ARCGIS
ADJUSTING AND ASSEMBLING MAPS FOR FIELD NOTE-TAKING

OVERVIEW:

We will be accessing maps hosted on ArcGIS Online to manipulate in the desktop application ArcMap[1] from ESRI to prepare maps that will be printed and brought into the field to make analog annotations.

ACCESS MAPS FROM ARCGIS ONLINE:

Open ArcMap and choose a default new map. Choose:

 File > ArcGIS Online...

Choose "Login" in the upper right-hand corner. Choose "Enterprise Login", enter "uvalibrary" and choose continue. Choose "University of Virginia". You will then be prompted to enter your SIS login information to access the platform.

From the "Groups" tab, you will find the Landscape Studies Initiative group where a variety of relevant maps are hosted. Choose "add" at the bottom of a layer to add it to your map. Be careful to not add too many layers: some of them are quite large and will bog down your system.
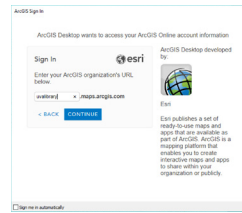
ARCMAP DATA AND LAYOUT VIEWS:

ArcMap provides two primary ways of viewing your data. The data view allows you to zoom in and out and pan around your data, while the layout view shows you how that data will appear as an exported file or printed sheet. The Layout view consists of both the paper space where you can add things like scale bars and north arrows and the data frame which is essentially a window into the data view.

SETTING BOOKMARKS:

A bookmark allows you to jump to a particular location and scale in either the data view or within the data frame in the layout view. Usually, I like to set a round number for my scale when I am setting a bookmark, and typically I set it from the layout view, so that I know exactly what view I will ultimately be printing. Find the approximate view that you want to print and then type in a close round-number scale in the scale selector. Once you have a view that you like, choose *Bookmarks > Create Bookmark...*. Give your bookmark a name and click "OK". You can now access that view from the Bookmark menu.
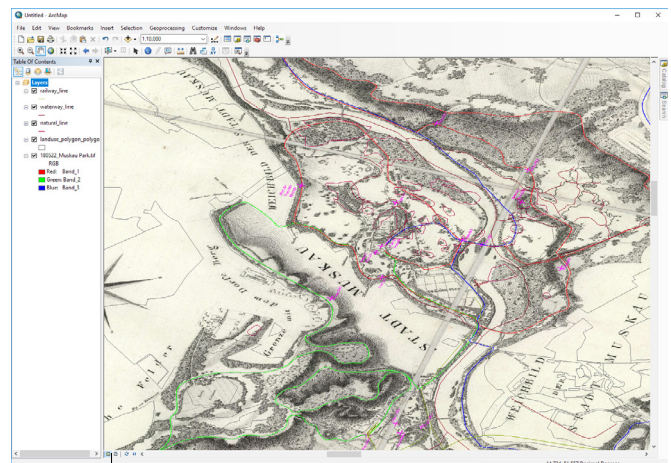

ArcGIS Online sign-in
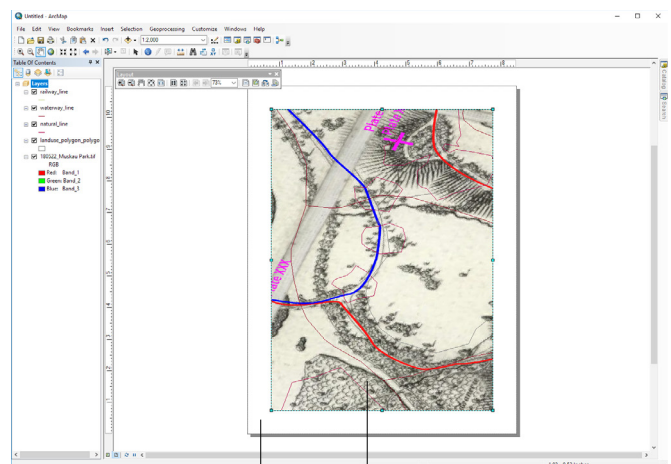

Landscape Studies Initiative group

ArcMap data view

data view / layout view tabs

ArcMap layout view

window into data view

paper space

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1   As a student, you can download ArcMap for free from the UVA Software Gateway: http://its.virginia.edu/software/displayPackages.php?tId=15. It is only available for Windows.
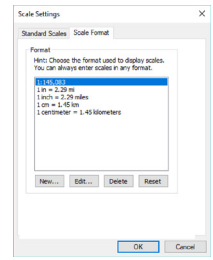
SETTING THE SCALE:

You can set the map scale from the drop-down selector in either the data or layout view. By default, the scale is expressed as ratios (e.g. 1:100, 1:1000, etc.), in which case units are irrelevant (at 1:100, 1 inch on paper will equal 100 inches in map space, just as 1 centimeter will equal 100 centimeters). You can also express the scale as a ratio of different units (e.g. 1 inch = 500 feet, or 1 cm = 1 km). To do this, from the scale drop-down menu, select *Customize This List*. The scale settings window will appear, allowing you to choose the scale format and the scale from a list of common scales or a custom scale.
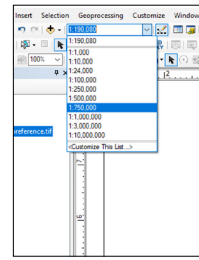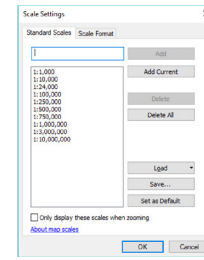

Scale drop-down menu   Scale Settings: Standard Scales   Scale Settings: Scale Format

ADJUSTING PAPER SIZE AND THE DATA FRAME:

With the data frame selected, right click and choose "Properties". In the properties window, choose the tab "size and position" where you can precisely set the size and position of your data frame on the layout. Other options you may want to change include the Frame (the border around the data frame), Grids (you can divide the map into a grid to make referencing locations easier). To make changes to the page itself, choose:

File > Page and Print Setup

From their you can set the printing size. Unfortunately, ArcMap does not allow you to save multiple layouts in the same map document. However, you can bookmark multiple views to assist in the production of multiple map exports.[1]
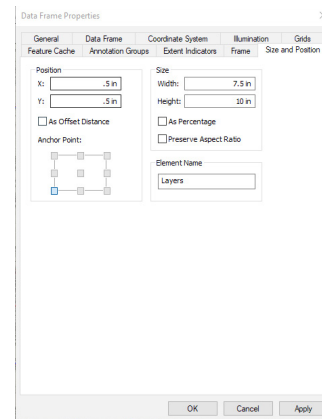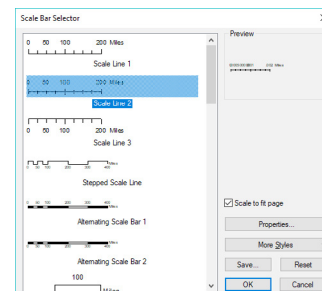

Size + position options

ADDING A SCALE BAR:

To add a scale bar to your map layout, choose *Insert > Scale Bar*.

Choose a scale bar style and add it to the map layout.[2] You can change many of the scale bar attributes, such as what units it uses, by right clicking on the scale bar that you inserted and choosing "Properties".
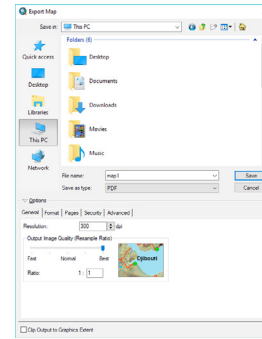

Scale bar selector

1   There are ways to automate the production of multi-page maps using Data Driven Pages, but it is somewhat complex (see http://desktop.arcgis.com/en/arcmap/10.3/map/page-layouts/creating-data-driven-pages.htm). The new ArcGIS Pro desktop application does have multi-layout functionality, but is not yet widely distributed at UVA.

2   The scale bar will automatically update to reflect the scale displayed in the data-frame.

EXPORTING YOUR MAP:

To export your map as a PDF, choose *File > Export Map....*

CARTOGRAPHIC CONSIDERATIONS:

Think about how the layers you include in your printed map serve the purposes of your intended field work. A map overcluttered with layers may be less useful than contours and a couple key systems. Also consider how you will be printing and carrying your maps. For field work, 8.5"x11" sheets may be most appropriate as they fit on a clipboard and in a backpack, but folded 11"x17" sheets could also prove useful.

Export window