

International Columbia River Board of Control

2010 Annual Report to the International Joint Commission



TABLE OF CONTENTS

HYDROLOGIC CONDITIONS IN 2010.....	1
INTERNATIONAL COLUMBIA RIVER BOARD OF CONTROL MEMBERSHIP	4

Cover: Whitestone Rock on Franklin D. Roosevelt Lake.

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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. 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. The Board's studies are currently limited to the monitoring and reporting on the stage and discharges of the Lake and the Columbia River at the International Boundary.

HYDROLOGIC CONDITIONS IN 2010

During calendar year 2010, 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 2010 totaled 73,690 cubic hectometers (59,740,000 acre-feet), about 23 percent below the mean annual volume for the 97-year period of record. The instantaneous maximum discharge of the Columbia River at the International Boundary was 5,210 cubic meters per second (184,000 cubic feet per second) on June 21, about 29 percent below the mean annual instantaneous maximum discharge for the 73-year period of record, and ranking 51 out of 73 discharge peaks. Daily mean discharge for the Columbia River at the International Boundary for 2006-10 is shown in figure 1A. Extremes of instantaneous stage recorded on the lake varied between elevations 383.746 meters (1,259.01 feet) on May 17 and 393.226 meters (1,290.11 feet) on June 21. Elevations are above mean sea level, Bureau of Reclamation datum, and adjustments of 1937. The stage at midnight on December 31, 2010, was

391.506 meters (1,284.47 feet). Water-level elevation in Franklin D. Roosevelt Lake for 2006-10 is shown in figure 1B.

The analyses of data collected indicate that backwater at the International Boundary varied during the year between 0.00 meter (0.00 feet) and 0.25 meter (0.82 feet). Backwater on December 30, 2010, was 0.03 meter (0.10 feet) (there was no backwater data recorded on December 31 due to the gage being frozen). Backwater that occurred at the International Boundary during 2006-10 is plotted in figure 1C. Backwater since the time of filling of Franklin D. Roosevelt Lake in June 1942 to December 31, 2005, is plotted on the charts submitted with previous annual reports.

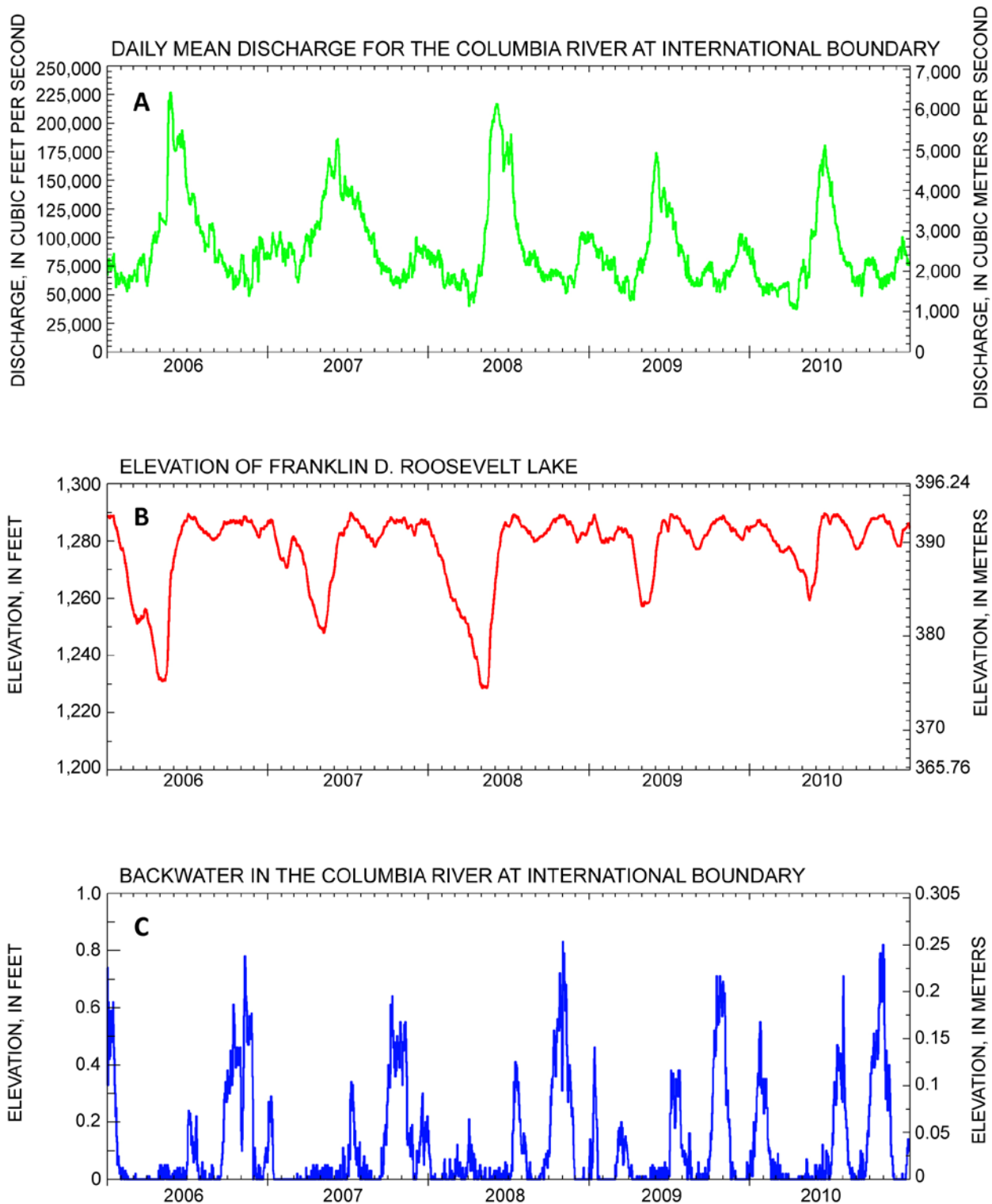


Figure 1. Hydrographs of A) daily-mean discharge for the Columbia River at the International Boundary, B) elevation of Franklin D. Roosevelt Lake, and C) backwater in the Columbia River at the International Boundary, 2006-10.

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