

## Method 7 Vermont Stream Geomorphic Assessment (VSGA)

### Definition of corridor:

The area of consideration when assessing runoff and erosion, flood plain function, and potential locations of active stream channels as channels evolves.

### Description of method, inputs and outputs:

This method was developed as part of the Vermont geomorphic assessment protocol. Using this method, river corridor lines are drawn at 2.5 times the bankfull width or 100 feet on each side of the channel. Next, the "meander centerline" is drawn, and a second corridor layer drawn 4 channel-widths to each side of that line. Any part of these corridors that is cut-off by a valley edge is extended on the other side of the river so that the corridor is at least eight times the channel width (total). All corridor lines are then combined to create the widest corridor possible. The key parameters of the method are erodibility of channel banks, sediment and flow regime characteristics, confinement, and degree of departure from reference conditions. Like the WARSSS method, this has three phases. Phase I is based on remote-sensing and windshield surveys. Phase II includes qualitative field measurements, while phase III requires quantitative surveying to inform restoration projects.

<b>Output:</b>		<b>Technology needs:</b>	
<input checked="" type="checkbox"/> Binary map (in the zone of risk or not) <input type="checkbox"/> Graded map (maps levels of risk)		<input checked="" type="checkbox"/> GIS <input type="checkbox"/> Specific model	
<b>What is assessed:</b>		<b>Data Sources:</b>	
<u>Channel-scale</u> <input checked="" type="checkbox"/> Width (bankfull) <input type="checkbox"/> Depth <input type="checkbox"/> Slope <input checked="" type="checkbox"/> Planform <input type="checkbox"/> Erodibility of Banks/Bed <input type="checkbox"/> Grain Size <input type="checkbox"/> Stream Power	<u>Landscape-scale</u> <input type="checkbox"/> Vegetation <input type="checkbox"/> Hydrology (streamflow, channel forming flow, flood) <input type="checkbox"/> Erodibility of floodplain <input checked="" type="checkbox"/> Width (flood prone area)	<input checked="" type="checkbox"/> Imagery (± channel geometry) (± vegetation) (± land use) (± infrastructure) <input checked="" type="checkbox"/> Topographic Maps (± LiDAR DEM) <input type="checkbox"/> Geologic Maps <input type="checkbox"/> Soil Maps/ database (± Surficial Geology)	<input type="checkbox"/> Streamflow data <input checked="" type="checkbox"/> Field measurements (± Channel geometry) (± Erosional Forms) (± Sedimentary Forms) (± Bankfull indicators) (± Vegetation) <input type="checkbox"/> Historical Information <input type="checkbox"/> Land use maps (± vegetation) (± wetlands)

**Developer/Year:** VT ANR, 2004

### Citation(s) for primary method or descriptive publication(s):

Kline, M., C. Alexander, S. Pomeroy, S. Jaquith, G. Springston, B. Cahoon, and L. Becker, 2004. Vermont Stream Geomorphic Assessment Appendix E: River Corridor Delineation Process. Prepared for the Vermont Agency of Natural Resources, Waterbury, VT.