Summary of Ecology Information Regarding Aquatic Life Uses in Lake Spokane

Introduction

In response to numerous requests for documentation to justify the aquatic life use designation in Lake Spokane (also known as Long Lake), Ecology has developed this summary of information gathered primarily from the Washington Department of Fish and Wildlife (WDFW), the agency responsible for providing this information as described in the May 2007 Inter-Agency Agreement between Ecology and WDFW Regarding Coordination on the Spokane River Hydroelectric Project.

Lake Spokane's designation as a Lake

The Lake Spokane reservoir has been consistently treated as a lake in the water quality standards since 1973. In the current version of the standards (2006) the definition for a lake states:

"Lakes" shall be distinguished from riverine systems as being water bodies, including reservoirs, with a mean detention time of greater than fifteen days." [Chapter 173-201A-020 WAC]

Since the detention time of the reservoir is greater than 15 days, this defines Lake Spokane as a lake for purposes of the water quality standards.

How lakes are designated in the standards:

Lakes are designated as Core summer salmonid habitat as described below.

173-201A-600 (1)(a) Additionally, the following waters are also to be protected for the designated uses of: Core summer salmonid habitat; and extraordinary primary contact recreation:

(i) All surface waters lying within national parks, national forests and/or wilderness areas.
(ii) All lakes and all feeder streams to lakes (reservoirs with a mean detention time greater than fifteen days are to be treated as a lake for use designation).
(iii) ……

Designated Uses in Lake Spokane

According to the 2006 water quality standards (173-201A WAC), the portion of the Spokane River that comprises Lake Spokane (Nine Mile bridge (RM 58) to Long Lake Dam (RM 33.9)) has an aquatic life use designation for core summer salmonid habitat. From WAC 173-201A-200, core summer salmonid habitat is defined as the following (formatting added):

Core summer salmonid habitat: The key identifying characteristics of this use are

- summer (June 15 - September 15) salmonid spawning or emergence, or
- adult holding;
- use as important summer rearing habitat by one or more salmonids; or
- foraging by adult and subadult native char.

Other common characteristic aquatic life uses for waters in this category include

- spawning outside of the summer season,
- rearing, and
- migration by salmonids.

In addition, it is required that all indigenous fish and nonfish aquatic species be protected in waters of the state (WAC 173-201A-200(1)(a).

Information to support use assessment

While there are no definitive studies that have specifically assessed salmonid populations, staff from WDFW point to other indicators that Lake Spokane provides important habitat for native salmonid species such as redband trout and mountain whitefish. Incidental encounters from warmwater surveys and angler checks lead WDFW to conclude that the river and shallower part of the upper reservoir and tributaries provide for spawning and rearing habitat while the lower reservoir is used for refuge and foraging. Staff from WDFW also maintain that improving dissolved oxygen in the entire lake would benefit and improve salmonid habitat.

The references listed below, as well as other data from WDFW as appropriate, will help determine the existing use (best use present from 1975 on). If information from Ecology and WDFW, including the references below, indicate the designated use is the existing use, then the designated use cannot be changed (existing uses must be protected as per federal regulations).

The following documents and references can help determine the aquatic life existing use for Lake Spokane. Other sources are referenced by these documents, which provide the most comprehensive summary of known information regarding fish resources in Lake Spokane. As noted above, none of these studies have specifically targeted salmonid species. Such a study would be a logical first step in determining the true level of uses in Lake Spokane by native salmonids.

1. Osborne, R., M. Divens, and C. Baldwin. 2003. 2001 Warmwater Fisheries Survey of Lake Spokane, Spokane and Stevens Counties, Washington. Washington Department of Fish and Wildlife. Olympia, Washington. April 2003.
2. Soltero, R.A., L.M. Sexton, L.L. Wargo, D.D. Geiger, K.J. Robertson, J.P. Buchanan, and M.S. Johnson. 1992. Asessment of nutrient loading sources and macrophyte growth in Long Lake, WA and feasibility of various control measures. Pp 235-241. Eastern Washington University, Cheney, WA.
3. Spokane River and Long Lake Reservoir Use Attainability Analysis. 2004. Prepared for Spokane River UAA Sponsoring Committee by CH2M-Hill. Pp 3-29 – 3-40, and comments by Chris Donley, WDFW, in Appendix A1.
4. Anderson, E., and R.A. Soltero. 1984. An evaluation of the information available for the Long Lake and Lower Spokane River fisheries, and a preliminary assessment of un-ionized ammonia and chlorine toxicity potential. Eastern Washington University, Cheney, WA.

5. Bennett, D.H., and D.R. Hatch. 1991. Factors limiting the fish community with emphasis on largemouth bass in Long Lake, Spokane County, Washington. University of Idaho, Moscow, ID.