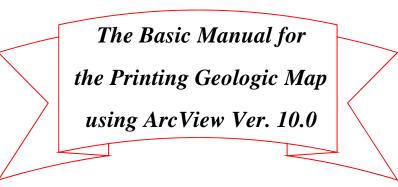
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Edition 0.8

JICA-GIS Project 2012

At GSD Zomba



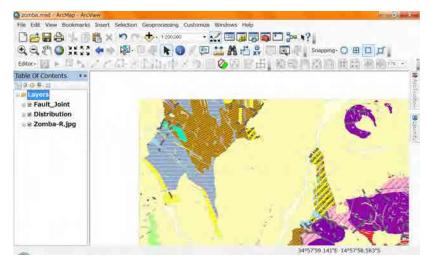
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0. Set shape file for the printing

0-1. Set the environment for color setting

Add the data of polygon (Distribution) and polyline (Fault_Joint) and scanned image.

Image is put bottom. So you can not see the image by the polygon data covering.



Make a new group layer in the layer.

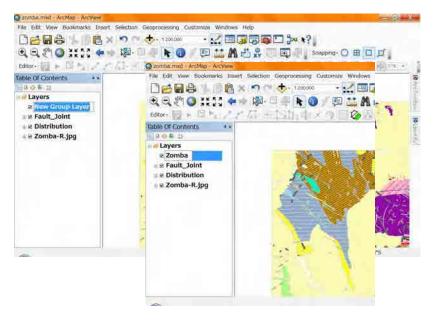


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Change the group layer name. Under selected condition single click on the name.

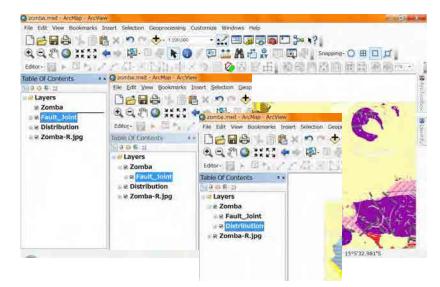
A rectangle apear and the name is changeable. Type new name then click the other

place or press "Enter Key"



Drag shepe files (polyline polygon) under the group layer (this case Zomba) one by

one.

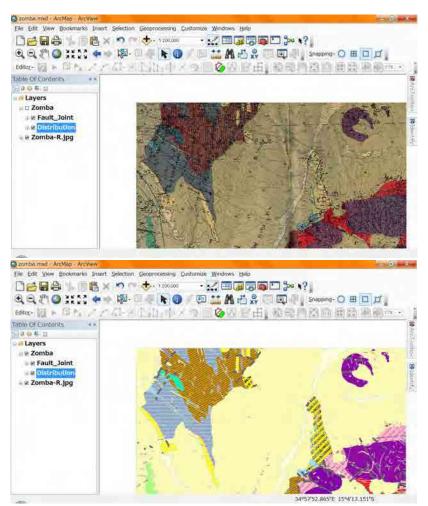


0-2. Show and hide the group layer

If you remove the check mark front of the group, layers belonging the group are hide.

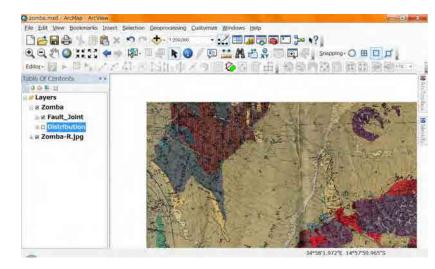
Against it add the check mark front of the group, layers belonging the group are

shown.



When add the check mark front of the group, you remove the check mark front of one

layer that belongs the group, the layer (checkmark removed) is hide.



Now you can see and compare the both colors, scanned map and polygons.

0-3. Create the relation table between Geo_ID and Lithology.

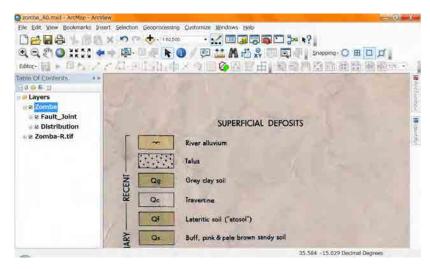
Start the Microsoft Excel from start button. (Sorry this Excel is Japanese version)

Input "Geo_ID" into the Cell "A1". Input "Lithology" into the Cell "B1".

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Back to the ArcGIS. See the legend of the scanned paper map.

Remember one pair of "Geo_ID" and its Lithology.



Go to the Excel, input these into second line (cell "A2" and cell "B2")

In this example DS and "Dambo" soil, seasonal marsh

and the second se				Book3 Micros	OT Excel		
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Do in the same way for all Geo_ID and Lithology.

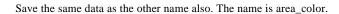
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4 A	BCD	E E 0 1	E E I K	L M N	0 5
Geo ID	Lithology				
DS	"Dambo" soil, seasonal marah				- 11
RD	River alluvium				
Q	Other Surface Soils, Clay, Sand				
M	Arkose, conglomerate, micaceous silt	stone & mudstone			1 T.
K	Mudstones and Shales				
S	Solvabergite				_
Sp	Porphyritic s?lvsbergite				
mSy	Microsvenite				
QmSy	Quartz - microsvenite				. I I
1 aniSy	Arfvedsonite - microsyenite				
2 Rp	Porphyritic rhyolite				
3 6	Felaite				
mG2	Alkaline microgranite				
s p	Phonolite				
6 Pp	Porhyritic phonolite				
7 mF	Micropulaskite & microfoyaite				
8 mFp	Porphyritic microfoyaite				_
9 mLi	Microhitchfieldite				
D L	Lamprophyres				
	Carbonatite - appiomerate				
Cb					
I Cb	A. A		30		

Input "R","G","B" into cell C1, D1, E1

		Lithology.xis (地合限の専用) [5 CM 高三 触象 クラフ	LIPE-IT Microsof	T, Excel	- 6 - X
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B1.	 A Lithology 				
4 A	B	C R E	F 0.	H I I	IN IN
Geo_ID	Lithology	R G H			
DS	"Dambo" soil, seasonal marsh				
RD	River alluvium				
Q_	Other Surface Soils, Clay, Sand				
MK	Arkose, congiomerate, micaceous silutone & n	indstone			
K S	Mudstones and Shales				
Sp	Solvabergite				
	Porphyritic s?lvsbergite Microsvenite				
0 mSy 0 QmSy	Quartz - microsvenite				
1 amSy	Arfvedsonite + microsvenite				
Rp	Porphyritic rhyolite				
5 F	Felaite				
mO2	Alkaline microgranite				
p p	Phonolite				
6 Pp	Porhyntic phonolate				
7 mF	Micropulashite & microfovate				
8 mFp	Porphynitic microfovaite				
9 mLi	Microlitchfieldite				
DL	Lamprophyres				
Cb	Carbonatite - agglomerate				
2	Applomente & silicified trachyte				
13 GB	Alkaline granite of ring dyke				
# 9. # STR	Trent Liters 2		191		1 N
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Save the file, type as Excel Ver.97-2003, name as area_lithology.

This figure uses Zomba area so the	file name is Zor	- 07
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This figure uses Zomba_Color.xls.

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0-4. Add the relation table

Back to the ArcGIS again. Add data that saved Excel file.

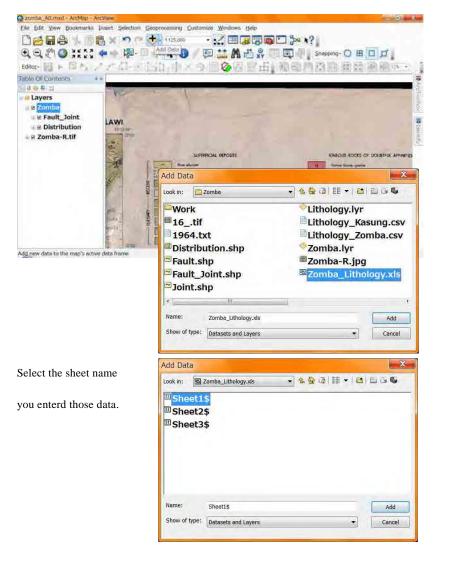
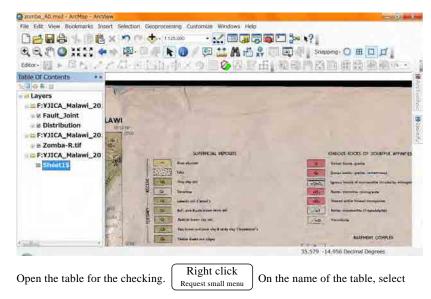
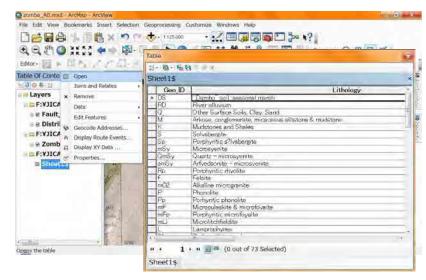


Table of contents window has changed from "List by drawing order" to "List by

Source". And the Excel sheet had added.



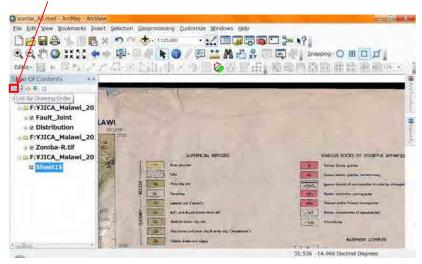
"Open". The table will apear.

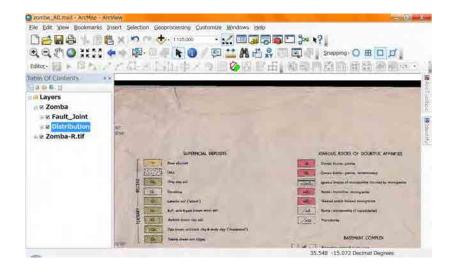


0-5. Join the shape file and relation table

Change table of contents window from "List by Source" to "List by drawing order".

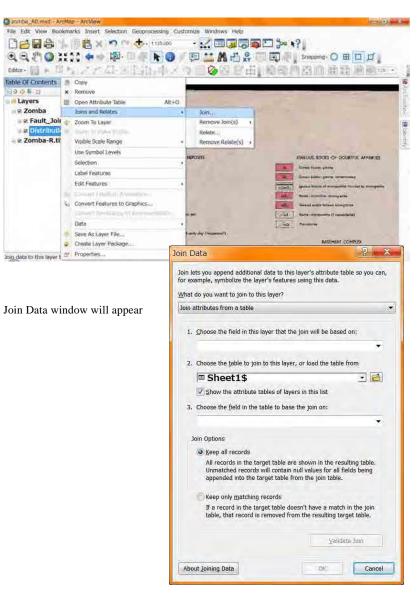
Click here.





ĺ	Right click	
l	Request small menu	On the layer name (polygon Distribution), select "Joins and

Relates", "Join".

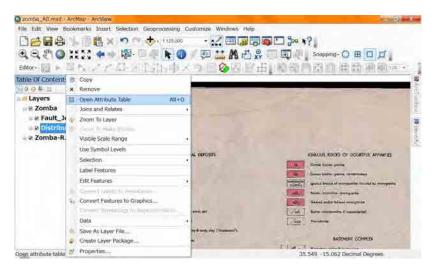


Select "Geo_ID" for "Choose the field in this layer that the join will be based on".



-

Open attribute Table of the polygon (Distribution).

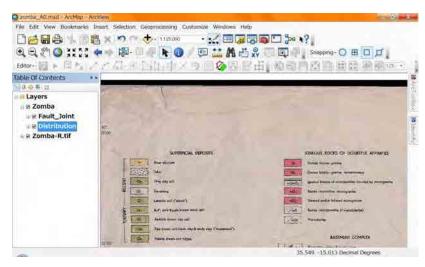


You can see the field "Lithology".

Distribution							
	FID	Shape *	Id	Geo_ID	Geo_ID	Lithology	
•		Polygon		RD	RD	Riveralluvium	
	1	Polygon		RD	RD	Riveralluvium	
		Polygon		RD	RD	Riveralluvium	
	3	Polygon		RD	RD	Riveralluvium	
	4	Polygon	0	RD	RD	Riveralluvium	
	5	Polygon	0	RD	RD	Riveralluvium	
	6	Polygon	0	RD	RD	Riveralluvium	
	7	Polygon	0	RD	RD	Riveralluvium	
	8	Polygon	0	RD	RD	Riveralluvium	
	9	Polygon	0	RD	RD	River alluvium	
	10	Polygon	0	RD	RD	Riveralluvium	
		Polygon	0	RD	RD	River alluvium	
		Polygon	0	RD	RD	River alluvium	
		Polygon	0	RD	RD	River alluvium	
1		Polygon	0	RD	RD	River alluvium	
		Polygon	0	RD	RD	River alluvium	
1		Polygon	0	RD	RD	River alluvium	
		Polygon	0	RD	RD	River alluvium	
		Polygon	0	RD	RD	River alluvium	
1		Polygon	0	RD	RD	Riveralluvium	

0-6. Set Symbology

Double click on the layer (polygon Distribution).



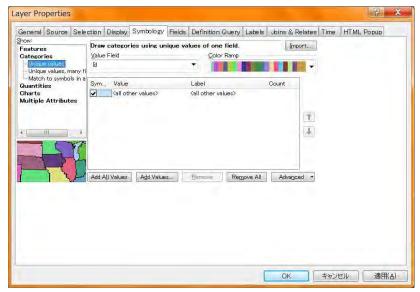
the Lyaer Properties window will appaer.

ayer Properties	9 X
General Source Selection Dis	play Symbology Fields Definition Query Labels Joins & Relates Time HTML Popup
Extent	: 8340702.272493 m
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Data Source	
Data Type: Shapefile: Geometry Type: Projection: Projection: Palse_Easting: False_Northing: Central_Meridian: Scale_Factor:	Shapefile Feature Class F-¥JICA_Malawi_2012¥JICA_DS01¥JICA_GIS_database Polygon WGS_1984_UTM_Zone_36S Transverse_Mercator 500000.00000000 33.00000000 0.99960000
* []	Set Data Source
	OK きゃンセル 適用(<u>A</u>)

Select "Symbology" tab. Click "Categories".

Features Sincle symbol Categories Quantities Charts Multiple Attributes	Symbol Advagced
A CONTRACTOR	Legend Label appearing next to the symbol in table of contents: Description Additional description appearing next to the symbol in your man's legend

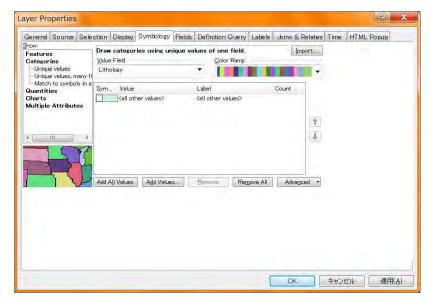
Select "Unique Values".



Select "Lithology" for "Value Field".

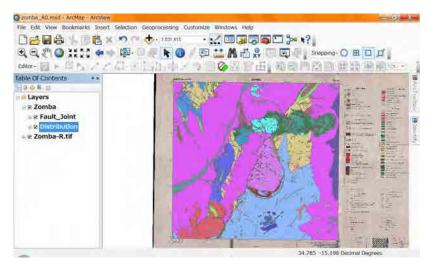
DW!				Definition Query	Labers		Linne	HTML Popup
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ategories Unique values	Value Field		-	Color Ramp	-	-		
Unique values, many fi	10		_					
Match to symbols in a	Geo D Geo D			pel	-	Count		
uantities harts	Lithology			other values>		obuitt		
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- Sent	Add All Values	Add Value	3\$	Remove Reg	nove All	Advanced *		

Remove check mark front of <all other values>. Click "Add All Values".



Features Categories — Unique values	Draw categories using unique Value Field Lithology	e values of one field. <u>C</u> olor Ramp	Import
Unique values, many fi -Match to symbols in a Quantities Charts Multiple Attributes (111 - 1	Sym. Value (all other values) (Heading) (Phyroxne) – hornblende Aspatic granitic "repheli Akaline granitic of Malosa	Label (all other values) Lithology tib (Phyroxne) – hornblende chyl Acgomertes silicified tru ne – Appaltic granitic pephelli MorAlaine sanita of ring of Alasine microgranite Altered basic proks Amphibolite	achy/2 ne = 15 a Moi 3
	Add All Values	<u>Remove</u>	All Advagged

All lithology will be listed. Once click "OK".



Each geologic unit will be painted by differrent color.

Open attribute table again.

stributi	1					
FID	Shape *	Id	Geo_ID	Geo_ID	Lithology	_
0	Polygon		RD	RD	Riveralluvium	_
1	Polygon	0		RD	Riveralluvium	
	Polygon	0		RD	Riveralluvium	
	Polygon	0		RD	Riveralluvium	
	Polygon		RD	RD	Riveralluvium	
	Polygon	0		RD	Riveralluvium	
6	Polygon		RD	RD	Riveralluvium	
7	Polygon		RD	RD	Riveralluvium	
	Polygon	0		RD	Riveralluvium	
	Polygon		RD	RD	Riveralluvium	
	Polygon		RD	RD	Riveralluvium	
	Polygon		RD	RD	Riveralluvium	
	Polygon		RD	RD	Riveralluvium	
13	Polygon	0	RD	RD	River alluvium	
14	Polygon		RD	RD	Riveralluvium	
	Polygon		RD	RD	River alluvium	
16	Polygon	0	RD	RD	Riveralluvium	
17	Polygon		RD	RD	River alluvium	
	Polygon	0	RD	RD	River alluvium	
19	Polygon	0	RD	RD	Riveralluvium	

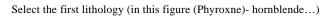
Right click Request small menu

uest small menu On the lithology select "Sort Ascending".

	ion					1.12	halami
FID	Shape *	Id	Geo_ID	Geo_ID			Sort Ascending
	Polygon	0	RD	RD	River alluvium		
	Polygon	0	RD	RD	River alluvium	7	Sort Descending
	Polygon	0	RD	RD	River alluvium		Advanced Sorting
	Polygon	0	RD	RD	River alluvium		Advanced Sorung
	Polygon	0	RD	RD	River alluvium		Summarize
	Polygon	0	RD	RD	Riveralluvium		
	Polygon	0	RD	RD	Riveralluvium	1.5	Staristics
	Polygon	0		RD	Riveralluvium	100	Field Calculator
	Polygon	0	RD	RD	River alluvium	100	Clear Calmatator.
9	Polygon	0	RD	RD	River alluvium		Calculate Geometry .
10	Polygon	0	RD	RD	River alluvium		T. Filloff
	Polygon	0	RD	RD	River alluvium		Turn Field Off
12	Polygon	0	RD	RD	River alluvium		Freeze/Unfreeze Column
13	Polygon	0	RD	RD	River alluvium		Treezer ontreeze column
14	Polygon	0	RD	RD	River alluvium	x	Delete Field
15	Polygon	0	RD	RD	River alluvium		
16	Polygon	0	RD	RD	River alluvium	D'	Properties
	Polygon	0	RD	RD	River alluvium		
	Polygon	0	RD	RD	River alluvium		
	Polygon	0	RD	RD	River alluvium		

Data have been sorted.

FID	Shape *	Id	Geo ID	Geo ID	Lithology
423	Polygon	0	Xh	Xh	(Phyroxne) – homblende –biotite – gneiss, occas
	Polygon	0	Xh	Xh'	(Phyroxne) – homblende –biotite – gneiss, occas
425	Polygon	0	Xh	Xh	(Phyroxne) – homblende –biotite – gneiss, occas
426	Polygon	0	Xh	Xh'	(Phyroxne) - homblende -biotite - gneiss, occas
	Polygon	0	Xh	Xh	(Phyroxne) – homblende –biotite – gneiss, occas
428	Polygon	0	Xh	Xh'	(Phyroxne) - homblende -biotite - gneiss, occas
429	Polygon	0	Xh	Xh'	(Phyroxne) - homblende -biotite - gneiss, occas
430	Polygon	0	Xh	Xh	(Phyroxne) - homblende -biotite - gneiss, occas
431	Polygon	0	Xh	Xh	(Phyroxne) – homblende –biotite – gneiss, occas
432	Polygon	0	Xh	Xh	(Phyroxne) - homblende -biotite - gneiss, occas
433	Polygon	0	Xh	Xh	(Phyroxne) – homblende –biotite – gneiss, occas
434	Polygon	0	Xh	Xh	(Phyroxne) - homblende -biotite - gneiss, occas
435	Polygon	0	Xh	Xh	(Phyroxne) – homblende –biotite – gneiss, occas
436	Polygon	0	Xh	Xh	(Phyroxne) - homblende -biotite - gneiss, occas
437	Polygon	0	Xh	Xh	(Phyroxne) – homblende –biotite – gneiss, occas
438	Polygon	0	Xh	Xh	(Phyroxne) - homblende -biotite - gneiss, occas
439	Polygon	0	Xh	Xh	(Phyroxne) – homblende –biotite – gneiss, occas
440	Polygon	0	Xh	Xh	(Phyroxne) – homblende –biotite – gneiss, occas
441	Polygon	0	Xh	Xh	(Phyroxne) – homblende –biotite – gneiss, occas
442	Polygon	0	Xh	Xh'	(Phyroxne) – homblende –biotite – gneiss, occas



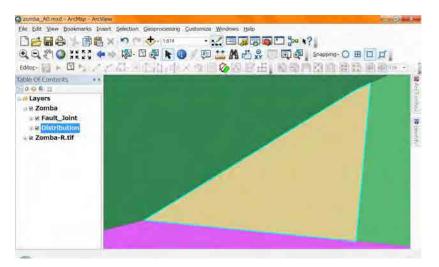
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	FID	Shape *	Id	Geo_ID	Geo_ID	Lithology
	423	Polygon	0	Xh	Xh	(Phyroxne) – homblende –biotite – gneiss, occas
	424	Polygon	0	Xh	Xh	(Phyroxne) – homblende –biotite – gneiss, occas
	425	Polygon	0	Xh	Xh	(Phyroxne) – homblende –biotite – gneiss, occas
	426	Polygon		Xh	Xh	(Phyroxne) – homblende –biotite – gneiss, occas
	427	Polygon	0	Xh	Xh	(Phyroxne) – homblende –biotite – gneiss, occas
	428	Polygon	0	Xh	Xh	(Phyroxne) – homblende –biotite – gneiss, occas
	429	Polygon	0	Xh	Xh	(Phyroxne) - homblende -biotite - gneiss, occas
	430	Polygon	0	Xh	Xh	(Phyroxne) - homblende -biotite - gneiss, occas
	431	Polygon	0	Xh	Xh	(Phyroxne) – homblende –biotite – gneiss, occas
	432	Polygon	0	Xh	Xh	(Phyroxne) - homblende -biotite - gneiss, occas
	433	Polygon	0	Xh	Xh	(Phyroxne) – homblende –biotite – gneiss, occas
	434	Polygon	0	Xh	Xh	(Phyroxne) - homblende -biotite - gneiss, occas
	435	Polygon	0	Xh	Xh	(Phyroxne) – homblende –biotite – gneiss, occas
	436	Polygon	0	Xh	Xh'	(Phyroxne) - homblende -biotite - gneiss, occas
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	438	Polygon	0	Xh	Xh'	(Phyroxne) - homblende -biotite - gneiss, occas
	439	Polygon	0	Xh	Xh	(Phyroxne) – homblende –biotite – gneiss, occas
	440	Polygon	0	Xh	Xh	(Phyroxne) – homblende –biotite – gneiss, occas
	441	Polygon	0	Xh	Xh'	(Phyroxne) – homblende –biotite – gneiss, occas
	442	Polygon	0	Xh	Xh	(Phyroxne) – homblende –biotite – gneiss, occas

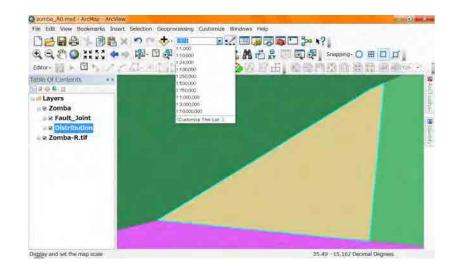
After selection click "Zoom To Selected".

	ributi	on Zoor	n To S	elected		
	FID	Shape *	ld	Geo_ID	Geo_ID	Lithology
1	423	Polygon	0	Xh	Xh	(Phyroxne) – homblende –biotite – gneiss, occasi
		Polygon		Xh	Xh	(Phyroxne) – homblende –biotite – gneiss, occasi
	425	Polygon	0	Xh	Xh	(Phyroxne) – homblende –biotite – gneiss, occasi
	426	Polygon	0	Xh	Xh	(Phyroxne) – homblende –biotite – gneiss, occasi
	427	Polygon	0	Xh	Xh	(Phyroxne) – homblende –biotite – gneiss, occasi
	428	Polygon	0	Xh	Xh	(Phyroxne) – homblende –biotite – gneiss, occasi
	429	Polygon	0	Xh	Xh	(Phyroxne) – homblende –biotite – gneiss, occasi
	430	Polygon	0	Xh	Xh	(Phyroxne) – homblende –biotite – gneiss, occasi
	431	Polygon	0	Xh	Xh	(Phyroxne) – homblende –biotite – gneiss, occasi
	432	Polygon	0	Xh	Xh'	(Phyroxne) - homblende -biotite - gneiss, occasi
	433	Polygon	0	Xh	Xh	(Phyroxne) - homblende -biotite - gneiss, occasi
		Polygon	0	Xh	Xh'	(Phyroxne) - homblende -biotite - gneiss, occasi
	435	Polygon	0	Xh	Xh	(Phyroxne) – homblende –biotite – gneiss, occasi
1		Polygon	0	Xh	Xh'	(Phyroxne) - homblende -biotite - gneiss, occasi
		Polygon	0	Xh	Xh'	(Phyroxne) – homblende –biotite – gneiss, occasi
	438	Polygon	0	Xh	Xh'	(Phyroxne) - homblende -biotite - gneiss, occasi
		Polygon	0	Xh	Xh'	(Phyroxne) – homblende –biotite – gneiss, occasi
		Polygon	0	Xh	Xh	(Phyroxne) – homblende –biotite – gneiss, occasi
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-		Polygon	0	Xh	Xh	(Phyroxne) – homblende –biotite – gneiss, occasi

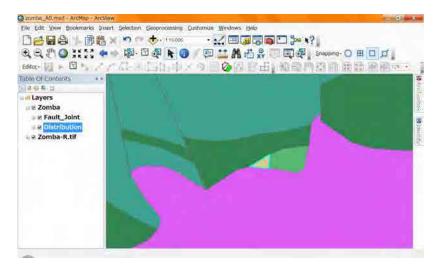
The polygon selected (Lithology is (Phyroxne)- hornblende...) is zoomed in the data

view window .





Select the scale near 10,000.

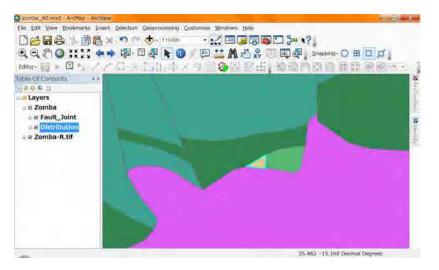


You remember the area selected.

Hide the Group layer. (remove check mark front of the area name "Zomba")

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Remember the color of the area (this case Xh' area). Show the group.



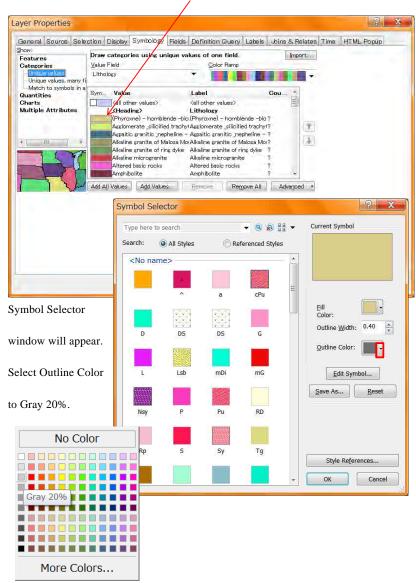
Double click on the layer (polygon Distribution) again.

Once go to Microsoft Excel, then open the file Area_Color.xls which you saved.

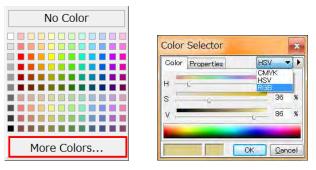
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B11	 Arfvedsonite - microsyenite 										
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DS	"Dambo" soil, seasonal marsh										
RD	River allovium										
Q_	Other Surface Soils, Cliry, Sund										
M	Arkose, conglomerate, niicaceous ailtstone & mudstone										
X	Mudstones and Shales										
S	Solvsbergite										
Sp	Porphyritic s?lvsbergite										
mSy	Macrosvenite										
0 QruSy	Quartz - microsyenite	-									
amSy	Arfvedsonite - microsyenite										
Rp	Porphynic rhyolite										
21	Felsite										
1 mG2	Alkaline microgramite										
5 P	Phonolite										
6 Pp	Porhyntic phonolite										
1 mF	Macropulaskite & microfoyaite										
8 mFp	Porphyritic microfoyaite										
9 mLi	Microlitchfieldite										
0 L	Lamprophyrei										
1 Cb	Carbonntite - agglomerate										
211	Aggiomerate & silicified trachyte										
3 68	Alkaline granite of ring dyke										
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Qiv	Quartz - sverute & quartz - perthosite										
6 Sy	Syenite & perthosite										
* Syp	Porphyritic symite										
8 OmSvu	Porohyntic quartz - microsycnite					10-	_		_	_	
For Serve					_	-		1000	LIN LOOM	1211	1

Double click on the color rectangle front of first lithology, (Phyroxne)-Hornblende...



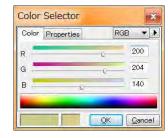
Select Fill Color to the color you remember using More Colors.



After selection of "More Colors" the Color Selector window will appear.

Select "RGB".





Select each RGB value using slider or input number.

Color	Properties	RGB 💌
R		£ 200
G 📒	ú	120
в	Ê	100

Remember each value.

After selection click "OK".

The color rectangle front of first lithology has been changed.

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Go to Microsoft Excel input RGB value into Area_Color.xls file.

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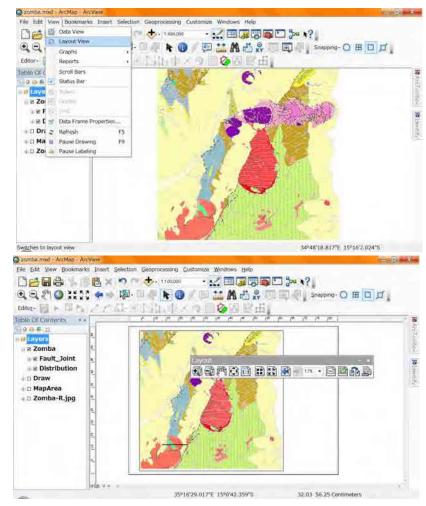
Do same way for the other lithologies also.

1. Data Frame in the Layout View

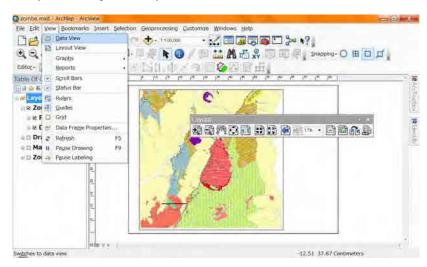
1-1. Change the view

There are two modes of "Data View" and "Layout View" to show a map in ArcMap.

Mode is selected in pulldown list of "View" in Main Menu Toolbar.



Also you can change from "Layout View" to "Data View".

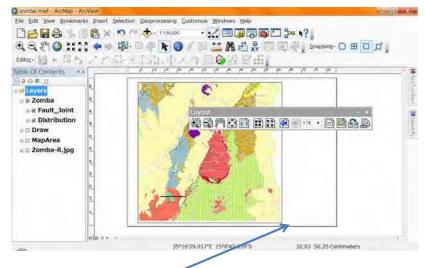


The purpose of each view is

- Data View : Brows the geographic data, edit, analyze and etc.
- Layout View : Design a layout for print

Create a legend, north arrow and map scale

Overlay figures and texts

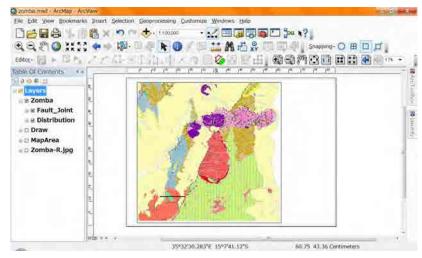


In the layout view you can see a rectangle, it means the paper size in your display.

Here in after we call this rectangle, "paper".

And you might find a new tool bar "Layout". This tool bar is good for the layout view.

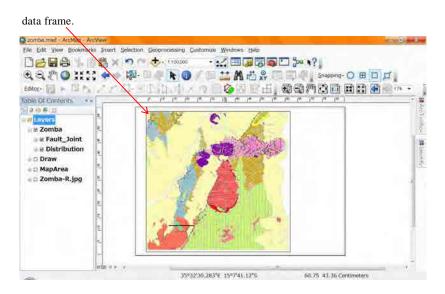
Move the tool bar beside the others.



1-2. Data Frame

After changing to the layout view, you add check mark in the table of contents, and

use "zoom to layer", you can see some map in paper in your display. This rectangle is



Data frame is a drawing map area in the paper. It seems a hole or a window.

Grasp this concept that the layout view has 2 planes which are a "paper" and a "Data

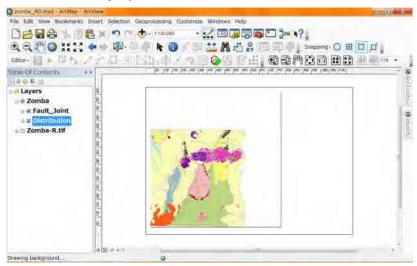
Frame".

1-3. 2 kinds of Zoom and Pan

There are 2 kinds of "Pan", one is used before.



You can move the map in your data frame.



You can not use this "Pan" out of the data frame.

Another "Pan" is good for the Paper. Somba All mod - Archtap - Arc File Edit View Bookmarks Insert Selection Geoprocessing Customize Windows Help 🟥 🗶 🄊 🖙 🛧 i 20.005 A BA Shapping- 🔿 🖽 🛄 🗖 k 🕕 20 B.H. Editor-Table Of Continuts 2.0.6.2 Livers Zomba B B Distribution I Zomba-R.tif Pan the map layout by dragging it 616,43 699,88 Millimeters

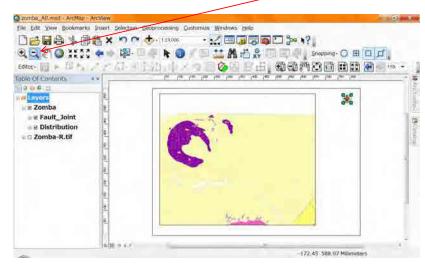
When you use this "Pan" the Paper will move in your Layout view.

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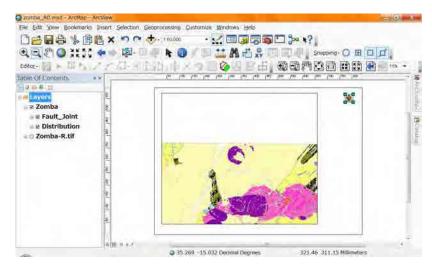
You can use this "Pan" in your Layout view.

About the "Zoom" also there are 2 kinds of Zoom in the Layout view.

One is good for the "Data Frame". Once try to use "Zoom out" in the data frame.



After selecting the "Zoom Out", Click several times in the data frame.



The map scale becomes smaller.

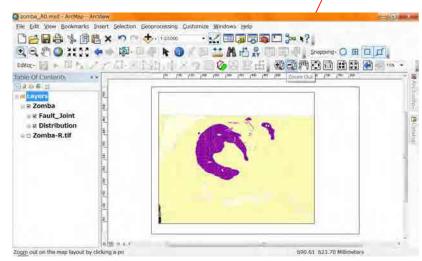
Next you use the "Zoom In" in the data frame. anna_A0.mxd File Edit View Bookmarks Insert Selection Geoprocessing Customize Windows Help □20日日 % 南西× つ で +. Instee 🔘 👯 💱 💠 👘 📖 🦛 🕲 🖉 🖽 🏦 🖆 👷 🔃 🕮 🖉 🖉 Snepping- 🔾 🖽 🗖 д 00,5 153. * Table Of Contents 2 D. E. 1 Lavers E Zomba Fault_Joint B B Distribution I Zomba-R.tif 172.45 522.09 Millimeters

After selecting the "Zoom Out", Click several times in the data frame.

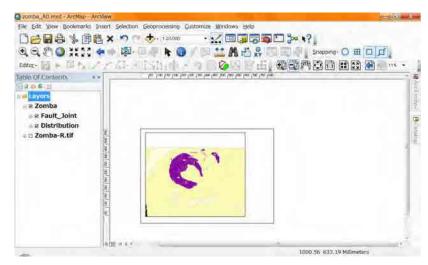
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The map scale becomes bigger.

For the paper there are "Zoom Out" and "Zoom In". Try to use "ZoomOut".



After selecting the "Zoom Out", Click several times in the Layou View.



The paper seems smaller.

Next you use the "Zoom In" in the layout view.

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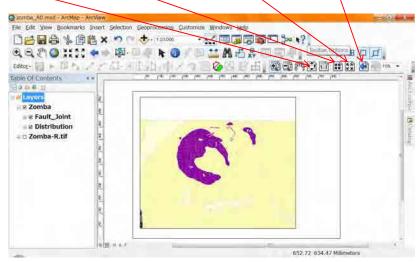
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The paper seems bigger.

For the paper there are other zooming tools.

"Zoom Whole Page", "Fixed Zoom In", "Fixed Zoom Out", "Go back to extent"



"Zoom Whole Page": You can see the whole paper in your layout view with one click on the tool bar.

"Fixed Zoom In" and "Fixed Zoom Out": Just one click on the tool bar, the paper

seems smaller or bigger.

"Go back to extent": Just one click on the tool bar, the layout view ie changed to the

previous scene.

These are convinient for the paper in the layout view.

And also you can select the scale of the data frame. It is easyer the Zoom.

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There is a similar selector for the paper. It is not so useful.

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1-4. Set the paper size and orientation

Estimate the size of your geologic map and orientation from the paper map.

In this manual we use the size "A1" and orientation "Land Scape". These came from

the paper geologic map of "Zomba".

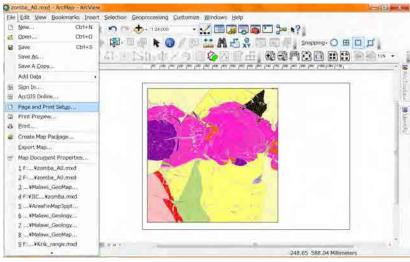
If you estimate the paper size of your area "A0", you read "A1" in this manual "A0".

If you estimate the paper orientation of yours "Portrait", you read "Landscape" in this

manual "Portrait".

For setting for printing paper, you can change from "File" in your main menu.

Select "Page and Print Setup".



"Page and Print Setup" window will appair.

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After selection of "T2300-HP", You select paper size to "A1".

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If you do not select "T2300-HP" you can not select the paper size "A0".

In this case, remove the check mark of "Use Printer paper setting"

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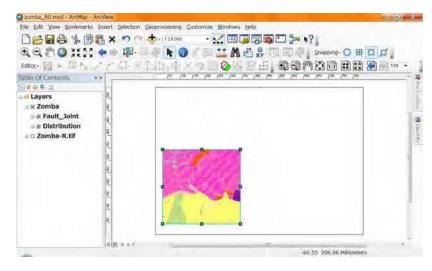
Then click "OK".

The paper size and its orientation has been changed.

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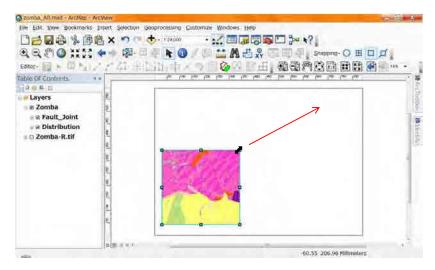
1-5. Set the Data frame size and position

Click on the data frame, 8 small rectangles will appear.



Under this condition, you can change the data frame size using drug these small

rectangles.



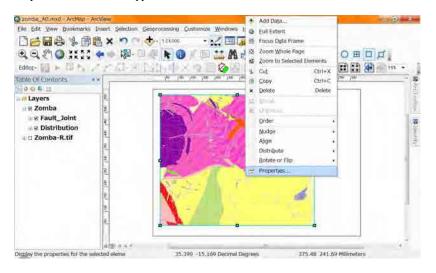
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	lection Geoprocessing Customize Windows Help
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A Layers	
a z Zomba	
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■ 2 Distribution	
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1. THE .	99 TELEVISION CONTRACTOR CONTRACTOR CONTRACTOR OF CONTRACTOR CONTRA TOR CONTR
	35,413 –15.18 Decimal Degrees 438.51 191,53 Millimeters

And you can move the data frame using drug inside of the data frame.

The other method for moving and changing the size of data frame is

Right click Request small menu on the data frame, select "properties", then the "Data Frame

Properties" window will appear.



You can enter the value for possintion and size of tha data frame in the paper.

General	Data Frame	Co	ordinate System	Illumina	ation Grids
Feature Cache	Annotation G	iroups	Extent Indicators	Frame	Size and Positio
Position		Size		-	
<u>X</u> :	30 mm	Width			
¥: 41.7	189 mm	Heigh	t: 529.2461 m	m	
As Offset Dist	tance	As	Pergentage		
Anchor		Er	eserve Aspect Ratio		
9-0		Eleme	nt Name		
	I	Laye	rs		
	100				
			OK	4+220	·適用(A

1-6. Set the Scale of the data frame

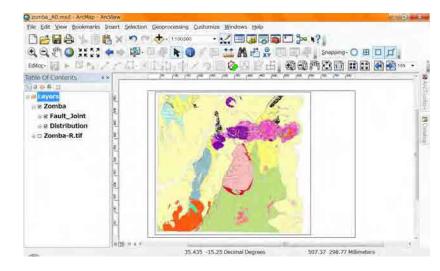
We will print the Map 1:100,000 scale Geologic Map, so select 1:100,000 scale.

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File Edit View Bookmarks Insert	election Geoprocessing Custom	nize Windows Help	
File Edit View Bookmarks Inset	5 6 1 1 1 1 1 1 1 1 1 1		
	***	- 14.	- E

The data frame (Map) scale has changed.

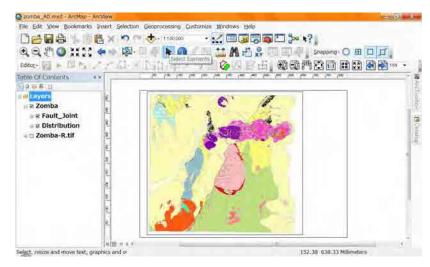
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e Edit View Bookmarks Insert S	lection Geoprocessing Customize Windows Help	
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ale Of Contents **		The fact for the fact that
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1970 - 10 - 10 - 10 - 10 - 10 - 10 - 10 -		

Move the map to good location using "Pan" for the data frame.



If you need changing the size of data frame, after selecting the tool "Select Elements",

click the data frame, then the 8 rectangles appaer, set the data frame size.

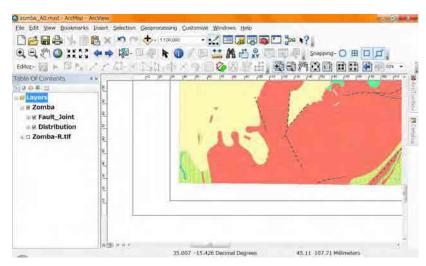


No need to be nurvous about the size of the data frame. It is enough to be bigger than

the map.

1-7. Set the Grids and the data frame for the Map

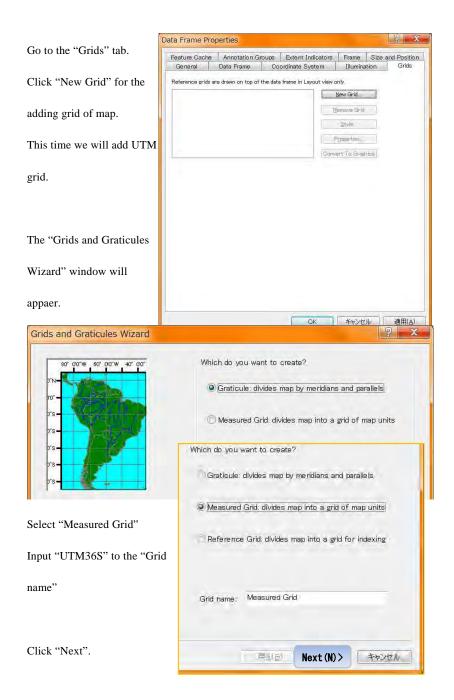
For this explanation the layout view is zoomed in the corner of the data frame.



Double click on the "Layers" in the table of contents window which is "List by

Drawing Order"	Data Frame Properties	? × -
Drawing Order	Feature Cache Annotation Groups Extent Indicators	Frame Size and Position
The "Data Frame	General Data Frame Coordinate System	Illumination Grids
properties" window		
will appaer. There is	Credits:	
no default tab it will	Units Mop: Meters • Display: Decimal Degrees •	
open as the same tab	Tip: See Customize > ArcMap Options > Data View tab for additional options for displaying coordinates in the status bar	
last time you used.	Reference Scale 1:100,000 Set 100	<mark>),000</mark>
Go to "Data Frame"	Label Engine: ESRI Standard Label Engine	
tab.		
	OK	キャンセル 適用(A)

	Data Frame Properties
Select "Clip to Shape"	Feature Cache Annotation Groups Extent Indicators Frame Size and Position
	General Data Frame Coordinate System Illumination Grids
in the "Clip Option"	Extent Automatic
	Automatic
Add check mark for the	Extent Used By Full Extent Command
	Extent of data in all layers (Default)
"Clip Grids and Graticules"	© Other:
	Specify Extent
	Clip Options
	No Clipping
	No Clipping
	Clip to shape Border
	Clip Grids and Graticules
	OK キャンセル 適用(A)
The button "Specify Shape"	
	Clip Options
will appaer.	Clip to shape
11	Exclude Layers Border:
Click the Button.	Clip Grids and Graticules
Chek the Dutton.	
	OK キャンセル 適用(A)
The "Data Frame Clipping"	
	Data Frame Clipping
window will appaer.	Data Frame Clipping
	A CONTRACTOR OF THE OWNER OWNER OF THE OWNER
Select "Outline of Features"	Ocurrent Visible Extent
	Outline of Features
After selection select the	Laver: Eatures
	Distribution 🔄 🔤
Polygon shape file name	Outline of Selected Graphic(s)
Polygon shape file name	
	Custom Extent
(this example is	Top: -14.985412223 dd
	Left 34.993544347 dd Right 35.574133264 dd
"Distribution") for the	Bottum -15.513090265 dd
"Layer". Click "OK".	OK Cancel
Layer . Chek OK .	



The window has changed. Select options as you like.

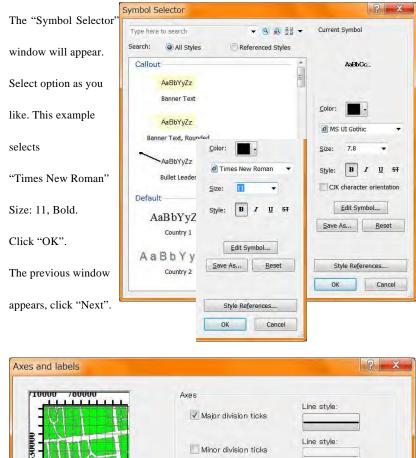
C Labels only Tick marks an Crid and labe		Style:
Coordinate System KSame as data f Transverse_Mer False_Easting: 50	rame>	Properties
Intervals		
X Axis: 10000	Meters	
Y Axis; 10000	Meters	

This example selects "Grid and labals" as "Appearance", "10000" as "Intervals" of

both axis. Click "Next". Remove a check mark of "Minor division ticks". Click

the "AaBbCc" button beside "Text" in the "Labeling".

Axes and labels	? ×
	Axes Line style: Major division ticks Line style: Minor division ticks Line style: Minor division ticks Line style: Mumber of flicks per major 0 Labeling Text
-	< 戻る(日) Next (N) > キャンセル



Axes Line style: Major division ticks
Line style:
Number of ricks per major
Labeling
Text AaBbCc

The window has changed. This example select the default option. Click "Finish".

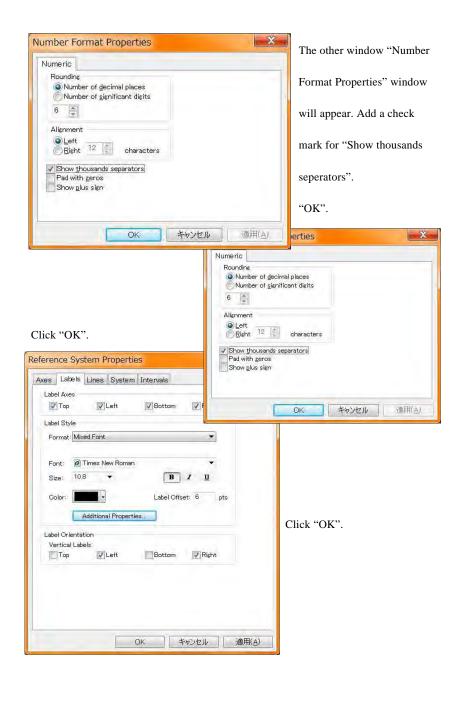
Create a measured gri	id					? ×
		Neatline Place a Grid Propertie © Store ar	border b border o s s a static s a fixed			ges to
			〈戻	ठ(<u>B</u>) F	inish	キャンセル
The "Data Frame	Data Frame Prop Feature Cache General	Annotation Grou Data Frame		ent Indicators ate System	Frame Siz	e and Position Grids
Properties"	Reference grids an	e drawn on top of the	e data fram		only. New Grid	
window will				E	<u>R</u> emove Grid	
appear.					Properties vert To Graphics	
And "UTM36S"						
grid appers in the						
rectangle.						
The check mark						
means "Show" and "Hide" the grid.						
mue une ginu.			[OK	キャンセル	適用(A)

So you can create the other grids for example "Graticule" similar as the "UTM36S". If

you create the others, they will appear in the rectangle.

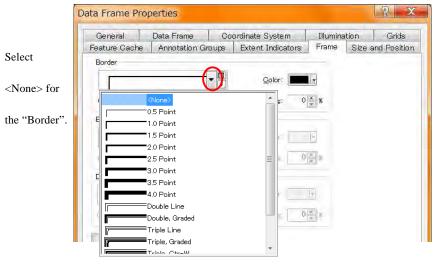
"UTM36S" is	Data Frame Properties
01101303 18	Feature Cache Annotation Groups Extent Indicators Frame Size and Position
highlighted If not	General Data Frame Coordinate System Illumination Grids
highlighted. If not	Reference grids are drawn on top of the data frame in Layout view only.
single slight on the	VUTM36S New Grid
single click on the	Remove Grid
name. After	Style
name. After	Properties
highlighting Click	Convert To Graphics
highlighting, Click	
"Due a suti su?"	
"Properties"	
hutton	
button.	
The "Reference	
The Reference	
Sustan Duanantias"	
System Properties"	
window will	OK キャンセル 適用(A)
willdow will	
	Reference System Properties
appaer.	
There is no default	Axes Labels Lines System Intervals
There is no default	Major Division Ticks
tah :t m:11 anan aa	V Top Left V Bottom V Right
tab it will open as	Symbol:
the same tab last	Display Display of the dataframe Tick size: 5.00 pts
the same tab last	
time you used	Subdivision Ticks
time you used.	Top Left Bottom Right
Ca ta "Labala" tab	Use 0 subdivisions
Go to "Labels" tab.	
	Symbol:
	Display ticks outside of the dataframe Tick size: 2.00 to pts
	Outside to the second s

		Select options as			
Axes Labels Lines System Int	tervals	you like.			
Label Axes		5			
Top Left	Bottom Right	This example			
Label Style		This example			
Format: Mixed Font	.*	selects "Additional			
Font: Times New Roman		Properties" and			
Size: 10.8 •	B I U Label Offset: 6 pts	remove check			
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ОК	キャンセル 適用(A				
	Grid Label Properties				
	Grid Label Properties	<u>? x</u>			
fter Ccicking "Additional roperties" button, the "Grid	Grid Label Properties	<u>? x</u>			
fter Ccicking "Additional roperties" button, the "Grid abel properties" window	Grid Label Properties Mixed Font Label Group by decimal point Specify the number of digits in a Secondary Font Name: MS UI Gothic	a group			
fter Ccicking "Additional roperties" button, the "Grid abel properties" window ill appear. Select "Specify	Grid Label Properties Mixed Font Label @Group by decimal point @Specify the number of digits in a Geondary Font	<u>? x</u>			
fter Ccicking "Additional roperties" button, the "Grid abel properties" window ill appear. Select "Specify e number of digits in a	Grid Label Properties	a group			
fter Ccicking "Additional roperties" button, the "Grid abel properties" window ill appear. Select "Specify e number of digits in a rooup". Click the "Number	Grid Label Properties Mixed Font Label Group by decimal point Specify the number of digits in a Secondary Font Name: MS UI Gothic Size: 4.8 • B Color:	a group			
fter Ccicking "Additional	Grid Label Properties Mixed Font Label Group by decimal point Specify the number of digits in a Secondary Font Name: MS UI Gothic Size: 4.8 • B Color:	a group			



Feature Cache	Annotation Gr	oups	Extent Indicator	s Frame	Size a	ind Position
General	Data Frame	Co	ordinate System	Illumina	ition	Grids
Reference grids a	re drawn on top of :	the data	frame in Layout vie	w only.		
IUTM36S				New Grid	1	
				Remove Grid		
				Style		
				Properties	-	
			Co	nvert To Grap	nics	

After returning to the "Data Frame Properties" window, go to the "Frame" tab.



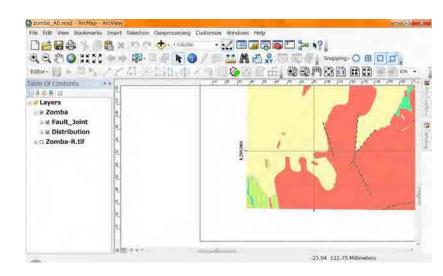
General	Data Frame	Coord	inate System	Illumination	Grids
eature Cache	Annotation Gr	oups E	xtent Indicators	Frame Size	e and Position
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		-	Gálor	F	
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Drop Shadow					
		•	Cojór	1	
Offset X 1	5 prs 🖄 -	15 pts	Roundine 0	ж	
Draft mode - i	ust show name				

Click "OK" for the final.

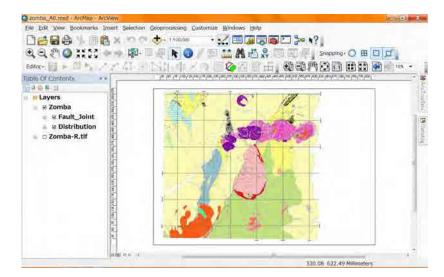
See the edge of the map in your layout view.

There might be some grid lines and UTM numbers which writen with thousand

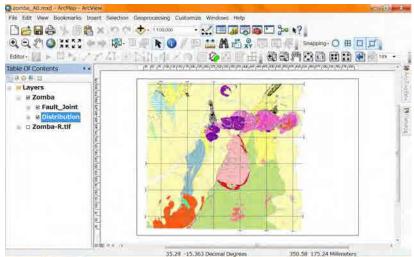
separator.



You use "Zoom Whole Page", you can see the Whole Map.

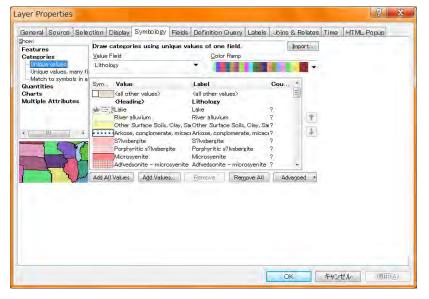


1-8. Set the Geo_ID for each geologic unit in the Map



Double click on the name of polgon layer (Distribution).

The "Layout Properties" window will appear. Tab "Symbology" may be selected.



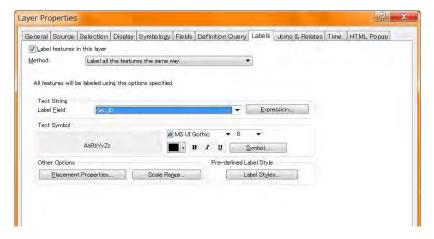
Select the tab "Labels".

	es in this layer
Method: All features w	Label all the features the same way.
Text String Label Eield:	
Text Symbo	AsBbYyZz Ø/MSUTGothic ▼ 8 ▼ AsBbYyZz Ø/S
Other Optio	ns Pre-defined Label Style nent Propertijes Label Styles

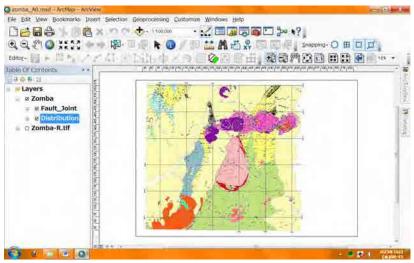
Add a check mark for "Label features in this layer". Select "Geo_ID" for the "Label

Field" in the "Text String". There are 2 "Geo_ID"s in the selecter, the first one is

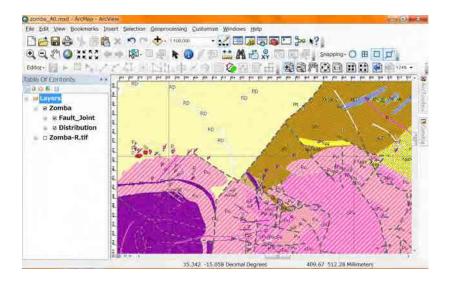
better.



You can change the size and font of these text as you like. After setting click "OK".



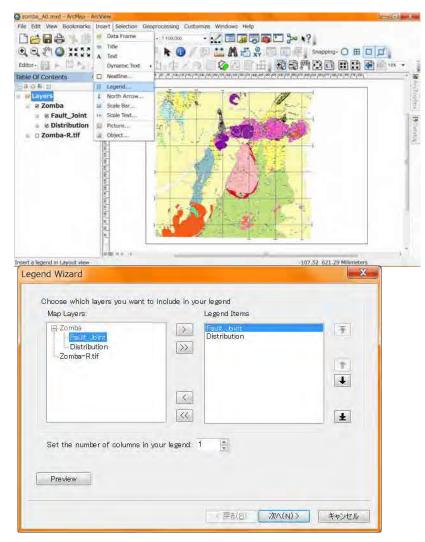




2. Additional parts of the Layout View

2-1. Legends for the Map

For adding legends, you select "Legend" from "Insert" in the "Main Menu" tool bar.



The "Legend Wizerd" window will appear. This manual select "Distribution" as the

polygon shape file. So we like to remove "Fault_Joint" from Legend Items.

Select "Fault_Joint", it will highlight. Then click single left arrow. It will remove.

Vap Layers:	nt to include in your legend Legend Items	
Zamba Paul Print Distribution Zomba-R tif	Fault bint Distribution	7 4
Set the number of column	e in your legend: 1	-
noose which layers you wa Map Layers:	nt to include in your legend Legend Items	
	> Distribution	
E Zomba Fault_Joint Distribution		Ē
		7 1 1

Set the number of cloumns in your legend. This example selects 2.

E Zomba Fault_Joint Distribution Zomba-R.tif	> Distribution >>	Ŧ
	<	1
		<u>±</u>
Set the number of columns	in your legend: 💈 🚊	

Click "Next". The contents of the window has changed.

Legend Wizard Legend Title Legend	×
Legend Title font properties Color: Size: 24 Font: OMS UI Gothic B I U Preview	Title Justification You can use this to control the justification of the title with the rest of the legend.
	《 戻る(日) Next (N) > キャンセル

Edit the title of legend and select size, font of this text. Then click "Next".

Legend Wizard	X
Legend Frame	
Border	
× ;	
Background	
Drop Shadow	
Gap <u>R</u> ounding	
10.00 👘 🕺	
Preview	
	< 戻る(旦) Next (N) > キャンセル

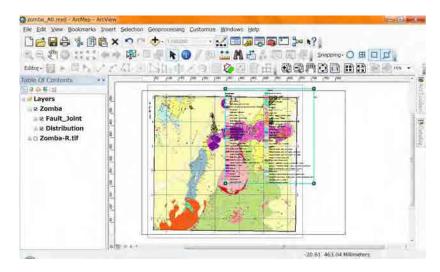
My recommendation is "Null" for these 3 options. After selection click "Next".

and polygon features in your legen	e of the symbol patch used to represent line d. /hose patches you want to change.
Legend Items:	Patch
Preview	Width: 48.00 (pts.) Height: 24.00 (pts.) Line: • Area: •

You can select the size and type of Patch. Click "Next".

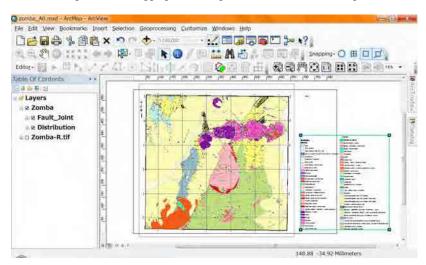
And you can set the intervals between each unit. Click "Finish".

Spacing between: Title and Legend Items: Legend Items: Columns: Headings and Classes: Labels and Descriptions:	8.57 8.57 8.57 8.57 8.57	(pts.) (pts.) (pts.) (pts.) (pts.)	Legend Item 2 Label desor/ption Label desor/ption Label desor/ption Label desor/ption Label desor/ption Label desor/ption Label desor/ption Label desor/ption Label desor/ption Label desor/ption
Patches (vertically) Patches and Labels:	8.57 8.57	(pts.) (pts.)	
Preview			

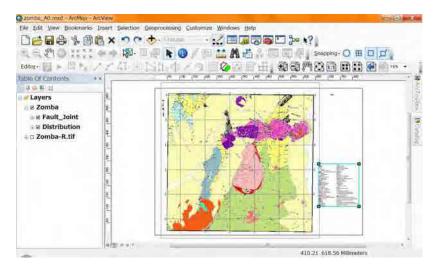


The legend appears. You can move as you like.

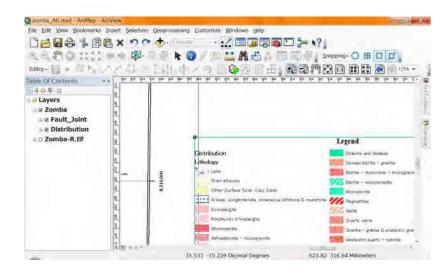
You can change the Size dragging the rectangle where is the corner of Legend.



See in detail.



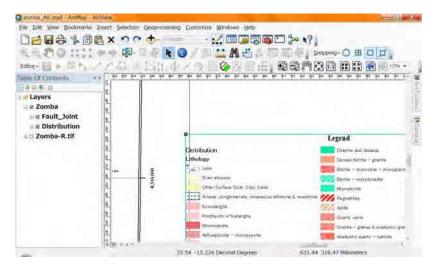
Use zoom in for the paper.



It is no need that the letters "Distribution" and "Lithology". In this case use "Select

Elements". Double click or right click on the legend (if you did right click, select

"properties".



end Items Frame S Specify Legend Items	ize and Position	
Map Layers:	Legend Items:	
E-Zomba	Distribution	* *
Distribution	>>	+ +
Zomba-R.tif		
	_	<u>S</u> tyle
	<	Place in new column
	<<	Columns: 2 *
Change text		
	d item(s)	
Apply to the whole item	s nam(s)	▼ Symbol
(1) F.F. (F. 1997) 15, Souther Street		
Map Connection	and the second second	and the second
Only display layers that		
Add a new item to the		
Keorder the legend ite	ms when the map layer reference scale is set	s are reorgered
Caste statistical and have a		

The window appears. If "Item" tab is not selected, select "Item" tab.

After highlighting the layer name (Distribution) click "Style" Button.

egend Item Selector			(0.10-1)	×
Legend	Legend Heading	*	Preview	
Label Description			hite	
Geo_Distribution001	Horizontal Bar with Headins, Labels, and Description			
Legend	Legend			
Description	Label			
Horizontal Sinsle Symbol Description Only	Horizontal Single Symbol Label Only			
Legend	Legend			
Layer Name Description	Layer Name		Properties	_
Horizontal Single Symbol Layer Name and Description	Horizontal Single Symbol		More Styles	
Legend	Legend		Save Reset	
Usedian	Usadian	•	OK Cancel	

You can select from the selector. Or you can set each option by yourself using the

"Properties" button.

Appearance Show Layer Name Layer Name Symbol	Show Labels
Show Heading	Show Descriptions
Heading Symbol	Description Symbol.
Override default patch	Override default patch size
Line:	Width: 36 pt
Area:	Height: 24 pt
Only show classes from this head	ine Lithology 🔹
Prevent item from being split a	across legend columns

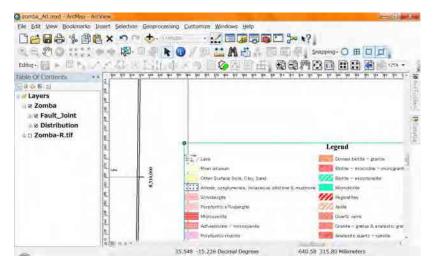
"Distribution" is the layer name. remove check mark of "Show Layer Name".

"Lothology" is the Heading. Remove check mark if "Show Heading".

Then "OK".	Legend Item Selector				
Inen OK .	Legend Lee Description Geo_Distribution001 Legend Horizontal Single Symbol Description Horizontal Single Symbol Legend	Horizontal Bar with Heading, Labels, and Description	111	Preview	
	Layer Name Description	Layer Name		Prope	
	Horizontal Single Symbol Layer Name and Description	Horizontal Single Symbol n Layer Name and Label		More	Styles *
	Legend	Legend		Save	Reset
	(Canadiana	Usedlas	-	OK	Cancel

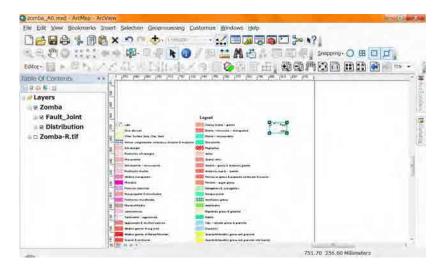
egend Items Frame Siz	e and Position	
Specify Legend Items	Legend Items:	
Map Layers: Zomba Faul Joint Distribution Zomba-R.tif	cegena terms: Distribution	Style Place in new column Columns: 2
Change text All items Selected Apply to the whole item		Columns: 2 x
Add a new item to the l	are checked on in the Table Of Co agend when a new layer is added is when the map layers are reordo aference scale is set	to the map
Scale symbols when a r	ererence scale is set	

"OK". They will hide.



You can put the legend not only one.

Do similar way for the Polyline Shape File (Fault_Joint).



After creating the legends you can dhange many options later using Right click,

Properties.

Like this way, you can change the legend as you like.

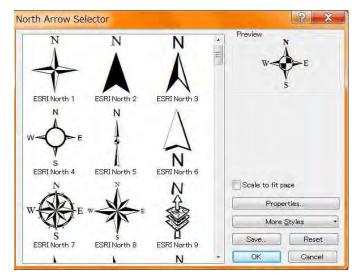
2-2. North arrow for the Map

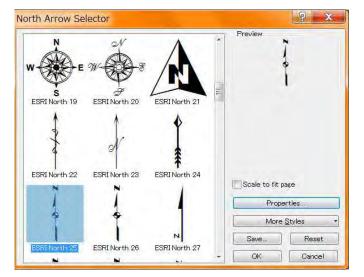
You can add the north arrow in your map, using "Insert", "North Arrow" in your

"Main Menu".

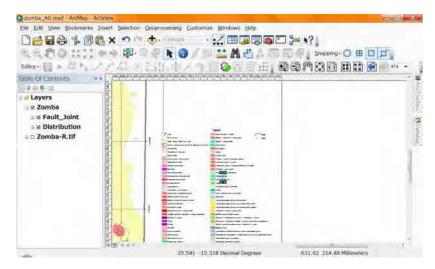


You can select one from the list.





Click "OK". It will appear in your map.

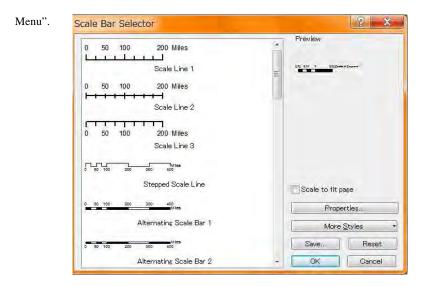


You can change the place and size of the north arrow as you like.

This example selects "ESRI North25"

2-3. Scale bar for the Map

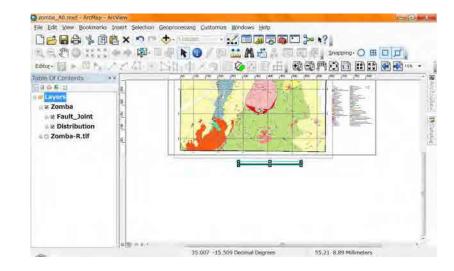
You can add the scale bar for your map also, using "Insert", "Scale Bar" in your "Main



You can select one from the list. Many options you can change using "Properties"

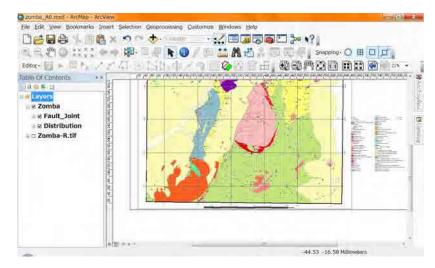
button. This example selects Double Alternating Scale Bar 2".

		Preview	
100	~		
Miles			
Single Division Scale Bar			•
0 50 100 200 300 400			
Hollow Scale Bar 1			
100 50 6 100 500 400 ET ET E	111		
Hollow Scale Bar 2			
0 50 100 200 300 400 Junes			
Double Alternating Scale Bar 1		Scale to fit ;	age
<u>1111111111111111111111111111111111111</u>		Prop	erties
Double Alternatine Scale Bar 2		More	<u>S</u> tyles
0 50 100 200 Kilometers		Save	Reset



The scale bar appears. After appearance, you can change the size, position, properties

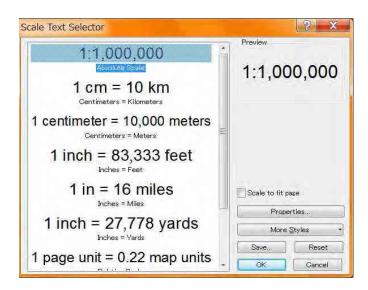
as you like.



2-4. Scale text for the Map

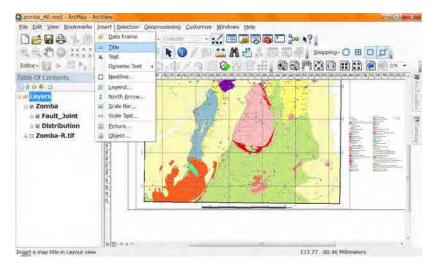
You can add the scale bar for your map also, using "Insert", "Scale Bar" in your "Main

Menu". You can select one from the list. Camba A0.mxd - ArcMap - ArcViet File Edit View Bookmarks Insert Selection Geoprocessing Customize Windows Help 🗋 😂 🔂 🎲 🏥 🤎 Data Frame R.R. E. O IIII - Ide 🔭 🕕 / 🖽 🛗 🖧 🖏 🗔 📖 🖓 Snapping- O 🖽 🛄 🖽 Editor - Dynamic Text + Table Of Contents Nestine .. 8.9 AL I Legend. Layers & North Arrow. Zomba 14 Scale Bar Re Fault Joint m Scele Text ■ 2 Distribution Ectare. a Zomba-R.tif Object. Insert a text description of the scale in Layou 35.227 -15.445 Decimal Degrees 292.39 81.80 Millimeters



2-5. Title for the Map

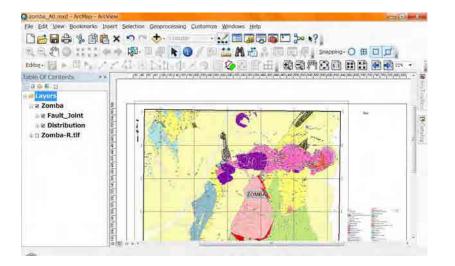
You can add the title for your map also, using "Insert", "Title" in your "Main Menu".



The new window for inserting a title. Input the title for your map. This example inputs

"ZOMBA". Click "OK" it will appear.





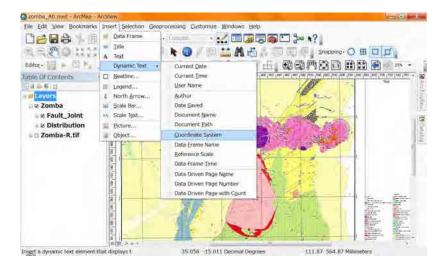
You can change the size, position, properties as you like.

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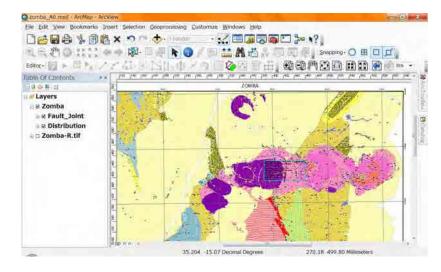
2-6. Coordinate system for the Map

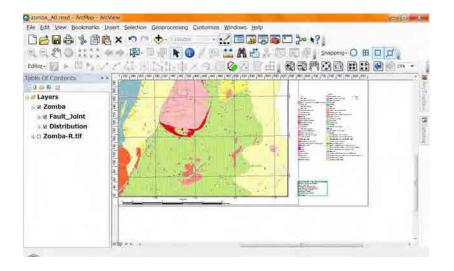
You can add the Coordinate system for your map also, using "Insert", "Title" in your

"Main Menu".



The texts of its Coordinate system in your map. You can move anyplace as you like.

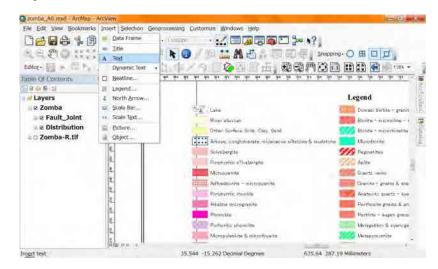




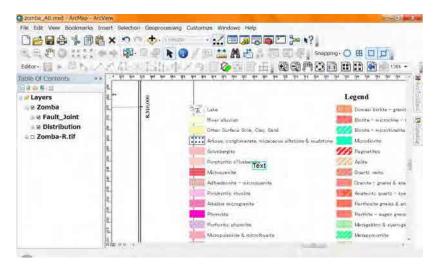
2-7. Text for the Map

You can add any text on your map. In this example we put "Geo_ID" on the Legend of

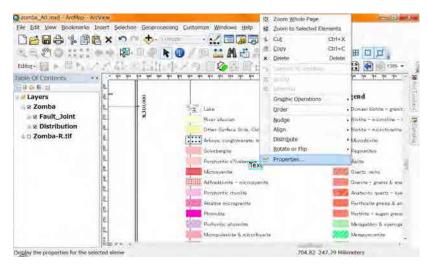
map. From main menu select "Insert", "Text".



A "Text" will appear.



On the rectangle of "Text" right click, select "Properties".



The "Properties" window will appear. Go to "Text" tab.

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Angle: 0.00	Character Spacing: 0.00
	Leading: 0.00
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You can change the contents of the "Text", Font, Size, others. Some options will

change using "Avout Formatting Text" or "Change Symbol" button.

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The text has changed.

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You can move any place using "drag".

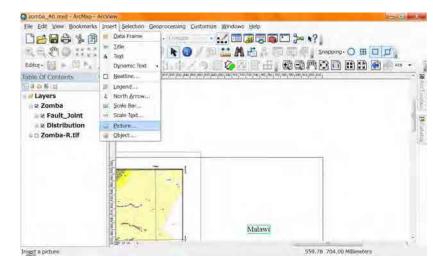
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Do same way for the other lithologies also.

2-8. Picture for the Map

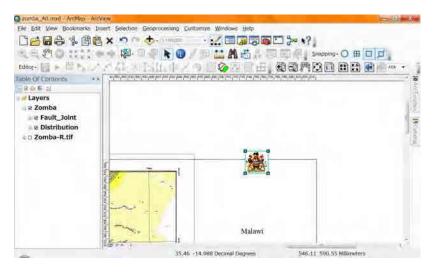
You can add images (type as GIF, TIF, JPG, BMP, etc.) on your map.

Probably you can understand where you start for the inserting a picture.

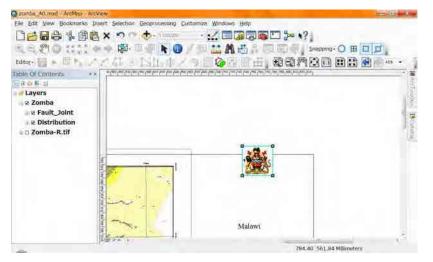


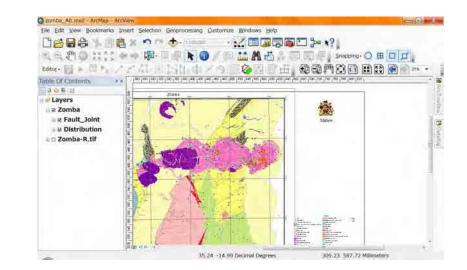
Select the file of picture which you like to inset.





The picture will appear. You can change the size by the dragging corner rectangle.





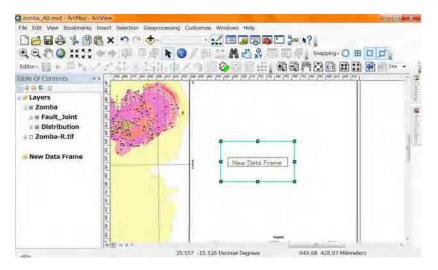
2-9. Additional Data frame

In your map you can put not only one "Data frame". In this example the other "Data

Frame" is put as the index map.

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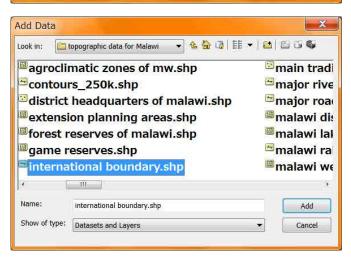
Select from main menu, "Insert", "Data Frame".



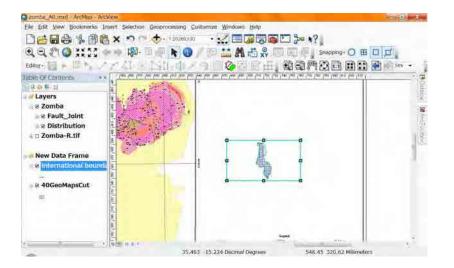
The empty "New Data Frame" will be there.

Add data for the "New Data Frame".

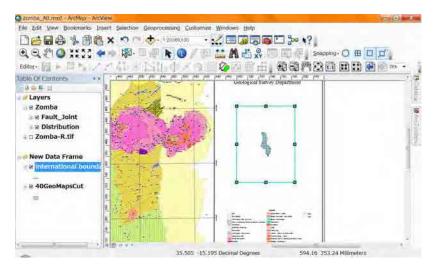
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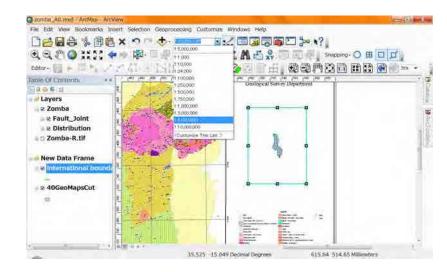
These maps will appear in the "New Data Frame".



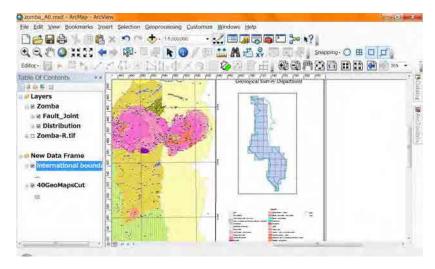
Set the position and size of the "New Data Frame".



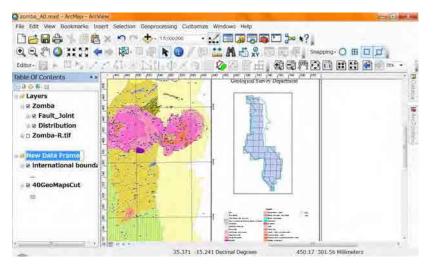
Set the scale for the "New Data Frame". Watch carefully which data frame is selected.



Select good sacale.



You can set all options about "New Data Frame", include the name.



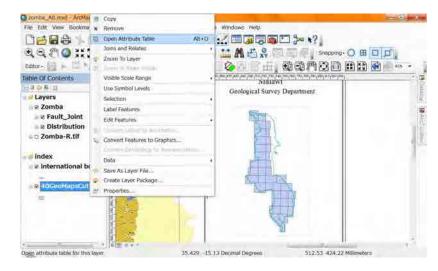
This time input "index" for the "New Data Frame".

Set the other options as you like.

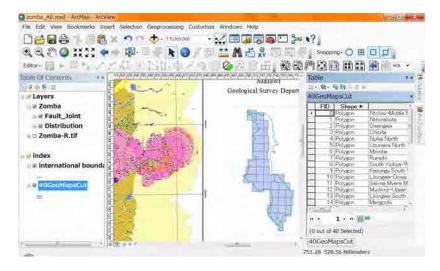
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After settings of all options, right click on the layer name of Maparea

(40GeoMapsCut).



Select "Open attribute Table". The "Table" window will appear.



Select the line that your map area (Zomba).

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Right click on the layer name (40GeoMapsCut), select "Properties".

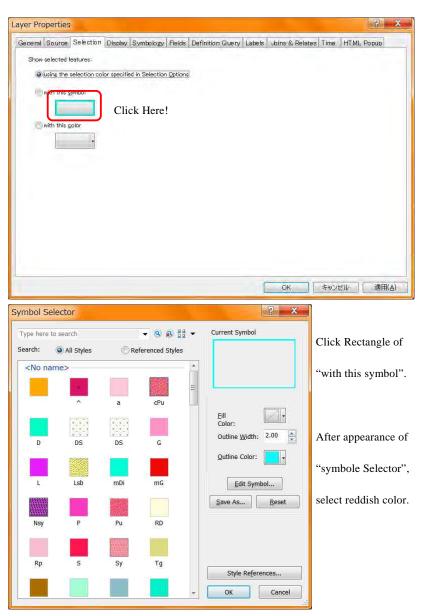
And select "Symbology" tab.

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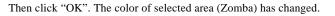
Set color light gray (20%)

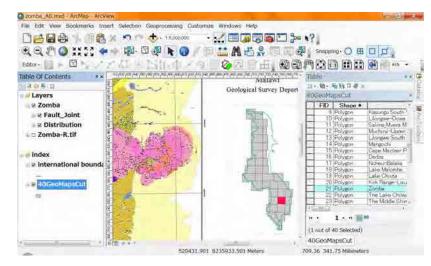
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Select "Selection" tab.



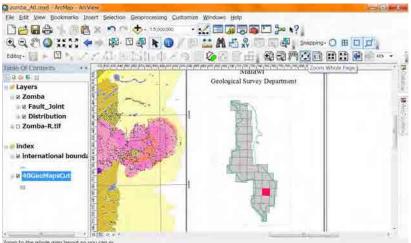
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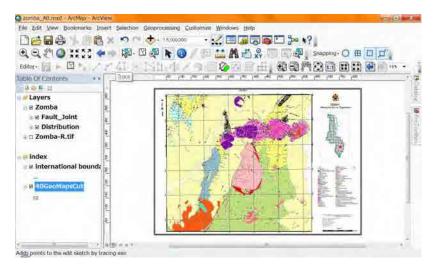
Close the "Table" window.

Use "Zoom whole Page".



Zoom to the whole map layout so you can se

You can see the whole map.



3. Print out

4-1. Printing method

There are 2 kinds of method for printing maps. One is through Local Area Network (LAN). The setting of LAN is severe and nervous. The connection may be cut easilly. It is not steady method. Another method is using USB flash memory. In your computer printed data is saved to the memory, you carry and put it to the big printer(T2300-HP). This manu reccomends.

Save the data (Export Map) **4-2**.

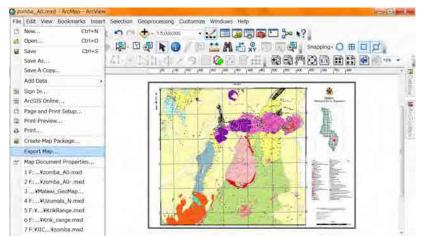
Prepair the USB flash memory for the printing. Put it into your USB slot in your

computer. In your computer display you might see the USB flash memory. Comfirm it.



After comfirming, go to "ArcMap", comfirm the layout view. Then select "File",

"Export Map" in the main menu.



The "Expot Map" window will appear. Select the location of the USB flash memory.

It should be in the "computer".

Set the resolution. This munual recommends 300 – 600 dpi.

You set the higher dpi, the size of file is the bigger.

For the training 300 dpi enough. And set the file name, then click "Save". It will be

saved.

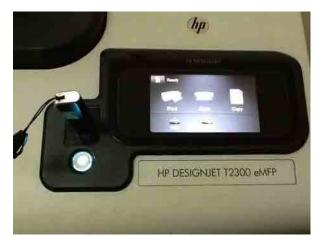
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4-3. Print at the big printer (T2300-HP)

Turn on the printer.



Put your USB flash memory form your PC into the big printer (T2300-HP).



Select print.



Select USB Drive



Select the file name you saved.



Start



4. Layer file

4-1. Outline of the layer file

MXD file saves data that the location of shape file, the symbology, etc.. But it is limited in the file. If you like to use these combinated shape files and their colors, it is good for the layer file.

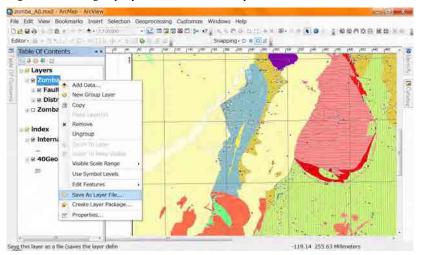
It contains these following data in the layer file.

- * Name and relative locations of shape files.
- * Symbology (Color setting) of each shape file
- * Combination of shape files.
- * Layer groups. ,etc.

You can save these data as a layer file.

4-2. Save as a layer file

Right click on the group layer. Select "Save as a layer file".



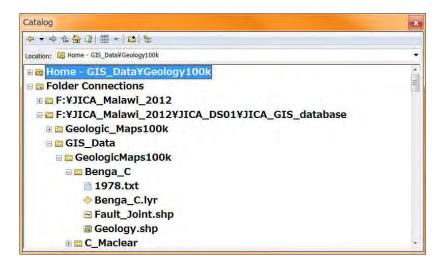
The window has appeared.

Save Layer					X
Look in:	Zomba	*	€		205
Zomba	.lyr _Color.xls				
Name:	Zomba.lyr				Save
Save as type:	Layer files (*.lyr)			 •	Cancel

You select the location of the layer file. For your remainding it is good the location is

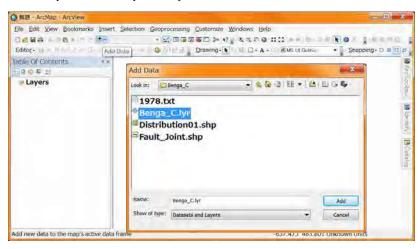
same as these shape files (Fault_Joint, Distribution).

After setting the file name, click "Save".

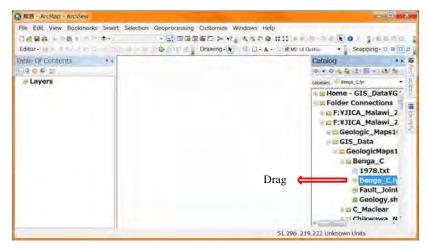


4-3. Add a layer file

Add the layer file same way as a shape file.



or



₩ □ 巻末資料 6 GIS データベース管理のマニュアル

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Edition 0.3

Administration Manual

for the Database HDD

JICA-GIS Project 2012

At GSD Zomba



1. Equipment

The GIS database is saved in 2 Hard disk drives connected Local Area Network, those have been provided. The purpose of 2 drives is the protecting from accidental deletes or unexpected changes. One drive is for saving, another is for backup. Usually one drive for saving is turned on and used. The GIS database update is permitted only the administrator who is nominated by the director of GSD, the administrator has to copy the update data from the drive for saving to another backup drive soon. The database users have to copy necessary data from the drive for saving to each PC for analyzing the data or creating maps.

Buffalo technology Link Station Duo LS-WV 4.0TL/R1



2. Structures

2.1 Structure of Local area network

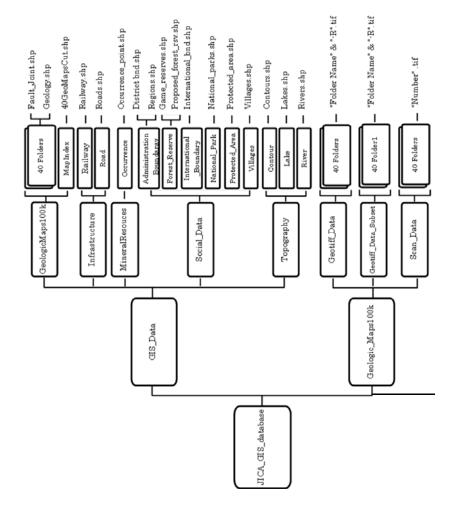
Hard disk drives connected Local Area Network. IP addresses in the network are shown in the table.

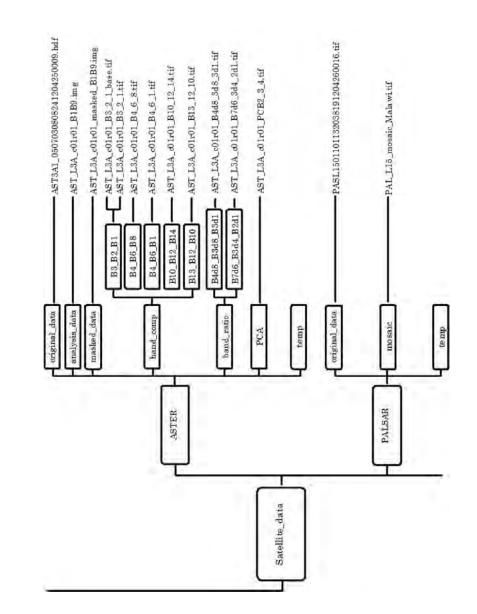
IP and MAC Address of PC, HDD and Printer

Host Name	Item	IP Address	MAC Address
JICA-PC01	Computer	192.168.1.51	E0-69-95-D0-11-C3
JICA-PC02	Computer	192.168.1.52	E0-69-95-FA-2A-F2
JICA-PC03	Computer	192.168.1.53	38-60-77-FA-B8-35
JICA-PC04	Computer	192.168.1.54	38-60-77-FA-B6-6D
JICA-PC05	Computer	192.168.1.55	38-60-77-FA-B6-77
JICA-DS	HDD	192.168.1.101	4C-E6-76-FD-10-CE
JICA-DS_BACKUP	HDD	192.168.1.102	4C-E6-76-FD-1B-6F
Т2300-НР	A0 Printer	192.168.1.103	EC-9A-74-64-40-42
HP-K8600	A3 Printer	192.168.1.104	00-1C-C4-F3-5F-96

2.2 Structure of Directories

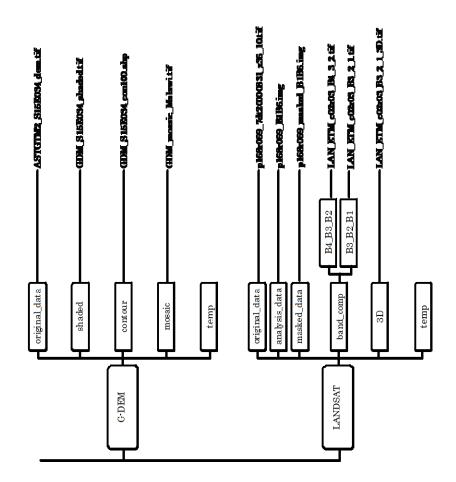
The name of root directory (top folder) is "JICA_GIS_database". There are three sub directories, "GIS_Data", "Geologic_Maps100k" and "Satellite_data" under the root directory.





~ 3 ~

~ 4 ~



3. Operating

3.1 Outline

Only one drive (JICA-DS) for saving is usually turned on and used. Only the administrator who is nominated by the director of GSD can update GIS database in the drive for saving and immediately has to copy the update data to another drive (JICA-DS_BACKUP) for backup. The database users have to copy necessary data from the drive (JICA-DS) for saving to each PC and then will process the data or create maps.

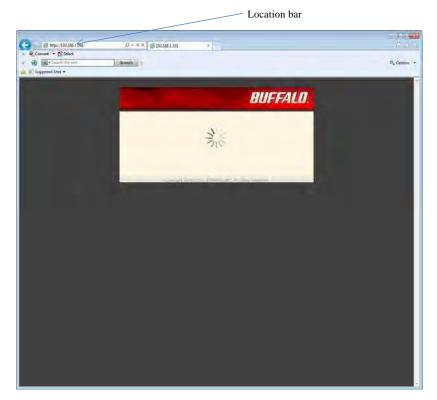
3.2 Administration of HDD

For the administration of HDD (JICA-DS or JICA-DS_BACKUP), the internet explorer will be used connecting each HDD from PC.

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After starting the internet explorer, enter the address to the location bar. For connecting to the JICA-DS, the address is "http://192.168.1.101/". For connecting to the JICA-DS_BACKUP, the address is "http://192.168.1.102/".

Then press the enter key.





Enter user name and its password. After then click "login". After login, you can administrate each HDD.

After a few seconds, the page requests the user name and password.

The default user name and its password were known by the director of GSD.

3.3 Usage of database

The database users have to copy necessary data from the drive (JICA-DS) for saving to each PC and then will process the data or create maps. For copy those data you have to connect JICA-DS using the network (Local Area Network). Click JICA-DS in the "Network" in the windows explorer.

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The folder named "JICA_GIS_database" will appear. Click it.

The small window named "Windows Security" will appear and the window requests the username and its password. The default username and its password are same as "3.2 Administration of HDD" and director of GSD knows them.

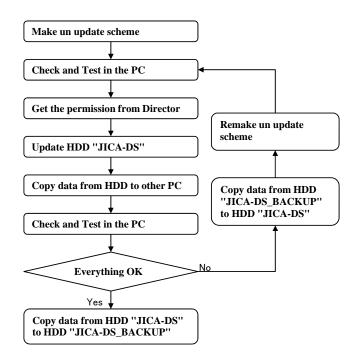
1000	password to connect to: JICA_DS	
1	User name	
	Password	
	Domain: JICA-PC05	
8	Access is denied.	-

Enter username and password. If those are collect, you can open the folder. In the folder, there are three sub directories, "GIS_Data", "Geologic_Maps100k" and "Satellite_data". You will copy your necessary data to your computer referring the figure of Structure of Directories (page 3-5).

When you finish the copying data, turn off the HDD (JICA-DS) before you use those data.

3.4 Update database

Before the updating database, the HDD "JICA-DS" and one PC are turned on their power, and are connected to the LAN (Local Area Network). Updating the database has to be followed the following flow chart.



There are 3 important matters on the updating.

The first is a getting permission. This database is one of GSD's assets. For updating it is necessary to get director's permission. The 2nd is "Check and Test". For the protecting data lose, "Check and Test" shall be done safely. The last is "Backup". There is a backup HDD named "JICA-DS_BACKUP". When the HDD "JICA-DS" is updated successfully, all data shall be copied to the HDD "JICA-DS_BACKUP".

3.5 Restore database

There is a backup HDD named "JICA-DS_BACKUP" for the protecting from accidental deletes or unexpected changes. The data stored in the HDD named "JICA-DS_BACKUP" is completely same as the data stored in the HDD named "JICA-DS".

The HDD "JICA-DS_BACKUP" is not turned on its power usual, when it is necessary to restore data in the HDD "JICA-DS it will be turned on the power.

Before the restoring database, two HDD ("JICA-DS" and "JICA-DS_BACKUP") and one PC are turned on their power, and are connected to the LAN (Local Area Network). The restoring database is executed on the following steps.

- 1. Check the existing data in the HDD named "JICA-DS_BACKUP"
- 2. Delete all data in the HDD named "JICA-DS"
- Copy all data from the HDD named "JICA-DS_BACKUP" to the HDD named "JICA-DS"