CHAPTER 11

WATER QUALITY: BIOLOGY

The water biology data set contains two types of data: bacterial counts and invertebrate counts.
Bacterial counts of water samples are measured to assess suitability of drinking water supplies and may indicate sources of pollution.

Invertebrate samples are taken at lake and stream sampling sites. Results may show if an area has high or low diversity of invertebrate life, and the presence of certain species called "indicators" may reflect problems in their environment.

Biological water data has been collected during the New Brunswick Department of the Environment's River Classification Program surveys. This program was developed to designate a class of outstanding waters throughout the province. Each of the study's permanent sampling sites is visited annually. For more information on this program, please refer to Chapter 9 **River Classification Program**. Currently, the water biology data set is limited to results from this program.

At this point, the Data Warehouse's water biology data set does not include any invertebrate information, although the River Classification Program has reports indicating species found at their sampling sites. The River Classification Assessments table (rc-assmt.dbf) indicates whether or not benthic invertebrate samples were taken at each site.

Bacterial count information is similarly limited to the results from the River Classification Program, and some electronic data is available. The River Classification Assessments table (rc-assmt.dbf) indicates whether or not bacterial analysis samples were taken at each site.

All water biology data is referenced to a water sampling site within GIS.

DATA SOURCES

Water biology data was obtained from the New Brunswick Department of the Environment. It includes data from departmental monitoring sites as a component of their River Classification program. All water samples were analysed by New Brunswick Department of the Environment's lab.

POSITIONAL ACCURACY

The positional accuracy of water biology sampling sites is based on textual descriptions of locations and/or latitude/longitude measurements. The positional accuracy of the hydrographic spatial data is ±1.5m to ±2.5m. Please refer to **SNB's Land and Water Standards Manual** for further details.

DATA FILES

Tabular Data

There is currently only one data table within the water biology data set which maintains bacterial counts. Information on the corresponding sampling sites is contained in River Classification Monitoring Sites table (rc-sites.dbf) (refer to Chapter 9 **River Classification Program**)

, **Bacterial Counts** - Contains the bacterial counts of water samples.

Spatial Data

No spatial files were created for the water biology data sets. However, the data are linked with a site identifier to an ArcView shape file created for the Department of the Environment's River Classification Program sampling sites - please refer to Chapter 9 **River Classification Program**. A point coverage is used, rather than dynamic segmentation, as some sampling sites occur in the middle of lakes.

TABULAR DATA FILES

BACTERIAL COUNTS

The ***Bacterial Counts*** table (rc-bacter.dbf) contains bacterial count data collected for New Brunswick lakes and streams. The only data currently residing within this database is for the Department of the Environment's River Classification Program.

Field of Information	Description	Dbase Field Name	Field Type (Length . Decimals)	Comments
River Classification Assessment ID	Unique identifier for each visit to a River Classification Program monitoring site. Assigned by the Data Warehouse	RCAssmt_ID	Numeric (4)	
River Classification Site ID	Unique identifier of the sampling site where assessment occurred. Assigned by the Data Warehouse	RC_Site_ID	Numeric (4)	
River Classification ID	Unique identifier of the study area	RC_Prog_ID	Numeric (4)	
Water Body ID	Unique identifier of the lake or stream where the sampling occurred	Water_ID	Numeric (8)	
Water Body Name	Name of lake or stream	Water_Name	Character (40)	
Drainage Codes	Drainage system codes indicating the watershed of the stream or lake	Drainge_Cd	Character (17)	Appendix A
Agency Code	Code representing the agency who collected or owns the data	Agency_Cd	Character (4)	Code Table 6
Agency's Site No.	Site identifier used by the agency, e.g. station number	Ag_Site_ID	Character (15)	
Lab Number	Number assigned by DOE lab	LabNo	Character (8)	
Field Number	Number assigned by field crew	FieldNo	Character (10)	
Assessment Date	Date water sample was collected - date format is YYYY.MM.DD	Assmt_Date	Character (10)	
Time of Day	Time of day when water sample was collected	Assmt_Time	Character (4)	
Water Depth of Sample	Depth at which water sample was collected - measured in metres.	Samp_Depth_m	Numeric (5.1)	
Water Temperature	Measured in /C	Water_Temp_°C	Numeric (5.2)	
Faecal Coliforms Qualifier (A)	Qualifies the data for faecal coliforms, sample A	L_FC_A	Character (2)	
Faecal Coliforms (A)	Number of colony forming units per 100 ml, sample A	FC_Per100A	Numeric (11.5)	
Faecal Coliforms Qualifier (B)	Qualifies the data for faecal coliforms, sample B	L_FC_B	Character (2)	
Faecal Coliforms (B)	Number of colony forming units per 100 ml, sample B	FC_Per100B	Numeric (11.5)	