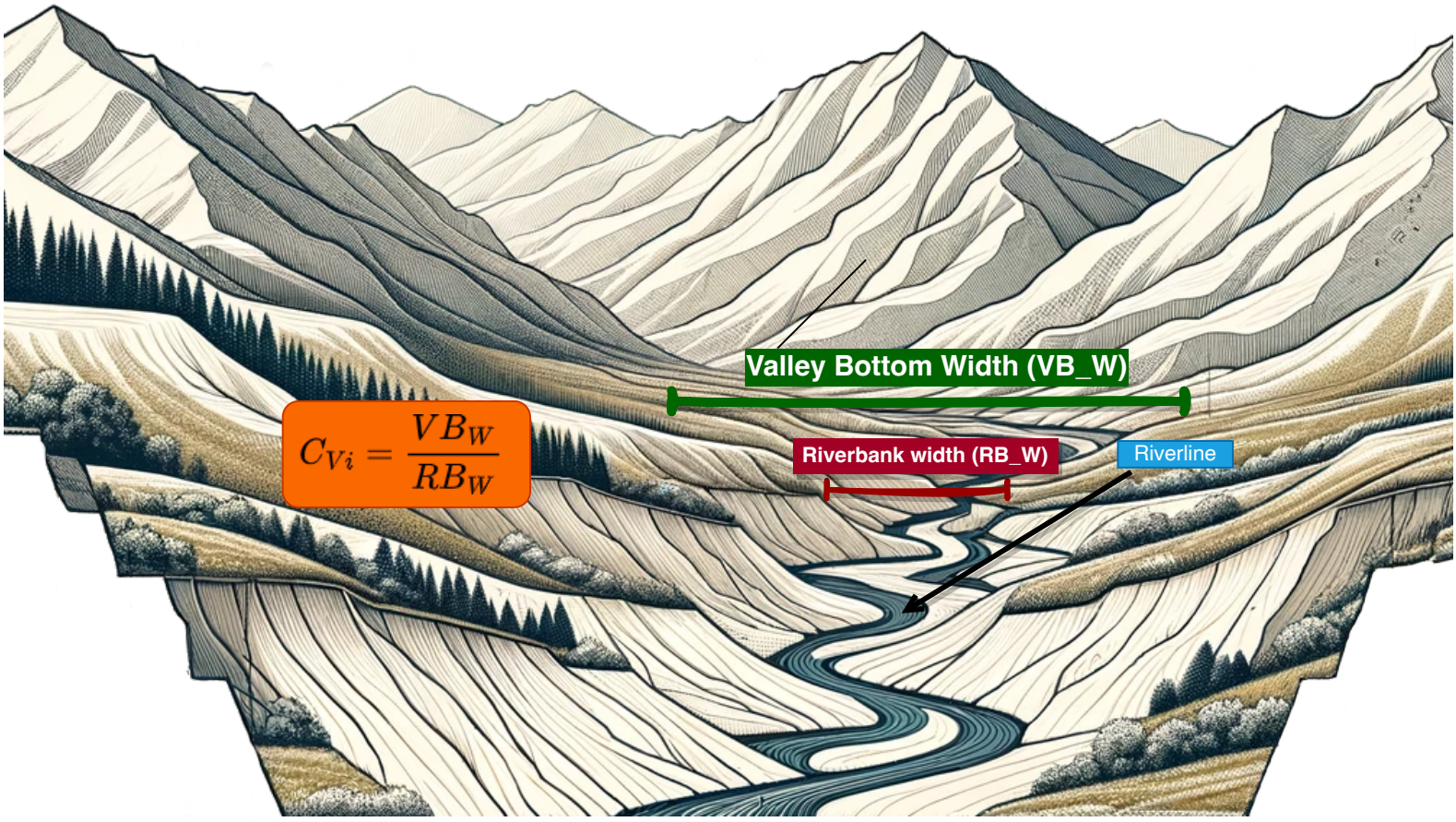
Confined Valley Index

Simplified diagram of the Qgis Model



Inputs

- Valley Bottom polygon
- Linear Layer with LEFT Riverbank
- Linear Layer with RIGHT Riverbank
- River Line path
- Transects step
- Transects width

START

Obatin inputs and parameters

Generation of transects along River Line Path

Split transects into Left and Right segments, using L/R Riverbanks input

Generate points of intersection of transects with riverbanks lines and valleybottom polygon.

Intersections along Right and Left side, are kept separate during the process

Determination of minimum distance from center to Left and Right Side of Riverbanks and Valley Bottom

Using spatial joins and other tuning procedures, only essential field and data are kept for the Output

OUTPUT: Points Shapefile

Description

The algorithm is used to calculate the relationship between the width of the ValleyBottom and the banks of a river.

Transects are generated, at constant pitch, along the river axis; they intersect the right bank, the left bank and the ValleyBottom polygon.

The distances between the river axis and the intersections are calculated, the minimum value is taken.

In Output a layer of points along the river axis containing the calculated data is generated:

- SEZ-ID: transect identifier (key field).
- VB_RB-index: Ratio of ValleyBottom Width to Riverbank Width.
- RB-W: River bank width
- VB-W: Width of the Valley Bottom
- min-RB-R: Minimum distance to the Right Bank of the river
- min-RB-L: minimum distance with the Left Bank of the river
- min-VB-L: minimum distance with the Left ValleyBottom
- min-VB-R: minimum distance with the ValleyBottom Right
- transect_d: distance along the river path

Available files and tested with:

Qgis - 3.28.11 - Firenze

 v.1.1 - 01/02/2024