Weather Tools / getWeather.py

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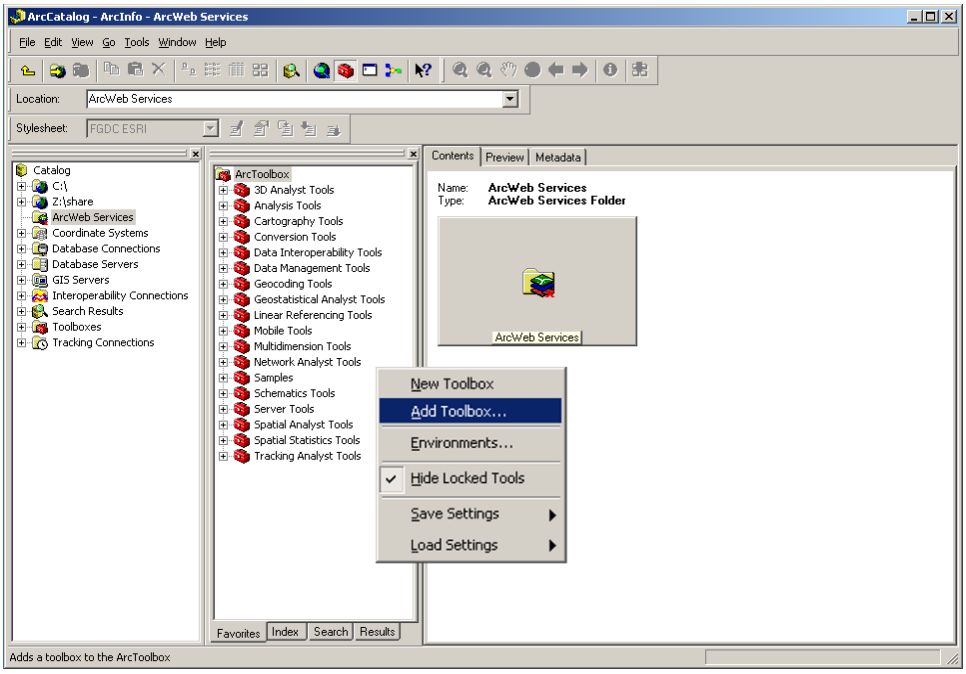
This python script creates a feature class containing the current weather for cities in a given Canadian province. The features are points with geographic coordinates. Attributes contain temperature, humidity, and chance of precipitation. The weather data is obtained from the RSS feeds at www.weathernetwork.com. The getWeather.py script can also be used from the command line.

Written for ArcGIS version 9.x.

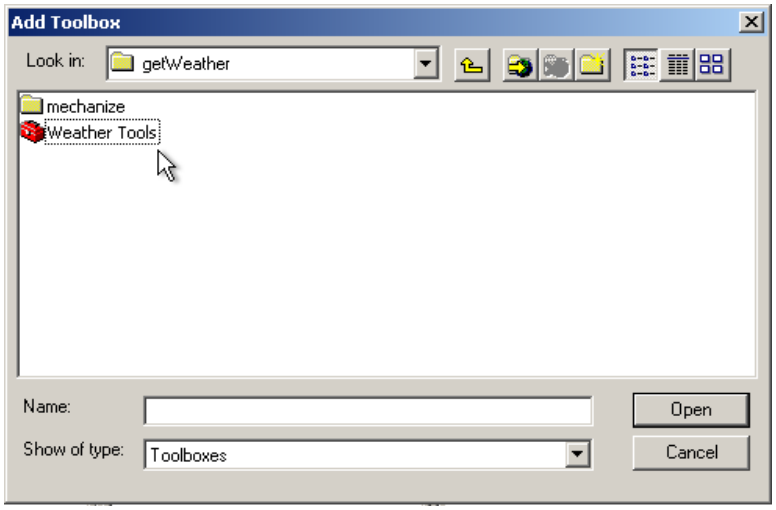
Comments and discussion at github: http://github.com/geoR/getWeather/

Installation:

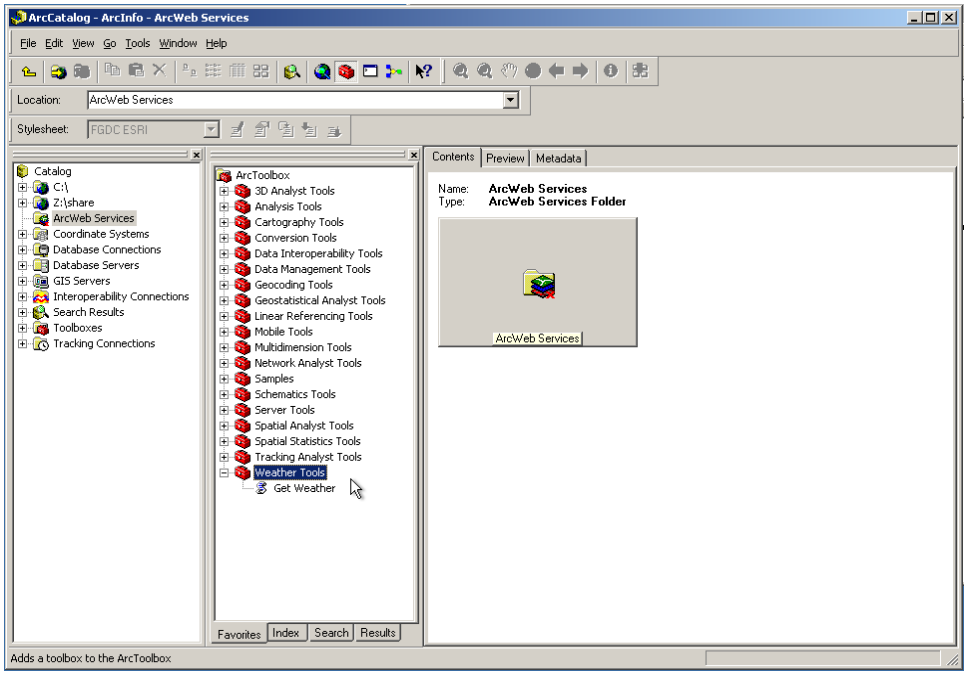
1. Unzip archive. Choose a fixed or permanent location.
2. In ArcCatalog and/or ArcMap, right click on the Toolbox pane and select Add Toolbox...



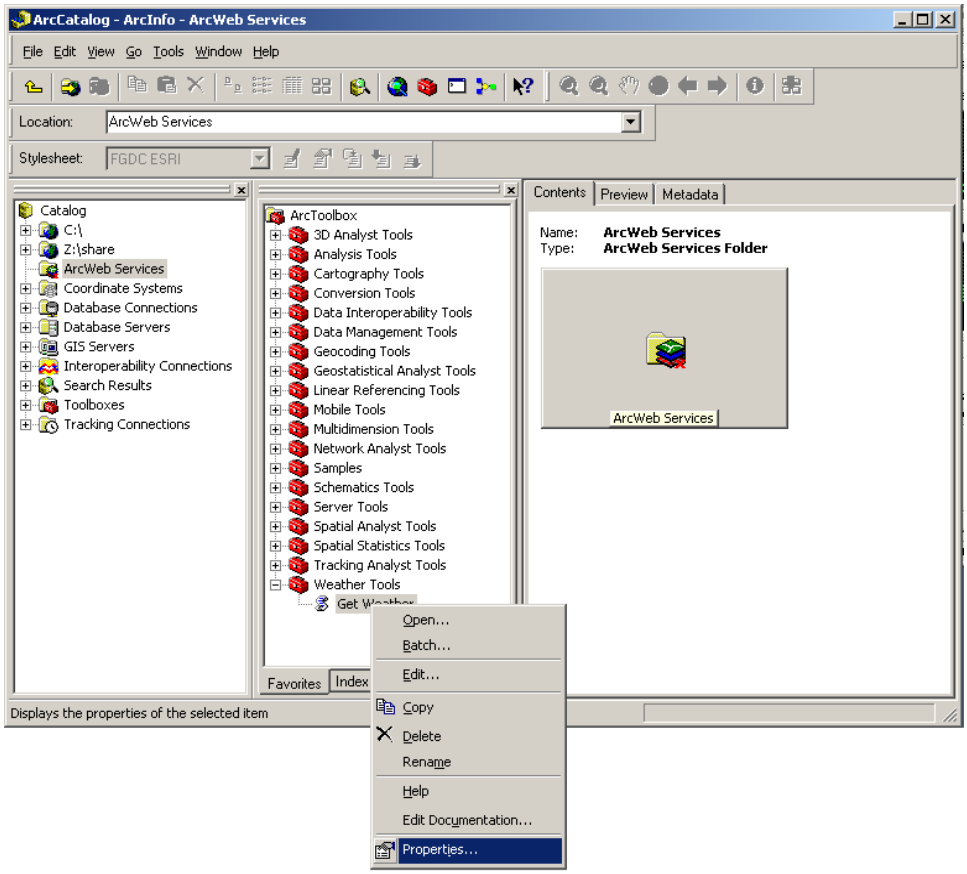
3. Navigate to the unziped getWeather folder, and select the Weather Tools toolbox.



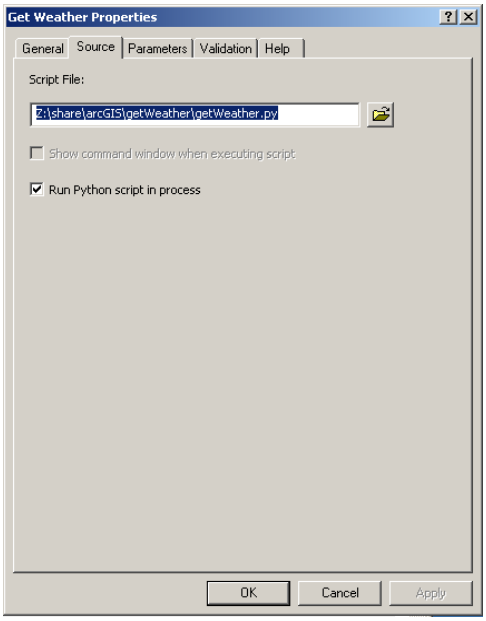
4. The Weather Tools toolbox will now be visible in the Toolbox pane, with the Get Weather script.



5. Ensure the script's path is set properly. Right click on the Get Weather script and select Properties.



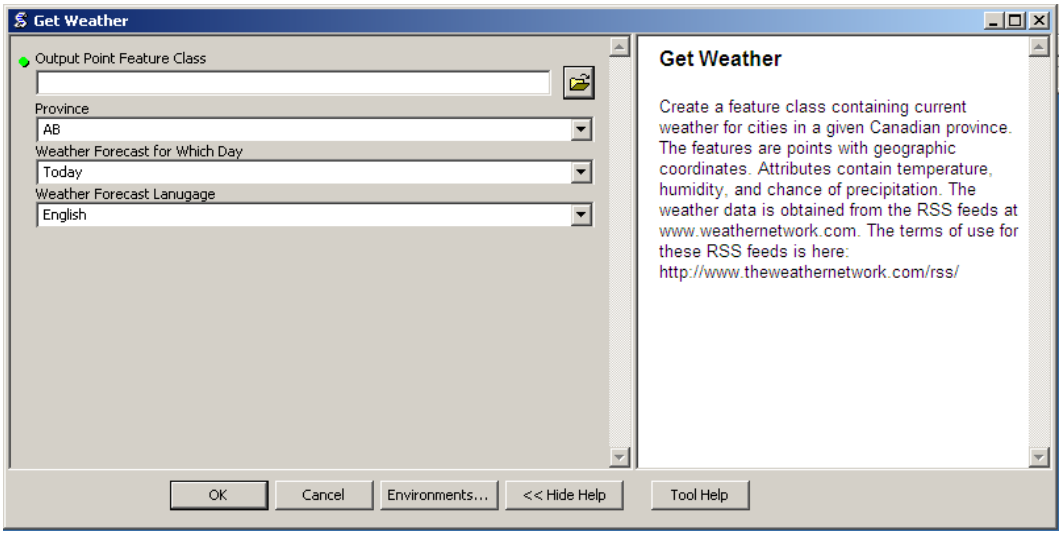
6. On the Source tab locate the getWeather.py script, found in the installation folder.



These steps will need to be repeated for both ArcCatalog and ArcMap.

Usage:

Double click the Get Weather script to launch its dialog box. There are four parameters and help is provided for each one.



- **Output Point Feature Class**: Name of new Feature Class. An existing feature class will be overwritten.
- **Province**: Two-letter province code - AB BC MB NB NL NS NT NU ON PE QC SK YT .
- **Weather Forecast for Which Day**: Today, Tomorrow, Day after tomorrow, or The day after the day after tomorrow.
- **Weather Forecast Language**: English or French.

The attributes of the output feature class depend upon the "Weather Forecast for Which Day" parameter. This is due to the information available from the RSS feeds.

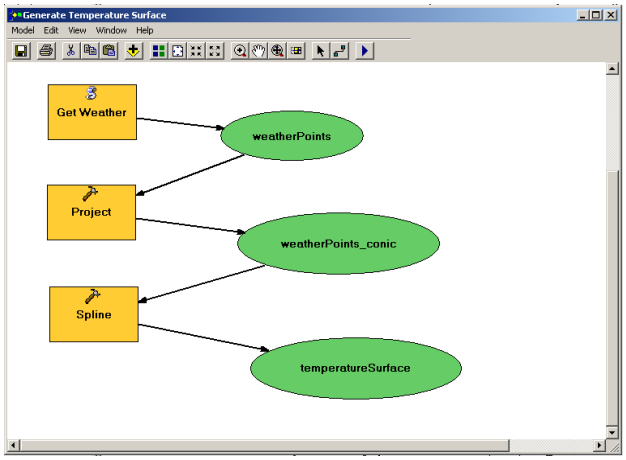
"Weather Forecast for Which Day"	Output Feature Class Attributes
Today	PROV, NAME, WEATHER, TEMP, HUMID, LAT, LON
Tomorrow	
Day after tomorrow	PROV, NAME, WEATHER, HIGH, LOW, POP, LAT, LON
Day after the day after tomorrow	

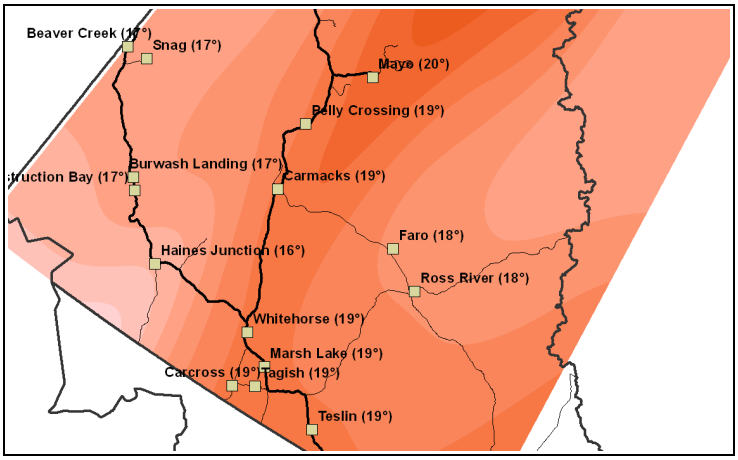
For example, "today" and "tomorrow" attribute tables for Yukon are:

OBJECTID *	Shape *	PROV	NAME	WEATHER	TEMP	HUMID	LAT	LON
1	Point	YT	Snag	A few clouds	12	77	62.39924	-140.3717
2	Point	YT	Teslin	Not Available	11	82	60.2261	-132.7707
3	Point	YT	Watson Lake	Overcast	13	82	60.06543	-128.7031
4	Point	YT	Whitehorse	A few clouds	11	82	60.71667	-135.05
5	Point	YT	Haines Junction	Not Available	9	76	60.76328	-137.5104
6	Point	YT	Faro	Not Available	12	77	62.23156	-133.3562
7	Point	YT	Ross River	Not Available	12	77	61.97197	-132.4428
8	Point	YT	Destruction Bay	A few clouds	12	77	61.25417	-138.8067
9	Point	YT	Dawson	Not Available	10	94	64.05055	-139.4181
10	Point	YT	Carmacks	Not Available	9	94	62.10593	-136.2567
11	Point	YT	Carcross	A few clouds	11	82	60.17463	-134.6981
12	Point	YT	Burwash Landing	A few clouds	12	77	61.35398	-139.0047
13	Point	YT	Beaver Creek	A few clouds	12	77	62.382	-140.876
14	Point	YT	Mayo	A few clouds	13	82	63.59426	-135.8965
15	Point	YT	Old Crow	Partly cloudy	12	100	67.56963	-139.8288
16	Point	YT	Swift River	Not Available	11	82	60.01942	-131.0457
17	Point	YT	Pelly Crossing	Not Available	9	82	62.81802	-136.5773
18	Point	YT	Tagish	A few clouds	11	82	60.29553	-134.2796
19	Point	YT	Marsh Lake	A few clouds	11	82	60.51667	-134.3333

OBJECTID *	Shape *	PRO	NAME	WEATHER	HIGH	LOW	POP	LAT	LON
1	Point	YT	Snag	Nuageux avec averses	22	12	40	62.39924	-140.3717
2	Point	YT	Teslin	Ensoleillé	26	11	10	60.2261	-132.7707
3	Point	YT	Watson Lake	Ensoleillé	25	10	10	60.06543	-128.7031
4	Point	YT	Whitehorse	Ensoleillé avec passages nuageux	27	13	20	60.71667	-135.05
5	Point	YT	Haines Junction	Nuageux avec averses	22	12	40	60.76328	-137.5104
6	Point	YT	Faro	Ciel variable	26	10	20	62.23156	-133.3562
7	Point	YT	Ross River	Ciel variable	26	10	20	61.97197	-132.4428
8	Point	YT	Destruction Bay	Nuageux avec averses	22	12	40	61.25417	-138.8067
9	Point	YT	Dawson	Plutôt nuageux	25	11	30	64.05055	-139.4181
10	Point	YT	Carmacks	Ciel variable	26	10	20	62.10593	-136.2567
11	Point	YT	Carcross	Ensoleillé avec passages nuageux	27	13	20	60.17463	-134.6981
12	Point	YT	Burwash Landing	Nuageux avec averses	22	12	40	61.35398	-139.0047
13	Point	YT	Beaver Creek	Nuageux avec averses	22	12	40	62.382	-140.876
14	Point	YT	Mayo	Ciel variable	27	12	30	63.59426	-135.8965
15	Point	YT	Old Crow	Nuageux avec averses	11	5	70	67.56963	-139.8288
16	Point	YT	Swift River	Ensoleillé	26	11	10	60.01942	-131.0457
17	Point	YT	Pelly Crossing	Ciel variable	27	12	30	62.81802	-136.5773
18	Point	YT	Tagish	Ensoleillé avec passages nuageux	27	13	20	60.29553	-134.2796
19	Point	YT	Marsh Lake	Ensoleillé avec passages nuageux	27	13	20	60.51667	-134.3333

This script can be used within model builder. For example this model creates a temperature surface from the city points.





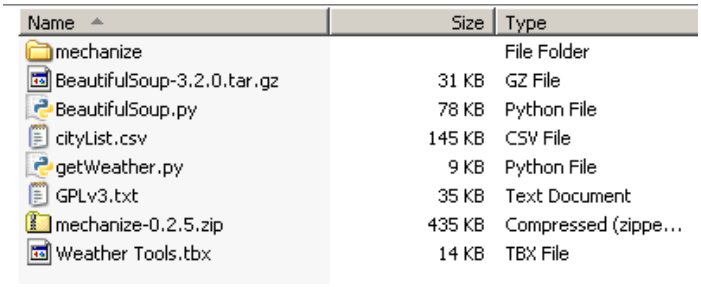
This script can also be used from the command line useful for executing at scheduled times. All parameters are mandatory. The syntax is:

```
getWeather.py <outputFeatureClass> <provinceCode> <day> <language>
```

For example:

```
getWeather.py "C:\\data\\bcWeather.shp" BC today english
```

File List:



- **getWeather.py**: Main script.
- **GPLv3.txt**: License
- **Weather Tools.tbx**: ArcGIS toolbox file, containing parameter configuration and help text.
- **cityList.csv**: Used to geocode cities. Will need to be updated if new cities are added.
- **Mechanize folder**: Module for getting URLs. See http://wwwsearch.sourceforge.net/mechanize/
- **mechanize-0.2.5.zip**: Mechanize archive included for reference. Can be deleted.
- **BeautifulSoup.py**: Module for parsing XML. See http://www.crummy.com/software/BeautifulSoup/
- **BeautifulSoup-3.2.0.tar.gz**: BeautifulSoup archive included for reference. Can be deleted.
- **GPLv3.txt**: License

Troubleshooting:

Ensure the path is set properly, as described in the setup above.

getWeather.py will not fail gracefully if there is no internet connection.

Errors are also generated if the Output Feature Class is already open in ArcMap or ArcCatalog. Ensure the Feature Class and geoDatabase are closed to prevent locking.

License: