**N-Sink Tool Analytical Outputs**

The tool currently has three major outputs.

1. **The Nitrogen Removal Efficiency Map** classifies individual water features of a watershed based on how efficient they are at removing nitrogen. Efficiency (removal rate) is based primarily on applying relevant hydrographic information to each N-Sink flow path segment to calculate residence time. Streams, rivers, ponds, lakes and other impoundments are color-coded as low (0% - 25%), medium (>25% - 50%) or high (>50%) removal. Wetland soils are another prominent watershed feature that removes N, but no single efficiency estimate can be applied to all wetlands since the residence time of a water particle is unique for each flow path. Estimates from the literature and used by N-Sink range from <30% to >80% depending on the length of flow path, using a range of distances from 25–100 feet. Wetland soil removal efficiency thus overlaps the medium and high ranges.

2. **The Nitrogen Transport Efficiency map** (aka “Heat Map”) estimates what percentage of N applied to any given location in the watershed is expected to ultimately reach the receiving waters. It is based on N-Sink’s particle tracking, applied to discrete transport reaches along the flow path and their respective N removal efficiencies. This tool can be used for a single user-defined point or points: the user clicks on a location on the map, and the tool generates a flow path from that location allowing the user to see the N sinks that the flow path encounters and to calculate the relative percentage of source N that is removed by these sinks. Currently, the tool uses an arbitrary N source value of 100 for this calculation. The heat maps are based on an interpolation of N-Sink results for data points calculated in a 100-meter grid.

3. **The Nitrogen Delivery Index** is a relative measure of how much N is being delivered to the receiving waters from each location in the watershed. N loading rates taken from the literature are applied to each of the land cover classes of the National Land Cover Dataset (30m resolution), and normalized to a number between 0 and 1. This number is then multiplied by the N Transport Efficiency (above, calculated in a 30m grid), which estimates the amount of the N load that will reach the receiving waters. The result is the Nitrogen Delivery Index, a number between 0 and 100 that allows the user to compare the relative contributions of different locations in the watershed to N pollution.