

**ANNUAL REPORT**  
**to the**  
**INTERNATIONAL JOINT COMMISSION**  
**from the**  
**INTERNATIONAL OSOYOOS LAKE BOARD OF CONTROL**  
**for**  
**CALENDAR YEAR 1999**

The International **Osoyoos** Lake Board of Control was established on February 12, 1986, by the International Joint Commission to carry out the provisions of the Commission's Order of Approval dated December 9, 1982, and the Supplementary Order of Approval dated October 17, 1985.

**ACTIVITIES OF THE BOARD**

A formal meeting of the Board was held on October 7, 1999, in Osoyoos, B. C. A public meeting followed the meeting of the Board on the same date.

1. OPERATION AND MAINTENANCE OF ZOSEL DAM

a. **Osoyoos Lake Elevations**

The level of Osoyoos Lake was controlled by Zosel Dam throughout the year within criteria specified in the Order of Approval. The authorized range of normal operating elevations, 909.0 to 911.5 feet, is shown by the blue area in appendix I. The gray area in appendix I shows the authorized range of elevations, 910.5 to 913.0 feet, that may be used to manage storage from April 1 to October 31 if drought conditions are declared by the Board in accordance with conditions 7 and 8

Condition 9 of the Orders of Approval recognizes that backwater from high flow in the Similkameen River and (or) excessive flow in the Okanagan River can cause Osoyoos Lake levels to rise above the authorized range. Lake levels were influenced by Similkameen River backwater and (or) high Okanagan River flows from April 23 to approximately June 22. However, the lake level did not exceed the drought-authorized elevation of 913.0 during this period.

The maximum instantaneous elevation on Osoyoos Lake occurred on May 29 at 912.56 feet.

The maximum daily mean elevation occurred on May 29 at 912.53 ft.

The maximum instantaneous discharge of the Okanogan River at Oroville occurred on May 20 and was 2,700 cubic feet per second.

Recorded lake elevations for water years 1996-99 are shown in appendix I.

Data on Osoyoos Lake levels and relevant river flows are summarized in appendix II and depicted in the hydrographs in appendix III.

b. **Drought Operation**

The Board of Control did not declare drought conditions this year.

**c. Zosel Dam**

The Oroville-Tonasket Irrigation District operated Zosel Dam under authority from the State of Washington, Department of Ecology. The levels on Osoyoos Lake were maintained for the year in accordance with the Commission's Orders of Approval.

**2. IMPROVEMENTS TO THE OKANOGAN RIVER CHANNEL**

Condition 4 of the IJC Order of Approval (December 9, 1982), and subsequently revised by the Supplementary Order of Approval (October 17, 1985), calls for the applicant (State of Washington Department of Ecology) to "...take all measures to ensure that the flow capacity of the Okanogan River, upstream and downstream from the control structure, enables the control structure to pass at least 2,500 cubic feet per second when the elevation of Osoyoos Lake is 913.0 feet USCGS and there is no appreciable backwater effect from the Similkameen River."

The Board obtained confirmation from the State of Washington regarding the capacities of the Okanogan River Channel. Hydrologic conditions in 1997, 1998 and 1999 demonstrated that water is able to be moved out of the lake, through the outlet channel, and past the dam at a rate greater than 2,500 cubic feet per second with the lake at an elevation less than 913.0 feet and no appreciable backwater effect from the Similkameen River.

Tonasket Creek enters a bypass reach of the outlet channel that was designed to accept the creek's sediment load deposits. The Tonasket Creek alluvial fan has not impaired the capacity of the main outlet channel to perform according to requirements of Condition 4.

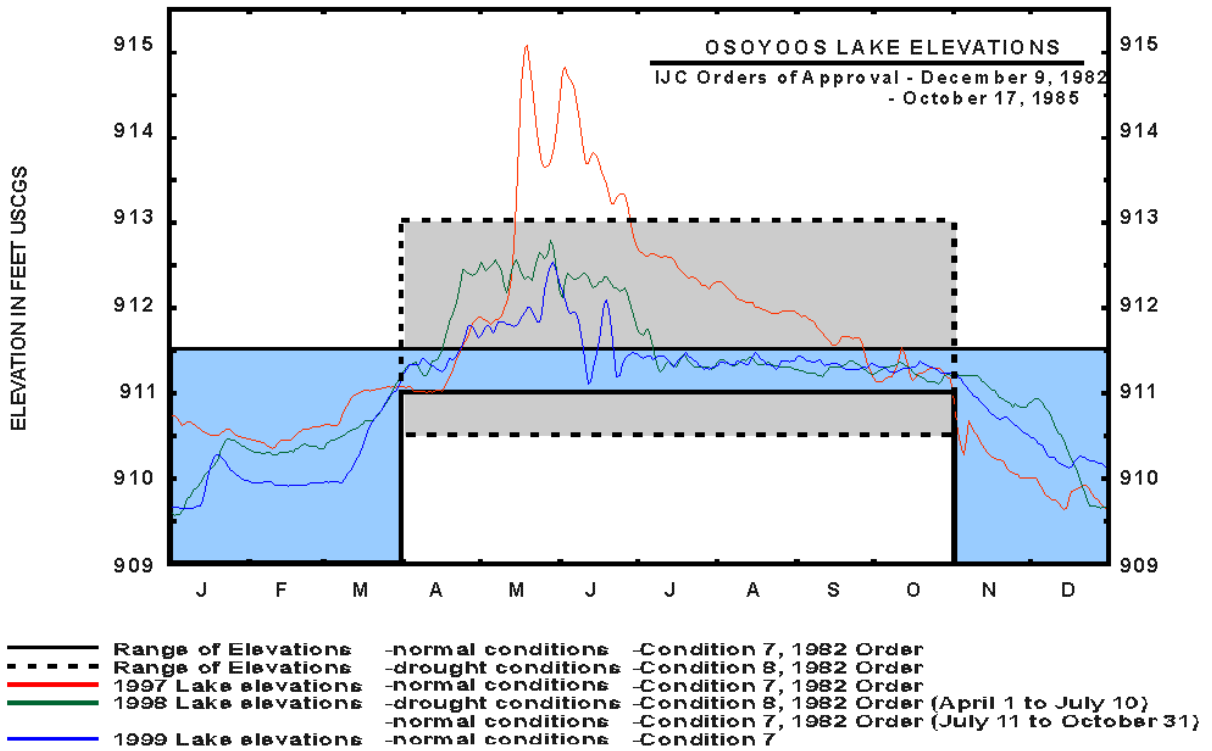
**3. PUBLIC MEETING COMMENTS**

The public meeting was held in Osoyoos, B. C. on October 7, 1999. Presentations were made on Osoyoos Lake, Zosel Dam and the Orders of Approval, 1999 hydrologic conditions, and Zosel Dam operations. Attendance was 25, of which 9 were from the general public.

Comments from those in attendance included a question of the validity of the terms of the drought conditions, an inquiry about the current lake level, and one person expressed concern that septic tanks may leak sewerage to the Lake when Lake levels reach 913 feet.

During the period of open discussion with the public, one person expressed concern that the level of the Lake is kept too high in late April and early May prior to the spring freshet. Another person stated that Osoyoos people feel that they are being sacrificed for Okanagan Lake residents. A member of the public stated that Okanogan County has set a minimum elevation for construction around the lake at 918 feet but in Canada it is at 921 feet. Mr. Christopher Fisher (Colville Confederated Tribes) asked what benefits were derived from straightening the river channel north of Osoyoos, and if the Oxbows could be replaced. He also asked if the system could be manipulated to improve the thermal barrier to fish passage.

APPENDIX 1.--



## APPENDIX II.-- OSOYOOS LAKE LEVELS, INFLOWS, AND OUTFLOWS

### A. International gaging stations in operation throughout the year:

#### (1) For Stage Records

Osoyoos Lake near Oroville, Washington

Okanogan River at Oroville, Washington (auxiliary gage)

#### (2) For Discharge Records

Okanogan River near Oliver, British Columbia

Okanogan River near Oroville, Washington (base gage)

Similkameen River near Nighthawk, Washington

#### (3) Reports

Monthly summary reports of stage and discharge data were forwarded to the International Joint Commission and to the Board of Control members.

### B. Compliance with the lake levels specified in the Orders of Approval is measured at the station "Osoyoos Lake near Oroville," where elevations are expressed in terms of USCGS datum.

### C. Osoyoos Lake

Maximum daily mean elevation	278.139 meters - May 20 (912.53 feet)
Maximum instantaneous elevation	278.148 meters - May 29 (912.56 feet)
Minimum instantaneous elevation	277.252 meters - January 6 and 8 (909.62 feet)

### D. Okanogan River at Oroville

Maximum instantaneous discharge	76.5 cms - May 20 (2,700 cfs)
Maximum daily mean discharge	75.6 cms - May 20 and 21 (2,670cfs)
Annual mean discharge	31.0 cms (1,095 cfs)

The annual mean discharge was 156 percent of the 57-year average of 704 cfs.

### E. Similkameen River near Nighthawk

Maximum instantaneous discharge	544 cms - June 17 (19,200 cfs)
Maximum daily mean discharge	544 cms - June 17 (19,200 cfs)

High river discharges and stages created backwater conditions for the Okanogan River at Oroville gaging station from May 23 to July 23.

APPENDIX III.

