Boise River Reservoir Operations

Treasure Valley CAMP Meeting
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U.S. Department of the Interior
Bureau of Reclamation

Boise River & Reservoir System

- Drainage area – 2650 square miles
- Provides water for full and supplemental irrigation to approx. 275,000 acres
- Electrical generation at Anderson Ranch, Arrowrock, Lucky Peak, and Boise Diversion Dam
- Flood operations in conjunction with Army Corps of Engineers
- Max. recorded discharge – 35,500 cfs, June 14, 1896
Boise River Diversion Dam

- Completed 1908 by USRS
- 68-ft high concrete and masonry dam
- Constructed to divert water into New York Canal and to provide power for Arrowrock construction
- Three 1100 kW generators

Arrowrock Dam

- Completed 1915 by USRS
- 350-ft high thick-concrete arch dam
- 272,200 AF storage capacity
- Authorized for irrigation storage
Anderson Ranch Dam

- Completed 1950 by USSR
- 456-ft high embankment dam
- 413,100 AF storage capacity
- Authorized for irrigation, power and flood control

Lucky Peak Dam

- Completed 1954 by Army Corps of Engineers
- 340-ft high embankment dam
- 264,370 AF storage capacity
- Authorized for flood control and storage
Boise River Reservoir Operations

- Primary objective is flood control
- Second objective is water supply storage
- Flood control operations primarily driven by runoff forecast
- Flood control operations dictated by Army Corps "rule curves" based on nearly 100 years of hydrologic record and current snowpack conditions
Boise River Reservoir Operations (cont.)

- Irrigation operations primarily driven by irrigation demand
- Irrigation releases are ordered daily by the Boise River Water Master
- Reclamation works with the Corps of Engineers, Boise River Watermaster, and others to manage the reservoir system for multiple objectives

Flood Control Operations
### Peak Unregulated Flows into Boise Reservoir System (cfs)

- **Average Peak for 50-yr period:** 13,346

#### Peak Unregulated Flows into Boise Reservoir System (cfs)

- **7000 cfs = Flood Stage (regulated)**
- **16,800 cfs = 100-year flood (regulated)**
- **41,200 cfs = 100-year flood (unregulated)**

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### Unregulated Inflows above Lucky Peak Dam

- 100 yr flood
- Flood stage
Peak Regulated Flows at Glenwood or Broadway Bridge Gauging Station

6500 cfs = Bank Full
7000 cfs = Flood Stage
Boise River Reservoir System Storage
(capacity = 949,700 ac-ft)
Eagle Island, Spring 2010

Eagle Island, March 2006
Glenwood flow = 4000 cfs

RECLAMATION
Eagle Island, April 2006
Glenwood flow = 6500 cfs
Water Supply Operations

Water Year Total Runoff
Volume Upstream of Lucky Peak Reservoir

<table>
<thead>
<tr>
<th>Year</th>
<th>Total Outflow (ac-ft)</th>
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<tbody>
<tr>
<td>1997</td>
<td>3,571,000</td>
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<tr>
<td>1996</td>
<td>2,902,000</td>
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<td>2,719,000</td>
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<tr>
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<td>2,447,000</td>
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<tr>
<td>1999</td>
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</table>

Average of past 20 years = 1,767,000

2006 - Above average runoff
2008 - Average runoff
2007 - Below average runoff
2007 Boise River Flows and Reservoir Storage

- Boise Reservoir System Storage
- Lucky Peak Releases
- Boise River at Glenwood Bridge

System Capacity = 949,900 ac-ft

2008 Boise River Flows and Reservoir Storage

- Boise Reservoir System Storage
- Lucky Peak Releases
- Boise River at Glenwood Bridge

System Capacity = 949,900 ac-ft
2006 Boise River Flows and Reservoir Storage

System Capacity = 949,900 ac-ft

RECLAMATION