

Libby Dam Operations Briefing

Regional District of Central Kootenay

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Topics

- **Background on Libby Dam Operations**
- **Challenges and Opportunities**
- **Questions**



Libby Dam Water Management Overview

Basin Characteristic – Variability:

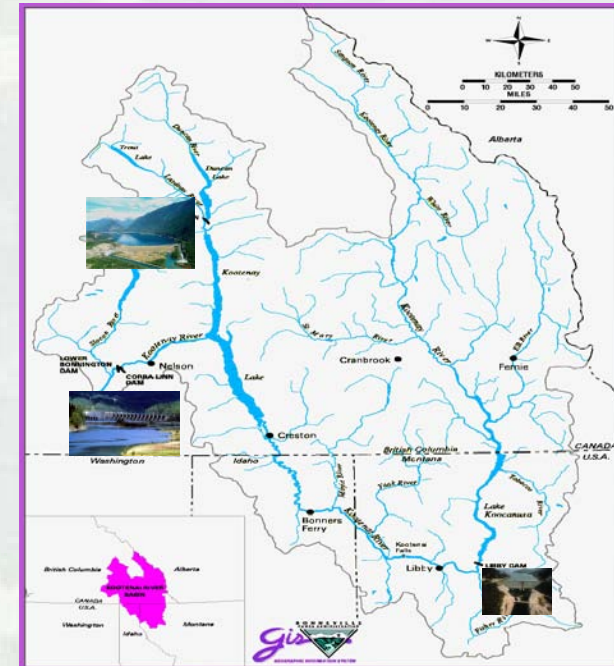
- Large: 9,000 sq miles above & 10,000 sq miles below dam
- Elevation ranges from 2,500 to 12,000 ft
- Large monsoonal rain events in June/July

Operated for Multiple Purposes:

- Flood Risk Management (system and local)
- Hydropower
- Recreation
- Ecosystem

Corps of Engineers Roles & Responsibilities:

- Northwestern Division (Portland, OR): Treaty/Canadian coordination, system and mainstem Columbia operations
- Seattle District (Seattle, WA): Regulation and forecasting



International Interests & Concerns

Upstream/Lake Koocanusa

▪ US

▶ Lake Recreation

- Access for boats – Lake is too low
- Marina Beaches inundated if reservoir is too high (2459 ft)

▶ Air Quality – Dust if lake is low

▪ Canada

▶ Lake Recreation

- Max elevation of Libby Dam is 2459 ft per Columbia River Treaty
- Access for boats – Lake is too low
 - ▷ Lake does not reach Canada until elevation 2420 ft
- Beaches inundated if reservoir is at 2459 ft

▶ Air Quality – Dust if lake is low

Downstream/Border & Kootenay Lake

▪ US

▶ Flood Risk Management (Bonners Ferry, ID)

▶ Fishery – ESA listed species

▶ Levee sloughing and saturation

▶ Seepage of farmlands in Kootenai Flats (Northern Idaho)

▪ Canada

▶ Kootenay Lake

- Elevation (1755 ft?) – Flood Risk
- Power generation – Flows in winter

▶ Levee slough and saturation

▶ Farmland Seepage

▶ Ecosystem (SARA)



Libby Dam Regulation - Guidance

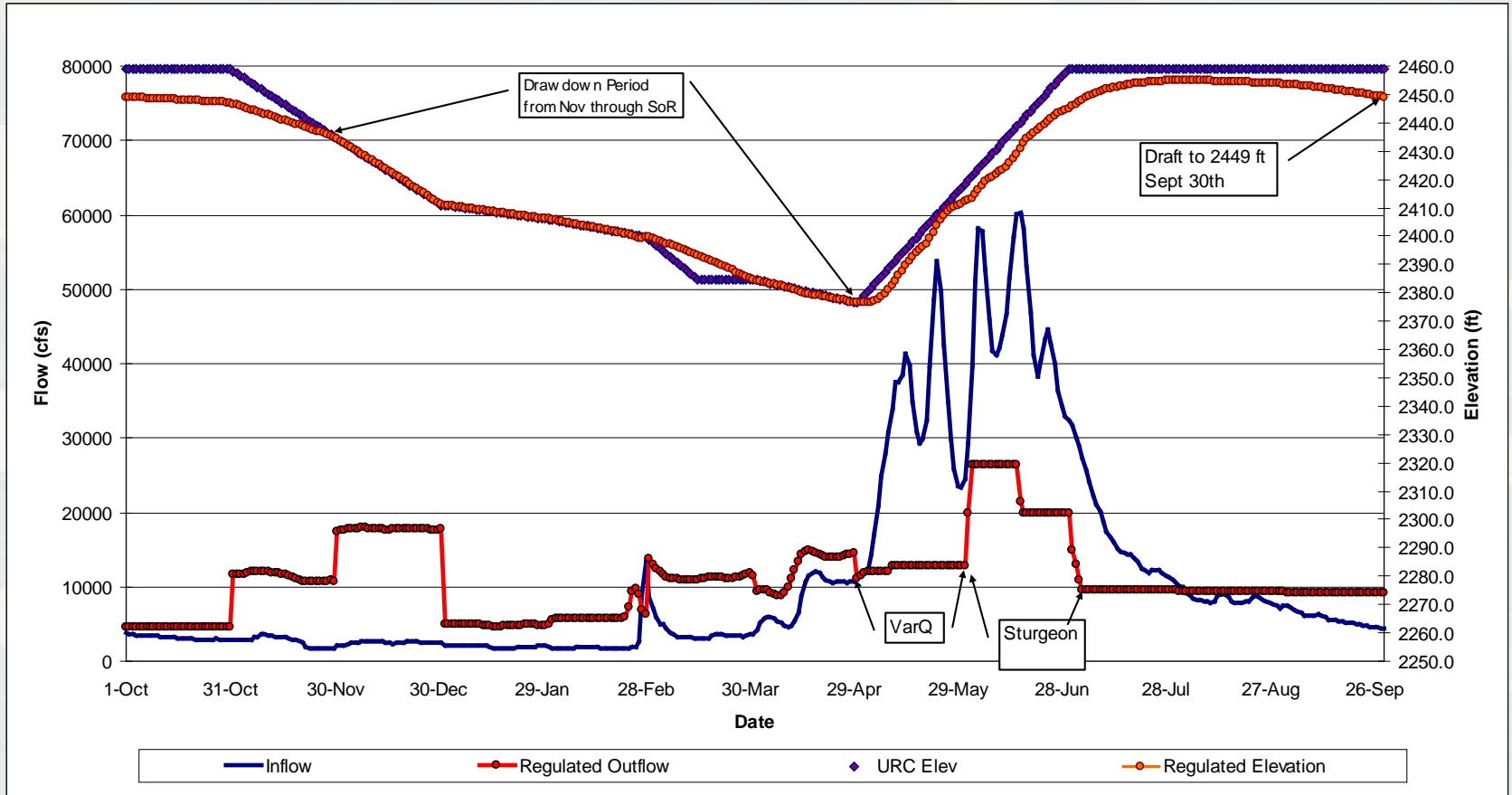
Governing Statutes, Treaties, Executive Orders, guidance:

- Libby Dam's Enabling Legislation
 - Columbia River Treaty
 - ▶ Libby Coordination Agreement
 - Libby Operating Plan
 - Endangered Species Act (ESA)
 - ▶ 2006 USFWS BiOp, as clarified
 - ▶ 2008/2010 NOAA FCRPS BiOp
 - The Northwest Power Act
 - The Clean Water Act
 - International Joint Commission (IJC) 1938 Order on Kootenay Lake
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Bonnars Ferry Idaho-1948



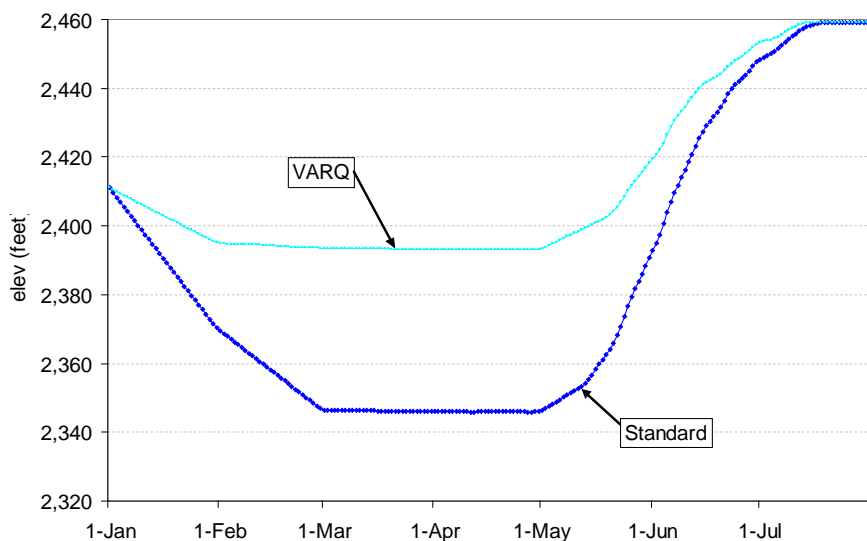
Typical Libby Water Year



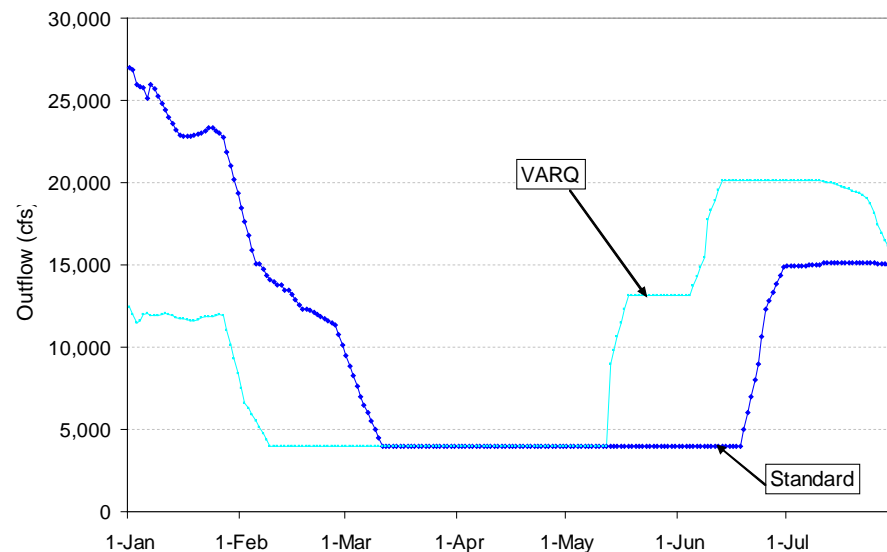
Libby Flood Risk Management Operations

- Prior to 2003, operated to the “Standard” flood risk management procedure
- Starting in 2003, began implementing VARQ procedure (Variable Flow Flood Risk Management):
 - ▶ Improves the chances of reservoir refill
 - ▶ Provides more normative flow
 - ▶ Draws the reservoir down less in the winter and requires more water to be released in the springtime
 - ▶ Adopted as the permanent flood risk management procedure - June 2008

Lake Koocanusa Elev - comparison of VARQ and Standard



Libby Dam Outflows - comparison of VARQ and Standard



Challenges and Opportunities

- Hydrologic Uncertainty (ex. 2006 and 2012 events) and Climate Change
- Operations for environmental objectives:
 - ▶ U.S. Endangered Species Act (white sturgeon, salmon, bull trout)
 - ▶ Canadian Species at Risk Act
 - ▶ Clean Water Act, State WQ regulations, etc.
- Flood Risk Management:
 - ▶ Canadian concerns about VARQ
 - ▶ Balancing local and system requirements
- Treaty 2014 Review:
 - ▶ Recommendation on future of Treaty by September 2013
 - ▶ Flood risk management change to Called Upon and Effective Use



Questions?



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