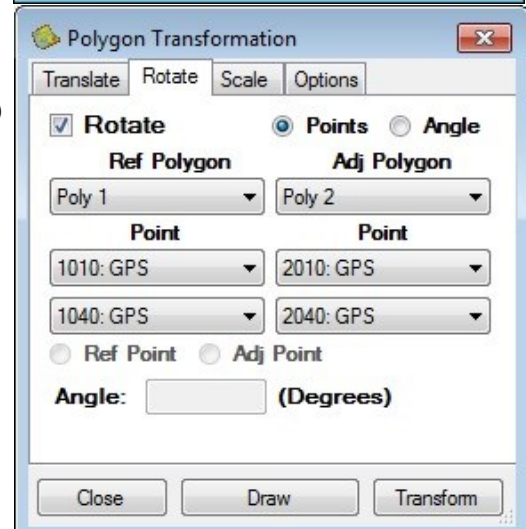
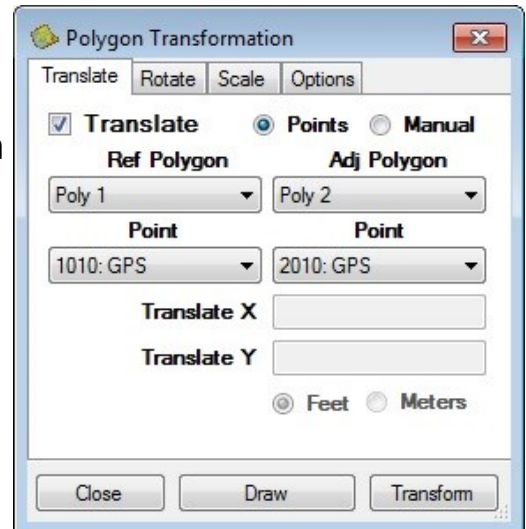
1. In the Tools 2 tab select **Polygon Transformation**. In this form you can **Translate, Rotate** and **Scale** a polygon.

2. To **Translate** a polygon check the Translate checkbox. Here you can either translate a polygon manually by giving it a distance to move by or having a Point align to another point inside another polygon.

3. To **Rotate** a Polygon check the Rotate checkbox. Here you have the ability to rotate a polygon by a specific angle or align two sets of points from two polygons. To align by two polygons select the Points option then proceed to select the reference polygon and the adjusting polygon as well as the points inside the polygons that will be aligned. To adjust by an Angle select the Angle option. Here you can rotate by the reference point or an adjusted point.

4. To **Scale** the polygon check the checkbox under the Scale tab. Here you can scale the polygon manually or by aligning points. When scaling by points, the polygon will scale the first reference point. When scaling manually the polygon will scale from its center.

5. When all your settings are set press the Transform button. Once this is clicked there is no un-doing. It is suggested to preform this operation on a copy of a polygon.



Note: This task does NOT actually move your polygon, but rather creates a new polygon that is transformed.

## Help

If you are experiencing an issue with the program or have gotten an error message, you can contact Gary Boyack (gboyack@fs.fed.us) or Bryan Miller (bryancmiller@fs.fed.us) for help with the issue. When contacting please attach an exported package that includes the project you are working on as well as the log file from the device with the issue.

### How To Export an Error Log:

To create an exported package, go to the settings tab and click on Export Log. It will ask you if you want to add the current project. Select yes. Choose a location to save the export and then select OK.