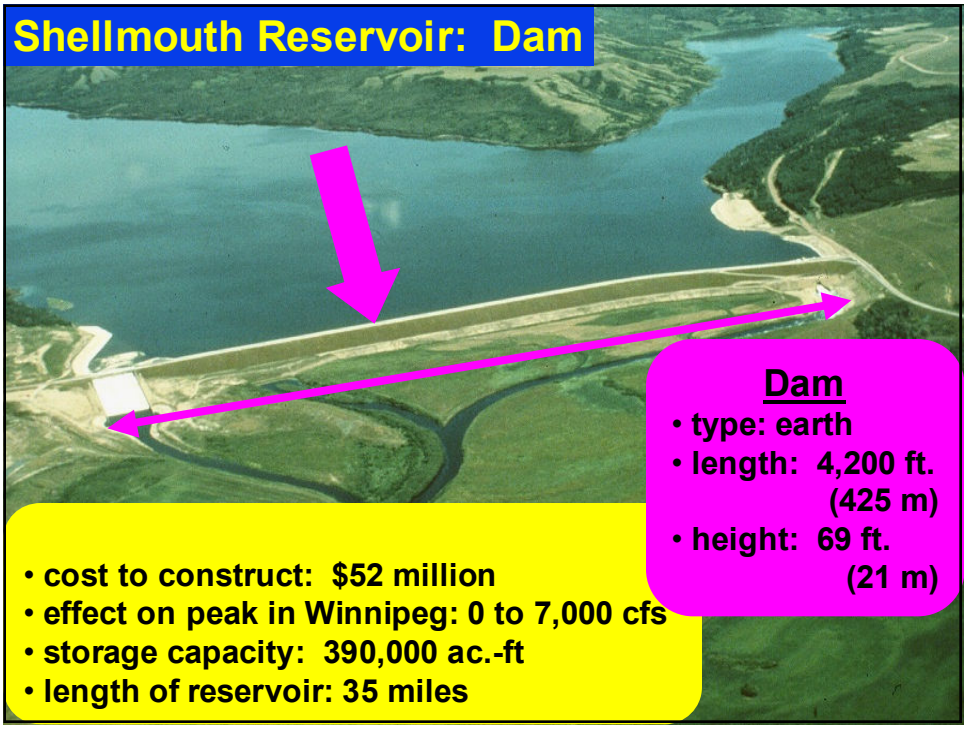
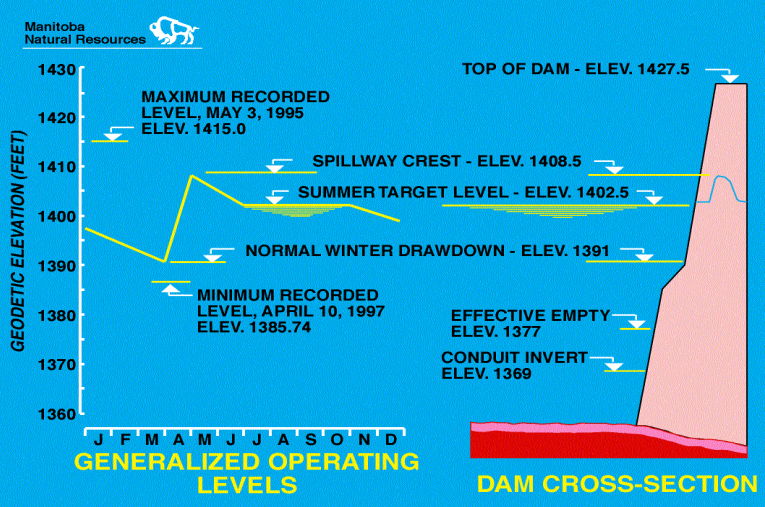
Shellmouth Reservoir: Dam



Dam
- type: earth
- length: 4,200 ft. (425 m)
- height: 69 ft. (21 m)

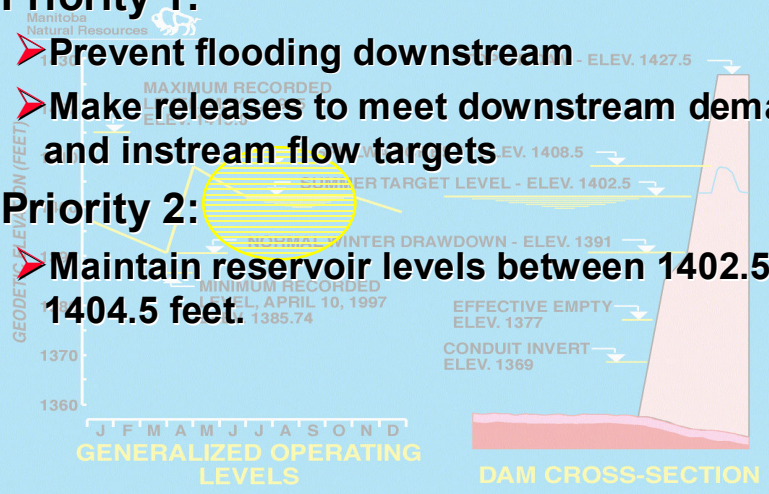
- cost to construct: $52 million
- effect on peak in Winnipeg: 0 to 7,000 cfs
- storage capacity: 390,000 ac.-ft
- length of reservoir: 35 miles

Shellmouth Dam and Reservoir



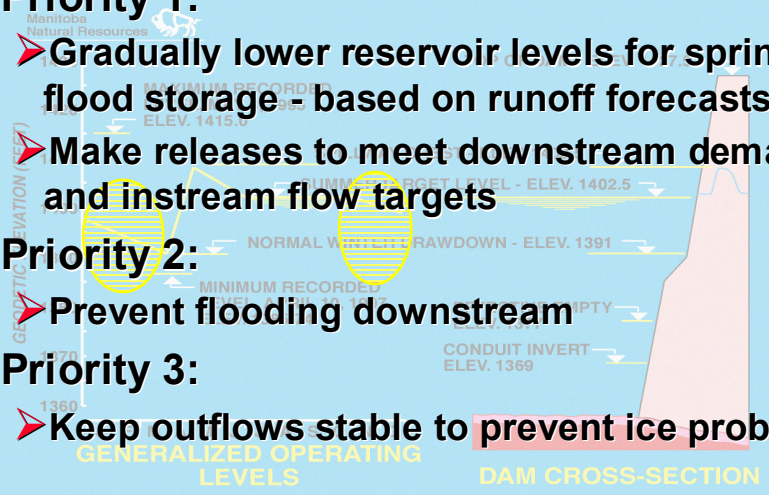
Operating Rules: Summer

- **Priority 1:**
  - Prevent flooding downstream
  - Make releases to meet downstream demands and instream flow targets
- **Priority 2:**
  - Maintain reservoir levels between 1402.5 and 1404.5 feet.



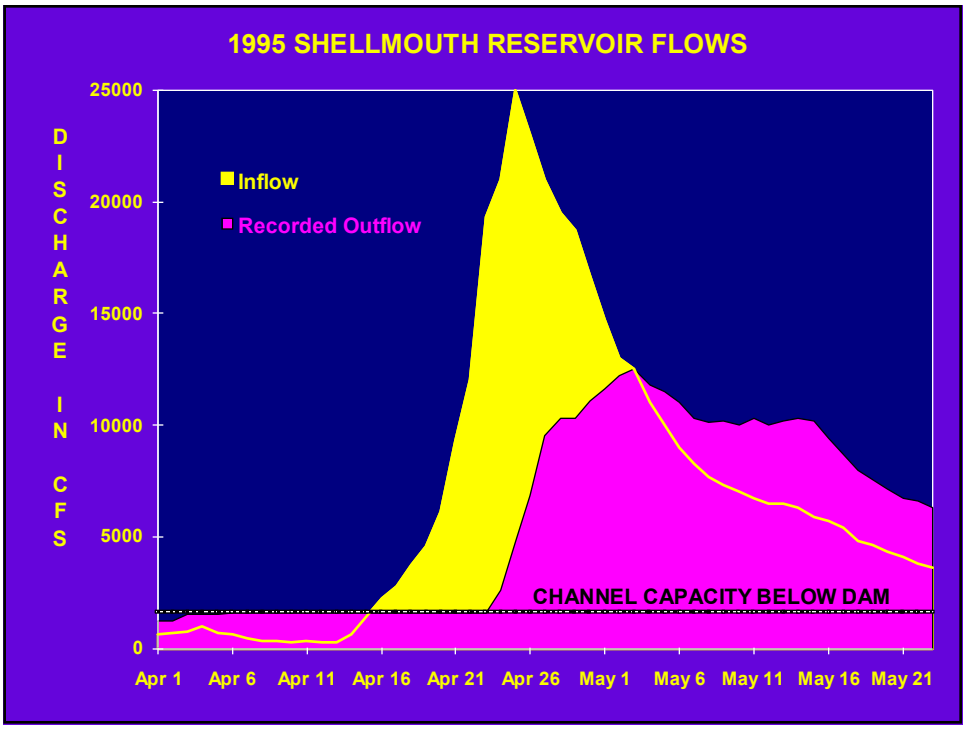
Operating Rules: Fall & Winter

- **Priority 1:**
  - Gradually lower reservoir levels for spring flood storage - based on runoff forecasts
  - Make releases to meet downstream demands and instream flow targets
- **Priority 2:**
  - Prevent flooding downstream
- **Priority 3:**
  - Keep outflows stable to prevent ice problems

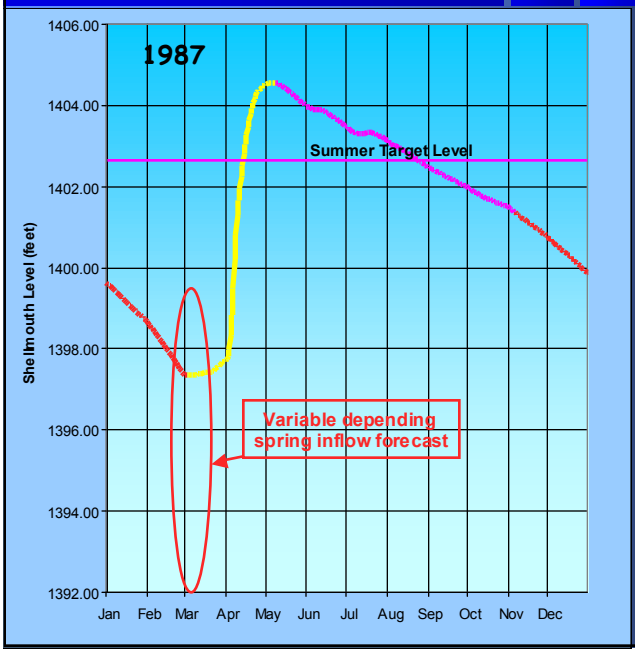


Operating Rules: Spring

- **Priority 1:**
  - Control releases to prevent flooding downstream
- **Priority 2:**
  - Try to keep outflows below 1600 cfs
- **Priority 3:**
  - Meet downstream instream flow targets
- **Priority 4:**
  - During dry periods attempt to raise reservoir levels to between 1402.5 and 1404.5 feet



Shellmouth Levels - Normal Year (1987)



- Starting ~Nov. 1ST, winter drawdown for flood storage.
- Spring refill.
- Decline in levels over summer.

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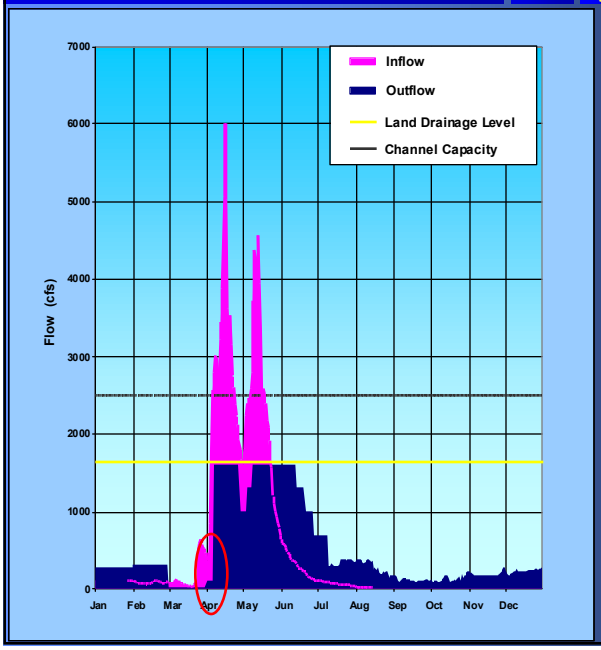
Shellmouth Outflow - Year (1988) Dry Year



- Spring maintain 100 cfs until local tributary runoff occurred.
- Maximum controlled flow 1600 cfs for downstream land drainage level.

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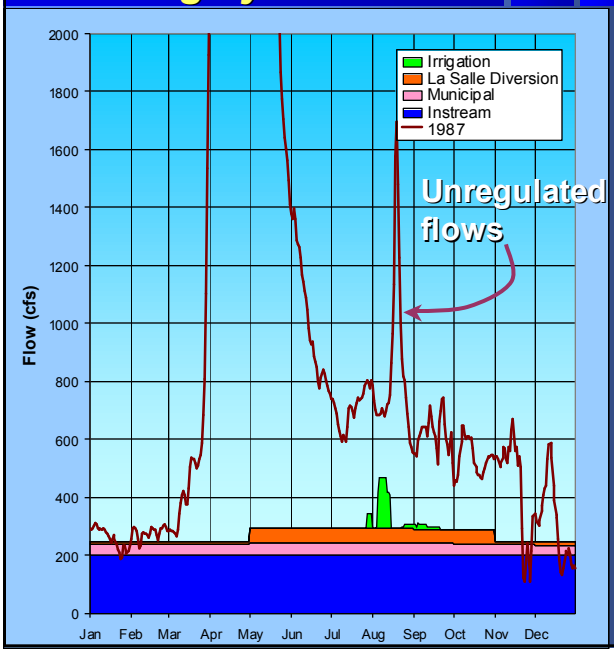
Headingley Flows - Normal Year (1987)



- Sufficient flow in river to meet demands.
- No draw from Shellmouth.

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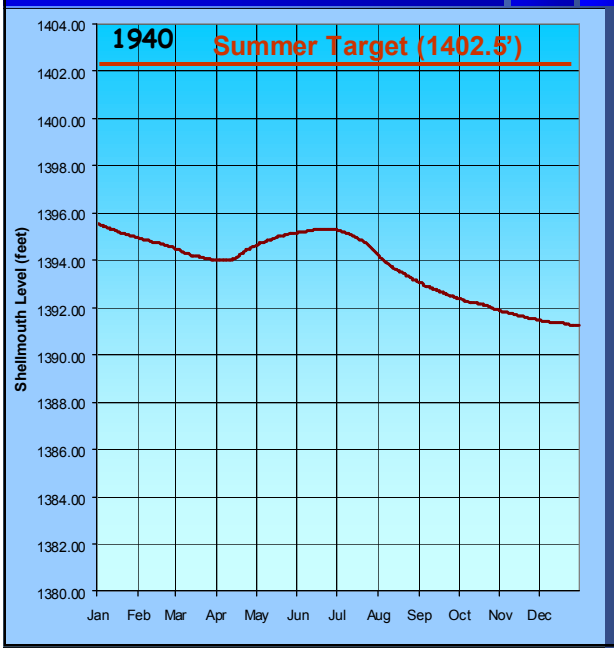
Shellmouth Levels - Driest Year (1940)



- Does not reach summer target.
- Releases to meet water demands over summer.

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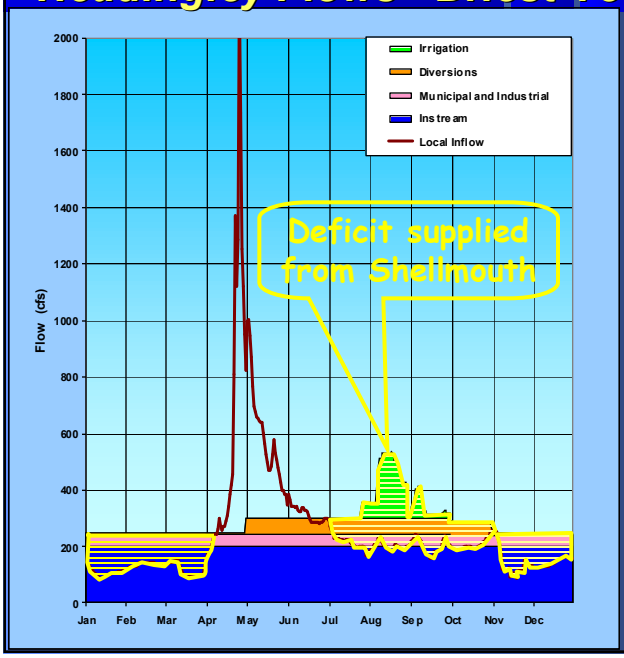
Headingley Flows - Driest Year (1940)



- Supply deficit from Shellmouth Reservoir
- Annual daily release of 70,800 ac. ft.

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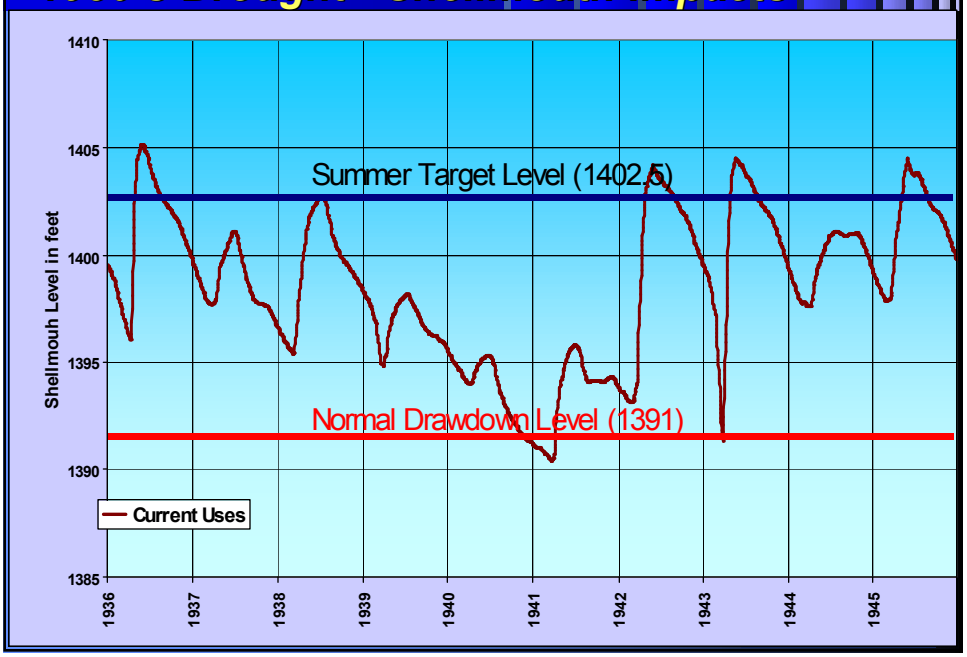
1930's Drought - Shellmouth Impacts