International Columbia River
Board of Control

SIXTY-THIRD ANNUAL REPORT

to the

International Joint Commission

from the

International Columbia River Board of Control

for

Calendar Year 2004

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INTERNATIONAL COLUMBIA RIVER BOARD OF CONTROL

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Executive Summary of the Sixty-third Annual Report to the International Joint Commission by the International Columbia River Board of Control for the Calendar Year 2004

The flow of the Columbia River at Grand Coulee Dam for the 2004 calendar year totaled 80,470 cubic hectometers (65,240,000 acre-feet), about 16.9 percent below the mean annual volume for the 91-year period of record.

The instantaneous maximum discharge of the Columbia River at the international boundary was 4,110 cubic meters per second (145,000 cubic feet per second) on June 16, about 45 percent below the mean annual instantaneous maximum discharge for the 67-year period of record, and ranking sixty-second out of 67 discharge peaks.

Extremes of instantaneous stage on Franklin D. Roosevelt Lake varied between elevations 393.122 meters (1,289.77 feet) on July 6 and 383.499 meters (1,258.20 feet) on March 5. The stage was 392.302 meters (1,287.08 feet) at midnight on December 31, 2004. Backwater at the international boundary varied during the year, between 0.000 meter (0.00 feet) and 0.146 meter (0.48 feet). Backwater on December 31, 2004, was 0.043 meter (0.14 feet). Flashboards at Grand Coulee Dam were in place for all of 2004 and should remain in place in the future under normal operating conditions.

SIXTY-THIRD ANNUAL REPORT
(For the Calendar Year 2004)

To: The International Joint Commission

From: The International Columbia River Board of Control

The Order of the International Joint Commission dated December 15, 1941, in the matter of the Application of the United States for Approval of the construction and operation of the Grand Coulee Dam and reservoir (Franklin D. Roosevelt Lake) provided for the creation of an engineering board to be known as the International Columbia River Board of Control, to which the undersigned have been duly appointed. The Order provides that the Board shall conduct studies under the supervision of the Commission as to the effect of the operation of Grand Coulee Dam and Franklin D. Roosevelt Lake on water levels at and above the international boundary, and shall submit a report to the Commission annually.

In a letter dated September 10, 2004, the IJC asked the Columbia Board of Control to provide any information that may be pertinent to the Canadian Columbia River Inter-Tribal Fisheries Commission issues related to the 1941 Order of Approval for Grand Coulee Dam. In a letter dated December 6, 2004, the Board provided the Commission with a list of documents in the Board's possession that may be pertinent to this matter.

During calendar year 2004, the United States Geological Survey continued the collection of information concerning the stages and discharges of Franklin D. Roosevelt Lake and, in cooperation with the Water Survey of Canada, the stages and discharges of the Columbia River at the international boundary, upstream from the lake.

The annual flow of the Columbia River at Grand Coulee Dam for calendar year 2004 totaled 80,470 cubic hectometers (65,240,000 acre-feet), about 16.9 percent below the mean annual volume for the 91-year period of record. The instantaneous maximum discharge of the Columbia River at the international boundary was 4,110 cubic meters per second (145,000 cubic feet per second) on June 16, about 45 percent below the mean annual instantaneous maximum discharge for the 67-year period of record, and ranking sixty-second out of 67 discharge peaks. Twenty-nine of the lowest annual instantaneous maximum discharge peaks in the 67-year period of

record have occurred in the last 32 years, indicating, in part, the effects of storage behind Mica Dam (1973) and Libby Dam (1974). The discharge at the international boundary is shown on the accompanying hydrograph. Extremes of instantaneous stage recorded on the lake varied between elevations 393.122 meters (1,289.77 feet) on July 6 and 383.499 meters (1,258.20 feet) on March 5. Elevations are above mean sea level, Bureau of Reclamation datum, and adjustments of 1937. The stage at midnight on December 31, 2004, was 392.302 meters (1,287.08 feet).

The analyses of data collected indicate that backwater at the international boundary varied during the year between 0.000 meter (0.00 feet) and 0.146 meter (0.48 feet). Backwater on December 31, 2004, was 0.043 meter (0.14 feet). Backwater that occurred at the international boundary during the period January 1, 2000, to December 31, 2004, as computed at 10-day intervals each month, is plotted on the accompanying graph. Backwater since the time of filling of Franklin D. Roosevelt Lake in June 1942 to December 31, 1999, is plotted on the charts submitted with previous annual reports.

The Board has been informed by the United States Bureau of Reclamation that flashboards at Grand Coulee Dam were in place for all of 2004.

Respectfully submitted,

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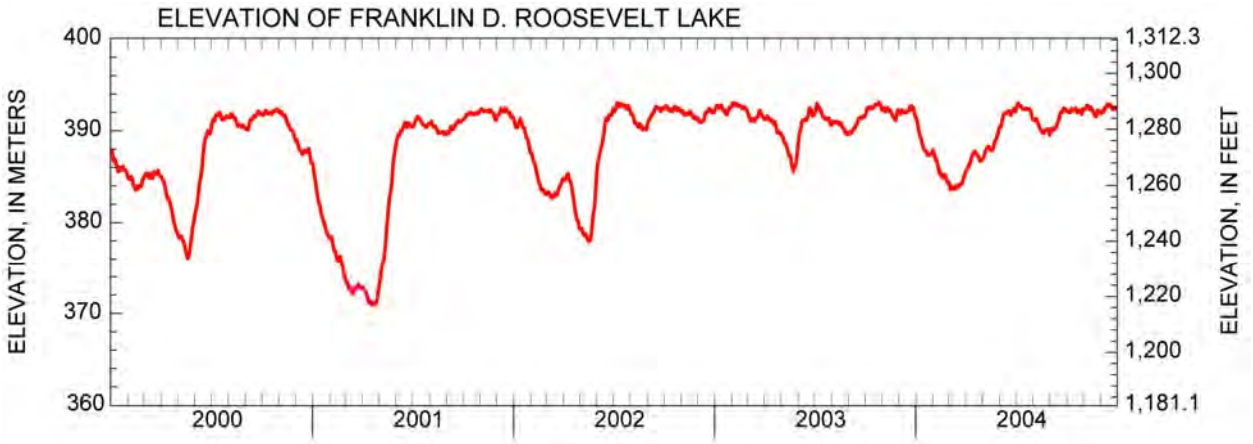
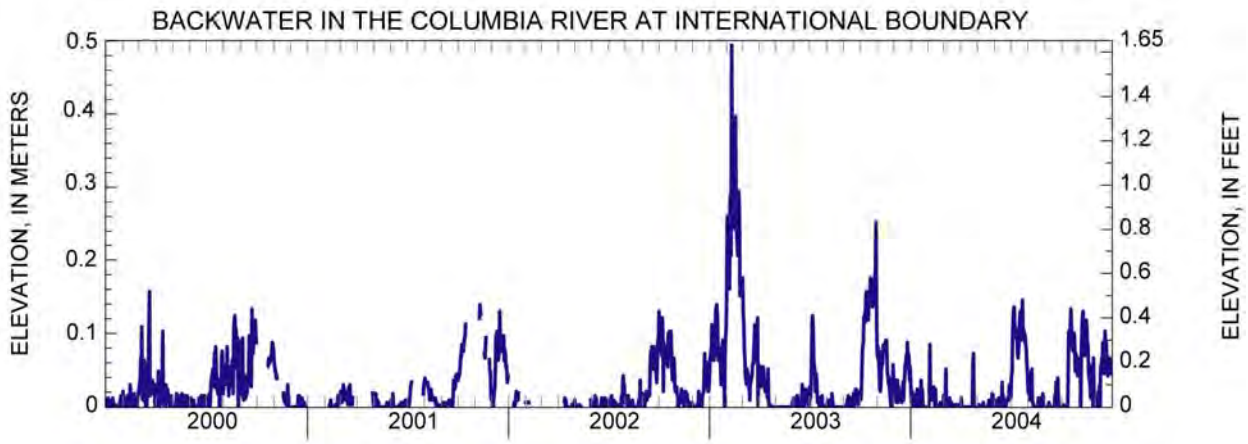
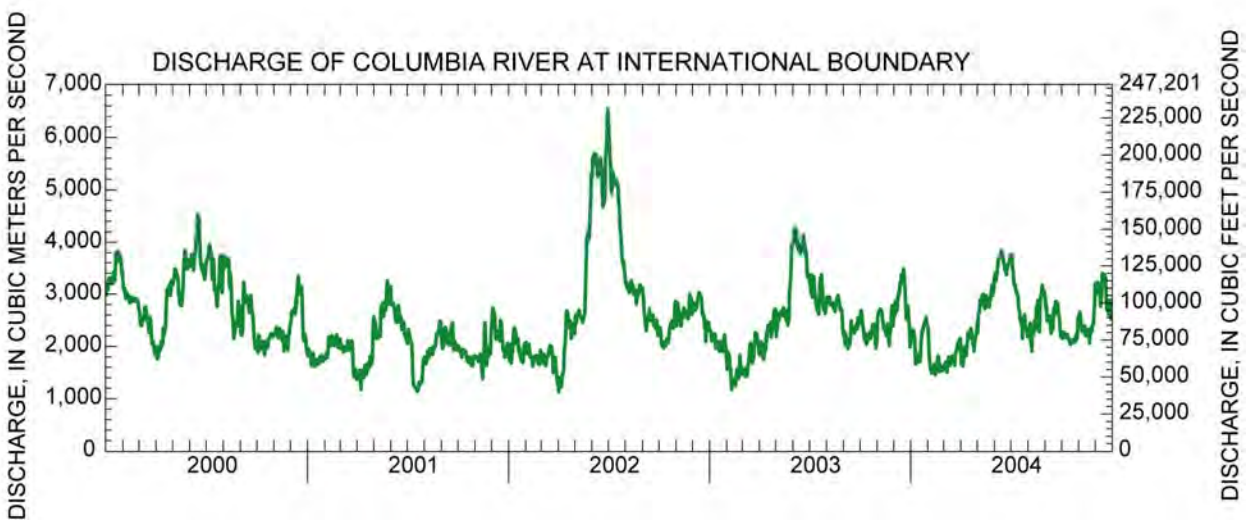

ELEVATION OF FRANKLIN D. ROOSEVELT LAKE
ELEVATION, IN METERS
ELEVATION, IN FEET
400
390
380
370
360
1,312.3
1,300
1,280
1,260
1,240
1,220
1,200
1,181.1
2000
2001
2002
2003
2004


BACKWATER IN THE COLUMBIA RIVER AT INTERNATIONAL BOUNDARY
ELEVATION, IN METERS
ELEVATION, IN FEET
0.5
0.4
0.3
0.2
0.1
0
1.65
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0
2000
2001
2002
2003
2004


DISCHARGE OF COLUMBIA RIVER AT INTERNATIONAL BOUNDARY
DISCHARGE, IN CUBIC METERS PER SECOND
DISCHARGE, IN CUBIC FEET PER SECOND
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0
247,201
225,000
200,000
175,000
150,000
125,000
100,000
75,000
50,000
25,000
0
2000
2001
2002
2003
2004