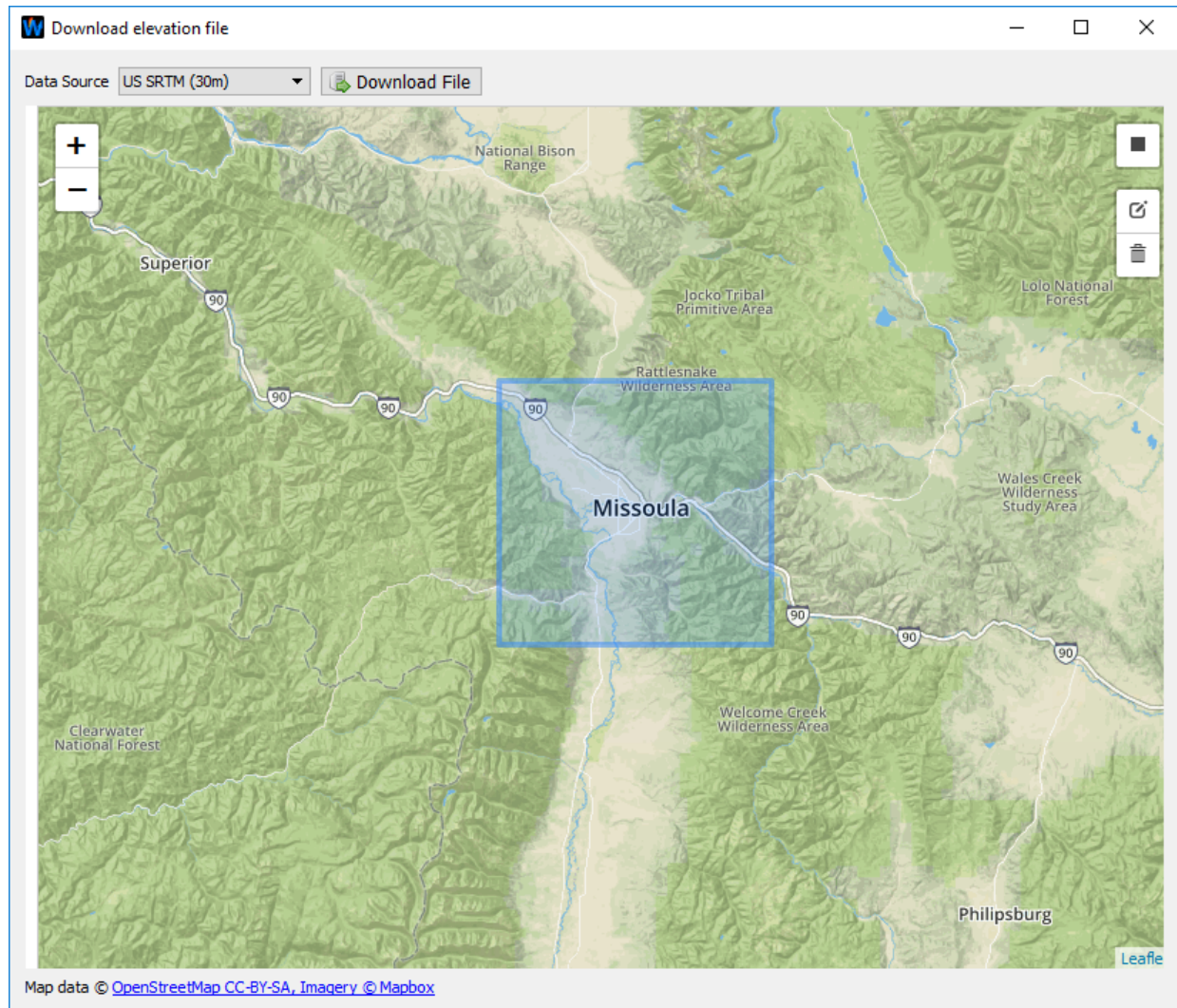# How to download an elevation file using WindNinja


10/24/2018

Introduction

This document describes the functionality built into WindNinja to download elevation files for wind modeling. We call this utility the "elevation file grabber". It allows you to use a custom ©Mapbox ©OpenStreetMap interface to zoom into and select a desired area for wind modeling. The elevation data for this area is downloaded by WindNinja from a USGS server and saved to a file on your computer. There is also a command line version of the elevation file grabber that is described here. The specific options available and work flow are described below.

To open the elevation file grabber window, start WindNinja and click *Surface Input* in the navigation tree at the top of WindNinja, then click the *Download File* button as shown below.
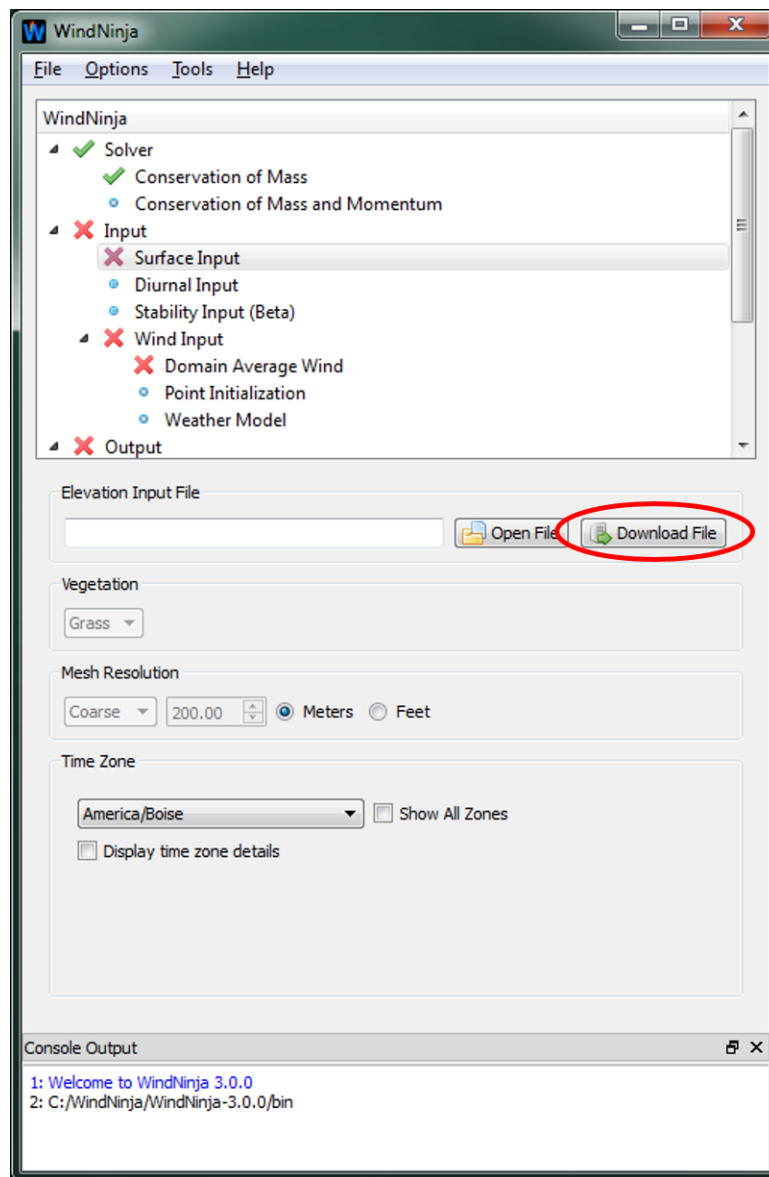
The *Download Elevation File* graphics window will open. This graphics window is an inter-active mapping display used to navigate into the desired wind simulation area. There are a couple of ways to pan and zoom the map. Using a mouse, you can pan with the left button and zoom using a mouse scroll wheel. The keyboard can also be used to pan (arrow keys) and zoom (plus and minus keys).
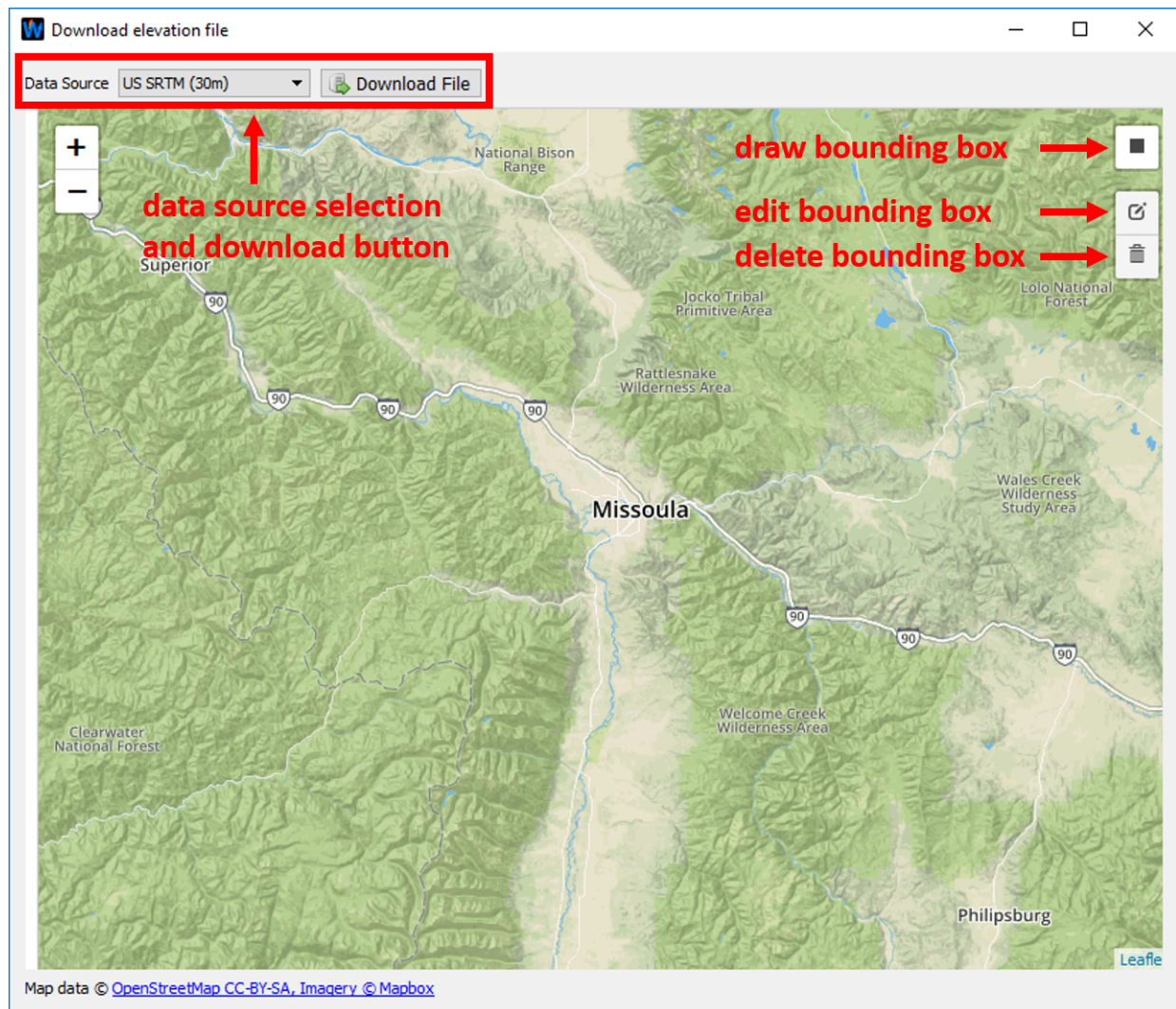
Defining Your Simulation Area

To define the area that you want to download, click the *Draw a rectangle* button in the upper right corner of the graphics window. Draw a box on the map bounding the area that you want to simulate. A transparent blue box will be drawn in the graphics window showing the area you've defined. If you want, you can enlarge or shrink this bounding box by clicking the *Edit layers* button in the upper right corner of the graphics window. This will allow you to drag the sides or corners of the box. You can also move the box by dragging the center icon. When you are done, click *Save* next to the *Edit layers* button. You can also delete a

bounding box by clicking the *Delete layers* button and *Clear All* in the upper right corner of the graphics window.

Elevation Data Source

There are 4 possible on-line data sets to download elevation data from. These are listed in the *Data Source* drop-down box at the top left of the graphics window. The main difference between these data sets is the spatial resolution and extent. The table below briefly describes these differences. You should be sure to choose a data set that covers your simulation area.

Data set name	Resolution	Spatial Extent	Description
US SRTM	30 meters	Contiguous US, Hawaii, PR, Southern Alaska	Data from the Shuttle Radar Tomography Mission (SRTM)
WORLD SRTM	90 meters	Between approximately -60 and +60 latitude	Data from the Shuttle Radar Tomography Mission (SRTM)
WORLD GMTED	250 meters	Between approximately -60 and +85 latitude	Global Multi-resolution Terrain Elevation Data 2010 (GMTED 2010)
Landscape (LCP)	30 meters	Contiguous US, Hawaii, PR, Southern Alaska	FARSITE Landscape files including vegetation information

Download The File

Once you have defined your download area and selected the elevation data source, click the *Download File* button at the top left of the graphics window to download the elevation file. A window will open to allow you to specify a file name and location. If you chose the option **US SRTM**, **WORLD SRTM**, or **WORLD GMTED**, the downloaded file will be a GeoTIFF (*.tif). **Landscape** files are downloaded as a .lcp file. After the file is successfully downloaded, you can close the Download elevation file window and the downloaded file will be automatically loaded into the main WindNinja window.