## HOW TO MAKE A SLOPEMAP FROM A DEM

1) In ArcMap, display the DEM you are interested in analyzing.



Courtesy of ESRI. Used with permission.

2) Make the Spatial Analyst tools available. Right-click on the taskbar at the top of the window and make sure Spatial Analyst is checked. The Spatial Analyst toolbar will appear.



Courtesy of ESRI. Used with permission.

3) From the Layer pulldown in the Spatial Analyst toolbar, select the DEM you want to analyze

1:148,456	5 💽 🛃 🤌 🏶 🟝 🖬 🕺 Edito <u>r</u> 👻 🕨 Task:
<b>X</b>	
Spa	tial Analyst 🛛
Sp	atial <u>A</u> nalyst 👻 Layer: Big Maria Mountains NW 💌 🎲 🚹
	Big Maria Mountains NW
	Big Maria Mountains NE
12	Big Maria Mountains SW
	Star Big Mana Mountains SE
8	my Inca
	10 m DEM
N	30 m DEM V
	0
6	Ph

Courtesy of ESRI. Used with permission.

Note! If all the options in the Spatial Analyst toolbar are greyed out, and there are no available layers, it is likely that the Spatial Analyst extension is turned off. To turn it on, in the ArcMap window click Tools and select extensions. Make sure that the box next to Spatial Analyst is checked.

🞗 bigmarias.mxd - ArcMap	- ArcInfo	
<u>File Edit View Insert Selection</u>	Tools Window Help	
D 🖻 🖬 🎒 👗 🖻 🛍	🖉 Editor Toolbar	56 💌
	Grap <u>h</u> s	
🖃 🥩 Layers	<u>R</u> eports	atial Analyst
	Geoco <u>d</u> ing	▶ spatial <u>A</u> nalyst ▼
Value	★ Add XY Data	NK
High : 72.5671	Hadd Route Events	58
Low : 0	ArcCatalog	- 8m
Color Orthophotos Landsat 7 bands 321	Macros	<b>•</b>
	Customize	í 🖕 🛛
□ 🗹 10 m DEM	Extensions	
High : 820.6		•
Low : 85.2	Options	R I
		0
		#4
		.2.

Courtesy of ESRI. Used with permission.

Extensions ? 🔀	
Select the extensions you want to use.	
Description:	
Copyright ©1999-2004 ESRI Inc. All Rights Reserved	
Provides tools for surface modeling and 3D visualization.	
About Extensions Close	

Courtesy of ESRI. Used with permission.

4) From the Spatial Analyst pulldown, select Surface Analysis, and Slope.

1:148,456 👤 💒 🔊 🧳	🛅 🖸 💦 🛛 Edito <u>r</u> 🔻 🕨 🥒 💌 Task:
Spatial Analyst Spatial <u>A</u> nalyst ▼ Layer: 10 m [	DEM 💽 🕅
Distance     Density     Interpolate to Raster     Surface Analysis     Cell Statistics     Neighborhood Statistics     Zonal Statistics     Reclassify     Raster Calculator     Options	Contour Slope Aspect Hillshade Viewshed Cut/Fill

Courtesy of ESRI. Used with permission.

5) A window appears. Specify the output path and press OK.

lope	? 🔀
Input surface:	10 m DEM 💌 🗳
Dutput measurement:	O Degree
Z factor:	1
Output cell size:	10
Dutput raster:	<temporary></temporary>
	OK Cancel

## Courtesy of ESRI. Used with permission.

6) Let's give the slopemap a beautiful color scheme! In the Tabloe of Contents, right-click on the layer corresponding to the slope map you just created, and select Properties.



Courtesy of ESRI. Used with permission.

7) Click the symbology tab.

Layer Properties			? 🗙
General   Source   Extent	Display Symbology		
Classified	Draw raster grouping values into c	lasses	Import
Stretched	Fields ⊻alue: <value> Normalization: <none></none></value>	Classification Natural Breaks (Je	enks) Classif <u>y</u>
	Color Ramp:		•
	Symbol     Hange       0 - 2.551186591     2.551186591 - 7.086629421       7.086629421 - 12.75593296     12.75593296 - 18.42523649	0 - 2.551186591 2.551186592 - 7.086629421 7.086629422 - 12.75593296 12.75593297 - 18.42523649	=
TA.	18.42523649 - 23.81107485 23.81107485 - 28.91344804 28.91344804 - 34.2992864 34.2992864 - 41.38591582	18.4252365 - 23.81107485 23.81107486 - 28.91344804 28.91344805 - 34.2992864 34.29928641 - 41.38591582	~
	Show class breaks using cell values	Display <u>N</u> oData as	
	[	OK Cancel	<u>A</u> pply

Courtesy of ESRI. Used with permission.

8) Select Stretched from the menu on the left, then select the black-to-white colormap (it should be the default). We want black to be the steepest slopes so click the Invert box in the lower right corner of the window to flip the colors so that black is at the top. When you're finished, click OK.

General   Source   Ext	tent Display Symbology		
how: Classified Stretched	Draw raster stretching values along a color ramp		
	Color     Value     Label       72.567085     High : 72.5671       0.000000     Low : 0		
	Color <u>R</u> amp:		
	Type: Standard Deviations Histograms   n; 2 Image: Invert	~	

Courtesy of ESRI. Used with permission.