

## **The Decision Problem**

October 31, 2011

### Summary

Large increases in bluegill, crappie, and largemouth bass populations have been observed in Fish Lake Reservoir recently, and walleye abundance and recruitment appear to be declining. Anglers and lakeshore property owners are concerned about the walleye fishery and possible influences on it. It is unclear which of many possible factors have the greatest impact on the fish community structure (e.g., fish species, aging reservoir, influence of water level management, climate trends, angler harvest, land management).

The Department of Natural Resources has asked the Advisory Committee to develop recommendations for a lake management plan that acknowledges diverse values and interests and that identifies specific objectives, a suite of potential management options, and appropriate models of the system. The Advisory Committee's products will include recommendations about fisheries management, monitoring, and research. They will also consider water level management within the discretion that is allowed under the current FERC license.

### Who

Decisions about the lake management plan are made by the Duluth Area Fisheries Office, which is headed by Deserae Hendrickson. There will be a process for public input on the final lake management plan. The Fish Lake Reservoir Advisory Committee, comprised of local residents and representatives of interested parties (i.e., stakeholders), will provide recommendations to the Duluth Area Fisheries Office before the new lake management plan is drafted.

### What

Fish survey data from Fish Lake Reservoir indicate that the abundance of walleye, especially young walleye, has declined recently. The data also indicate that the abundance of black crappie, bluegill, and largemouth bass have increased recently, as have the size of largemouth bass.

### Where

The spatial scope of this project is Fish Lake Reservoir, but similar trends in fish communities have been observed in other basins.

### When

The Advisory Committee hopes to influence management decisions that are made as soon as autumn of 2012. The Advisory Committee recognizes that planning for and implementing fish management actions takes time. The amount of time varies considerably depending upon the type of action.

### Why

This problem is important because the public values the walleye fishery and fisheries for other species in Fish Lake Reservoir, so there is much interest in trying to understanding the causes of recent changes in the fish community and considering ways to maintain a high quality walleye fishery.

### How

The Advisory Committee and Duluth Area Fisheries staff will use a structured decision making (SDM) approach for addressing the decision problem described above. The approach involves deconstructing the problem into decision components for easier, more efficient analysis and resolution.