

Armour, Gabby

Basic Instructions for Wiser Spacing Halo

November 8, 2021

Purpose:


This document serves as basic instructions on how to setup and how to use the Wiser Spacing Halo Tool. The Wiser Spacing Halo generates double rings based on user input. The user will provide the diameters of the output rings in meters. The tool will work in and out of an edit session. The [indicatrix](#) used by the tool considers the World Geodetic System (WGS84) coordinate system/projection and distorts the generated ring accordingly. (Basically, the tool will work with a minimum margin of error on GPS points because WGS84 is the standard. For more information on WGS84, click [here](#).)

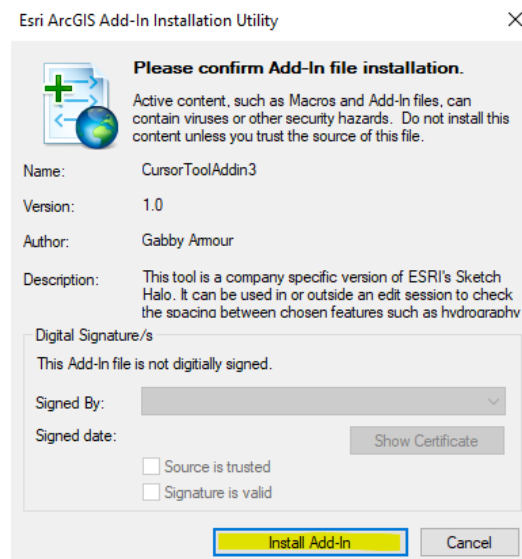
Requirement(s):

Tool will only perform for **ArcMap 10.4** or higher, depending on the chosen add-in. The Layer Data Frame Properties in the Table of Contents (TOC) will need to be set to view the Map Units in meters for the tool to conduct proper conversions/work at all.

Setup for Usage:

Instructions to Install the Wiser Spacing Halo Tool Add-In:

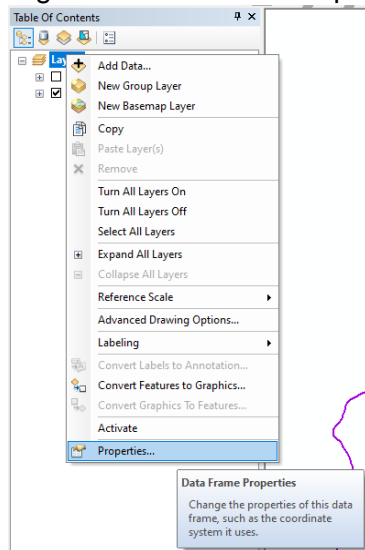
- Download the add-in file:
 WiserSpacingHalo.esriAddIn
- Double-click to install add-in
 - Installation Window Screenshot:



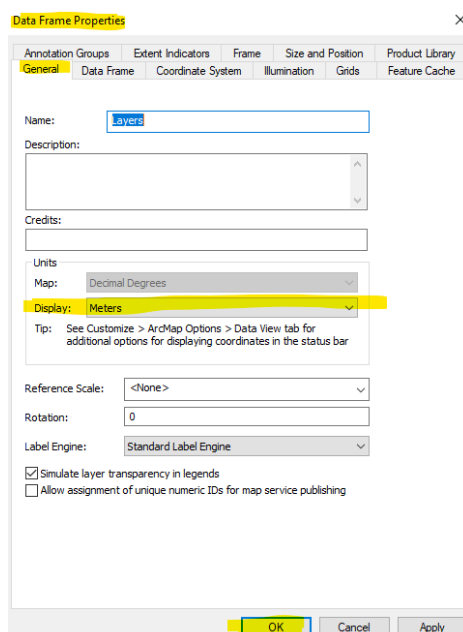
- Click “Install Add-In” to finish installation

Instructions to Setup ArcMap Session Using Best Practices:

- Open a new session of ArcMap
- Add desired data, e. g. Transportation Curves, Hydrography Curves, Digital Globe Imagery, etc.
- Change Layer/Data Frame General Properties in the TOC (Table of Contents) to display map units in Meters. (**Best Practice)
 - Tool will only work properly if the data first loaded in has been projected.
 - Right-click and scroll to open the Layer Data Frame Properties:




- Screenshot of Meters Setup – Click OK:

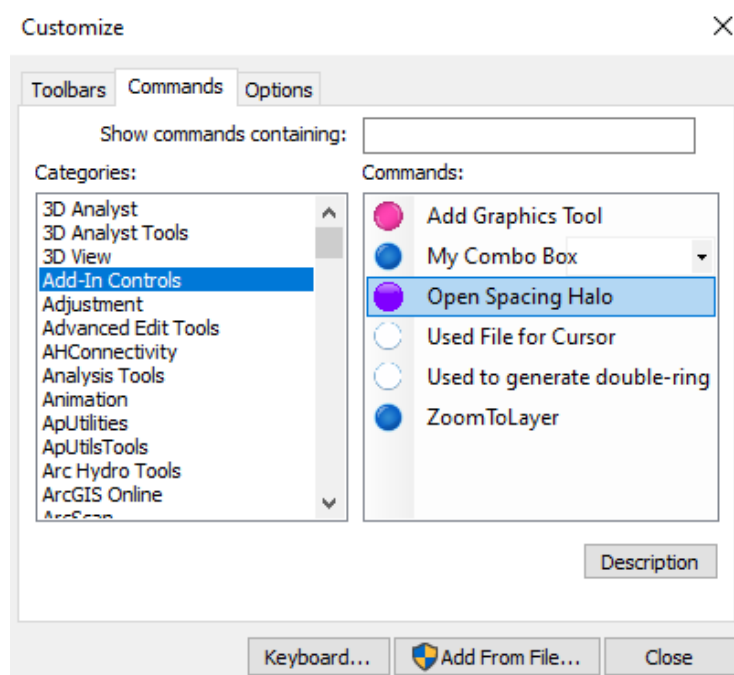


Instructions to Add Tool to Toolbar:

- Add Button to ArcMap using Customize Mode/Add-In Controls.
 - Button to place on any toolbar: (**Purple Button, NOT White Button)

 Open Spacing Halo

- Screenshot of Customize Mode Window:



- Place button on desired toolbar.
 - Example:



- Tip: To remove button, make sure the Customize Window is still open and drag and drop button off the toolbar into whitespace.

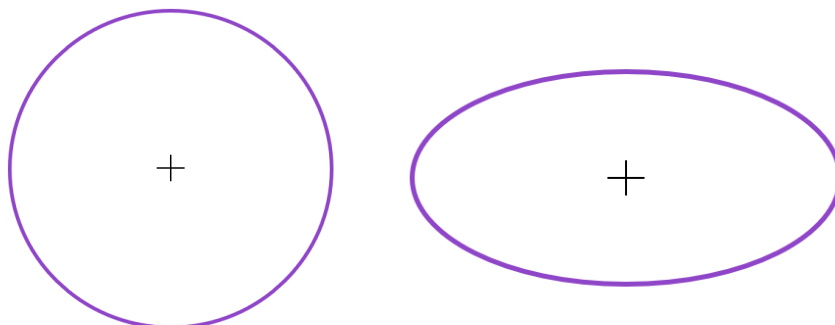
- Click to open.
 - Form Visual:

Wiser Spacing Halo ✕

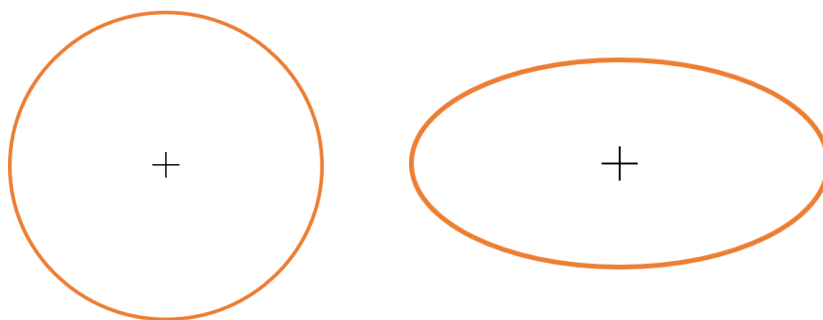
Enter Ring Diameter(s) in Meters: Inner Ring Outer Ring

Usage Instructions:**Instructions to Use Tool – Single Ring:**

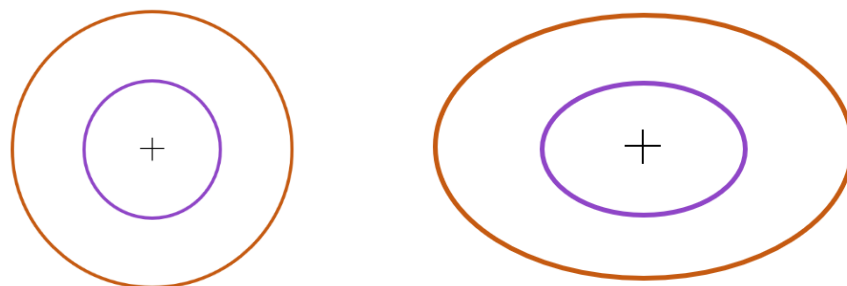
- Enter desired ring parameter in meters for the given ring
- Press either the Inner Ring or Outer Button
- Cursor will appear like the following depending on latitude when moved around in the Active View where ArcMap draws data:
 - Sample Condition: Inner Ring at 600 meters and Outer Ring at 0 Meters



- Sample Condition: Inner Ring at 0 meters and Outer Ring at 600 Meters

**Instructions to Use Tool – Double Ring:**

- Enter desired ring parameters in meters for both rings
- Press the Outer Ring Button
- Cursor will appear like the following depending on latitude when moved around in the Active View where ArcMap draws data:
 - Sample Condition: Inner Ring at 600 meters and Outer Ring at 1200 meters



General Functionality of Tool:

- Cursor changes size based on an indicatrix.
 - Translation: Ring will appear like an oval closer to the poles on a map.
- Cursor only appears in the Active View of ArcMap.
- Tool form can stay open will user switches between tools.
- Tool can be used to make selections on an SDE dataset, e. g. functions like the editor cursor.
 - Hold down “ctrl” to add to selection.
 - Click the whitespace to unselect all selections.
- Tool can be used inside and outside of an edit session.

Things to Keep in Mind:

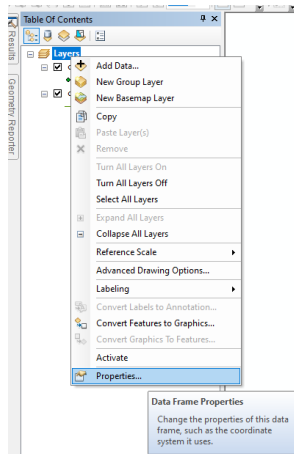
- Tool will only work if the data first loaded in has been projected.
- This demo will need to be tested with Digital Globe to test for further conflict.
- Use the red "x" to close the tool properly.
 - This will set the main cursor back to the system default arrow.
 - This deletes any leftover program data off machine.

Basic Troubleshooting:

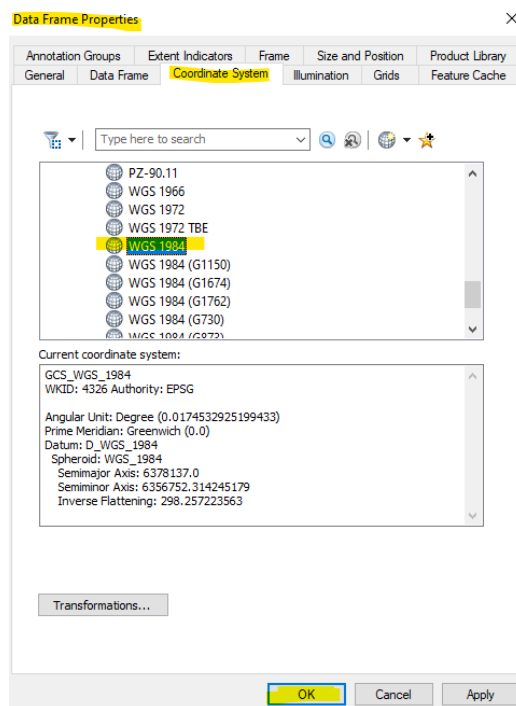
This section will only be outlining the most common problem. The most common problem is adding unprojected data, e. g. GAIT calls, BEFORE adding projected/referenced data. It is best practice to project your map and set your map units before adding any data. Then, the first data that you should add to your MXD should be referenced data. See the Instructions to Setup ArcMap Session Using Best Practices section in the Setup for Usage portion of the instructions to see how to set the current MXD's display units to meters. See below to add a coordinate system/projection to the current MXD's Layer/Data Frame.

Set Layer/Data Frame Projection in Table of Contents (TOC):

- Right-click and scroll (or double-click) to open the Layer Data Frame Properties



- Set map Coordinate System to WGS 1984 and click “OK”:



Contributors:

Gabby Armour:

- Lead, Designer, and Programmer
- Cursor Graphics
- Their project muse: Blaise Pascal

John Jackson:

- Ring Visual Alignment Calculation – Double Ring Behavior
- Selection Logic
- His project muse: Pythagoras of Samos

Nat Cagle:

- Scale Meters to Pixels Conversion
- Tissot Indicatrix Distortion Calculation
- Their project muse: Archimedes of Syracuse