Clean Nova Scotia
inspiring environmental change

Fish Habitat Assessment Database

Background on Clean Nova Scotia
Clean Nova Scotia (CNS) is a non-profit environmental organization now proudly in its twenty-third year. Our motto of Inspiring Environmental Change encourages the creation of a cleaner, healthier environment by informing, enabling, and inspiring Nova Scotians to respect and consider the environment in all their choices. In 2006 we developed a stream restoration program, and have since conducted restoration on five streams within the Halifax Regional Municipality. Currently, CNS is working on the creation of a standard methodology for fish habitat assessment for use in Nova Scotia.

Need for New Methodology
In Nova Scotia, there are numerous environmental organizations with interests in aquatic environments and fish habitat. Different groups rely on various methodologies and formats to assess the health and quality of fish habitat and there is currently no consistent approach. Some groups have adopted different approaches developed in other areas of North America, most of which have no practical application in the lakes and streams of Nova Scotia.

These differences make it difficult to compare data amongst groups and sites and, more importantly, distort our understanding of fish populations and habitat quality. To remedy this, Clean Nova Scotia is developing a standard methodology for fish habitat assessment to allow for consistent data collection across the province. This assessment tool will give the various environmental groups and other proponents an improved ability in accurately assessing their local rivers and planning for restoration and protection projects to ensure healthy and productive aquatic ecosystems.

Use of Methodology and Database
The methodology will generate an abundance of site specific field data collected by multiple groups across the province. The data will be predominantly **habitat variable values** which can be "plotted on" a **Habitat Suitability Index** (HSI) curve and will identify fish habitat quality in the individual surveyed areas/sites by evaluating where the habitat variables are found the curve. HSI curves are created for specific habitat variables (maximum temperature, % cover) and specific species of fish (brook trout, Atlantic salmon). Variables can be evaluated independently, combined into separate life stages (migration, spawning), or combined into a single value which represents a specific area's suitability for an entire lifecycle. HSI values range from 0-1.0, with poor (0-0.4), fair (0.4-0.9), and optimum (1.0) quality ranges.

The data, originally recorded on a field sheet, will be entered into a database which will provide analysis and feedback based on the habitat value's rating in the HSI. Feedback would include the suitability rating of the various variables, the calculation of different lifestage ratings, and a summary report describing of the results. Supplemental information on the effects of less than optimum habitat could also aid in the data analysis and interpretation. The benefits to users are immense as they can directly relate their surveying to habitat quality, fish populations, and aquatic ecosystem health and productivity.

The database needs to be usable by various individuals across the province and easily shared. A computer based software compatible with different operating systems would be ideal.