

# *Appendix A*

## *Data Collection Methods*

The Southeast, Southwest, and Northwest Anderson Lake UAA included the collection and analysis of data from the lake and its watershed. The methods discussion includes:

- Lake water quality data collection
- Ecosystem data collection
- In-lake water quality modeling

## A.1 Lake Water Quality Data Collection

In 2000 and 2001, a representative Southeast, Southwest, and Northwest Anderson Lake sampling station was selected (i.e., located at the deepest location in the lake basin). Samples were collected monthly between the end of April and beginning of September. During August samples were collected biweekly. Each year a total of six water quality parameters were measured at the Southeast, Southwest, and Northwest Anderson Lake sampling station. Table A-1 lists the water quality parameters and specifies at what depths samples or measurements were collected. Dissolved oxygen, temperature, specific conductance, and Secchi disc were measured in the field, whereas water samples were analyzed in the laboratory for total phosphorus, soluble reactive phosphorus, total nitrogen, chlorophyll *a*, and pH. The procedures for chemical analyses of the water samples are shown in Table A-2. Generally, the methods can be found in Standard Methods for Water and Wastewater Analysis.

## A.2 Ecosystem Data Collection

Ecosystem describes the community of living things within Southeast, Southwest, and Northwest Anderson Lake and their interaction with the environment in which they live and with each other.

During April through October 1999, ecosystem data collection included:

- Phytoplankton – A composite 0-2 meter sample was collected during each water quality sampling event described in the previous section.
- Zooplankton – A zooplankton sample was collected (i.e., bottom to surface) during each water quality sampling event described in the previous section.
- Macrophytes – Macrophyte surveys were collected during June and August 1999.

**Table A-1. Southeast, Southwest, and Northwest Anderson Lake Water Quality Parameters**

Parameters	Depth (Meters)	Sampled or Measured During Each Sample Event
Dissolved Oxygen	Surface to bottom profile	X
Temperature	Surface to bottom profile	X
Specific Conductance	Surface to bottom profile	X
Secchi Disc	—	X
Total Phosphorus	0-2 Meter Composite Sample	X
Total Phosphorus	Profile at 1.0 meter intervals from 3 meters to 0.5 meters above lake bottom	X
Soluble Reactive Phosphorus	0-2 Meter Composite Sample	X
Total Nitrogen	0-2 Meter Composite Sample	X
pH	0-2 Meter Composite Sample	X
pH	Profile at 1.0 meter intervals from 3 meters to 0.5 meters above lake bottom	X
Chlorophyll a	0-2 Meter Composite Sample	X

**Table A-2. Procedures for Chemical Analyses Performed on Water Samples**

Analysis	Procedure	Reference
Total Phosphorus	Persulfate digestion, manual ascorbic acid	Standard Methods, 18th Edition (1992) modified per Eisenreich, et al., Environmental Letters 9(1), 43-53 (1975)
Soluble Reactive Phosphorus	Manual ascorbic acid	Standard Methods, 18th Edition modified per Eisenreich, et al., Environmental Letters 9(1), 43-53 (1975)
Total Nitrogen	Persulfate digestion, scanning spectrophotometric	Bachman, Roger W. and Daniel E. Canfield, Jr., 1991. A Comparability Study of a New Method for Measuring Total Nitrogen in Florida Waters. Report submitted to the Florida Department of Environmental Regulation.
Chlorophyll a	Spectrophotometric	Standard Methods, 18th Edition, 1992, 10200 H
pH	Potentiometric measurement, glass electrode	Standard Methods, 16th Edition, 1985, 423
Specific Conductance	Wheatstone bridge	Standard Methods, 16th Edition, 1985, 205
Temperature	Thermometric	Standard Methods, 16th Edition, 1985, 212
Dissolved Oxygen	Electrode	Standard Methods, 16th Edition, 1985, 421F
Phytoplankton Identification and Enumeration	Inverted Microscope	Standard Methods, 16th Edition, 1985, 1002F (2-d), 1002H (2)
Zooplankton Identification and Enumeration	Sedgewick Rafter	Standard Methods, 16th Edition, 1985, 1002F (2-d), 1002H
Transparency	Secchi disc	

Phytoplankton and zooplankton samples were identified and enumerated to provide information on species diversity and abundance. The macrophyte community was surveyed to determine species location, composition, and abundance.