FREQUENT QUESTIONS ABOUT WATERSHED INDEX ONLINE (WSIO)

Q: What is the Watershed Index Online (WSIO)?

A: The WSIO is a free, publically available data library of watershed indicators and a decision support tool, developed by the EPA, to assist water resource managers with evaluating, comparing and prioritizing watersheds to support a variety of objectives. Watersheds, which are the land area draining to a common body of water, strongly influence the water quality of our lakes, rivers and streams. The WSIO enables its users to compare watersheds for a wide variety of reasons, primarily related to learning how watersheds and activities within them can influence the health of America's waters.

Q: What are the main components of the WSIO?

A: The WSIO consists of:

- Nationwide watershed indicator data: A library of indicators measured on all conterminous U.S. watersheds at the HUC12 scale (average size approximately 35 square miles).
- The WSIO Tool: A coded Excel workbook used to download data, perform calculations, compare and contrast watersheds. The WSIO Tool is available for download on the WSIO website.
- Approach: The Tool's calculations are based on the EPA Science Advisory Board's general recommendations for watershed analysis. The Tool combines indicators using a consistent method to screen and compare large numbers of watersheds. This is done to document their relative range of conditions or to identify a subset of watersheds that best meet criteria for a stated objective.

Q: What are the intended uses of the WSIO?

A: The primary uses of the WSIO, a technical tools and data website, include:

- Providing states and others with data and tools that help them allocate limited resources more wisely for maintaining and restoring clean and healthy water.
- Comparing watersheds for restoration planning and prioritization.
- Comparing watersheds to target healthy watersheds for protection.
- Helping non-GIS users understand and use geospatial watershed data to support resource and planning decisions.

Q: Who is the intended audience?

A: Potential users of the WSIO include:

- Federal, state, tribal, and local water quality programs, their stakeholders and collaborators.

- Non-Government Organizations (NGOs).
- Anyone with moderate technical skills in environmental science and computers who is involved with or interested in water quality management and planning.

Q: How does the WSIO Tool work?

A: The WSIO process involves:

- Establishing an objective for watershed comparison.
- Selecting a geographic area of interest.
- Selecting watershed indicators relevant to the objective and the geographic area.
- Using the WSIO Tool to calculate indices.
- Using the results to compare watersheds and make decisions.

Q: What are watershed indicators?

A: A WSIO watershed indicator is an attribute of a watershed that is useful for watershed comparison and can be consistently measured throughout the geographic area of interest. Most indicators are derived from geospatial data analysis, but may also come from surface waters monitoring data. Indicator types in the WSIO database are categorized into four categories: Ecological, Stressor, Social, and Base.

Q: Why are watershed indicators organized into components?

A: Components are related to the Essential Ecological Attributes (EEAs) and stressors as defined by the EPA Science Advisory Board. These recommended EEAs are used as a guide to assess ecological condition and stressors within the WSIO. Considering stressors separately enables more systematic assessment of the relationships between these stressors and ecosystem impacts.

Q: How should a user choose which watershed indicators to download?

A: It is recommended that users be inclusive and select a variety of indicators that may become useful at any point. Selecting a wide variety of indicators when the Tool is first created allows the user to perform multiple screenings for multiple project objectives later on their local computer. It is also good to select indicators from as many Components as practical for objectives. This ensures that as many as possible of the EEAs have been addressed.

Q: How do users select Indicators for screening?

A: Users select a small subset of their downloaded Indicators that are most relevant to the objectives of the screening run. It is recommended that users select between 6 to 12 indicators of each category (ecological, stressor, social) for a screening run. It is also recommended that the indicators represent as

many Components as is practical, while avoiding correlated indicators. Users may analyze indicators to determine which ones add power to the screening.

Q: How does the WSIO Tool work?

A: The WSIO Tool has a series of macros built into it that are used to calculate four Index values using the selected indicators, including a combined Watershed Index score. The Tool's macros also store selected indicator data and display screening results in map and graph formats.

Q: What are Ecological, Stressor, Social and Watershed Index values?

A: The four index values are:

- Ecological: Reflects the overall condition and the capacity of the watershed to maintain or regain functionality, based on metrics related to natural watershed processes and structure.
- Stressor: Reflects pressures (drivers of change) on watershed condition from several primary sources of pollutants and water quality impairments.
- Social: Includes many factors that strongly influence the level of effort and complexity in making or maintaining improvements in the watershed.
- Watershed Index: An index of watershed condition calculated from the combined effects of the Ecological, Stressor, and Social Index values.

Q: How does the WSIO Tool show the results from a watershed screening?

A: Results can be displayed and analyzed using provided tables, bubble plots and maps.

- The Tool displays a table of Ecological, Stressor, Social and combined WSI Scores for each screened watershed. The rank order of each watershed is also provided.
- The Tool also displays results as a bubble plot, with each watershed plotted based on its stressor score (x axis), ecological score (y axis), and dot size reflecting its social score.
- The Tool contains an embedded map allowing users to plot indicator data and/or index scores directly within the workbook onto a map.