

# Columbia River Treaty Review - Kootenay/Koocanusa

Presented at Public Consultation Sessions

Spring, 2012



FOR GENERATIONS

# OVERVIEW

## Koocanusa

- Libby and the Columbia River Treaty
- Libby operations
- VarQ versus Standard flood control
- Interests on Koocanusa reservoir

## Kootenay Lake and River

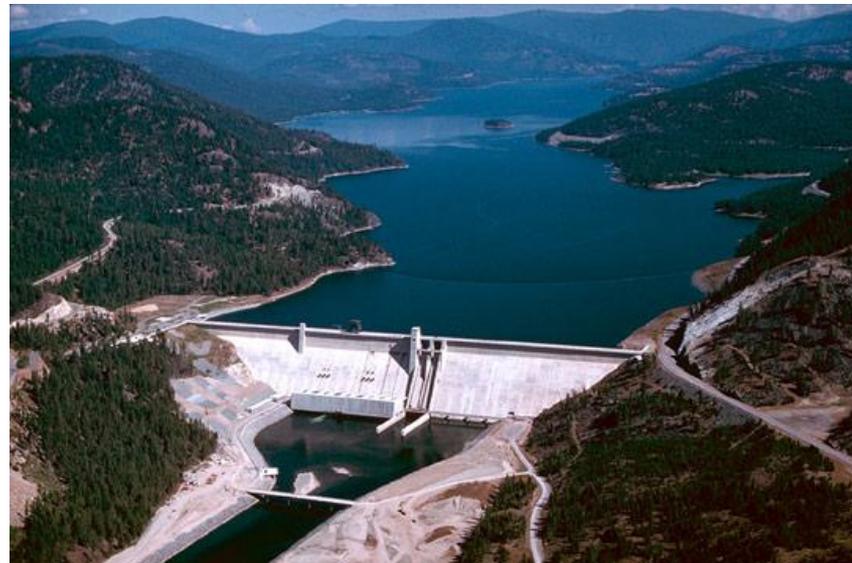
- Kootenay Lake operation and the IJC order
- Known interests on Kootenay Lake

## Libby and the Columbia River Treaty Review

# Libby and the Columbia River Treaty

## Columbia River Treaty:

- Provided the US with the option to build Libby Dam in Montana
- Kootenay reservoir floods 42 miles into Canada
- Libby Dam provides flood and power benefits for Canada.
- Power generated at Libby belongs to the US Power benefits downstream in Canada on the Kootenay river stay in Canada
- Coordination on Libby operation continues even if Treaty is terminated.
  - Canada can request a change in operation. If it is not to the US disadvantage the US shall agree



# Libby Operation

## Oct-Dec:

- Libby drafted to reach the flood control level of 2411 ft on 31 Dec  
(Full pool = 2459 ft).

## Jan - Apr:

- Ave/high snow pack years - continue drafting to stay on flood control curve
- Low snow pack years - the flood control curve rises after 1 Jan

## May - Jul:

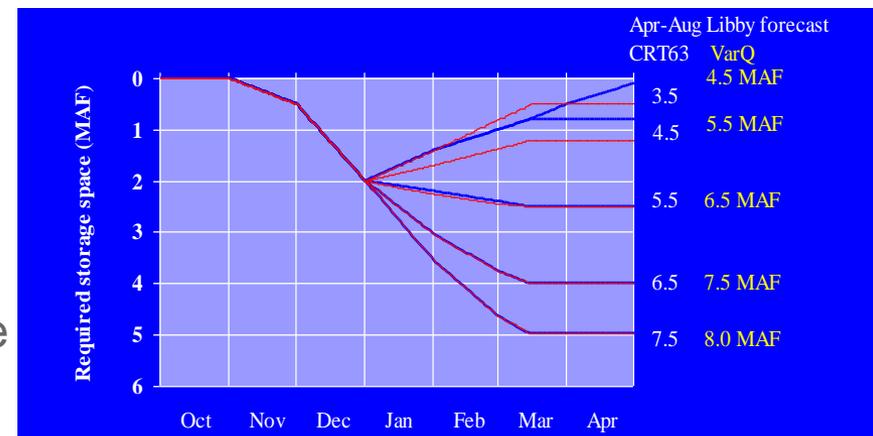
- Maintain sufficient flood control space (typically 10-15 ft on Jun30)
- Release “VarQ” flows (for bull trout and sturgeon)
  - Sturgeon release volumes increase in high snowpack years. For low water year there is no flow release for sturgeon.
- Typically reservoir peaks (within the top 5 to 10 ft) in mid-July.
  - In low water years, the reservoir will not reach this range

## Aug – Sep (operation for downstream salmon)

- Top 80% of runoff years - target 10 ft from full on 30 Sept
- Bottom 20% of runoff years - target 20 ft from full on 30 Sept

# VarQ versus Standard Flood Control

- Since 2003, Corps has used VarQ flood control curves
- VarQ curves are generally higher than standard flood control curves, except under very high runoff conditions
- Higher Kooconusa levels between Jan and July
- Sturgeon Flows affect timing of release in May – Jul, not volume
- VarQ results in power losses in Canada, and may cause higher peak levels on Kootenay Lake
- Libby Coordination Agreement allows BC to compensate itself for power loss. Discussing further mitigation measures for VarQ



# Known Koochanusa Interests

## Recreation:

- Boating access
- Beach area
- preferred range 2445-2455 ft

## Fish and Aquatic Resources:

- Abundance and diversity
- kokanee, trout

## Wild life and vegetation:

- Grassland at northern end of reservoir
- Nesting and wildlife habitat

## Archeological sites:

- Identification and protection of sites

## Commercial Interests

- Tourism, guide outfitters
- House boat operators



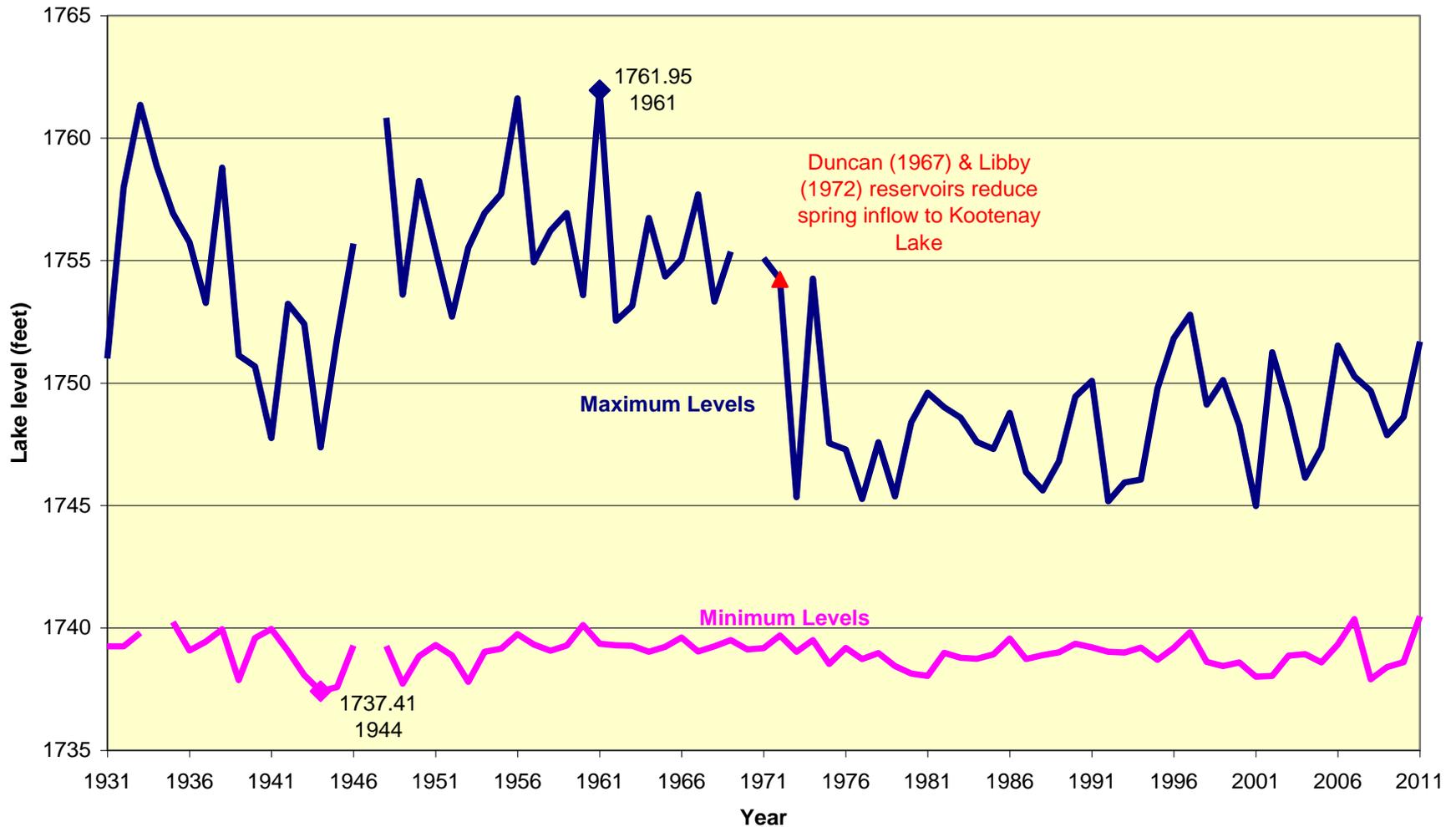
# Kootenay Lake and the IJC Order

## Kootenay Lake:

- Operates under the International Joint commission (IJC) order.
- Influenced by Duncan and Libby operation
- Controlled by Corra Linn Dam (FortisBC)
- Discharge is limited by hydraulic constriction at Grohman Narrows

# Treaty Flood Control Benefits - Kootenay Lake

**Kootenay Lake Levels (at Queens Bay)  
annual maximum & minimum**



# Known Kootenay Lake Interests

## Flooding of Private Property:

- Localized flooding above 1750 ft. Significant flooding above 1755 ft
- Dyke erosion with higher levels and flows

## Fish and Aquatic Resources:

- West arm shoal spawning kokanee
- White sturgeon adult and juvenile rearing habitat
- Nutrient restoration program

## Wild life and vegetation:

- Wetlands and Duck Lake

## Archeological sites:

- Identification and protection of sites

## Commercial Interests

- Tourism, guide outfitters

## Ferry Navigation on West Arm

- Levels below 1738 ft can impact Harrop-Proctor and Balfour ferries

# Libby and the CRT Review

## Called Upon flood control

- Could require deeper draft more frequently at Libby
- Coordinated Flood Risk Management within the Treaty Framework may be able to mitigate deeper drafts.

## Canadian Domestic Trade off

- Higher Kooconusa levels May – Jul may increase peak levels at Kootenay Lk

## US Domestic Law

- Sturgeon spring flows and Aug/Sep salmon releases from Libby are court ordered
- US will not agree to an operation that violates their domestic law.

## Treaty Review Work plan

- Investigate Coordinated Flood Risk Management
- Investigate Libby alternatives that are within US and Canadian laws
- Will analyse impacts on Kooconusa and Kootenay interests