

Making Maps Make Themselves

The automated creation of daily
temperature and precipitation maps

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ILGISA Spring Conference
April 20, 2011

FIRST:

- What do we have to start with?
 - NWS Co-op Stations Textfile
 - AHPS 4km x 4km Shapefiles
- What do we want to end with?
 - 8 maps (.png)
- Where is everything going to go?
 - The 'magic' computer (Z:\)

Input textfile.

COOPID,	Date,	Latitude,	Longitude,	Elev,	Tmax,	Tmin,	Tmean,	Precip,	Snow,	SnowDepth,	GDD,	HDD,	CDD,
030064,	'2011/01/19',	35.92889,	-91.05833,	252,	47.0,	29.0,	38.0,	0.00,	-99.0,	-99.0,	0,	27,	0,
030220,	'2011/01/19',	34.14333,	-93.05889,	196,	48.0,	38.0,	43.0,	0.00,	-99.0,	-99.0,	0,	22,	0,
030286,	'2011/01/19',	33.61944,	-94.09944,	320,	55.0,	38.0,	46.5,	0.00,	-99.0,	-99.0,	0,	18,	0,
030300,	'2011/01/19',	34.32528,	-93.98111,	960,	-99.0,	-99.0,	-99.0,	0.00,	-99.0,	-99.0,	-99,	-99,	-99,
030458,	'2011/01/19',	35.83056,	-91.79444,	571,	44.0,	29.0,	36.5,	0.00,	-99.0,	-99.0,	0,	28,	0,
030460,	'2011/01/19',	35.76000,	-91.63889,	290,	46.0,	30.0,	38.0,	0.00,	-99.0,	-99.0,	0,	27,	0,
030616,	'2011/01/19',	36.42944,	-93.62556,	1180,	-99.0,	-99.0,	-99.0,	0.00,	-99.0,	-99.0,	-99,	-99,	-99,
030664,	'2011/01/19',	34.46194,	-93.99833,	1200,	49.0,	29.0,	39.0,	0.00,	-99.0,	-99.0,	0,	26,	0,
030764,	'2011/01/19',	34.56972,	-93.19472,	426,	-99.0,	-99.0,	-99.0,	0.04,	-99.0,	-99.0,	-99,	-99,	-99,
030798,	'2011/01/19',	35.11611,	-93.65056,	426,	-99.0,	-99.0,	-99.0,	0.00,	-99.0,	-99.0,	-99,	-99,	-99,
030830,	'2011/01/19',	35.09306,	-93.92583,	600,	46.0,	26.0,	36.0,	0.00,	-99.0,	-99.0,	0,	29,	0,
030832,	'2011/01/19',	35.09306,	-93.92583,	600,	46.0,	26.0,	36.0,	0.00,	-99.0,	-99.0,	0,	29,	0,
030936,	'2011/01/19',	34.88222,	-91.21528,	185,	49.0,	34.0,	41.5,	0.00,	-99.0,	-99.0,	0,	23,	0,
031102,	'2011/01/19',	34.98167,	-92.00639,	300,	51.0,	33.0,	42.0,	0.00,	-99.0,	-99.0,	0,	23,	0,
031132,	'2011/01/19',	36.10917,	-92.16361,	350,	44.0,	30.0,	37.0,	0.00,	-99.0,	-99.0,	0,	28,	0,
031140,	'2011/01/19',	33.31111,	-92.48500,	100,	53.0,	40.0,	46.5,	0.01,	-99.0,	-99.0,	0,	18,	0,
031152,	'2011/01/19',	33.59000,	-92.82361,	116,	52.0,	39.0,	45.5,	0.00,	-99.0,	-99.0,	0,	19,	0,
031191,	'2011/01/19',	33.91528,	-91.77111,	260,	52.0,	37.0,	44.5,	0.00,	-99.0,	-99.0,	0,	20,	0,
031442,	'2011/01/19',	34.68000,	-91.22083,	180,	50.0,	34.0,	42.0,	0.00,	0.0,	0.0,	0,	23,	0,
031457,	'2011/01/19',	35.53278,	-93.40361,	850,	41.0,	30.0,	35.5,	0.00,	-99.0,	-99.0,	0,	29,	0,
031459,	'2011/01/19',	35.45639,	-93.44250,	620,	49.0,	32.0,	40.5,	0.00,	-99.0,	-99.0,	0,	24,	0,
031596,	'2011/01/19',	35.08306,	-92.42944,	315,	48.0,	33.0,	40.5,	0.00,	-99.0,	-99.0,	0,	24,	0,
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031730,	'2011/01/19',	33.11111,	-91.94806,	180,	55.0,	39.0,	47.0,	0.00,	-99.0,	-99.0,	0,	18,	0,
031838,	'2011/01/19',	35.23417,	-93.16750,	370,	47.0,	34.0,	40.5,	0.00,	-99.0,	-99.0,	0,	24,	0,
031900,	'2011/01/19',	35.82722,	-93.20444,	2375,	38.0,	23.0,	30.5,	0.00,	-99.0,	-99.0,	0,	34,	0,
031952,	'2011/01/19',	34.10028,	-94.37250,	557,	-99.0,	-99.0,	-99.0,	0.00,	-99.0,	-99.0,	-99,	-99,	-99,
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032020,	'2011/01/19',	34.14750,	-94.08889,	686,	-99.0,	-99.0,	-99.0,	0.00,	-99.0,	-99.0,	-99,	-99,	-99,
032300,	'2011/01/19',	33.22083,	-92.81417,	252,	49.0,	40.0,	44.5,	0.00,	0.0,	0.0,	0,	20,	0,
032355,	'2011/01/19',	33.11444,	-91.26278,	135,	56.0,	41.0,	48.5,	0.03,	-99.0,	-99.0,	0,	16,	0,
032366,	'2011/01/19',	36.07167,	-91.61694,	500,	44.0,	28.0,	36.0,	0.02,	-99.0,	-99.0,	0,	29,	0,
032443,	'2011/01/19',	36.00972,	-94.16944,	1251,	48.0,	27.0,	37.5,	0.00,	0.0,	0.0,	0,	27,	0,
032444,	'2011/01/19',	36.10056,	-94.17444,	1270,	35.0,	26.0,	30.5,	0.00,	-99.0,	-99.0,	0,	34,	0,
032475,	'2011/01/19',	33.05972,	-92.12361,	60,	-99.0,	-99.0,	-99.0,	0.00,	0.0,	0.0,	-99,	-99,	-99,
032528,	'2011/01/19',	36.29083,	-92.59000,	719,	37.0,	28.0,	32.5,	0.00,	0.0,	0.0,	0,	32,	0,
032540,	'2011/01/19',	33.82278,	-92.39889,	230,	52.0,	38.0,	45.0,	0.01,	-99.0,	-99.0,	0,	20,	0,
032574,	'2011/01/19',	35.33306,	-94.36250,	449,	45.0,	24.0,	34.5,	0.00,	0.0,	0.0,	0,	30,	0,
032794,	'2011/01/19',	35.99139,	-92.71472,	620,	43.0,	28.0,	35.5,	0.00,	0.0,	0.0,	0,	29,	0,

Input shapefiles.

National Weather Service
Advanced Hydrologic Prediction Service

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Statistical Models...
MOS Prod
GFS-LAMP Prod
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Past Weather
Predictions
Weather Safety
Weather Radio
Hazard Assmt...
StormReady /
TsunamiReady
Skywarn™
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Information Center

Download

Special Notice (9/17/2010): We discovered a daily shapefiles are correct, but the archived r not be accurate. We have identified the proble have any questions please email [AHPS.Precip](mailto:AHPS.Precip@noaa.gov)

Downloading Gridded Rainfall Data

(1) Choose Format	(2) Select
<input checked="" type="radio"/> Shapefile - Current Data	Current
<input type="radio"/> Shapefile - Yesterday's Data	Last 7 Da
<input type="radio"/> Shapefile - Archive Data	Last 14 D
<input type="radio"/> netCDF	Last 30 D
<input type="radio"/> Full resolution	Last 60 D

General Information

The precipitation data are quality-controlled, n Forecast Centers (RFCs). The original data a stereographic projection true at 60°N / 105°W grid cell.

Use the form above to download these files. A anonymous FTP server is no longer available

If you wish to use wget (see above), single-da http://water.weather.gov/precip/p_download_r

If you have any questions or problems, pleas

Legend:
nws_precip_1day_observed_201...
nws_precip_last7days_observed...
nws_precip_last30days_observed...

Output: 8 Maps.

Coop Network - Temperature

[info](#)



Max Temp



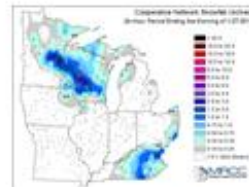
Min Temp

Coop Network - Precipitation

[info](#)



Precipitation



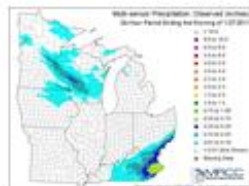
Snowfall



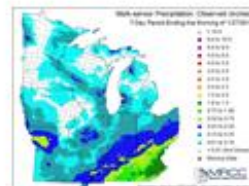
Snow Depth

Multi-sensor Precipitation

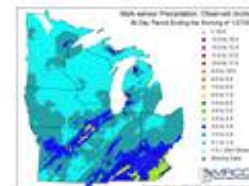
[info](#)



24 Hours



7 Days



30 Days

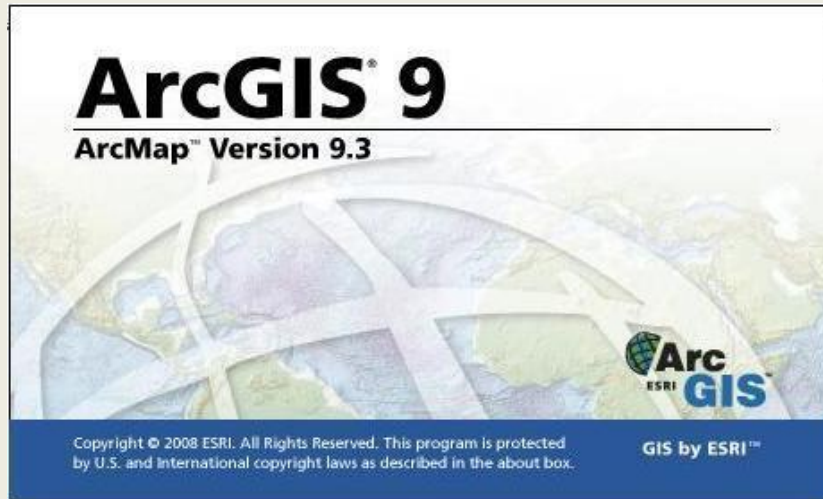
Locations for the starter data and final maps

Name	Size	Date modified	Type
mozilla		5/13/2010 7:48 AM	File Folder
Aug8-11		10/21/2010 11:25 PM	File Folder
frz-input		1/21/2011 10:52 AM	File Folder
grid-input		1/20/2011 5:02 PM	File Folder
Maps		10/14/2010 9:33 AM	File Folder
mpe-input		1/1/2011 10:45 AM	File Folder
soil-input		9/9/2010 11:05 AM	File Folder
str-input		1/28/2011 2:40 AM	File Folder
wind-input		10/14/2010 9:33 AM	File Folder
.bash_history	1 KB	11/23/2010 11:35 AM	BASH_HISTORY File
bash_logout	1 KB	5/13/2010 7:48 AM	BASH_LOGOUT File

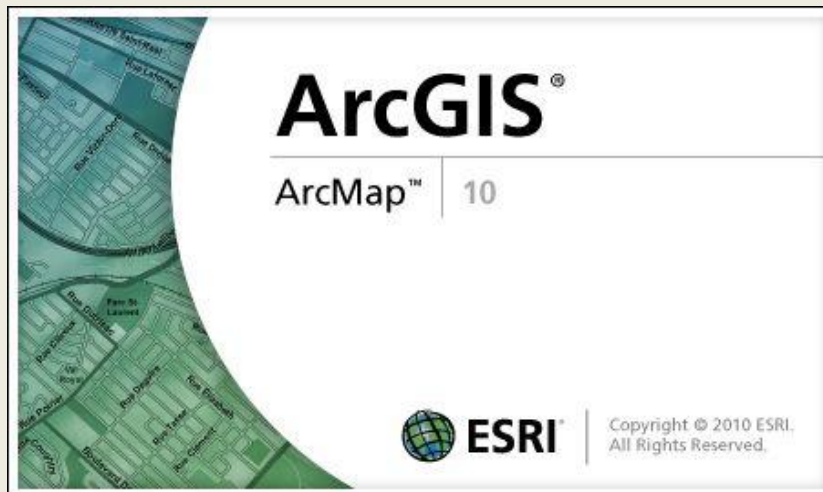
Annotations:

- End (purple arrow) points to Maps
- Start (red arrow) points to mpe-input
- Start (red arrow) points to str-input

Today...

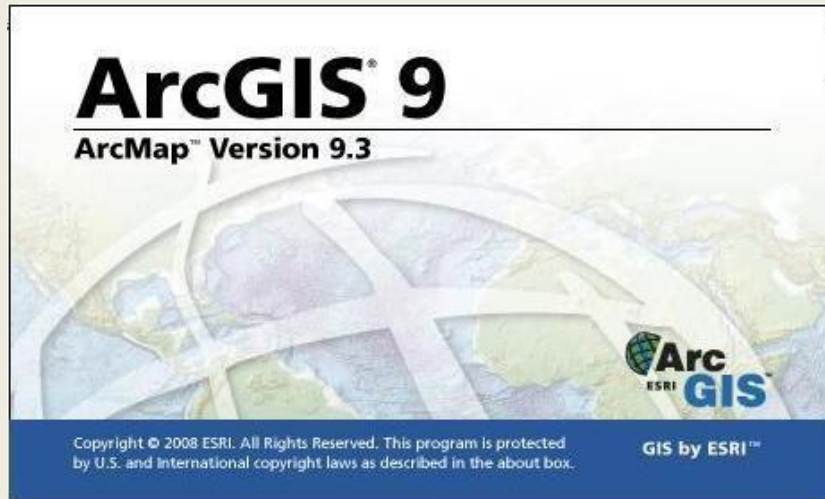


+ VBA



+ arcpy

A year ago...



+ VBA



DOES NOT EXIST!

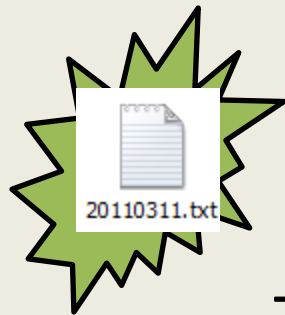
The Basic Workflow:

C:\ 

Z:\ 

The Basic Workflow:

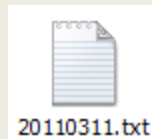
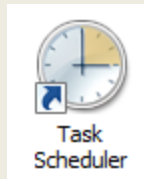
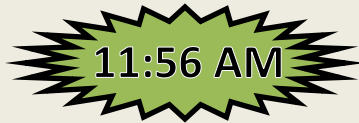
C:\ 



Z:\ 

The Basic Workflow:

C:\

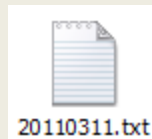
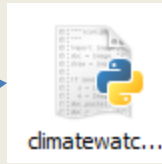
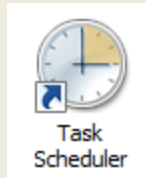
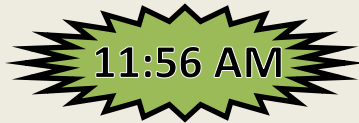


Z:\



The Basic Workflow:

C:\

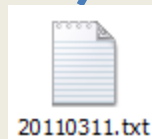
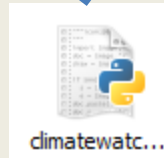
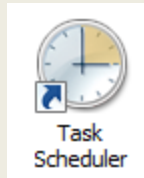
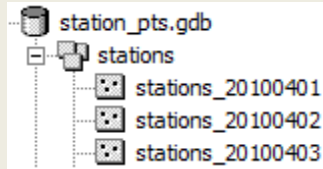


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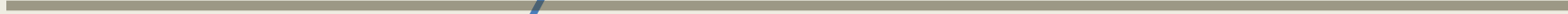


The Basic Workflow:

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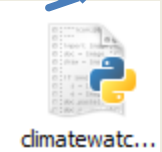
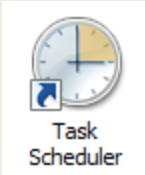
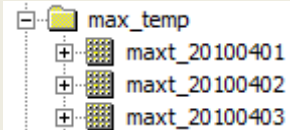
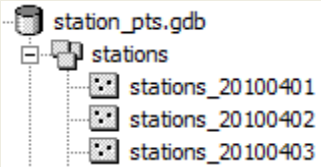


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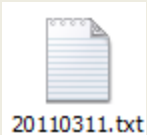


The Basic Workflow:

C:\ 



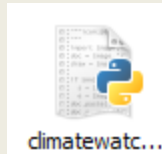
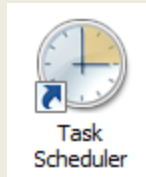
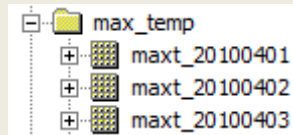
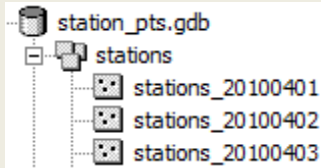
5X



Z:\ 

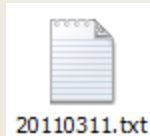
The Basic Workflow:

C:\



3X

☑ nws_precip_1day_observed_201
☑ nws_precip_last7days_observed_
☑ nws_precip_last30days_observed

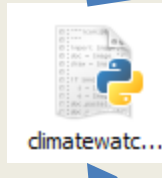
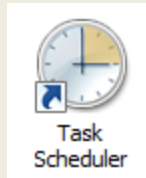
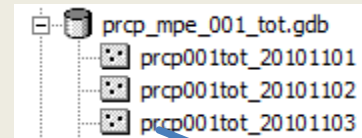
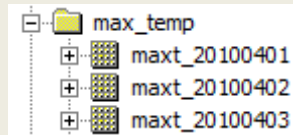
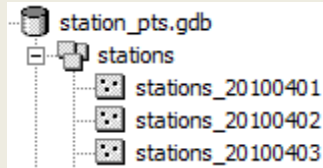


Z:\



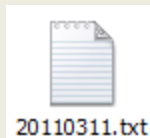
The Basic Workflow:

C:\



3X

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nws_precip_last7days_observed
nws_precip_last30days_observed
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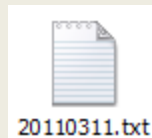
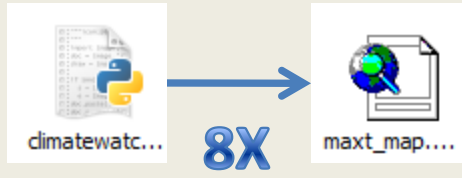
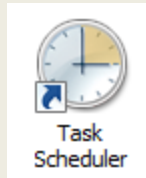
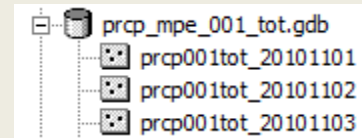
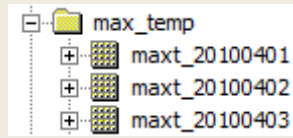
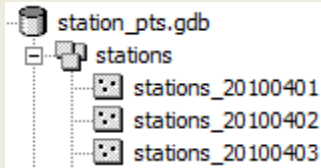


Z:\



The Basic Workflow:

C:\



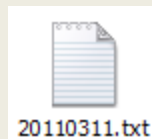
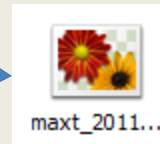
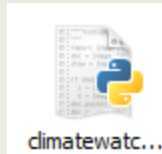
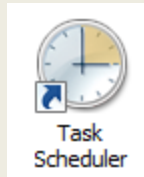
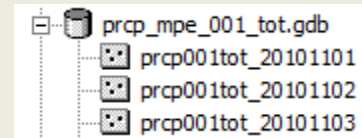
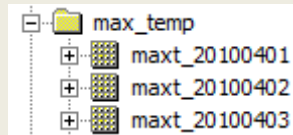
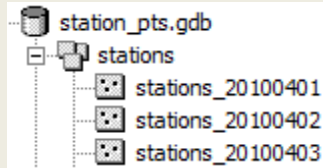
```
nws precip 1day observed 201  
nws_precip_last7days_observed_  
nws_precip_last30days_observed
```

Z:\



The Basic Workflow:

C:\



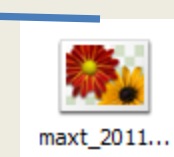
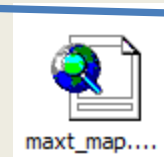
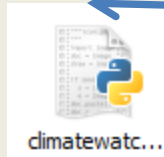
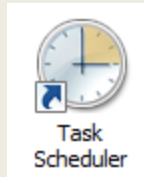
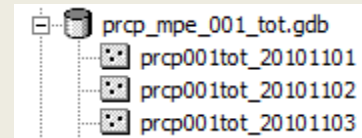
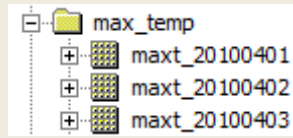
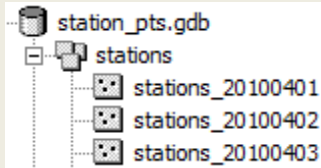
```
nws precip 1day observed 20110311
nws_precip_last7days_observed_20110311
nws_precip_last30days_observed_20110311
```

Z:\

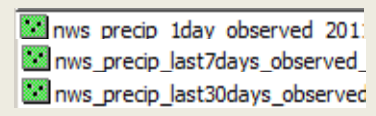
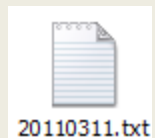


The Basic Workflow:

C:\



8X



Z:\



Kickoff: Task Scheduler



Task Scheduler

File Action View Help

Task Scheduler (Local)
Task Scheduler Library

Name	Status	Triggers	Next
{2EFB8F5C-CE01-4CD1-AE00-4A...}	Ready	When the task is created or modified	
ClimateWatch_fallfreeze	Disabled	At 12:30 PM every day	
ClimateWatch_grids	Disabled		
ClimateWatch_maps	Ready	Multiple triggers defined	4/15/
ClimateWatch_precip_dev-pct	Ready	At 3:00 PM every day - After triggered, repeat every 5 minutes for a duration of 15 minutes.	4/15/
ClimateWatch_soil	Ready	Multiple triggers defined	4/15/
ClimateWatch_springfreeze	Ready	At 12:30 PM every day	4/15/
ClimateWatch_stormreports	Ready	Multiple triggers defined	4/15/
ClimateWatch_windvis	Disabled	At 12:45 PM every day	
ScheduledDPMClientBackup	Ready	At 10:21 AM every day - After triggered, repeat every 15 minutes for a duration of 1 day.	4/14/

General Triggers Actions Conditions Settings History

Name: ClimateWatch_maps

Author: SWS\zaloudek

Description: The ClimateWatch script is a python script that creates spatial data and maps daily for the MRCC Climate Watch website. The 11:56a run makes today's maps, the 1:30p run makes yesterday's & the day before's maps, and the 6:30 run makes today's, yesterday's, and the day before's maps.

Security options

When running the task, use the following user account:
SWS\zaloudek

Run only when user is logged on

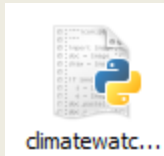
Run whether user is logged on or not

Do not store password. The task will only have access to local resources

Run with highest privileges

Hidden

Configure for: Windows Vista™ or Windows Server™ 2008



Script Startup

```
# -----  
# climatewatch_maps.py (Windshear)  
# Created on: Fri Mar 19 2010 11:27:27 AM  
#   (generated by ArcGIS\\ModelBuilder)  
#   Finished by Zoe Zaloudek  
# -----  
  
# Import system modules  
print "Starting up..."  
import sys, string, os, arcgisscripting, glob, subprocess, datetime, shutil, win32wnet, time, urllib, tarfile  
  
# Create the Geoprocessor object  
gp = arcgisscripting.create()  
# Check out any necessary licenses  
gp.CheckOutExtension("spatial")
```

Startup

Map Z:\

Get date

TXT to points

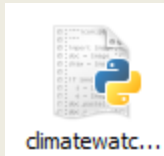
Points to rasters

Get AHPS data

Clip AHPS data

Open MXDs

Copy maps to Z:\



Environment Settings

```
# Set the Geoprocessing environment...
gp.extent = "C:\\ClimateWatch\\base_data\\base_data.mdb\\MRCCstates_GCSNAD83"
gp.outputCoordinateSystem = "GEOGCS['GCS_North_American_1983',DATUM['D_North_American_1983',SPHEROID['GRS_1980',
gp.OverWriteOutput = 1 #Overwrite set to true
```

Startup

Map Z:\

Get date

TXT to points

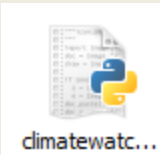
Points to rasters

Get AHPS data

Clip AHPS data

Open MXDs

Copy maps to Z:\



Map the Z:\ drive

```
import sys, string, os, arcgisscripting, glob, subprocess, datetime, shutil, win32wnet, time, urllib, tarfile
```

```
# Map Network Drive Z: to \\magic\GISMAPS if needed
stn_mst = "Z:\\stn-input\\mst0.txt"
- if not os.path.exists(stn_mst):
    from win32netcon import RESOURCETYPE_DISK as DISK
    drive_letter = "Z:"
    path = "\\\\magic\\GISMAPS"
    un = "username"
    pw = "password"
- try:
    win32wnet.WNetAddConnection2(DISK, drive_letter, path, None, un, pw)
    print "GISMAPS mapped to Z:"
- except:
    print ""
```

Startup

Map Z:\

Get date

TXT to points

Points to rasters

Get AHPS data

Clip AHPS data

Open MXDs

Copy maps to Z:\



Figure out the date

```
import sys, string, os, arcgisscripting, glob, subprocess, datetime, shutil, win32wnet, time, urllib, tarfile
```

```
# Figure out today's date in YYYYMMDD format  
today = datetime.datetime.today()  
date = today.strftime("%Y%m%d")  
print "Map date: " + date
```

```
>>> import datetime  
>>> today = datetime.datetime.today()  
>>> print today  
2011-04-18 19:58:10.533000  
>>> date = today.strftime("%Y%m%d")  
>>> print date  
20110418
```

Startup

Map Z:\

Get date

TXT to points

Points to rasters

Get AHPS data

Clip AHPS data

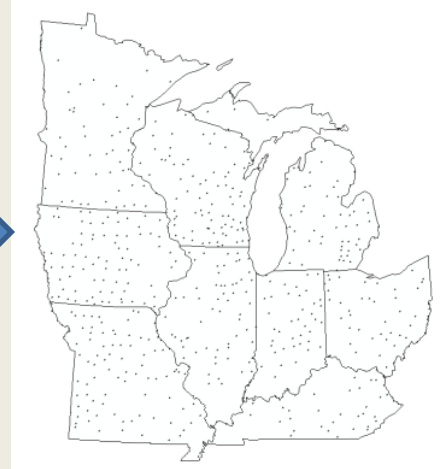
Open MXDs

Copy maps to Z:\



Textfile to Points

COOPID	Date	Latitude	Longitude	Elev	Tmax	Tmin	Tmean	Precip	Snow	snowDepth	GDD	HDD	CDD
030064	'2011/01/19'	35.92889	-91.05833	252	47.0	29.0	38.0	0.00	-99.0	-99.0	0	27	0
030220	'2011/01/19'	34.14333	-93.05889	196	48.0	38.0	43.0	0.00	-99.0	-99.0	0	22	0
030286	'2011/01/19'	33.61844	-91.09844	320	55.0	38.0	46.5	0.00	-99.0	-99.0	0	18	0
030300	'2011/01/19'	34.13278	-93.98111	960	-99.0	-99.0	-99.0	0.00	-99.0	-99.0	-99	-99	-99
030458	'2011/01/19'	35.83056	-91.79444	571	44.0	29.0	36.5	0.00	-99.0	-99.0	0	28	0
030460	'2011/01/19'	35.76000	-91.63889	290	46.0	30.0	38.0	0.00	-99.0	-99.0	0	27	0
030616	'2011/01/19'	36.42944	-93.62536	1180	-99.0	-99.0	-99.0	0.00	-99.0	-99.0	-99	-99	-99
030664	'2011/01/19'	34.46184	-93.99833	1200	49.0	39.0	39.0	0.00	-99.0	-99.0	0	26	0
030764	'2011/01/19'	34.46972	-93.19472	426	-99.0	-99.0	-99.0	0.04	-99.0	-99.0	-99	-99	-99
030798	'2011/01/19'	35.11611	-93.65056	426	-99.0	-99.0	-99.0	0.00	-99.0	-99.0	-99	-99	-99
030830	'2011/01/19'	35.09306	-93.92583	600	46.0	26.0	36.0	0.00	-99.0	-99.0	0	29	0
030832	'2011/01/19'	35.09306	-93.92583	600	46.0	26.0	36.0	0.00	-99.0	-99.0	0	29	0
030936	'2011/01/19'	34.88222	-91.21528	185	49.0	34.0	41.5	0.00	-99.0	-99.0	0	23	0
031102	'2011/01/19'	34.98167	-92.00639	300	51.0	33.0	42.0	0.00	-99.0	-99.0	0	23	0
031132	'2011/01/19'	36.10917	-92.18361	350	44.0	30.0	37.0	0.00	-99.0	-99.0	0	28	0
031140	'2011/01/19'	33.31111	-92.48500	100	53.0	40.0	46.5	0.01	-99.0	-99.0	0	18	0
031152	'2011/01/19'	33.59000	-92.82361	116	52.0	39.0	45.5	0.00	-99.0	-99.0	0	19	0
031191	'2011/01/19'	33.91528	-91.77111	260	52.0	37.0	44.5	0.00	-99.0	-99.0	0	20	0
031442	'2011/01/19'	34.68000	-91.22083	180	50.0	34.0	42.0	0.00	0.0	0.0	0	23	0
031457	'2011/01/19'	35.53278	-93.40361	850	41.0	30.0	35.5	0.00	-99.0	-99.0	0	29	0
031459	'2011/01/19'	35.43639	-93.44250	820	49.0	32.0	40.5	0.00	-99.0	-99.0	0	24	0
031596	'2011/01/19'	35.08306	-92.42944	315	48.0	33.0	40.5	0.00	-99.0	-99.0	0	24	0
031632	'2011/01/19'	36.41972	-90.38583	300	46.0	37.0	37.5	0.00	-99.0	-99.0	0	27	0
031730	'2011/01/19'	33.11111	-91.94806	180	55.0	39.0	47.0	0.00	-99.0	-99.0	0	18	0
031838	'2011/01/19'	35.23417	-93.16750	370	47.0	34.0	40.5	0.00	-99.0	-99.0	0	24	0
031800	'2011/01/19'	35.82722	-93.20444	2375	38.0	23.0	30.5	0.00	-99.0	-99.0	-99	-99	-99
031952	'2011/01/19'	34.10028	-94.37250	557	-99.0	-99.0	-99.0	0.00	-99.0	-99.0	-99	-99	-99
031953	'2011/01/19'	34.03000	-94.40083	355	43.0	28.0	35.5	0.00	0.0	0.0	0	19	0
031968	'2011/01/19'	34.97722	-91.49778	200	52.0	35.0	43.5	0.00	0.0	0.0	0	21	0
032015	'2011/01/19'	34.12667	-94.01722	470	-99.0	-99.0	-99.0	0.00	0.0	0.0	-99	-99	-99
032020	'2011/01/19'	34.14750	-91.08889	886	-99.0	-99.0	-99.0	0.00	-99.0	-99.0	-99	-99	-99
032300	'2011/01/19'	33.22083	-92.81417	252	49.0	40.0	44.5	0.00	0.0	0.0	0	20	0
032355	'2011/01/19'	32.11444	-91.26278	135	56.0	41.0	48.5	0.01	-99.0	-99.0	0	16	0
032366	'2011/01/19'	36.07167	-91.61694	500	44.0	28.0	36.0	0.02	-99.0	-99.0	0	29	0
032443	'2011/01/19'	36.00972	-94.16944	1251	48.0	27.0	37.5	0.00	0.0	0.0	0	27	0
032444	'2011/01/19'	36.10056	-91.17444	1270	35.0	26.0	30.5	0.00	-99.0	-99.0	0	34	0
032475	'2011/01/19'	33.05972	-92.12361	60	-99.0	-99.0	-99.0	0.00	0.0	0.0	-99	-99	-99
032528	'2011/01/19'	36.29083	-92.59000	719	37.0	28.0	32.5	0.00	0.0	0.0	0	32	0
032540	'2011/01/19'	33.82278	-92.39889	230	52.0	38.0	45.0	0.01	-99.0	-99.0	0	20	0
032574	'2011/01/19'	35.33306	-91.36250	449	45.0	24.0	34.5	0.00	0.0	0.0	0	30	0
032794	'2011/01/19'	35.99139	-92.71472	620	43.0	28.0	35.5	0.00	0.0	0.0	0	29	0



```
# STATION POINTS
try:
    # Process: Make XY Event Layer...
    gp.MakeXYEventLayer_management(textfile_name, "Longitude", "Latitude", stationdata_lyr, "GEOGCS['GCS_North_Amer
    # Process: Feature Class to Feature Class...
    gp.FeatureClassToFeatureClass_conversion(stationdata_lyr, stations_location, stations_name, "", "COOPID 'COOPID
    print "station points done"
except:
    print "stations not completed"
```

Startup

Map Z:\

Get date

TXT to points

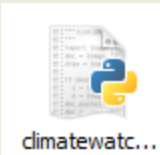
Points to rasters

Get AHPS data

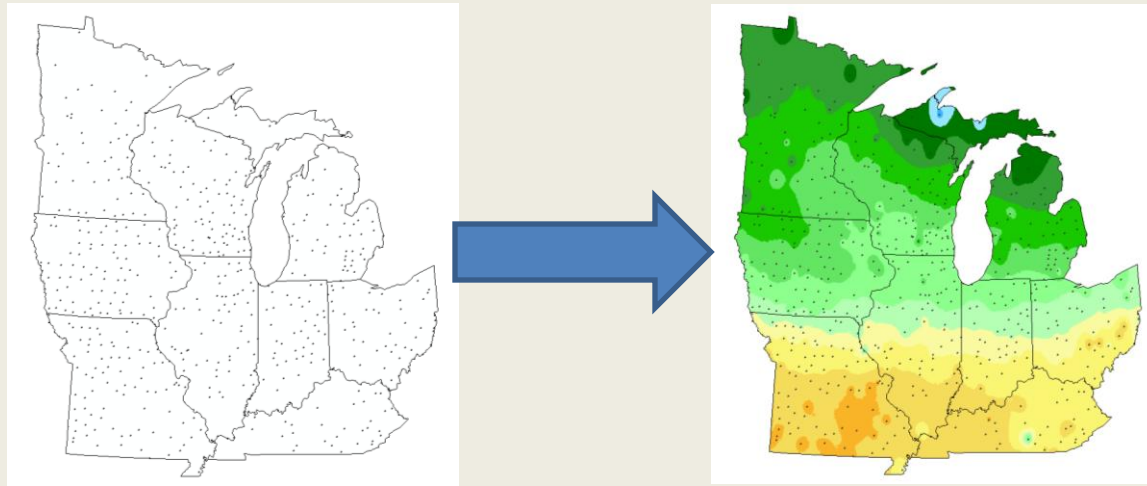
Clip AHPS data

Open MXDs

Copy maps to Z:\



Station Points to Rasters



```
# Process: Make Feature Layer (get rid of stations with null values)...
gp.MakeFeatureLayer_management(stations_full_name, notnull_maxt, "TMax <> -99", "", "COOPID COOPID V
# Process: IDW...
gp.Idw_sa(notnull_maxt, "TMax", maxt_name_temp, "0.015", "2", "VARIABLE 12", "")
print "maxt raster done"
```

Startup

Map Z:\

Get date

TXT to points

Points to rasters

Get AHPS data

Clip AHPS data

Open MXDs

Copy maps to Z:\



Get AHPS Data

```
import sys, string, os, arcgisscripting, glob, subprocess, datetime, shutil, win32wnet, time, urllib, tarfile
```

```
# AHPS precip shapefiles variables
ahpsfiles = ["nws_precip_1day_observed_shape_", "nws_precip_last7days_observed_shape_", "nws_precip_last30da
ahpsurl = "http://water.weather.gov/precip/p_download_new/"
# Create folder(s) if needed
dayfolder = mpeinputfolder + "\\\" + year + "\\\" + month + "\\\" + day
if not os.path.exists(dayfolder):
    gp.CreateFolder_management (monthfolder, day)

# ACQUIRE AHPS PRECIP SHAPEFILES
for filenm in ahpsfiles:
    try:
        # Download the precip .gz file
        url = ahpsurl + year + "/" + month + "/" + day + "/" + filenm + year + month + day + ".tar.gz"
        gzfilename = dayfolder + "\\\" + filenm + year + month + day + ".tar.gz"
        urllib.urlopen(url)
        urllib.URLOpener().retrieve(url, gzfilename)
        # Unzip file
        tar = tarfile.open(gzfilename, "r")
        tar.extractall(dayfolder)
        tar.close()
        gp.Delete_management (gzfilename)
    except:
        print filenm[11:-7] + " didn't work."
print "AHPS file acquisition done"
```

Startup

Map Z:\

Get date

TXT to points

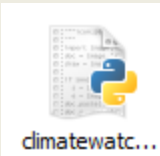
Points to rasters

Get AHPS data

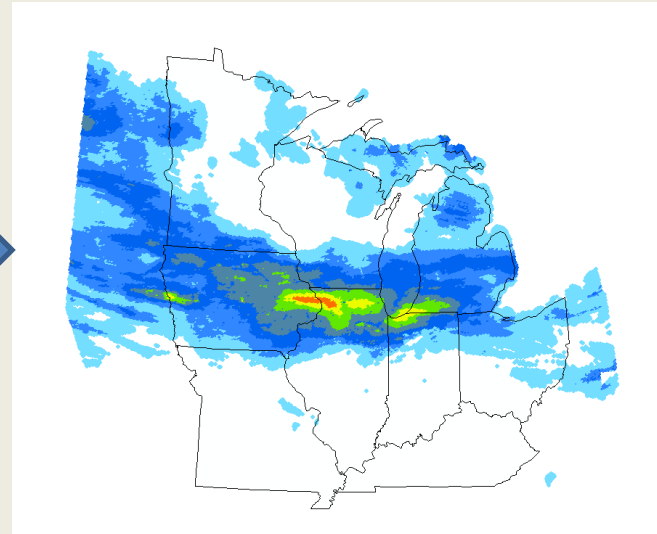
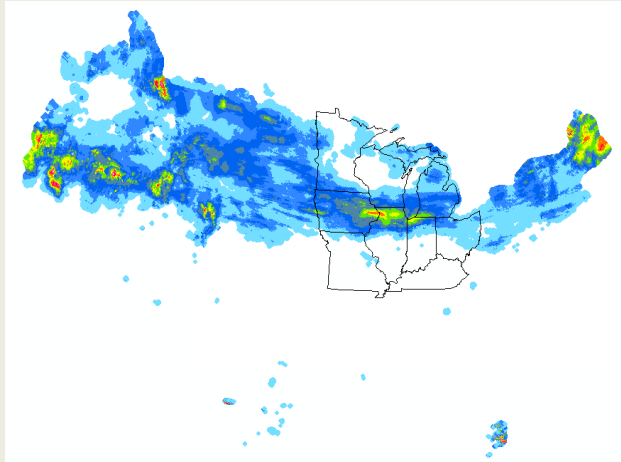
Clip AHPS data

Open MXDs

Copy maps to Z:\



Clip AHPS Data



```
# Process: Clip precip
gp.Clip_analysis(prcp001tot_origshp, buffer_hrap_features, prcp001tot_full_name, "")
print "prcp001tot points clipped"
```

Startup

Map Z:\

Get date

TXT to points

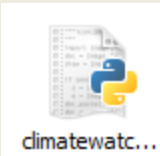
Points to rasters

Get AHPS data

Clip AHPS data

Open MXDs

Copy maps to Z:\



Open the MXDs

```
import sys, string, os, arcgisscripting, glob, subprocess, datetime, shutil, win32wnet, time, urllib, tarfile
```

```
mxd = path + "\\maxt_" + prev + "map.mxd"  
objNewProcess = subprocess.Popen([strArcMapPath, mxd])  
objNewProcess.wait()  
print "maxt map exported"
```

Startup

Map Z:\

Get date

TXT to points

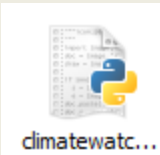
Points to rasters

Get AHPS data

Clip AHPS data

Open MXDs

Copy maps to Z:\



Copy the Maps to Z:\

```
import sys, string, os, arcgisscripting, glob, subprocess, datetime, shutil, win32wnet, time, urllib, tarfile
```

```
maxtpng = "C:\\ClimateWatch\\maps_images\\maxt_" + date + ".png"  
maxtpngcopy = "Z:\\Maps\\maxt\\maxt_" + date + ".png"  
shutil.copyfile (maxtpng, maxtpngcopy)  
print "maxt maps copied"
```

Startup

Map Z:\

Get date

TXT to points

Points to rasters

Get AHPS data

Clip AHPS data

Open MXDs

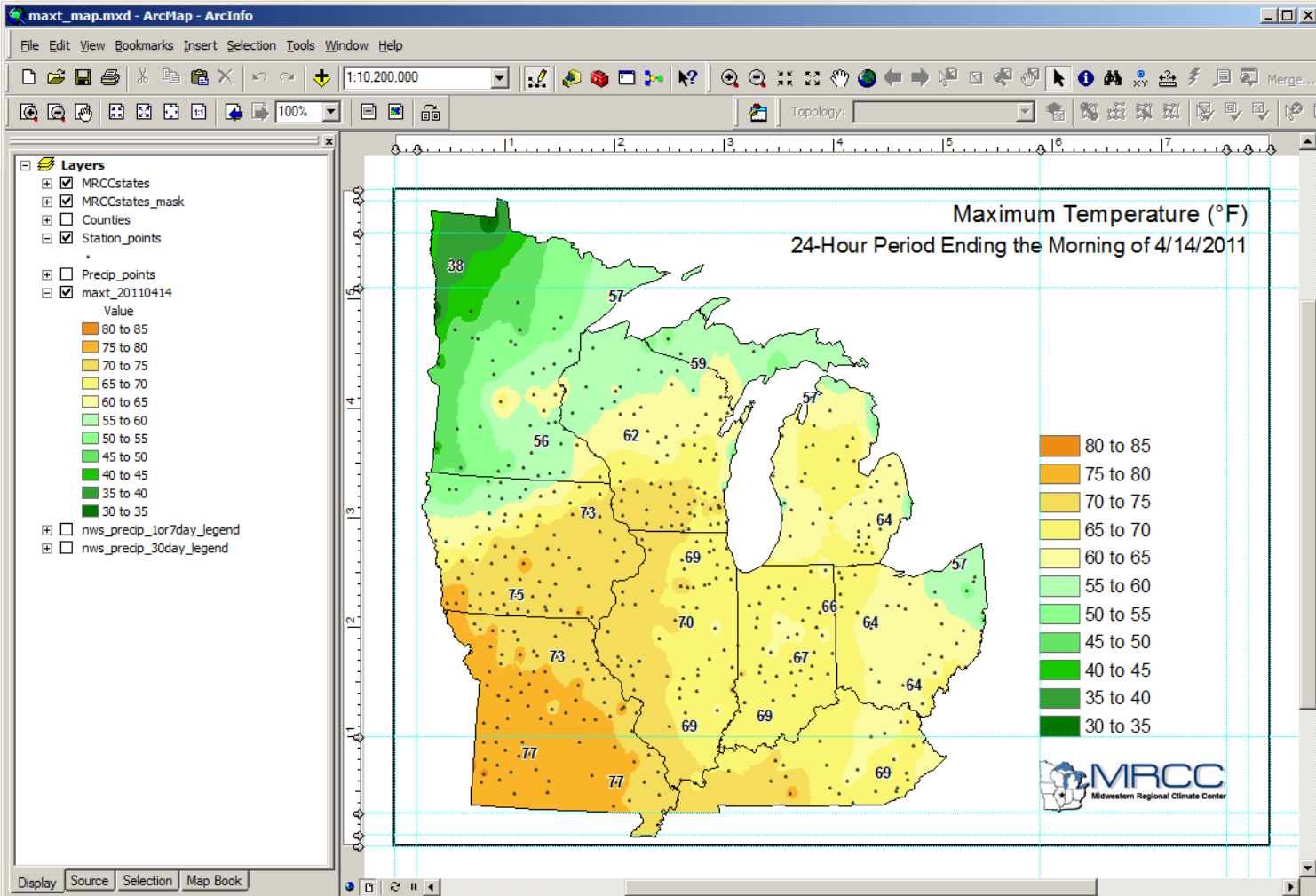
Copy maps to Z:\



maxt_map....

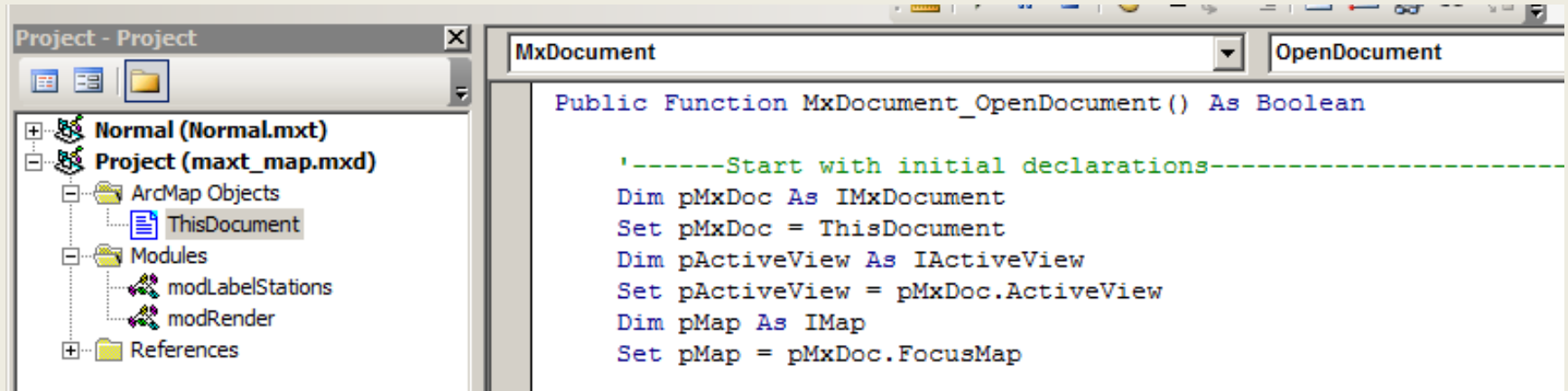
VBA Code highlights

- maxt_map.mxd
- mint_map.mxd
- prcp001tot_map.mxd
- prcp007tot_map.mxd
- prcp030tot_map.mxd
- prcp_map.mxd
- snow_map.mxd
- snwd_map.mxd





OpenDocument & Title



```
'Set what type of map this mxd is for (based on mxd name)
Dim pDoc As IDocument
Set pDoc = Application.Document
Dim strDocName As String
strDocName = pDoc.Title
Dim strDNameType As String

If (Len(strDocName) = 12 Or Len(strDocName) = 18) And Left(strDocName, 5) <> "prcp0" Then
    strDNameType = Left(strDocName, 4)
ElseIf (Len(strDocName) = 18 Or Len(strDocName) = 24) And Left(strDocName, 5) = "prcp0" Then
    strDNameType = Left(strDocName, 10)
End If
```



maxt_map...

Set Raster & Points

```
Dim strRASfull As String
strRASfull = strRASpath & "\" & strRAS

'Set the raster source as today's raster
Dim pLayer As ILayer
Set pLayer = pMap.Layer(5)
Dim pRLayer As IRasterLayer
Set pRLayer = pLayer
Dim pDataLayer2 As IDataLayer2
Set pDataLayer2 = pRLayer
pDataLayer2.Disconnect
pRLayer.CreateFromFilePath strRASfull
```

```
strPts = "prcp001tot_" & strDate2
strPtsgdb = "C:\ClimateWatch\raster_data\prcp_mpe_001_tot\prcp_mpe_001_tot.gdb"
Set pLayer2 = pMap.Layer(4)

'Sets the points feature class source as the day's points
Dim pFPlayer As IFeatureLayer2
Set pFPlayer = pLayer2
Dim pFGDBFactory As IWorkspaceFactory
Set pFGDBFactory = New FileGDBWorkspaceFactory
Dim pFWorkspace As IFeatureWorkspace
Set pFWorkspace = pFGDBFactory.OpenFromFile(strPtsgdb, 0)
Dim pOldFC As IFeatureClass
Set pOldFC = pFPlayer.FeatureClass
Dim pNewFC As IFeatureClass
Set pNewFC = pFWorkspace.OpenFeatureClass(strPts)

'Set new points data source
Dim pMapAdmin3 As IMapAdmin3
Set pMapAdmin3 = pMap
Set pFPlayer.FeatureClass = pNewFC
pMapAdmin3.FireChangeFeatureClass pOldFC, pNewFC
```



maxt_map...

Turn Layers on/off

```
'-----Shows or hides layers (in the table of contents)-----  
Dim pLayerCounties As ILayer2  
Set pLayerCounties = pMap.Layer(2)  
Dim pLayerStations As ILayer2  
Set pLayerStations = pMap.Layer(3)  
Dim pLayerPrecipPts As ILayer2  
Set pLayerPrecipPts = pMap.Layer(4)  
Dim pLayerRaster As ILayer2  
Set pLayerRaster = pMap.Layer(5)  
Dim pLayerPrecipLegend1 As ILayer2  
Set pLayerPrecipLegend1 = pMap.Layer(6)  
Dim pLayerPrecipLegend2 As ILayer2  
Set pLayerPrecipLegend2 = pMap.Layer(7)  
  
If strDNameType = "maxt" Or strDNameType = "mint" Or strDNameType = "prcp"  
    pLayerCounties.Visible = False  
    pLayerStations.Visible = True  
    pLayerPrecipPts.Visible = False  
    pLayerRaster.Visible = True  
    pLayerPrecipLegend1.Visible = False  
    pLayerPrecipLegend2.Visible = False  
ElseIf strDNameType = "prcp001tot" Or strDNameType = "prcp007tot" Then  
    pLayerCounties.Visible = True  
    pLayerStations.Visible = False  
    pLayerPrecipPts.Visible = True  
    pLayerRaster.Visible = False  
    pLayerPrecipLegend1.Visible = True  
    pLayerPrecipLegend2.Visible = False  
ElseIf strDNameType = "prcp030tot" Then  
    pLayerCounties.Visible = True  
    pLayerStations.Visible = False  
    pLayerPrecipPts.Visible = True  
    pLayerRaster.Visible = False  
    pLayerPrecipLegend1.Visible = False  
    pLayerPrecipLegend2.Visible = True  
End If
```



maxt_map....

Set Title Text

```
'-----Updates the text on the map-----  
Dim strTitle As String  
Dim strTitle2 As String  
Dim strTitle3 As String  
If strDNameType = "maxt" Then  
    strTitle = "Maximum Temperature (°F)"  
    strTitle2 = "24-Hour Period Ending the Morning of " & strDate  
    strTitle3 = " "  
ElseIf strDNameType = "mint" Then  
    strTitle = "Minimum Temperature (°F)"  
    strTitle2 = "24-Hour Period Ending the Morning of " & strDate  
    strTitle3 = " "  
ElseIf strDNameType = "prcp001tot" Then  
    strTitle = "Multi-sensor Precipitation: Observed (inches)"  
    strTitle2 = "24-Hour Period Ending the Morning of " & strDate  
    strTitle3 = "Precipitation data from NWS AHPS: http://water.weather.gov/precip"  
ElseIf strDNameType = "prcp007tot" Then  
    strTitle = "Multi-sensor Precipitation: Observed (inches)"  
    strTitle2 = "7-Day Period Ending the Morning of " & strDate  
    strTitle3 = "Precipitation data from NWS AHPS: http://water.weather.gov/precip"  
ElseIf strDNameType = "prcp030tot" Then  
    strTitle = "Multi-sensor Precipitation: Observed (inches)"  
    strTitle2 = "30-Day Period Ending the Morning of " & strDate  
    strTitle3 = "Precipitation data from NWS AHPS: http://water.weather.gov/precip"  
ElseIf strDNameType = "prcp" Then  
    strTitle = "Cooperative Network Precipitation (inches)"  
    strTitle2 = "24-Hour Period Ending the Morning of " & strDate  
    strTitle3 = " "  
ElseIf strDNameType = "snow" Then  
    strTitle = "Cooperative Network Snowfall (inches)"  
    strTitle2 = "24-Hour Period Ending the Morning of " & strDate  
    strTitle3 = " "  
ElseIf strDNameType = "snwd" Then  
    strTitle = "Cooperative Network Snow Depth (inches)"  
    strTitle2 = "Valid the Morning of " & strDate  
    strTitle3 = " "  
End If
```

```
'Edit title boxes  
Dim pGraphics As IGraphicsContainer  
Set pGraphics = pMxDoc.PageLayout  
pGraphics.Reset  
Dim pElementProp As IElementProperties2  
Set pElementProp = pGraphics.Next  
Dim pTextElement As ITextElement  
Set pTextElement = pElementProp  
pTextElement.Text = strTitle  
Dim pElementProp2 As IElementProperties2  
Set pElementProp2 = pGraphics.Next  
Dim pTextElement2 As ITextElement  
Set pTextElement2 = pElementProp2  
pTextElement2.Text = strTitle2  
Dim pElementProp3 As IElementProperties2  
Set pElementProp3 = pGraphics.Next  
Dim pTextElement3 As ITextElement  
Set pTextElement3 = pElementProp3  
pTextElement3.Text = strTitle3
```



maxt_map...

Raster Render

```
'Create RasterWorkspace
Dim pWSF As IWorkspaceFactory
Set pWSF = New RasterWorkspaceFactory
Dim pRWorkspace As IRasterWorkspace
Set pRWorkspace = pWSF.OpenFromFile(strRASpath, 0)
```

```
'Find statistics (max, min, median) of raster
```

```
Dim pRDataset As IRasterDataset2
Set pRDataset = pRWorkspace.C
Dim pRBC As IRasterBandCollection
Set pRBC = pRDataset
Dim pRBand As IRasterBand
Set pRBand = pRBC.Item(0)
Dim pRStat As IRasterStatistics
Set pRStat = pRBand.Statistics
```

```
Dim dblMax As Double
dblMax = pRStat.Maximum
Dim dblMin As Double
dblMin = pRStat.Minimum
```

```
'Set up custom colors... create
```

```
Dim c18 As IColor
Set c18 = New RGBColor
c18.RGB = RGB(130, 130, 130)
Dim c19 As IColor
Set c19 = New RGBColor
c19.RGB = RGB(204, 204, 204)
Dim c20 As IColor
Set c20 = New RGBColor
c20.RGB = RGB(255, 255, 255)
Dim c21 As IColor
Set c21 = New RGBColor
c21.RGB = RGB(255, 230, 255)
Dim c22 As IColor
Set c22 = New RGBColor
c22.RGB = RGB(255, 200, 255)
```

```
'Figure out where to start the classes
```

```
Dim dblClassMax As Double
dblClassMax = Round(dblMax, 0)
Dim dblClassMin As Double
dblClassMin = Round(dblMin, 0)
```

```
'Determines the highest & lowest values that will
```

```
Dim strClassMax As String
strClassMax = dblClassMax
```

```
Dim strClassMaxRight As String
strClassMaxRight = (Right(strClassMax, 1))
Dim dblClassHigh As Double
```

```
If dblClassMax >= 0 Then
    Select Case strClassMaxRight
        Case 1
            dblClassHigh = dblClassMax + 4
        Case 2
            dblClassHigh = dblClassMax + 3
        Case 3
            dblClassHigh = dblClassMax + 2
        Case 4
            dblClassHigh = dblClassMax + 1
        Case 5
            dblClassHigh = dblClassMax + 5
        Case 6
            dblClassHigh = dblClassMax + 4
        Case 7
            dblClassHigh = dblClassMax + 3
        Case 8
            dblClassHigh = dblClassMax + 2
        Case 9
            dblClassHigh = dblClassMax + 1
        Case 0
```

```
'Set up raster renderer
```

```
Dim pRCCRR As IRasterClassifyColorRampRenderer
Set pRCCRR = New RasterClassifyColorRampRenderer
pRCCRR.ClassField = "Value"
pRCCRR.SortClassesAscending = True
Dim intNumClasses As Integer
intNumClasses = ((dblClassHigh - dblClassLow) / 5)
pRCCRR.ClassCount = intNumClasses
Dim pRRenderer As IRasterRenderer
Set pRRenderer = pRCCRR
Set pRRenderer.Raster = pRaster
pRRenderer.Update
```

```
'Loop through the classes and apply the class break,
```

```
Dim i As Integer
i = 0
Do Until i = (intNumClasses)
    dblCs = ((dblClassHigh - (i * 5))) - 5
    If dblCs < -40 Then
        pRCCRR.Break(i) = -100
    Else
        pRCCRR.Break(i) = (dblCs)
    End If
    'Case statement to select the color
    Dim ci As IColor
    Select Case (dblCs + 5)
        Case Is = -40
            Set ci = c18
            pRCCRR.Label(i) = "Below -40"
        Case -35
            Set ci = c19
        Case -30
            Set ci = c20
        Case -25
```



maxt_map....

Points Render

```
Public Sub PrecipPtsRender()
```

```
Dim pMxDoc As IMxDocument
Set pMxDoc = ThisDocument
Dim pActiveView As IActiveView
Set pActiveView = pMxDoc.ActiveView
    Dim pMap As IMap
Set pMap = pMxDoc.FocusMap
Dim pLayer As ILayer
Set pLayer = pMap.Layer(4)
Dim pPlayer As IFeatureLayer2
Set pPlayer = pLayer
Dim pGFLayer As IGeoFeatureLayer
Set pGFLayer = pPlayer
```

```
'Set up custom colors... create each
```

```
Dim c17 As IColor
Set c17 = New RGBColor
c17.RGB = RGB(255, 255, 255)
Dim c18 As IColor 'c18 is for the low
Set c18 = New RGBColor
c18.RGB = RGB(0, 255, 255)
Dim c19 As IColor
Set c19 = New RGBColor
c19.RGB = RGB(20, 164, 171)
Dim c20 As IColor
Set c20 = New RGBColor
c20.RGB = RGB(0, 0, 255)
Dim c21 As IColor
Set c21 = New RGBColor
c21.RGB = RGB(180, 254, 0)
Dim c22 As IColor
Set c22 = New RGBColor
c22.RGB = RGB(0, 255, 0)
Dim c23 As IColor
Set c23 = New RGBColor
```

```
'Set up variables to stand
```

```
Dim b0 As Double
Dim b1 As Double
Dim b2 As Double
Dim b3 As Double
Dim b4 As Double
Dim b5 As Double
Dim b6 As Double
Dim b7 As Double
Dim b8 As Double
Dim b9 As Double
Dim b10 As Double
Dim b11 As Double
Dim b12 As Double
Dim b13 As Double
Dim b14 As Double
Dim b15 As Double
Dim bxd As Double
'For 24-hr breaks:
If strDNameType = "prcp001t"
    b0 = 0.01
    b1 = 0.1
    b2 = 0.25
    b3 = 0.5
    b4 = 0.75
    b5 = 1
    b6 = 1.5
    b7 = 2
    b8 = 2.5
    b9 = 3
    b10 = 4
    b11 = 5
    b12 = 6
    b13 = 8
    b14 = 10
    b15 = 25
    bxd = -2
```

```
'Create symbol for the classes
```

```
Dim pSymbol As ISymbol
Dim pCMSymbol As ICharacterMarkerSymbol
Set pCMSymbol = New CharacterMarkerSymbol
pCMSymbol.CharacterIndex = 37
pCMSymbol.size = 3
'Set up Renderer
Dim pCBR As IClassBreaksRenderer
Set pCBR = New ClassBreaksRenderer
pCBR.BreakCount = 17
Dim pFClass As IFeatureClass
Set pFClass = pPlayer.FeatureClass
Dim pFields As IFields2
Set pFields = pFClass.Fields
pCBR.Field = "Globvalue"
```

```
'Loop through the classes and apply the class
```

```
Dim i As Integer
i = 0
Dim ci As IColor
Do Until i = (17)
    'Case statement
    Select Case i
        Case 0
            Set ci = cxd
            pCBR.Break(i) = (bxd)
        Case 1
            Set ci = c17
            pCBR.Break(i) = (b0)
        Case 2
            Set ci = c18
            pCBR.Break(i) = (b1)
        Case 3
            Set ci = c19
            pCBR.Break(i) = (b2)
        Case 4
            Set ci = c20
            pCBR.Break(i) = (b3)
```



maxt_map...

Refresh Legend too

```
Case 16
  Set ci = c32
  pCBR.Break(i) = (b15)
End Select

pCMSymbol.Color = ci
Set pSymbol = pCMSymbol
pCBR.Symbol(i) = pSymbol
i = i + 1
Loop

'Update the renderer and plug into layer
Set pGFLayer.Renderer = pCBR

'Control legend display
Dim pLCF As ILegendClassFormat
Set pLCF = New LegendClassFormat
Dim pTSymbol As ITextSymbol
Set pTSymbol = New TextSymbol
Dim pFont As IFontDisp
Set pFont = New StdFont
pFont.Name = "Arial"
pFont.size = 12
pFont.Bold = False
pTSymbol.Font = pFont
pLCF.LabelSymbol = pTSymbol

'Access legend through mapsurround interface
Dim pSurround As IMapSurround
Set pSurround = pMap.MapSurround(0)

'Refresh Everything
pMxDoc.UpdateContents
pSurround.Refresh
pActiveView.Refresh
```



maxt_map...

Export PNG

```
'-----Exports the map-----  
Dim pMxApp As IMxApplication  
Set pMxApp = Application  
Dim pPageLayout As IPageLayout  
Set pPageLayout = pMxDoc.PageLayout  
Dim pExporter As IExport  
Set pExporter = New ExportPNG  
Dim pPrinter As IPrinter  
Set pPrinter = pMxApp.Printer  
Dim pRECT As tagRECT  
Dim hDc As OLE_HANDLE  
Dim pDriverBounds As IEnvelope  
Dim pVisibleBounds As IEnvelope  
Set pVisibleBounds = New Envelope  
Set pVisibleBounds = Nothing 'set to nothing unless clip to graphic extent is checked  
Dim pPixelBounds As IEnvelope  
Set pPixelBounds = New Envelope  
Dim ipPixelBounds As IEnvelope  
Dim width As Double  
Dim height As Double  
'Figure out the day's export image file name  
Dim strExpFile As String  
strExpFile = strDNameType & "_" & strDate2 & ".png"  
Dim strExpFilepath As String  
strExpFilepath = "C:\ClimateWatch\maps_images"  
Dim strExpFilefull As String  
strExpFilefull = strExpFilepath & "\" & strExpFile  
pExporter.ExportFileName = strExpFilefull  
pExporter.Resolution = 100  
'Figure out map extent  
pPrinter.QueryPaperSize width, height  
width = 8  
height = 6  
pRECT.Left = 0  
pRECT.Top = 0  
pRECT.Right = width * pExporter.Resolution  
pRECT.bottom = height * pExporter.Resolution  
pPixelBounds.PutCoords pRECT.Left, pRECT.Top, pRECT.Right, pRECT.bottom  
pExporter.PixelBounds = pPixelBounds  
'Export!  
hDc = pExporter.StartExporting  
pMxDoc.ActiveView.Output hDc, pExporter.Resolution, pRECT, pVisibleBounds, Nothing  
pExporter.FinishExporting  
pExporter.Cleanup
```



Shutdown

```
'-----Closes the mxd-----  
'Close MXD  
Application.Shutdown  
  
End Function
```

**HINT: to edit this MXD again,
hold shift while it opens!**

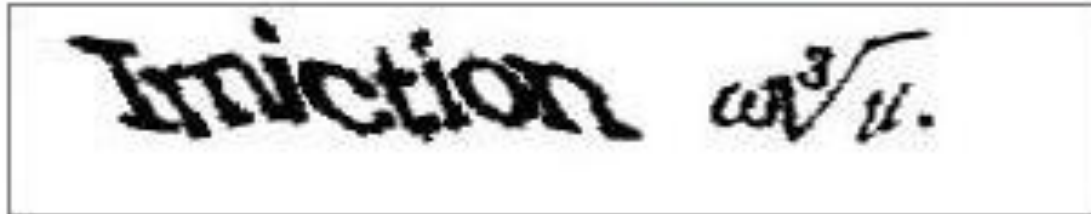
A few final tricks...

Do you have a Pepsi password?

No, I'm new here!

Yes, my password is

[Forgot your password?](#)

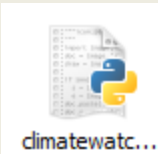


[Refresh image](#)

[Audio](#)

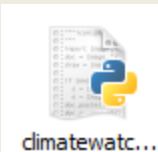
Type the two words

[Sign In](#)



Loading toolboxes

```
# Load required toolboxes
checkexistsfolder1 = "C:\\Program Files (x86)\\ArcGIS\\Desktop10.0"
checkexistsfolder2 = "C:\\Program Files\\ArcGIS\\Desktop10.0"
checkexistsfolder3 = "C:\\Program Files (x86)\\ArcGIS\\ArcToolbox"
- if os.path.exists(checkexistsfolder1):
    # For ArcGIS 10, Windows 7
    gp.AddToolbox("C:\\Program Files (x86)\\ArcGIS\\Desktop10.0\\ArcToolbox\\Toolboxes\\Conversion Tools.tbx")
    gp.AddToolbox("C:\\Program Files (x86)\\ArcGIS\\Desktop10.0\\ArcToolbox\\Toolboxes\\Data Management Tools.tbx")
    gp.AddToolbox("C:\\Program Files (x86)\\ArcGIS\\Desktop10.0\\ArcToolbox\\Toolboxes\\Analysis Tools.tbx")
    gp.AddToolbox("C:\\Program Files (x86)\\ArcGIS\\Desktop10.0\\ArcToolbox\\Toolboxes\\Spatial Analyst Tools.tbx")
- else:
-     if os.path.exists(checkexistsfolder2):
        # For ArcGIS 10, Windows XP or Vista
        gp.AddToolbox("C:\\Program Files\\ArcGIS\\Desktop10.0\\ArcToolbox\\Toolboxes\\Conversion Tools.tbx")
        gp.AddToolbox("C:\\Program Files\\ArcGIS\\Desktop10.0\\ArcToolbox\\Toolboxes\\Data Management Tools.tbx")
        gp.AddToolbox("C:\\Program Files\\ArcGIS\\Desktop10.0\\ArcToolbox\\Toolboxes\\Analysis Tools.tbx")
        gp.AddToolbox("C:\\Program Files\\ArcGIS\\Desktop10.0\\ArcToolbox\\Toolboxes\\Spatial Analyst Tools.tbx")
-     else:
-         if os.path.exists(checkexistsfolder3):
            # For ArcGIS 9.X, Windows 7
            gp.AddToolbox("C:\\Program Files (x86)\\ArcGIS\\ArcToolbox\\Toolboxes\\Conversion Tools.tbx")
            gp.AddToolbox("C:\\Program Files (x86)\\ArcGIS\\ArcToolbox\\Toolboxes\\Data Management Tools.tbx")
            gp.AddToolbox("C:\\Program Files (x86)\\ArcGIS\\ArcToolbox\\Toolboxes\\Analysis Tools.tbx")
            gp.AddToolbox("C:\\Program Files (x86)\\ArcGIS\\ArcToolbox\\Toolboxes\\Spatial Analyst Tools.tbx")
-         else:
            # For ArcGIS 9.X, Windows XP or Vista
            gp.AddToolbox("C:\\Program Files\\ArcGIS\\ArcToolbox\\Toolboxes\\Conversion Tools.tbx")
            gp.AddToolbox("C:\\Program Files\\ArcGIS\\ArcToolbox\\Toolboxes\\Data Management Tools.tbx")
            gp.AddToolbox("C:\\Program Files\\ArcGIS\\ArcToolbox\\Toolboxes\\Analysis Tools.tbx")
            gp.AddToolbox("C:\\Program Files\\ArcGIS\\ArcToolbox\\Toolboxes\\Spatial Analyst Tools.tbx")
```



Logfile

```
#Create & open a text file for feedback
textfilenm = "C:\\ClimateWatch\\scripts_code\\auto_run\\logs\\" + date + "_log.txt"
f = open(textfilenm, 'w')
logline = "ClimateWatch Script log: Maps for " + date + '\n'
f.write(logline)
logline = "Script began at: " + str(today) + '\n'
f.write(logline)
```

```
print "maxt map exported"
logline = "maxt map exported" + '\n'
f.write(logline)
maxtpng = "C:\\ClimateWatch\\maps_images\\maxt_" + date + ".png"
maxtpngcopy = "Z:\\Maps\\maxt\\maxt_" + date + ".png"
shutil.copyfile (maxtpng, maxtpngcopy)
print "maxt maps copied"
logline = "maxt maps copied" + '\n'
f.write(logline)
except:
    print "maxt not complete"
    logline = "maxt not complete" + '\n'
    f.write(logline)
```

```
logline = date + " done" + '\n'
f.write(logline)
today = datetime.datetime.today()
logline = "Script ended at: " + str(today) + '\n'
f.write(logline)
f.close()
# Copy the log file to Atlas
logfilecopy = "\\ATLAS\\CentersGIS\\CAS\\MRCC\\ClimateWatch\\scripts_code\\logs_windshear\\" + date + "_log.txt"
shutil.copyfile (textfilenm, logfilecopy)
```



climatewatc...

Manual Version

```
# Get which parts of the script are to be run
runmaxt = 'y'
runmint = 'y'
runprcp = 'y'
runsnow = 'y'
runsnwd = 'y'
runprcp001tot = 'y'
runprcp007tot = 'y'
runprcp030tot = 'y'
runall = raw_input('Would you like to run script for all maps? y or n --> ')
if runall <> 'y':
    if runall <> 'n':
        runall = raw_input('Run all maps? Please input either y or n --> ')
if runall == 'n':
    runmaxt = raw_input('Would you like to run script for Max Temp? y or n --> ')
    if runmaxt <> 'y':
        if runmaxt <> 'n':
            runmaxt = raw_input('Run Max Temp? Please input either y or n --> ')
    runmint = raw_input('Would you like to run script for Min Temp? y or n --> ')
    if runmint <> 'y':
        if runmint <> 'n':
            runmint = raw_input('Run Min Temp? Please input either y or n --> ')
    runprcp = raw_input('Would you like to run script for Co-op Precip? y or n --> ')
    if runprcp <> 'y':
        if runprcp <> 'n':
            runprcp = raw_input('Run Co-op Precip? Please input either y or n --> ')
    runsnow = raw_input('Would you like to run script for Snowfall? y or n --> ')
    if runsnow <> 'y':
        if runsnow <> 'n':
            runsnow = raw_input('Run Snowfall? Please input either y or n --> ')
    runsnwd = raw_input('Would you like to run script for Snow Depth? y or n --> ')
    if runsnwd <> 'y':
        if runsnwd <> 'n':
            runsnwd = raw_input('Run Snow Depth? Please input either y or n --> ')
    runprcp001tot = raw_input('Would you like to run script for MPE 1-day Precip? y or n --> ')
    if runprcp001tot <> 'y':
        if runprcp001tot <> 'n':
            runprcp001tot = raw_input('Run MPE 1-day Precip? Please input either y or n --> ')
    runprcp007tot = raw_input('Would you like to run script for MPE 7-day Precip? y or n --> ')
    if runprcp007tot <> 'y':
        if runprcp007tot <> 'n':
            runprcp007tot = raw_input('Run MPE 7-day Precip? Please input either y or n --> ')
    runprcp030tot = raw_input('Would you like to run script for MPE 30-day Precip? y or n --> ')
    if runprcp030tot <> 'y':
        if runprcp030tot <> 'n':
            runprcp030tot = raw_input('Run MPE 30-day Precip? Please input either y or n --> ')

```

Resources

- ESRI Discussion Forums
 - <http://forums.arcgis.com/index.php>
- Python Documentation
 - <http://docs.python.org/index.html>
- ArcGIS Resource Center for VBA (9.3)
 - http://resources.esri.com/help/9.3/arcgisdesktop/com/vba_start.htm
- ArcGIS Desktop Help (9.3): Geoprocessing Tool Reference
 - [http://webhelp.esri.com/arcgisdesktop/9.3/index.cfm?TopicName=An overview of commonly used tools](http://webhelp.esri.com/arcgisdesktop/9.3/index.cfm?TopicName=An%20overview%20of%20commonly%20used%20tools)

Thanks!

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MRCC's Midwest Climate Watch page:

<http://mcc.sws.uiuc.edu/cliwatch/watch.htm>