Method 6 River Morphodynamic Corridor (RMC)

Definition of corridor:
The area over which a river may migrate under either normal conditions or extreme events.

Description of method, inputs and outputs:
Reconstruction of historical paths is used to determine channel migration rates and predict future channel locations. These predictions are tempered by natural and human confinements. The Morphodynamic Corridor is assumed to experience erosion in all cases while the Event Morphodynamic Corridor is only at risk during extreme floods. This method is part of the larger Italian framework for hydromorphological assessment, analysis and monitoring (IDRAIM). Other components include the "Morphological Quality Index," the "Morphological Dynamics Index," and the "Event Dynamics Classification." The results of these tools can be incorporated in the corridor delineation tool.
The RMC tool uses historical channel locations to determine migration rates and predict future locations. These predictions are tempered by natural and human confinements, determined from topographic maps.

<table>
<tr><td colspan="2">Output:

☐ Binary map (in the zone of risk or not)
☑ Graded map (maps levels of risk)</td><td colspan="2">Technology needs:

☑ GIS
☐ Specific model</td></tr>
<tr><td colspan="2">What is assessed:</td><td colspan="2">Data Sources:</td></tr>
<tr><td><u>Channel-scale</u>
☐ Width (bankfull)
☐ Depth
☐ Slope
☑ Planform
☐ Erodibility of Banks/Bed
☐ Grain Size
☐ Stream Power</td><td><u>Landscape-scale</u>
☐ Vegetation
☐ Hydrology (streamflow, channel forming flow, flood)
☑ Erodibility of floodplain
☐ Width (flood prone area)</td><td>☑ Imagery
(± channel geometry)
(± vegetation)
(± land use)
(± infrastructure)
☑ Topographic Maps
(± LiDAR DEM)
☐ Geologic Maps
☐ Soil Maps/ database
(± Surficial Geology)</td><td>☐ Streamflow data
☐ Field measurements
(± Channel geometry)
(± Erosional Forms)
(± Sedimentary Forms)
(± Bankfull indicators)
(± Vegetation)
☑ Historical Information
☐ Land use maps
(± vegetation)
(± wetlands)</td></tr>
</table>

Developer/Year: ISPRA, in prep

Citation(s) for primary method or descriptive publication(s):
Rinaldi, M. et al. In Preparation