

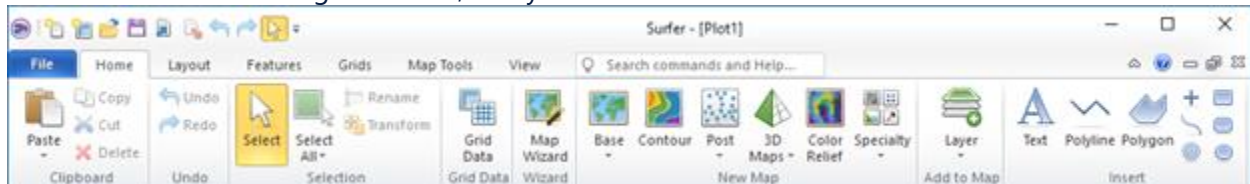
What's New in Surfer 14?

There are many very exciting new features in Surfer 14! We focused on increasing usability, improving workflows to increase time savings, and including the most popular new features requested. The top 30 new features are listed below.

A more complete list of the new features can be found by clicking the ? button in the upper right corner of the program to open the Help. On the Contents page in the Help, navigate to Surfer 14 | Introduction | New Features.

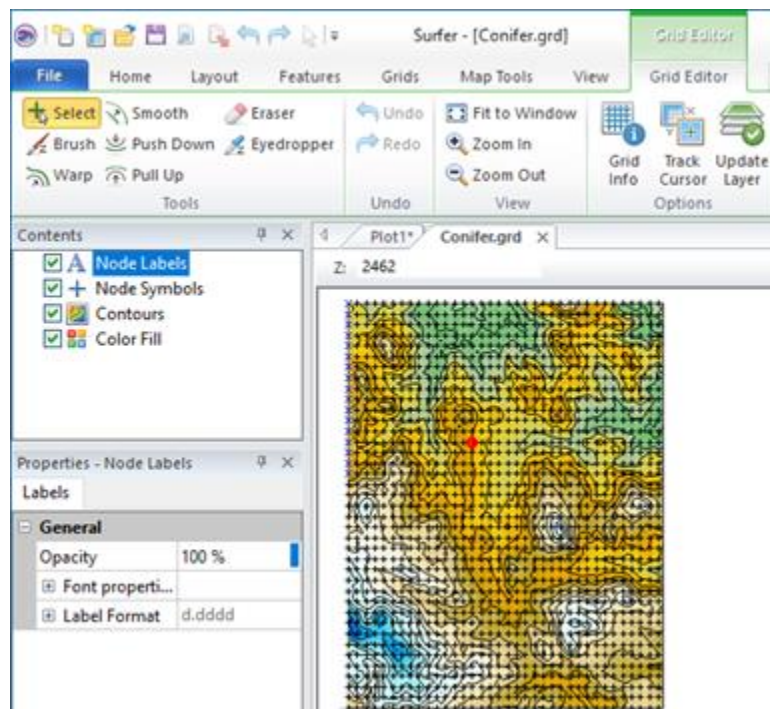
1. New and improved user interface

Surfer's been redesigned to make your work faster and easier than ever with the new ribbon interface. You have full control over the ribbon design, so you can customize it so all your commonly used features are in a single location, ready for use.



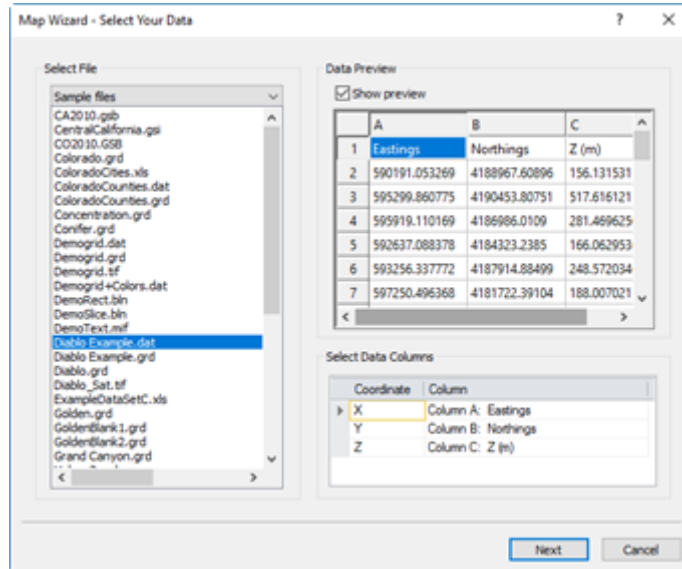
2. Edit contours and grids

Contour and grid editing has been vastly improved with many new tools and a new interface! Set multiple nodes at once to a specific Z value or a NoData value, edit contour lines by warping and dragging them, smooth contour lines, and update map layers in the plot window directly after editing!

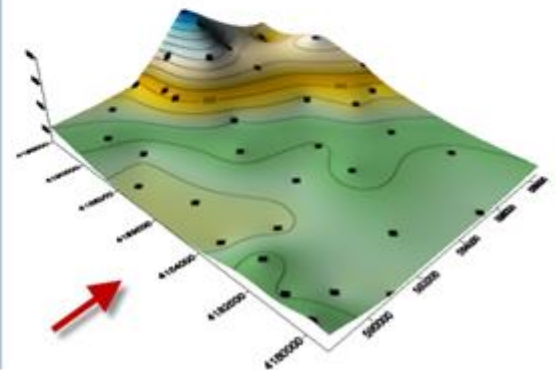
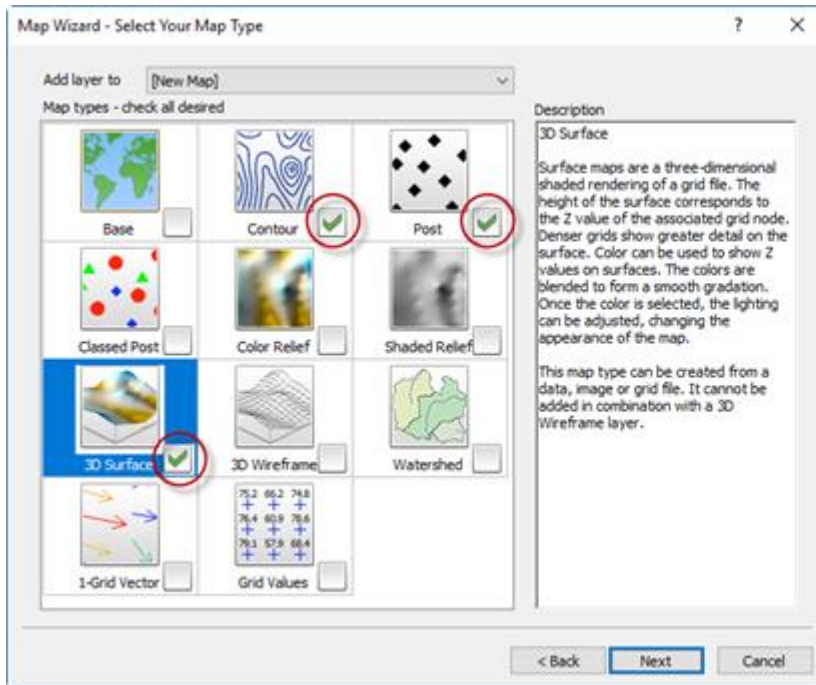


3. Create maps in a snap with the Map Wizard

Simply walk through step-by-step to create the map you want from your initial data. No more guessing what files you need or in what format. Just select the data, select the map types you want to create and you're done!

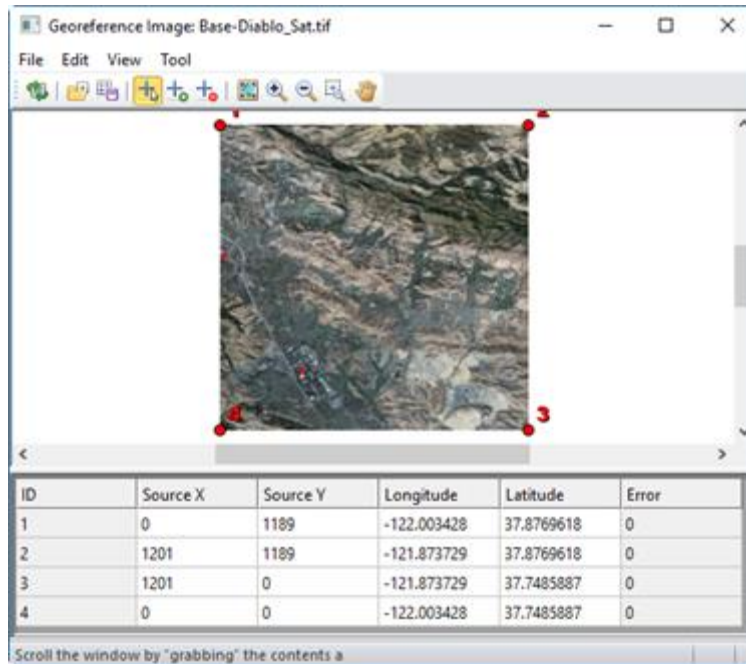


In addition, save time by creating multiple layers at once. Select your data or grid file, select all the map layer types you wish to create, and all the layers are created at one time.



4. Georeference an image

You can georeference an image using any points on the image. Simply click on the point, enter the real world X and Y values for that point, and the image is warped and referenced according to the calibration points. Surfer can do it all!



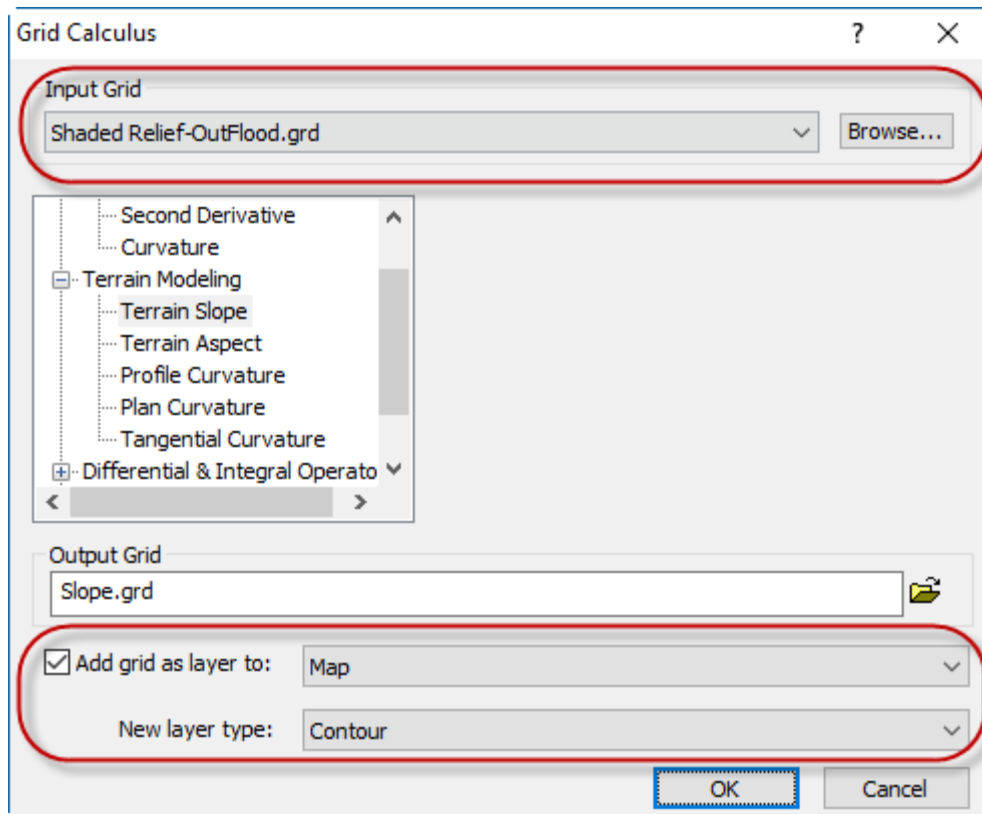
5. Top level legends (including legends for post maps)

Create a single legend item that can display legends for multiple map layers. The layers you wish to include in the legend can be turned on or off, depending on what you want to display. In addition, create legends for regular post maps! Display proportionally sized symbols and symbols colored with a colormap. You have the option to change the text next to the legend entries.

Legend	
Sample Assay Results (Cu ppm)	
■	0.03 - 190 ppm
▲	190 - 500 ppm
◆	500 - 1500 ppm
●	1500 - 4500 ppm
★	4500 - 56000 ppm
WellProduction.xlsx	
○	Abandoned
●	Oil
☀	Gas
Samples.xlsx	
✕	Sample Location

6. All grid operations have been streamlined

This is a huge time savings. All the grid operations can now set the input grid to any existing layer, and create a new map directly from the resulting output grid. You don't have to go looking for a specific grid file, or waste time creating a new map or layer from the output.

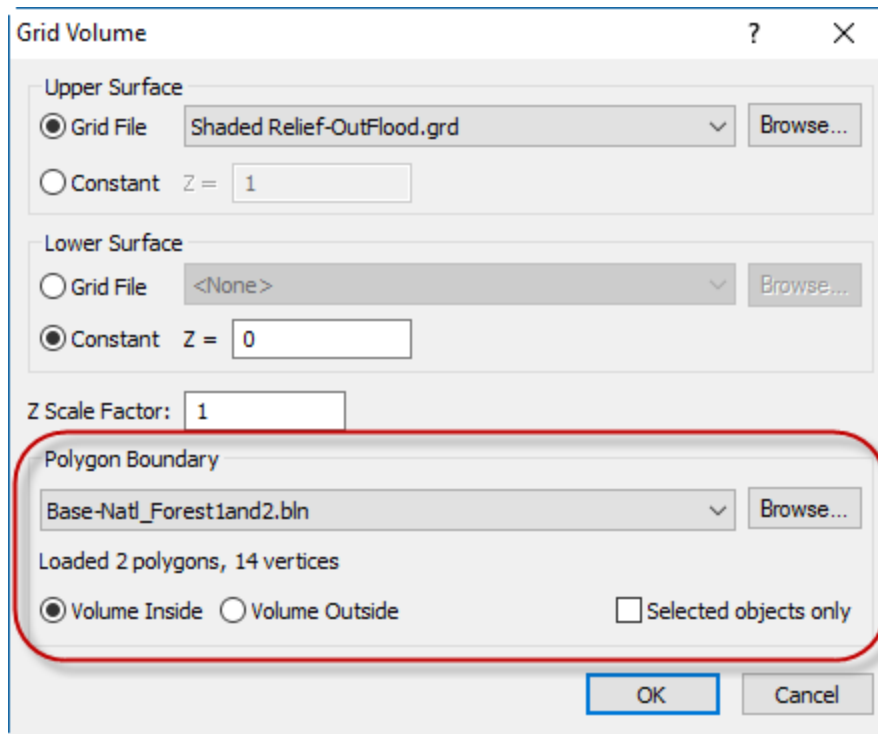


7. Converting areas of a grid to NoData (blanking) has huge time savings!

Not only did we streamline the workflow to convert areas inside or outside a polygon to a NoData (or blanking) value by allowing you to use a grid from an existing layer, but you can also use any polygon (or polygons) in any existing base layer as the boundary polygon, or load the polygon(s) from any vector file (e.g. SHP, DXF, etc)! It is no longer a requirement that the polygon(s) be in BLN format.

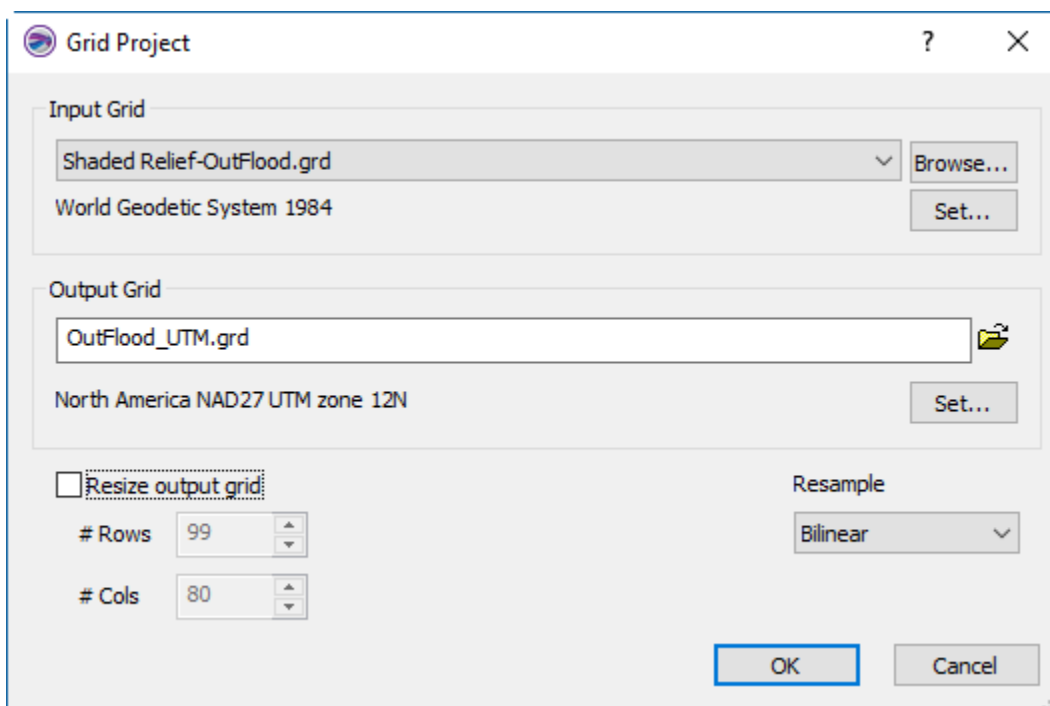
8. Calculate the grid volume within a selected polygon

Calculating the volume inside or outside a polygon just got a lot easier! Simply use a polygon (or multiple polygons) in any existing base layer, or load the polygon(s) from any vector file (e.g. DXF, SHP, etc). It's that easy! No extra steps are required.



9. Reproject a grid from one coordinate system to another

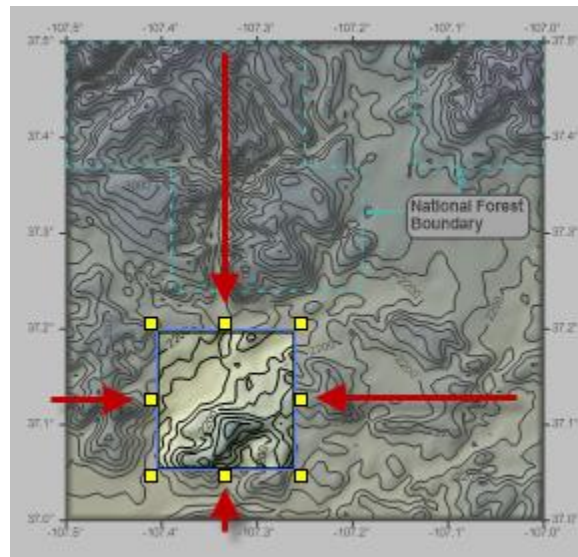
The time to convert the coordinate system of a grid file has been quartered! Simply select the input grid and input coordinate system, set the output grid file name and output coordinate system and you have your new projected grid.



10. Set the map limits by drawing a rectangle

Set the map limits by dragging the handles to resize the limits interactively, or by holding the CTRL key down and simply drawing a rectangle over your map! You can click and drag the rectangle to a

new location, or continue to fine tune the rectangle by resizing it. Press ENTER and the new limits are applied. No more trial and error!



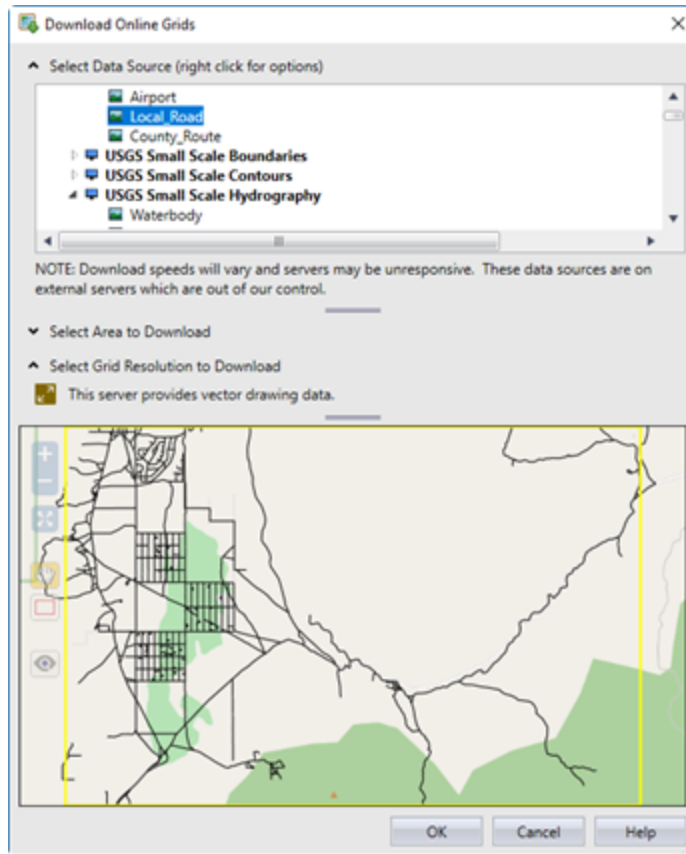
11. Create profiles with multiple surfaces for a complete cross section

Add a profile to a map, and all grid-based layers in the map are added to the profile! You choose which layers are displayed in the profile to create the cross section you need.

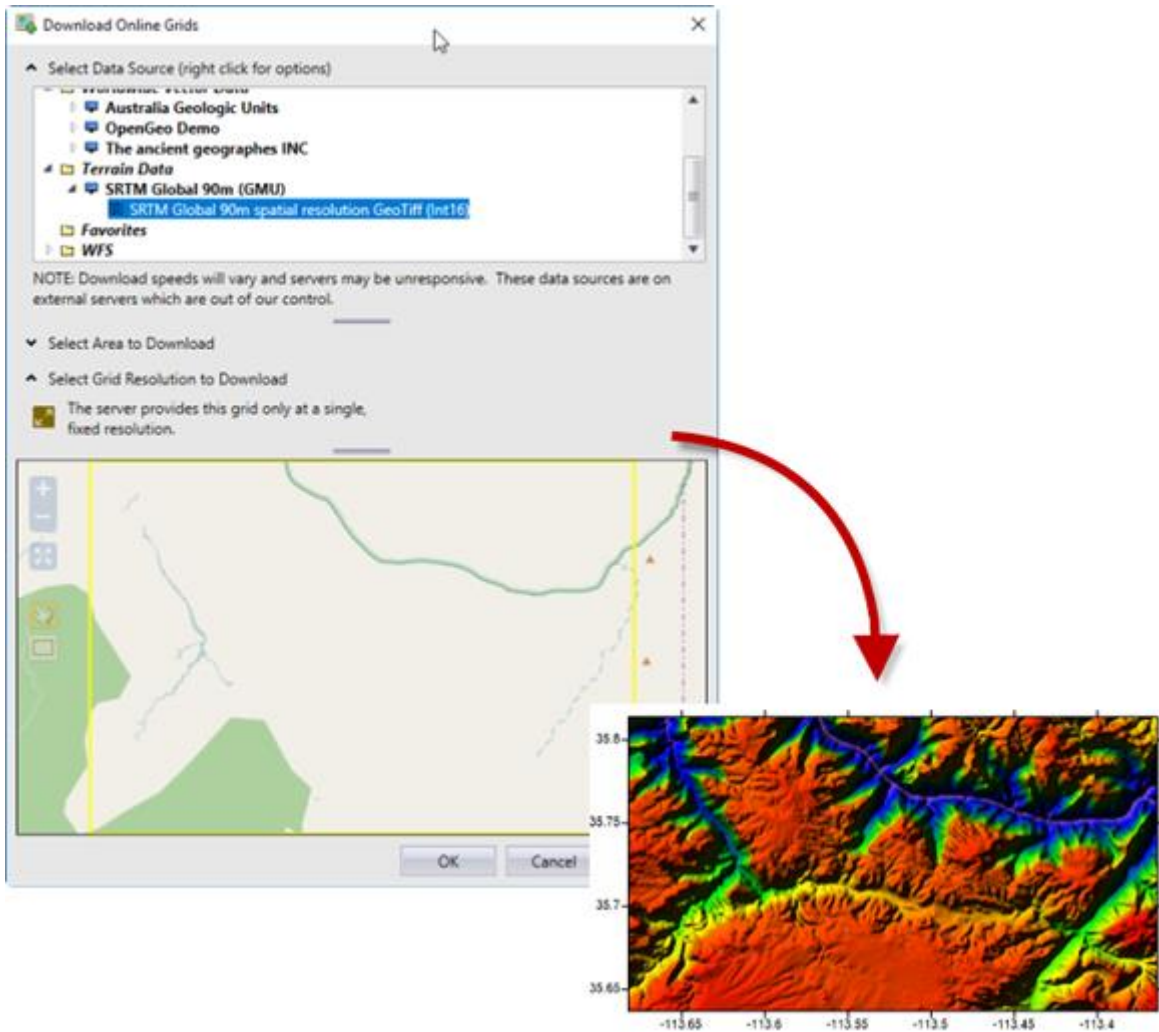
12. Connect to OSM, WCS and WFS servers to directly download DEM and vector data

Surfer can connect to more server types to get you the information you need! Open Street Maps (OSM) servers provide excellent street maps, Web Coverage Servers (WCS) provide DEM data, and Web Feature Servers (WFS) provide vector data!

If you need boundary data, Surfer comes preloaded with many WFS servers to provide this information! Preview the data you want from WFS servers before you download it.

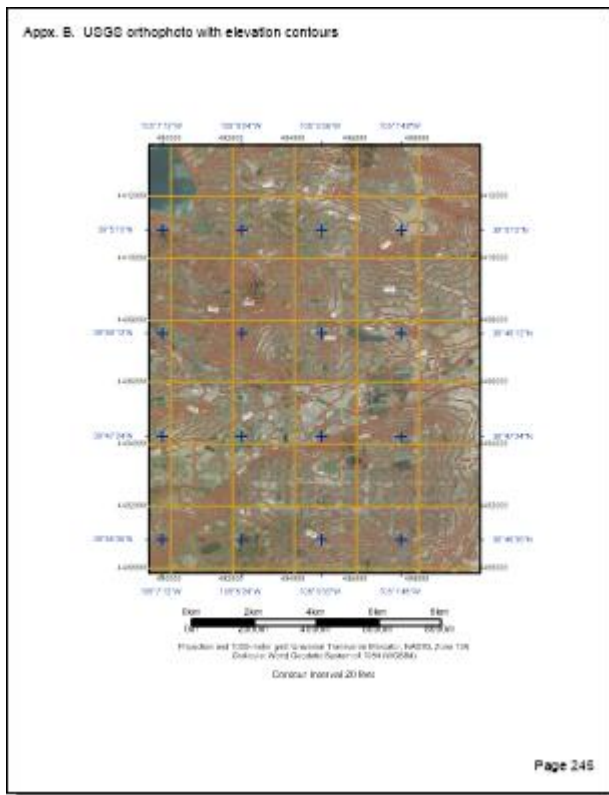


If you don't have DEM or grid data for your field area, download it! Surfer comes preloaded with the SRTM 90m global coverage server information so you can get the data you need, with true Z values.



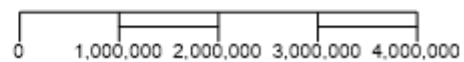
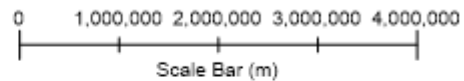
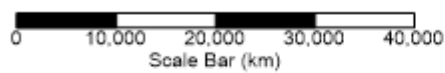
13. Create headers and footers for the plot view

Create headers and/or footers in the right, center or left sides of the page. You control the content and the font properties!



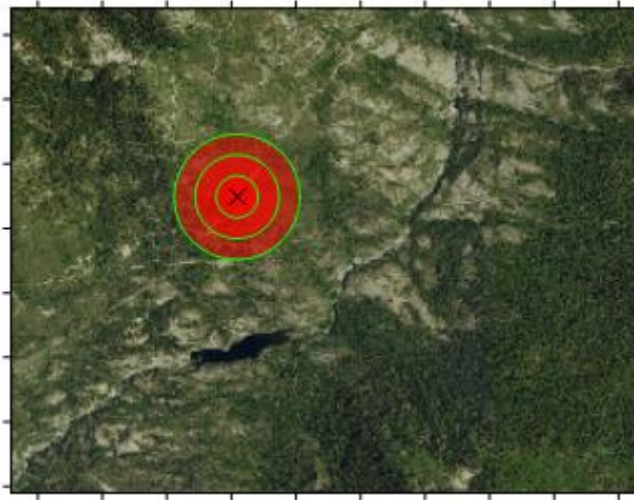
14. New scale bar options

Scale bars have been improved giving you more options than ever. Choose from many different styles, show the subdivisions in the initial cycle, add a title, or choose which side of the bar to draw the labels.



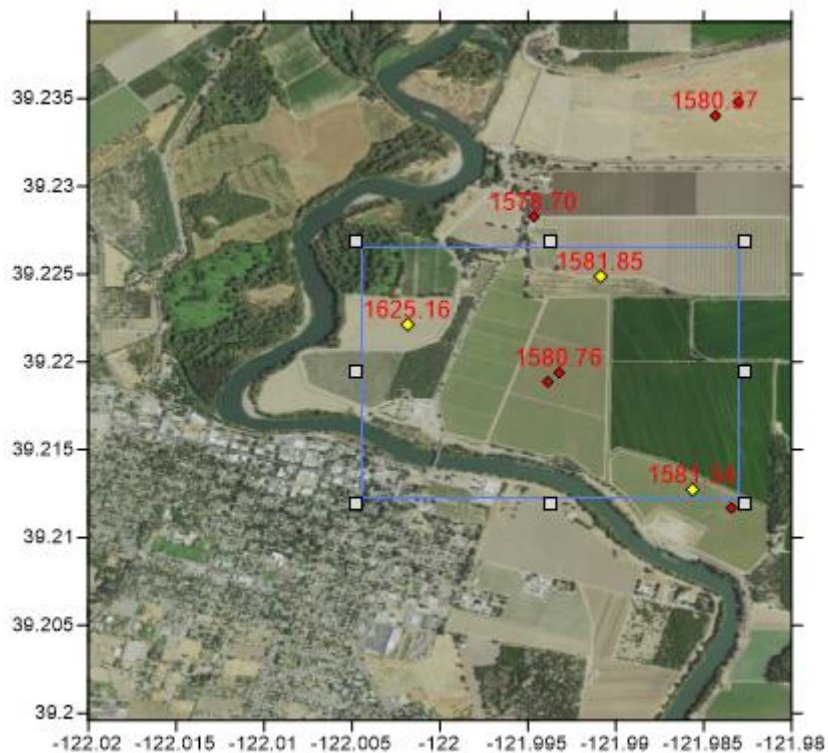
15. Range rings

Create rings, in circles or squares, around a specific point location. Adjust the number of rings, radius, and other properties after creation in the Properties window.



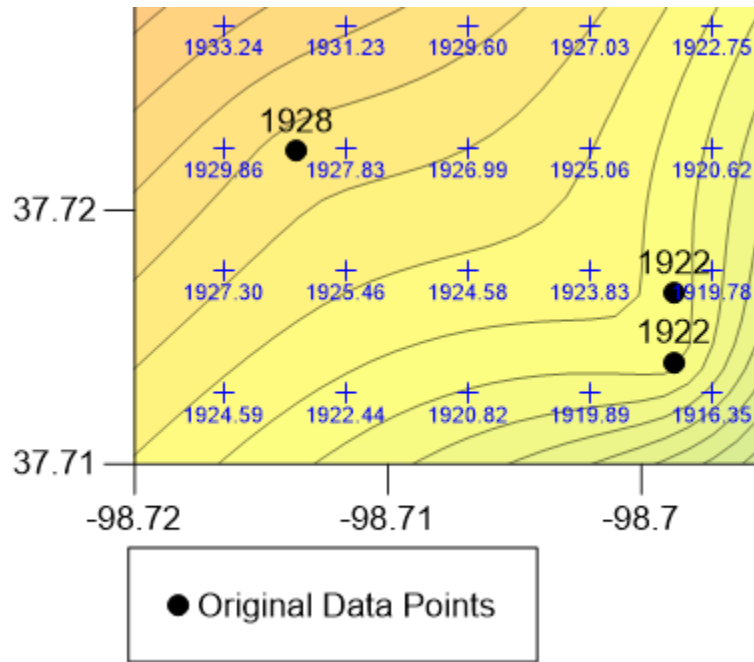
16. Import a data file as a base map

Import XY points from a data file (e.g. XLSX, DAT, TXT, etc) as a base layer so you can perform operations on the point data. For example, interactively select and delete points, change individual symbol properties, query the point data, create buffers around some points, etc. Other columns of data in the file are imported as attributes for the point objects in the base layer.



17. Display grid values directly on a map

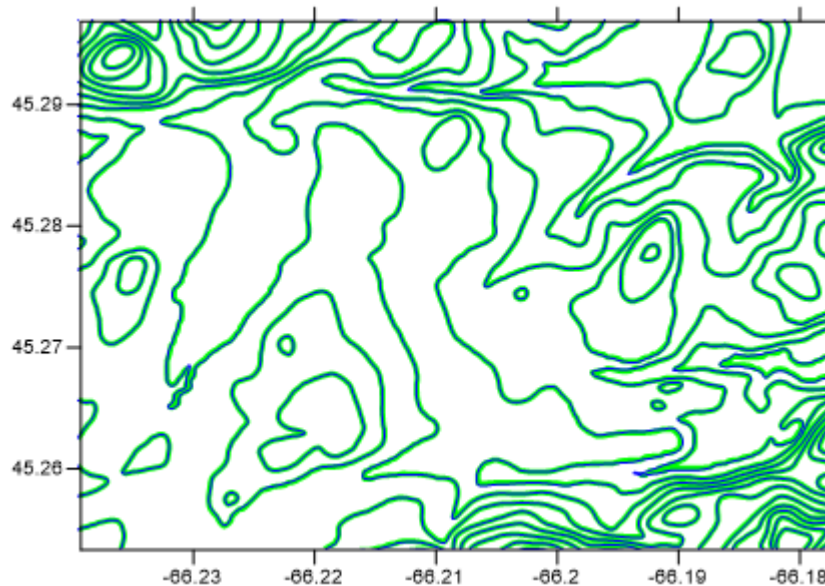
Plot grid nodes and node values over any map. Comparing grid values to contours or original data points takes no time at all.



18. Create a grid directly from vector contours

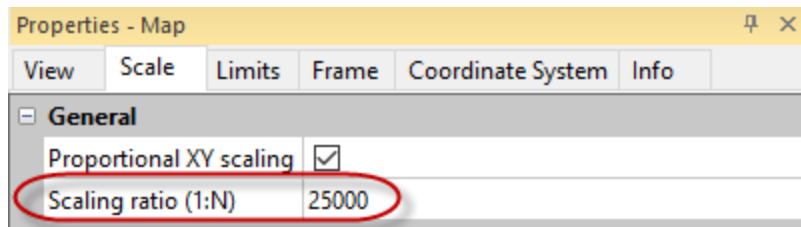
Load a vector file (e.g. SHP or DXF) of contours as a base layer, and convert it directly into a grid so you can use it to create other map layers (e.g. contours, 3D surface, color relief, etc). This command generates a grid file that most closely matches the original contours.

For example, the image below shows original contours imported from a SHP file in dark blue, and the contours from the generated grid file in bright green. They are practically identical. Converting the vector data to raw data, and gridding the raw data could not make such a match!



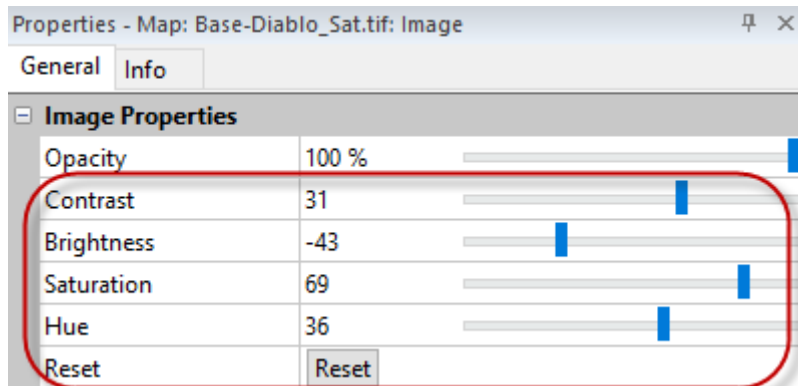
19. Scale of your map in ratio form (e.g. 1:25000)

Set the scale of your map precisely the way you want it.



20. Adjust image brightness, contrast, saturation and hue of imagery

Emphasize features in your image by applying image processing



21. Convert latitude and longitude data in degrees, minutes and seconds directly into decimal degrees

Work seamlessly with your lat/lon data and use Surfer to directly convert data from Degrees Minutes Seconds format into Decimal Degrees.

I15		x	y	z	
	A	B	C	D	
1	Longitude	Latitude	Longitude (DD)	Latitude (DD)	
2	8934.1504 W	3922.2448 N	-89.56917	39.37075	
3	8934.1525 W	3922.2448 N	-89.56921	39.37075	
4	8934.1546 W	3922.2448 N	-89.56924	39.37075	
5	8934.1565 W	3922.2447 N	-89.56927	39.37074	
6	8934.1585 W	3922.2448 N	-89.56931	39.37075	

22. Align items to the margins of the page

23. Distribute items horizontally and vertically so they are equally spaced

24. Map Measure: create a base map from the geometry, or export it to a vector file

25. Export and Print the current view displayed on the screen only

26. Use the Point Sample tool to find the Z value at XY point locations saved in a data file

27. Convert points into a polyline (and polyline into points)

28. Coordinate system improvements:

- Save/load spatial reference information using AUX.XML files
- Save/load spatial reference files directly into the Assign Coordinate System dialog
- Lambert Conformal Conic with one standard parallel (used for coordinate systems in France)
- Krovak S-JTSK

29. Import:

- LiDAR LAZ
- GML
- STL as 2D base layer

30. Export:

- Convert Grid to STL for 3D printing