

## Development of a National Healthy Watersheds Preliminary Assessment

*This Preliminary Assessment will provide a “first cut” nationwide product at the HUC12 scale with statewide summaries intended to help states and others without Healthy Watersheds Assessments engage in watershed protection planning and prioritizing.*

### **Background**

EPA's Healthy Watersheds Program (HWP) works with states to generate assessments of watershed health and vulnerability, supporting efforts to identify and protect watersheds that are in good condition. To date, HWP has supported the completion of statewide assessments for California, Wisconsin, and Alabama, and a basin-level assessment for the Clinch-Powell Rivers. Support for a Tennessee statewide assessment is ongoing. A new HWP project will soon apply the experience gained in these detailed assessments by developing a more general, national-scale preliminary assessment of potential healthy watersheds.

Detailed assessments are valuable to the states that have them, and HWP's new Grants program will continue to support state- and river basin-specific assessments as well as protection implementation projects. Developing a national preliminary assessment, however, will make healthy watersheds protection progress much earlier across the nation than detailed assessments alone. A consistent, base-level characterization of watershed health and vulnerability for the nation is needed because:

- As a national-scale program, HWP's vision is that healthy watersheds are identified, protected, and tracked in all 50 states, territories and tribal nations. HWP naturally generates expectations for national coverage and products.
- Two major EPA restoration/protection programs – the TMDL and 319 programs – have recently issued guidance that promotes prioritization by states as part of their Integrated Reporting and non-point source pollution strategies, respectively.

For these reasons, HWP has initiated a preliminary healthy watersheds assessment to identify and map the nation's healthy watersheds during 2015.

### **Approach**

*Consistent with HWP Methods.* Full HWP assessment involves scoring watersheds at the catchment scale according to multi-metric indices of **Watershed Health** (landscape condition, habitat condition, hydrologic condition, geomorphic condition, biological condition, and water quality) and **Watershed Vulnerability** (projected climate change, land use change, and future water use). To the extent possible, the preliminary assessment will follow the same pattern, using data at a consistent (HUC12) watershed scale that are nationally available yet most comparable to data used in the Health and Vulnerability indices. Indicator data will come mainly from the Watershed Index (WSI), a collaborative partnership between EPA Region 4 and the Recovery Potential Screening (RPS) project that is already playing a major role in supporting implementation of the TMDL vision. The WSI currently includes 500+ environmental indicators, measured at the HUC12 level for all lower 48 states.

*Ecoregion-based scoring.* HUC12 scoring in the Health and Vulnerability indices will be quantified per whole (i.e., often multi-state) ecoregion rather than per state only, as HUCs within ecoregions share ecological commonalities and thus are more meaningfully comparable across the myriad gradients controlling ecosystem function represented by the Health and Vulnerability indices.

*Formatted for state-specific results.* The preliminary assessment will first score and compare each whole ecoregion's HUCs, then re-summarize by each ecoregion portion within state boundaries, to enable state-level users to consider watershed protection options relative to each ecoregion within their state.

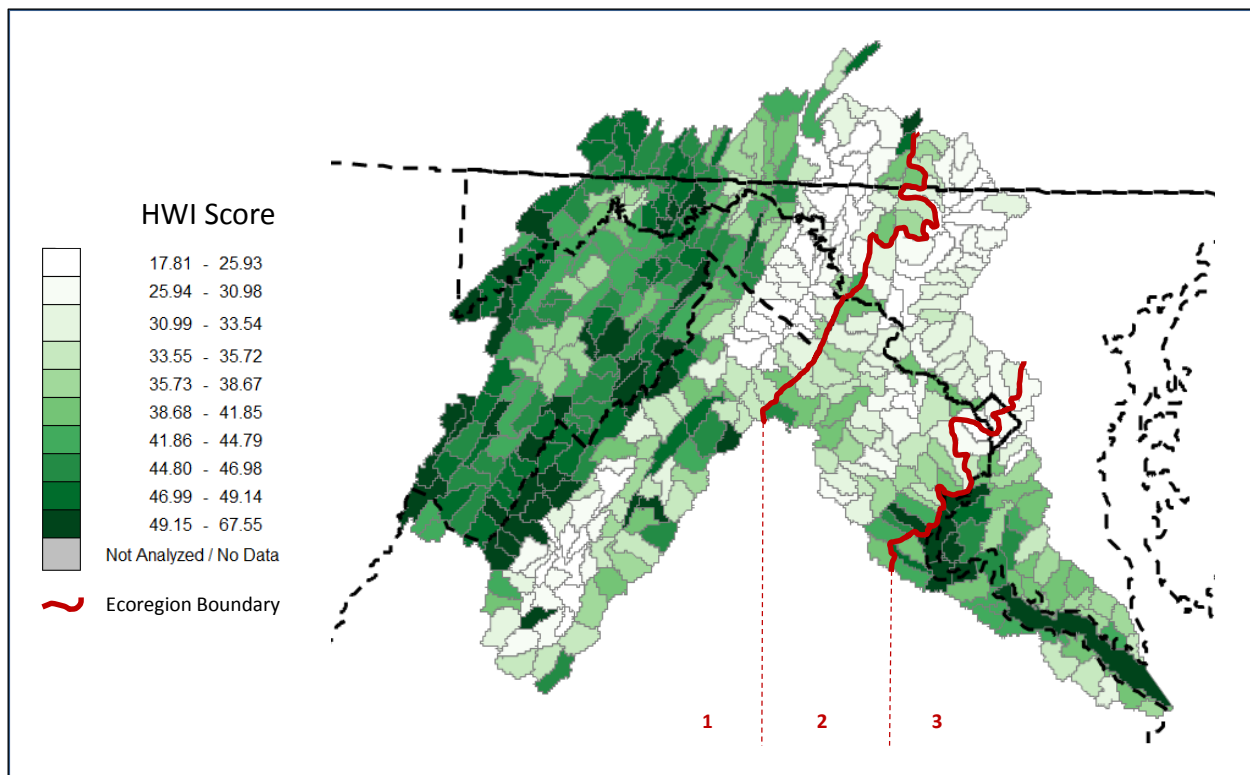


Figure: Simulation of a Healthy Watersheds Preliminary Assessment used to set priorities for protection in a hypothetical state (the Potomac River Basin) with three ecoregions. This simplified example prioritizes all in-state HUC12 watersheds that scored in the top 10% of their ecoregion in the assessment; top 10% is based on entire ecoregion, not just in-state portion. In this case, the prioritization approach identifies 35 HUC12s in ecoregion 1, 1 in ecoregion 2, and 6 in ecoregion 3. The ecoregion-within-state assessment approach also enables the state to customize by ecoregion if desired (e.g., protect top 50% in one ecoregion, 100% in another, and 0% in another) based on ecoregional differences in valued characteristics, protection potential, vulnerability, or other considerations.

### **Final Products and Timeline:**

Although the assessment is national in scope, its products will be available by state and by ecoregion. The National Healthy Watersheds Preliminary Assessment for the lower 48 states will be based on HUC12s and include the best approximation of the metrics required for HWP Health and Vulnerability indices from WSI data and other consistent national sources. Non-CONUS states, territories and tribes can contact EPA for support. The assessment can be refined by individual state, EPA Regional, river basin, or other users in more detail. Rather than a static reporting framework, the assessment will be developed using the Recovery Potential Screening Tool, allowing users to further manipulate the data and customize indicator selection to address a variety of specific questions/concerns about watershed protection options (e.g., 'watershed health and vulnerability' from the perspective of cold water fisheries vs. wetland function). Assessment development is ongoing, with incremental products through 2015 and a projected end-date of December 2015.

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