ETWG Integration - Riparian Mapping

This topic is closely related to several others in the ETWG Integration Focus Group, particularly the Wetlands Mapping topic. These pages may be merged in the future, but are being help separately for the early exploration phases.

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Screenshare: https://gstalk.usgs.gov/47919 (best results with Internet Explorer on PC and Safari on Mac)

This page is intended to share ideas and software on how to map "riparian" areas at the CONUS level, so please feel free to post ideas and questions in the "Forum" section and we'll try to get a dialog going. The impetus behind this effort is that the commonly used method of defining a fixed Euclidean distance buffer around streams is a poor way to approximate "riparian" areas. These pages are intended to provide a place to discuss whether there better methods to determine these areas. There are a variety of interesting questions in here, starting with:

Terminology:

Exactly what is the definition of a "riparian area" or "floodplain?" Are these terms interchangeable? Do ecologists, biologists, and hydrologists need or even want the same boundaries? If so, are they

1. areas characterized by a suite of plants that are adapted to/depend on the shallow water table and or soils? That is, is this a greenbelt?
2. areas whose boundaries are detectable using a suite of geomorphic characteristics such as changes in topography, such as slope, or some other metric?
3. areas that regularly are inundated with flood water?
4. areas than can be inferred from flow characteristics? If so, which flow characteristics are relevant? Flood height, stage, and/or recurrence interval? What is the best method to derive these values? What is the best method to extrapolate these values from gaged locations to the associated stream segment, and beyond to non-gaged segments?

Existing Tools:

- USFS Riparian Tool (Details about how the USFS tool works with examples)
- River Bathymetry Toolkit (RBT) (The RBT is a suite of GIS tools that work within ESRI's ArcGIS Desktop software)
- USGS Stream Channel and Floodplain Metric GIS Toolbox (Presentation about prototype software)
- USGS GFT, A software tool for rapid flood inundation mapping (download tool here)
- Exploring Some Methods of Floodplain Delineation

Additional sources of information:

- ETWG Integration Riparian Delineation Forum (used to table the discussion on this topic)
- Related Publications

Interested Parties:

- USFS Forest to Faucets
- NAWQA
- Powell Center
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Next Steps