Hydrogeology of Tributaries to Coeur d’Alene Lake

presented to
Coeur d’ Alene
Watershed Advisory Group
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Robert Steed
Collection of water quality data has been challenging because Coeur d’Alene tributaries “went dry” much earlier than most Idaho streams.

In July, 2010 Coeur d’Alene Regional Office hypothesized what’s hydrologically going on.
Monitoring

• Access
  – Road Crossings
  – Public Lands

• Representation
  – Lower portions of watershed are typically targeted
HOLOCENE DEPOSITS

Qal
Alluvial deposits (Holocene)

Qla
Lacustrine sediments and alluvium (Holocene)

Qls
Landslide deposits (Holocene)

Qfg
Fluvial gravel (Pleistocene and Holocene)

Qp
Palouse Formation (Pleistocene and Holocene) *(pattern only)*
Coeur d’ Alene Lake Geologic History

• Lake elevation variable
• Coeur d’ Alene Lake is southern extent of most recent glacial activity
• Glacier flowing south in the Purcell Trench (10-15k years ago)
• Lake elevation was 52 feet higher for a long period in the past
• Delta-like deposition occurred in flooded v-shaped valleys
Length of Emergent Delta Formations

- Beauty Creek, 5,000 feet
- Wolf Lodge Creek, 19,000 feet
- Blue Creek, 8,550 feet
- Fernan Creek, 11,700 feet
- Cougar Creek, 12,100 feet
- Kid Creek, 4,000 feet
- Mica Creek, 11,700 feet
- Rockford Creek, 3,700 feet
Figure 29: Map of deltaic sediments between 2128 and 2182 on tributaries to Coeur d’Alene Lake.
Other deposition

- Coeur d’ Alene Lake Full Pool 2128’ elevation
- Change in knick point
- Stream Energy not enough to move cobbles and cobble deposition occurs and transitions
Comparison of Hydrographs

![Hydrograph chart showing discharge in cubic feet per second (ft³/sec) versus month. The chart compares different locations and months.](chart.png)
Hydrologic differences

• Typical North Idaho Tributaries
  – Peak flow in May
  – Base flow in July to August

• Coeur d’ Alene Tributaries (lower portions of the bigger streams)
  – Peak flow in February or March
  – Base flow in May and June
  – Subsurface July