


The mapwindow


The map window shows the current map in 2D or 3D. The map window has three main functions:

- i) Creating of all kinds of geodata like waypoints, routes, tracks, geochaches and drawings.
- ii) Plotting of existing GPS data in user-defined colors, line styles and fonts.
- iii) Orientation / navigation in the GPS-Online mode to show your actual position together with your tracklog, and - in case of the routable NAVTEQ navi maps - also navigation commands.

The basic principle is simple:

After a map has been calibrated, QV can calculate the geographic coordinates for any location of the mouse pointer. Each movement of the mouse is immediately converted into coordinates which are indicated in the map status field at the bottom of the map window.

And vice versa, each point whose geographic coordinates are known can be plotted in the correct place on the map. Simply click on the Search point by coordinates  icon, enter the coordinates, specify the adequate coordinate system and map datum and click the search in map / show button. The map will immediately be scrolled to this position (as long as the map covers this position). In case the map does not cover the geographic area, QV will scan all maps and will list all maps which i) cover this position and ii) fulfill the selected AutoMAP criteria.

Left clicking on the map puts the so-called map cursor in the place of the mouse pointer which is indicated by a purple circle . The coordinates of the map cursor are also shown in own field in the status field.

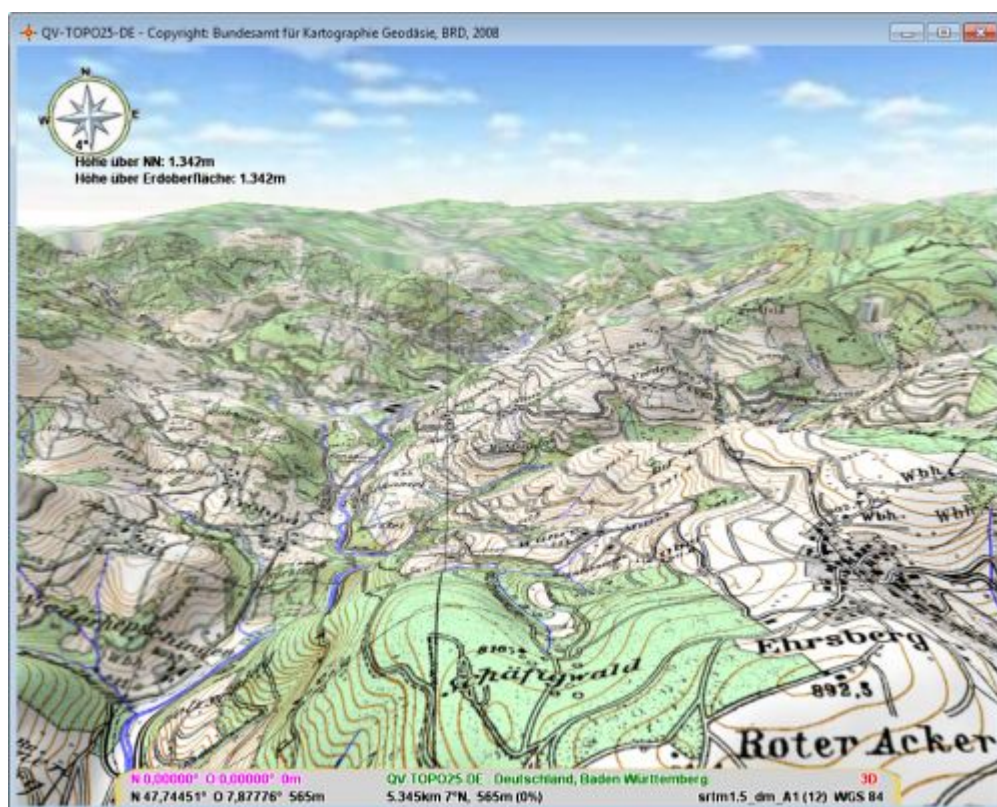
Another field shows the corresponding distance and direction from the map cursor to the mouse pointer which will be continuously updated with every mouse movement.

This may not sound very exciting but it is the basis for all subsequent actions in the map window.

As waypoints, routes, tracks or drawings will be saved with their coordinates, they can be plotted on any suitable map. And vice versa, by simple mouse clicks new waypoints or tracks can be created.

The same is true for maps: As they are stored with their corresponding coordinates, QV can automatically search suitable maps for any point, track or route or other types of geodata.

Following an example of a map window showing a 3D map representation:



At the bottom of the map window, you will find the map status field which summarizes important information:

N 50,04184° O 8,97021° 116m	TTQV-TOPO25-DE - Deutschland, Bayern	2D 87% I=1
N 50,02866° O 8,98706° 119m	1,90km 141°SO, 3m (0%)	N40_E000 (4) WGS 84

Left column

1. The position of the map cursor including altitude
2. The actual position of the mouse pointer including altitude

Central column

1. Name of the used map
2. Distance, course, altitude difference and corresponding slope in % between map cursor and mouse pointer

Right column:

Name of the used DEM (digital elevation model) and the actual map datum

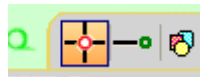
Remark: Please note that all coordinates are specified in the units according to the unit settings.

If you have enabled the display of the North arrow in the View menu, you will find a compass rose plotted in the upper left corner of the map window. In this case you will also find all details on the camera characteristics like position, altitude, speed, course, pitch and roll.

Infos zu Objekten

Wenn Sie die Tooltip-Infos  einschalten erhalten Sie Kurz-Infos in Form einer kleinen, gelben



Tooltip-Box, wenn Sie die Maus über ein Objekt bewegen. Wenn Sie jetzt das Objekt anklicken, öffnet sich eine gelbe Info-Box mit weiteren Infos:



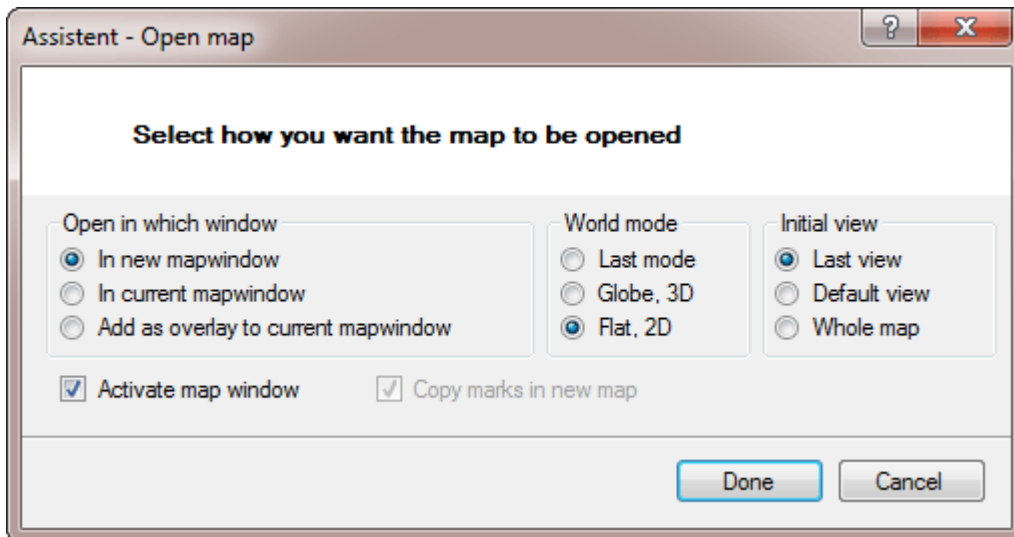
Im Editieren-Modus können Sie dort auch Änderungen vornehmen, welche automatisch gespeichert werden, sobald Sie die Box wieder verlassen. Mit dem Button "X" können Sie in den Xplorer wechseln und haben dort Zugriff auf alle Eigenschaften des Objektes. Die Info-Box schließt sich automatisch, sobald sie den Focus verliert.

Opening maps

After a map has been imported to QV and is listed in one of the X-Plorer databases, you have several options to open a map:

- Mark the map in the QV X-Plorer and double-click. The open map assistant will open.
- Mark the map in the QV X-Plorer and click the  Show in map icon. The open map assistant will open. If you push the Ctrl button before clicking the  icon, the map will be opened in a new map window.
- Just drag and drop the map from the X-Plorer to the map window. It will automatically be plotted in 2D or 3D depending on how you have configured your map window.

The open map assistant looks as follows:



In this window you can specify how the map should be visualized. You have the following options:

World mode:

- Flat, 2D - Use this option if you want the map to be plotted in a conventional 2D view.
- Globe 3D - Use this option if you want the map to be plotted in real 3D. It will be projected on the digital elevation model (DEM) of the globe. It is obligatory to have DEMs installed in your QV installation! Please note that the accuracy of this 3D modelling will strongly be affected by the resolution of the used DEM. The DEM resolution which comes with QuoVadis 6 is 30" which corresponds to approx 900 m at the equator. digital elevation models with a higher resolution are available at our webshop. All QV Topomaps come with a 3" DEM (approx. 90 m resolution). Extra high resolution DEMs are available for some areas with a 25 m resolution and excellent accuracy of elevation values (data source INTERMAP®).
- Last mode - If you choose this option QV will open the map in the same style which you have been using with the last map.

Initial view:




- Map center - QV will initially zoom to the center of the map
- Whole map - QV will zoom to the whole map extent
- Last view - If you choose this option QV will open the map in the same way which you have been using with the last map.

If you have more than one map window opened, you will also have the choice of one of the following options:

Open in which window:

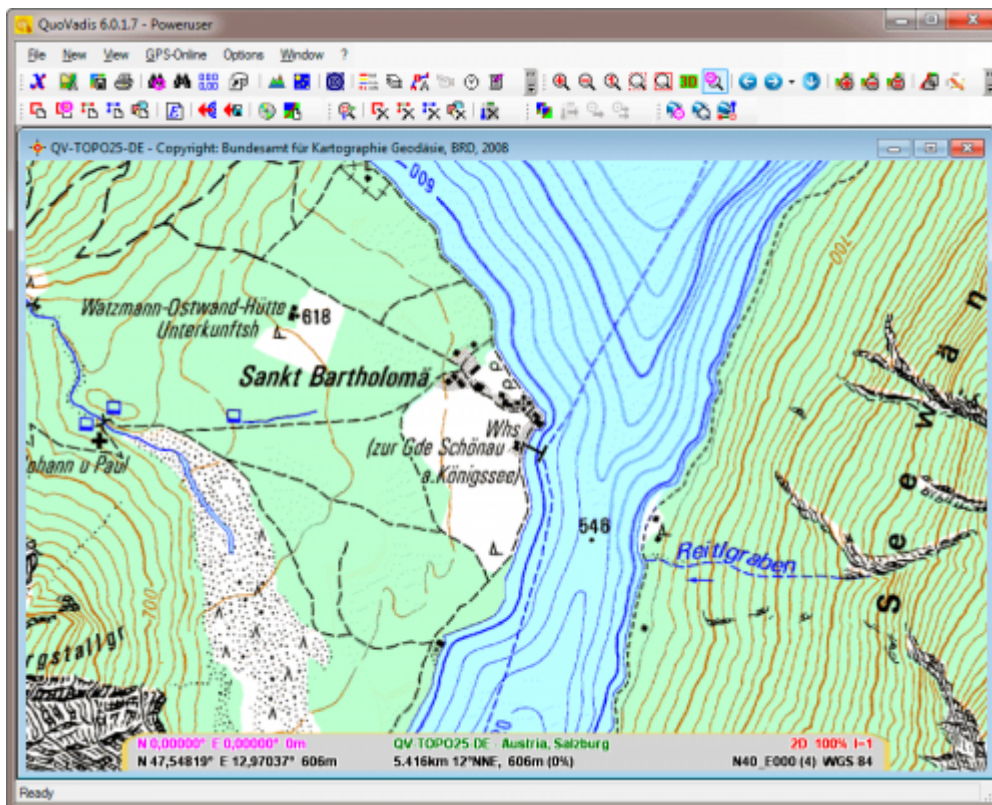
- In new map window - This is the only option if no map window has been opened before.
- In current map window - This option will add the map in their currently active map window.
- Add as overlay to the current map window - In this case the map will be opened as an overlay to a map which has already been plotted in the active map window.

Important Remark:

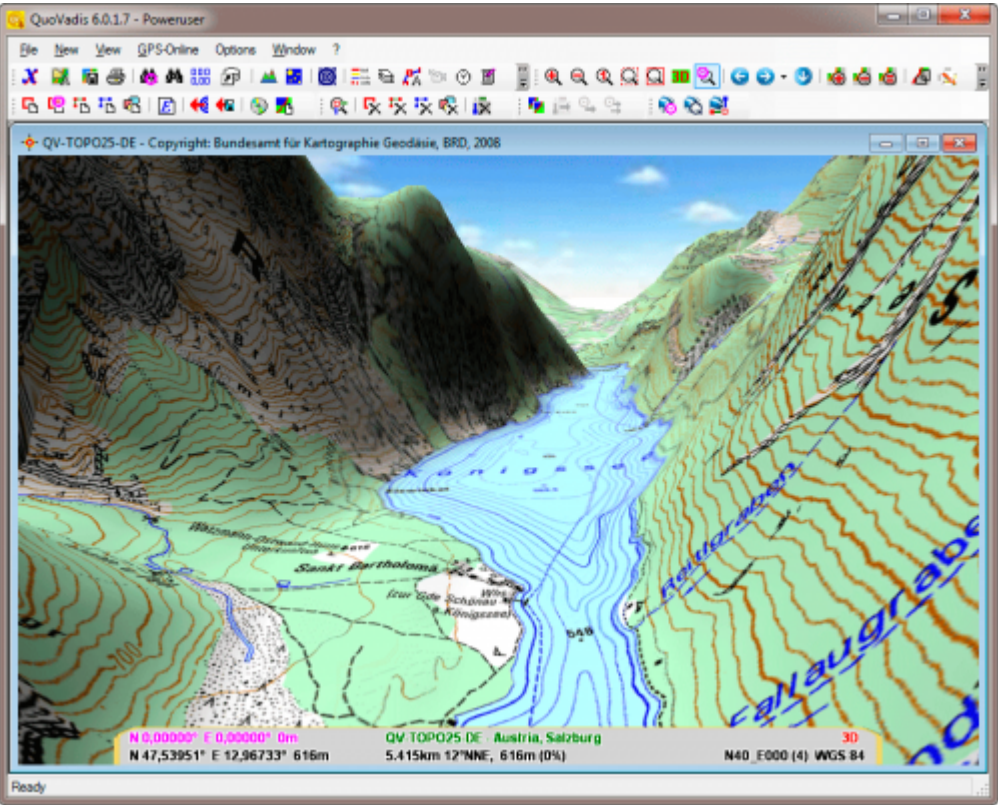
- The setting of the AutoMap mode will influence the maps which are offered when pressing the  Show in map icon. If the AutoMap function is disabled and the icon has this appearance  ^{no}, you will only be able to open a map which you explicitly marked. In this case just enable the AutoMap mode by click the corresponding icon until it looks like this: . Then maps which are stored in in other databases will also be offered in the selection of maps to be opened.

Here two examples on how the Top25 Germany topomap will look in a 2D and 3D mode (2D upper, 3D lower):

Top25 Germany - 2D view







Top25 Germany - 3D view (please note that due to the limited resolution of the DEM with a 90 raster the slopes along the eastern shoreline are not perfectly modelled):



Controlling the map perspective


In order to adjust the 3D characteristics of the 3D map window, you can use one of the following keys / key combinations and/or the mouse. Additionally the corresponding functions for the 2D window are listed:

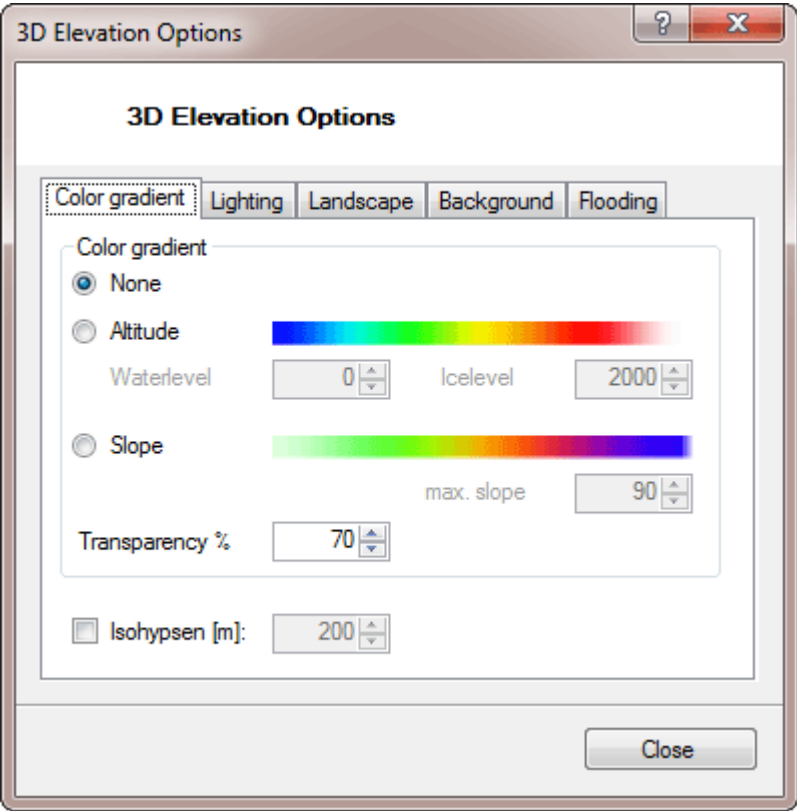
Key / Mouse	Function in 2D window	Function in 3D window
	Pan the map to the left	Pan the map to the left (constant altitude)
	Pan the map to the right	Pan the map to the right (constant altitude)
	Pan the map downwards	Pan the map downwards (constant altitude)
	Pan the map upwards	Pan the map upwards (constant altitude)
Shift +	Turn the map contra-clockwise	Turn the camera contra-clockwise
Shift +	Turn the map clockwise	Turn the camera clockwise
Shift +	(not used)	Turn camera downwards
Shift +	(not used)	Turn camera upwards
Ctrl +	(not used)	Turn the map contra-clockwise (Cursor centered)
Ctrl +	(not used)	Turn the map clockwise (Cursor centered)
Ctrl +	(not used)	Increase camera distance from cursor (Zoom Out)
Ctrl +	(not used)	Decrease camera distance from cursor (Zoom In)

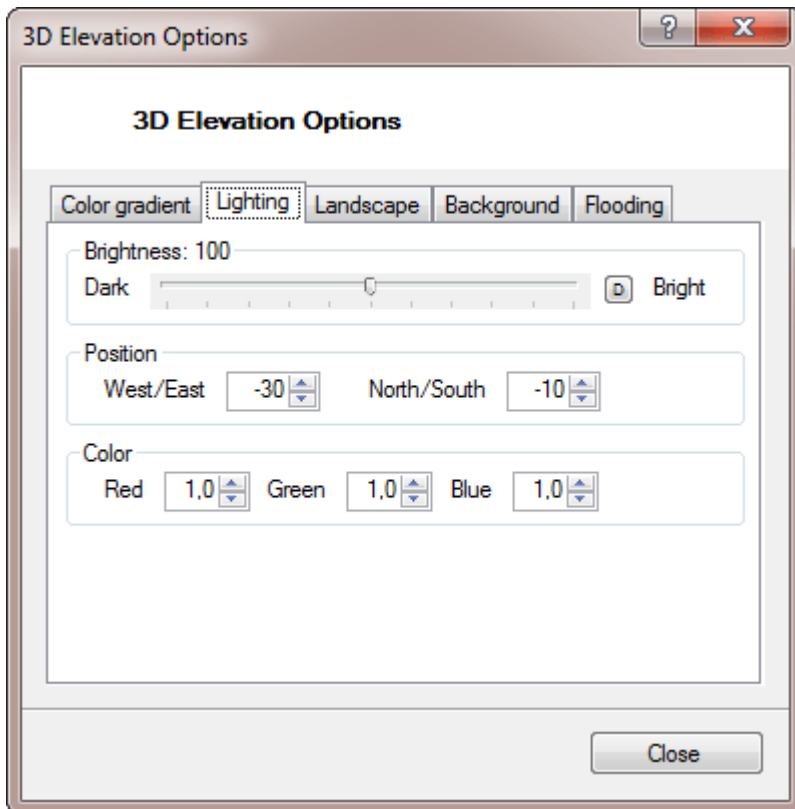
Key / Mouse	Function in 2D window	Function in 3D window
Page 	Zoom In	Decrease camera elevation (Zoom In)
Page 	Zoom Out	Icrease camera elevation (Zoom Out)
Ctrl + Shift + 	(not used)	Tilt the horizon contra-clockwise
Ctrl + Shift + 	(not used)	Tilt the horizon clockwise
Mouse wheel	Without additional keys: Zoom In / Zoom Out (with focus on the mouse position) Shift + wheel: Accelerate / decelerate movement Ctrl + Wheel: Move towards cursor / move towards map center	
Mouse movement	Drag with left mouse button pushed: Move map (any direction) Horizontal move with right button pushed: rotate map (relative to map center) Vertical move with right button pushed: camera tilt (NOT in 2D)	

- Using the N key you can always orient the map towards North!
- Using the 1 key you can switch back to a view from perpendicular above
- Using the R key you can reproject your map toward north and view from perpendicular above. If you have the zoom on cursor option enabled, the map will be centered on the cursor position. Otherwise it will be centered on the centre of the map.

3D options

When plotting a map in the 3D mode, you have a couple of additional options which can be accessed by clicking the 3D elevation options  icon. Thereafter the 3D elevation options window with 5 tabs will open:



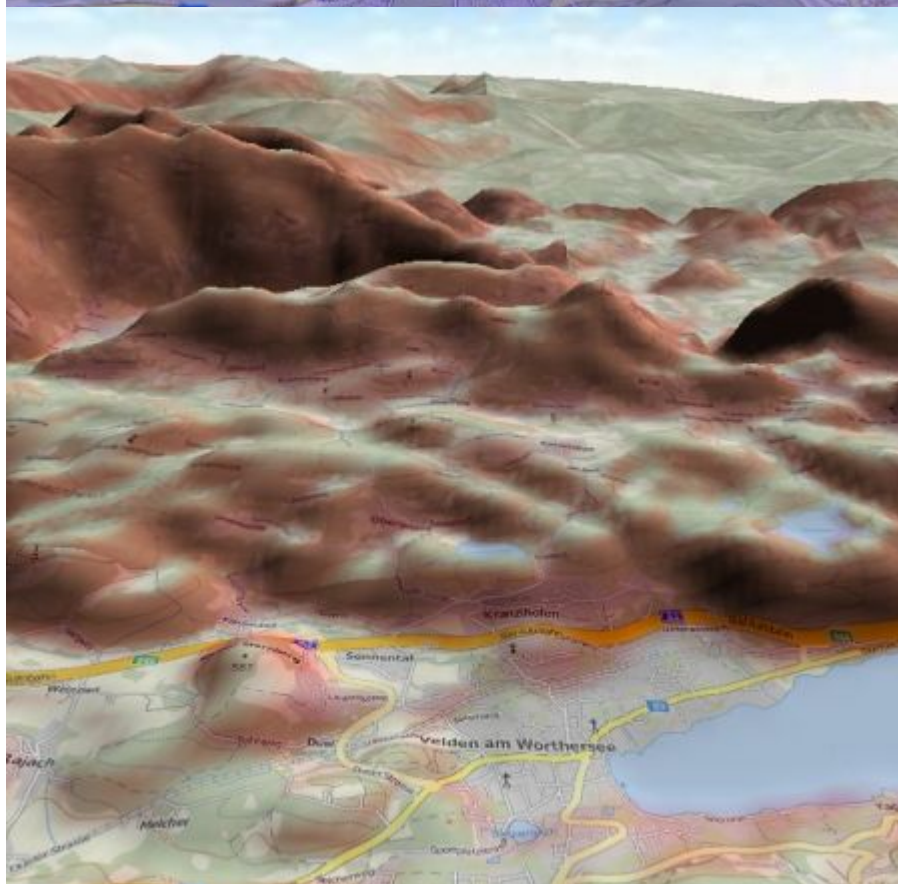
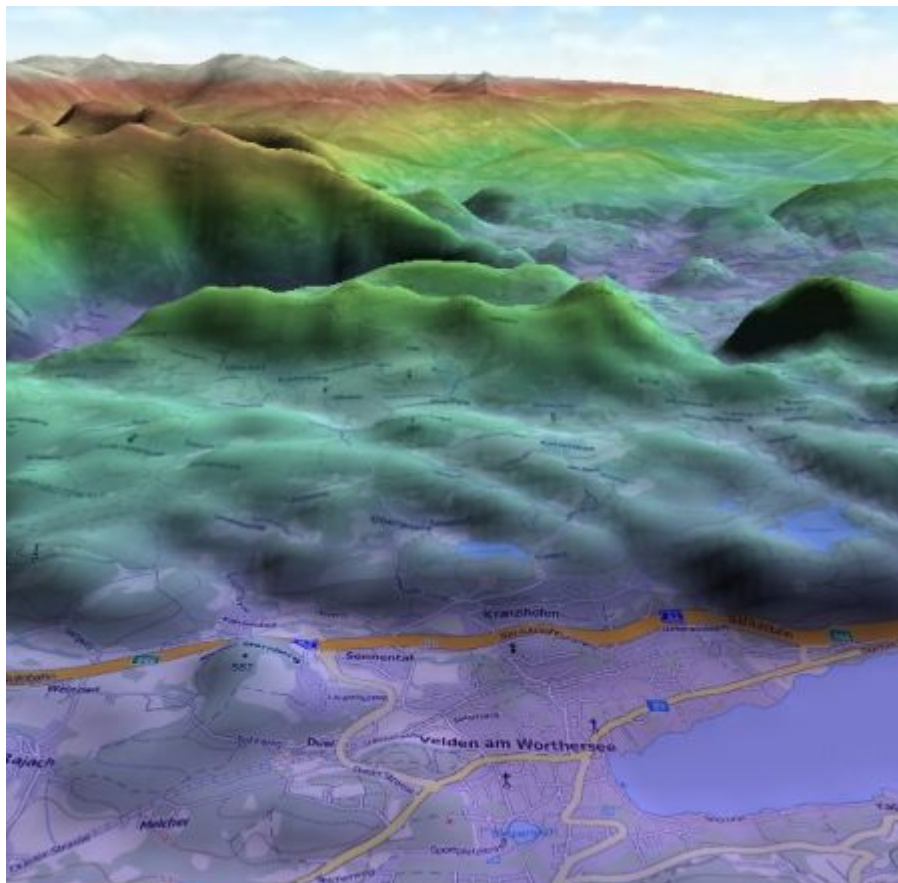


On the Color gradient tab, none is the default option which will show the map in its original style. Optionally you can color-code the map according to ground surface elevation (Altitude option). In this case you can specify different threshold values for the water and ice levels. In this context the water level represents the lower elevation limit which is color-coded in blue and the ice level the upper elevation threshold which is color-coded in red.

With the slope option you can color-code the map according to the slope of the terrain. In this case you have to define a threshold level for the steepest slope class.

For both colorcoding options you have to define the Transparency for the color-coded bands in % in order to adapt the visibility of the original map to your personal preferences.

Below you find an example for colorcoding according to altitude (left/upper) and slope (right/lower):



Alternatively, you can activate the Isohypsens switch in order to activate a shading according to elevation bands as an overlay to the map plot.

Below an example without (left/upper) and with enabled altitude isolines (right/lower; 50 m intervals):



On the Lightning tab you adjust the brightness of the map plot and specify the position of the sun (Light position) which will define how the shading affects the map style.

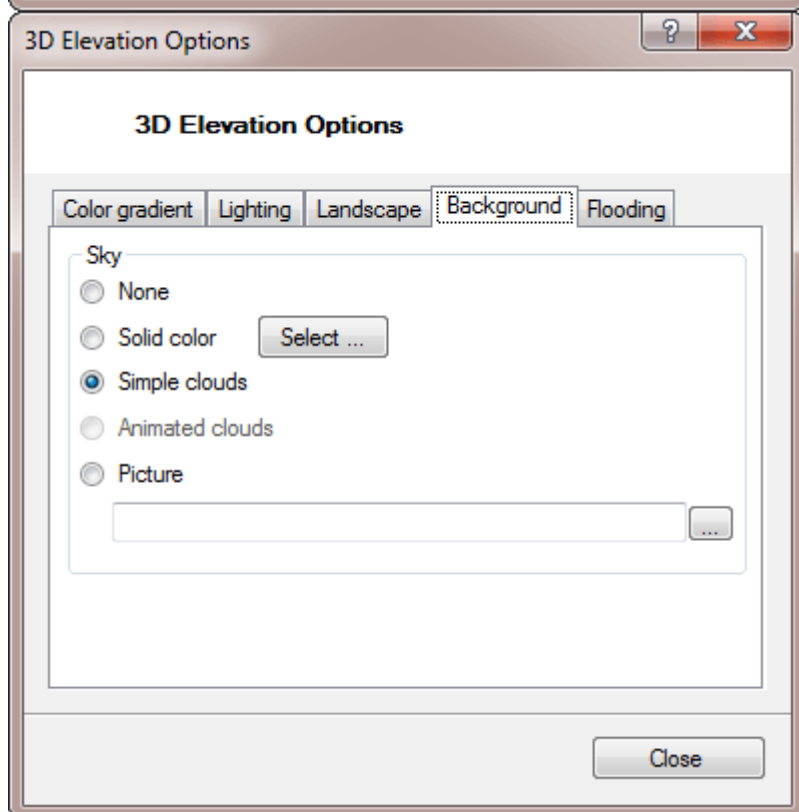
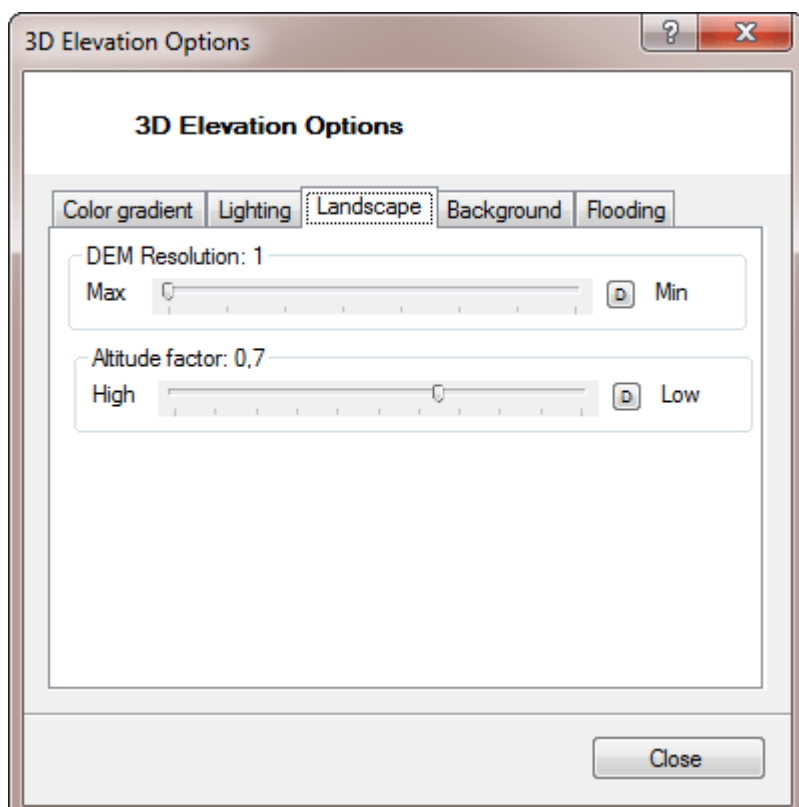
Additionally you can modify the Light Color of the light source for special effects.

An example how the position of the sun affects the shading is shown below for a sun azimuth 45° east (left/upper) and 45° west (right/lower; in both cases sun elevation North/South was set at -5°):



Important Remark:

- Concerning sun azimuth, negative values translate to east, concerning altitude negative values represent north.



On the Surface relief tab you can adapt the 3D modelling to your requirements. Using the Mesh Resolution slider, you can adjust the resolution of the irregular triangular network which builds the terrain surface. By increasing the Mesh Resolution factor, the ground surface will be modelled with a higher resolution but this will result in a slower modelling by imposing additional load on your CPU. So, if you are using a PC with limited performance, it is wise to decrease the Mesh Resolution factor to

some extent.

Below two examples for a high (left/upper) and a low mesh resolution (right/lower):



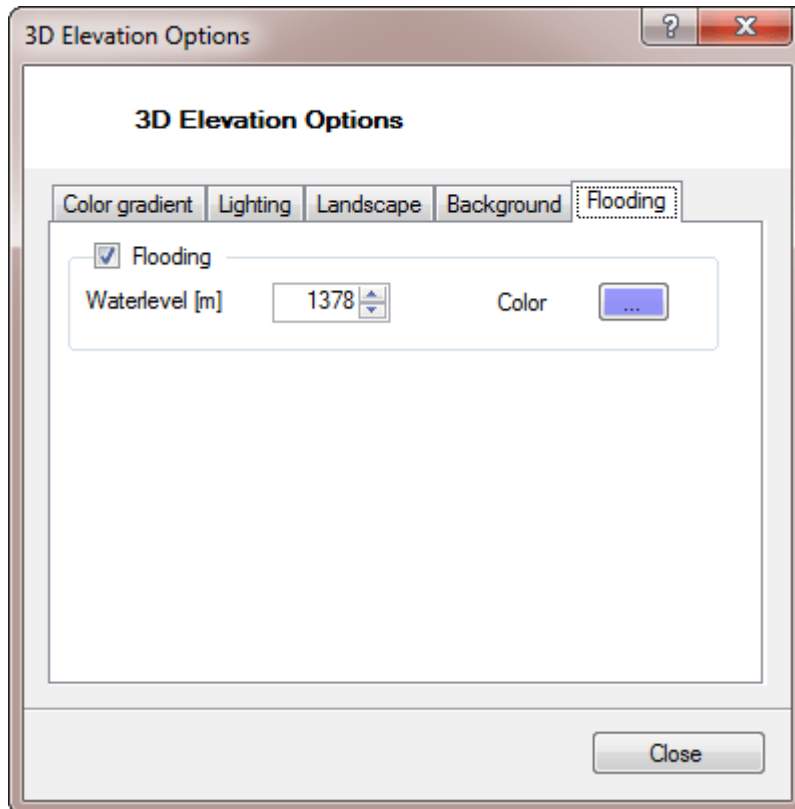
Using the Vertical scaling slider, you adjust the scale of the vertical axis to your personal preferences.

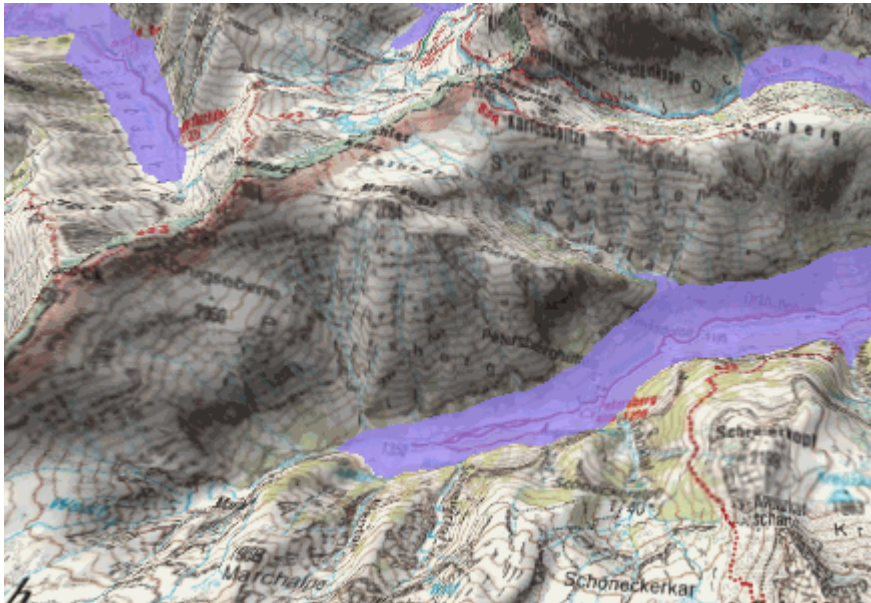
Please note that this is a dimensionless slider where a value of “1” does not necessarily reflect a “natural” view as the 3D characteristics are strongly influenced by the camera perspective. Following two examples with a pronounced relief energy (left/upper) and a more flat map representation (right/lower):





Auf der Seite Überflutung können Sie Überflutungsgebiete im Gelände veranschaulichen. Hierzu wird auf einer frei einstellbaren Höhe eine Fläche in die Karte eingeblendet, die anzeigt, welche Teile des Geländes bei diesem Wasserstand überflutet sein werden. Farbe und Transparenz dieser Wasser-Fläche sind unter Farbe einstellbar. Benutzen Sie die kleinen Pfeilchen in der Eingabebox Wasserlevel, um den Wasserstand in Meter-Schritten zu verändern. Die Kartenansicht wird hierbei in Echtzeit aktualisiert.






Map extent and section






The map plot can be shifted within the map window in various ways:

- Using the arrow keys on the keyboard. With this method a neighbouring map will automatically be searched and opened when the map extend of the current map is reached.
- By dragging the map during a click-and-hold operation with left mouse button.
- By zooming out until the area of interest is covered, then placing the mouse pointer at the place of interest and zooming in again.

The map display can also be zoomed in various ways:

- By selecting one of the zoom symbols in the symbol bar of the main window.
- By selecting one of the zoom commands from the View menu in the main menu bar.
- By pressing + or - on the keyboard to zoom in or out, or key 1 for 100% zoom.
- By selecting a zoom stage from the pop-up menu in the status line.
- With the scroll wheel of your mouse.

Click on the  Center zoom on cursor to skip back to the cursor point from any map position.

Using one of the lens icons  /  /  /  /  (description see above), you can zoom the map to any scale or map extent. You can also select from a pop-up menu with zoom factors at the status bar below the map window or enter a specific zoom factor.

Important Remark:

When zooming, QV will always center according to the position of the mouse pointer! This is different when compared with older QV versions where the map was centered by default according to the map cursor position.

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