

Alaska Department of Fish & Game
Division of Commercial Fisheries
**“Water Quality Monitoring and Trophic Assessment Of
Seven Lakes in the Matanuska-Susitna Borough”**



FY02 RSA Amount: \$50,749 Match Required: \$0 (special project with ADEC)



Description and Purpose:

Eutrophication, the process of over-enrichment of a water body, is a common problem facing many lakes and reservoirs across the nation. Although nutrient loading and subsequent changes in trophic state occur naturally, anthropogenic influences can accelerate this process. Because the ecological context of a lake has an important bearing on its attainable water quality conditions or trophic state, development of regional nutrient criteria could provide a better means to assess or predict the degree of change in the trophic state of a lake ecosystem arising from an alteration in the

concentration of key limiting nutrients. The overall goal of this project was to obtain pertinent limnological information from a variety of lakes within the Matanuska-Susitna (Mat-Su) region. During 2001, a limnological monitoring program was conducted on seven lakes within the Mat-Su region: Big, Cottonwood, Finger, Knik, Lorraine, Threemile, and Wasilla lakes. Each lake was sampled four times during the ice-free season (May-October). Field measurements included light penetration and transparency, and vertical profiles of temperature and dissolved oxygen. Laboratory analyses included: conductivity, alkalinity, pH, silica, turbidity, color, total phosphorus, total filterable phosphorus, filterable reactive phosphorus, total Kjeldahl nitrogen, ammonia, nitrate + nitrite, particulate organic carbon, and chlorophyll *a*. Two phytoplankton (spring/fall) samples were also collected from each lake. Subsequently, these data are to be used to aid in the subsequent development of regional nutrient criteria for Alaskan lakes.

Deliverables for this Project Include:

- Field limnological data presented in electronic format (Excel).
- Laboratory analytical results presented in tabular and graphic format (Excel).
- [Summary report](#) (technical data report) interpreting and summarizing data with recommendations for further investigations (Word).



Project Contacts:

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