HIGH HEAD BYPASS - UPDATE

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PRESENTATION OUTLINE

- Background
- Challenges for high head bypass
- Research and Design Parameters Report
- Development of bypass alternatives
- Research framework workshop
- Next Steps

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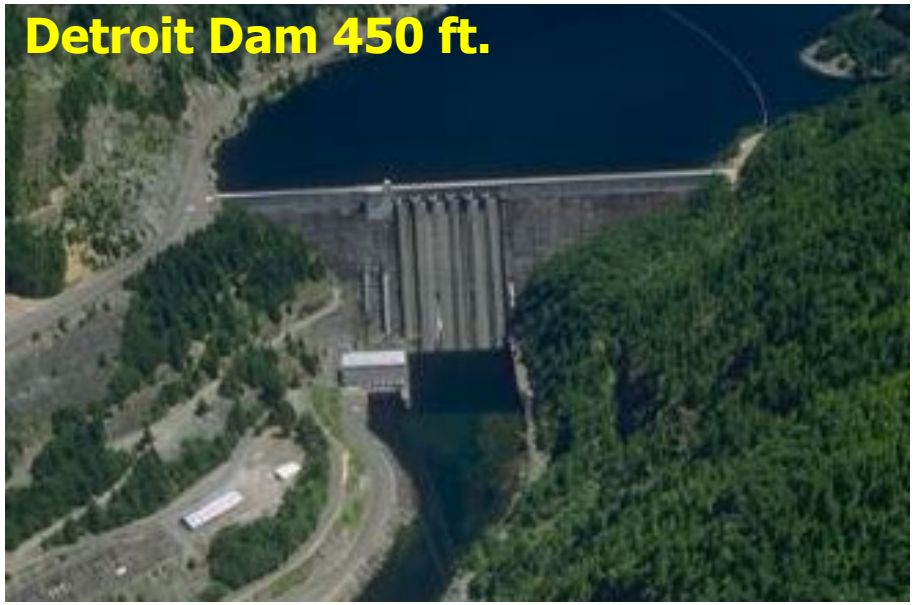
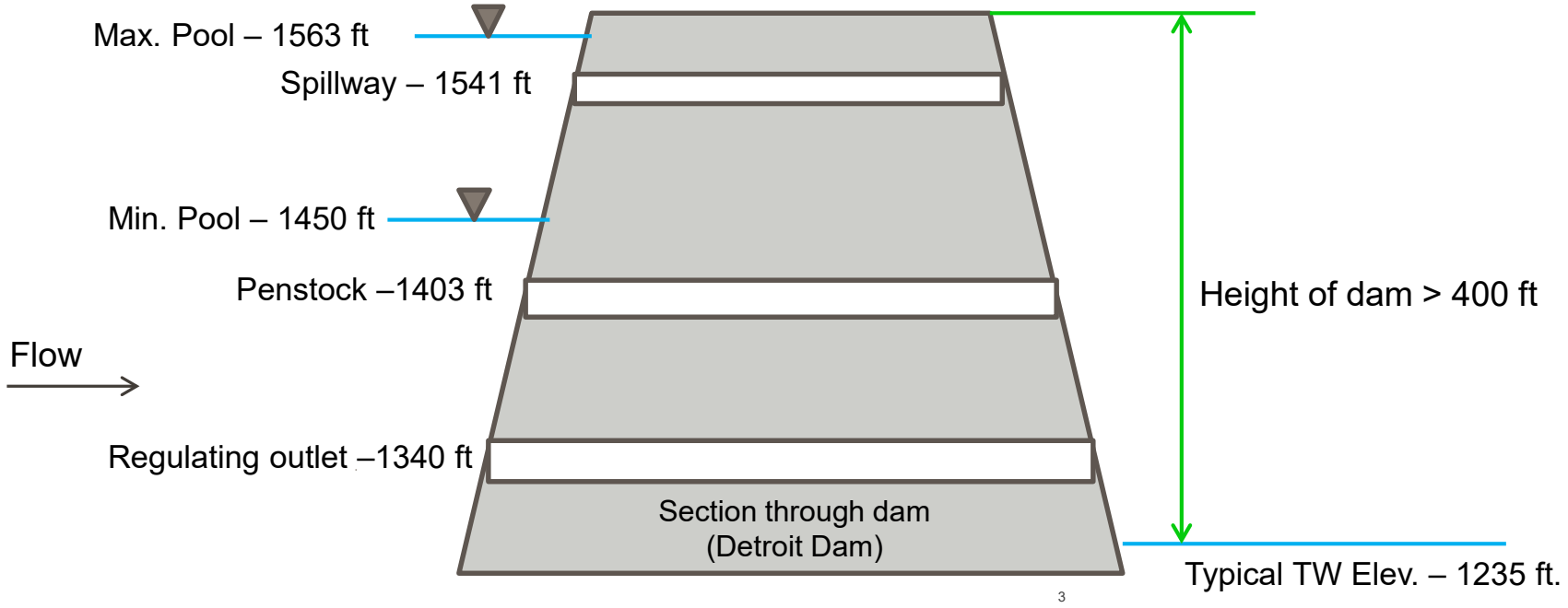
CHALLENGES FOR FISH PASSAGE

- Tall structures
- Large forebay elevation fluctuations
- Outlets positioned low on the dam





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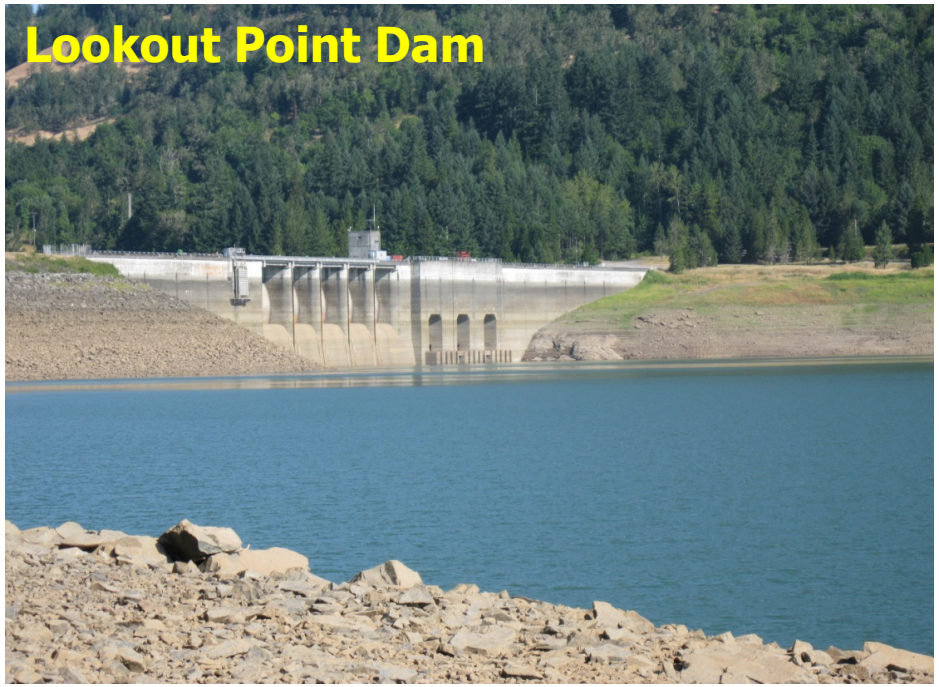
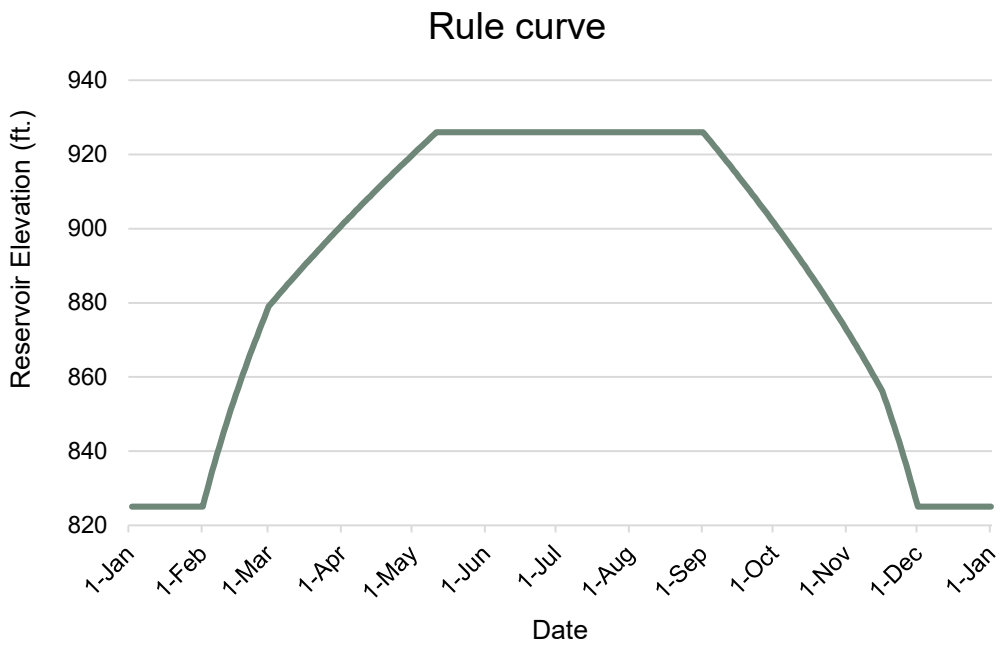
CHALLENGES FOR IMPLEMENTING HIGH HEAD BYPASS





Detroit Dam - Reservoir

- Normal full pool: 1563 ft.
- Min. pool for flood control: 1450 ft.

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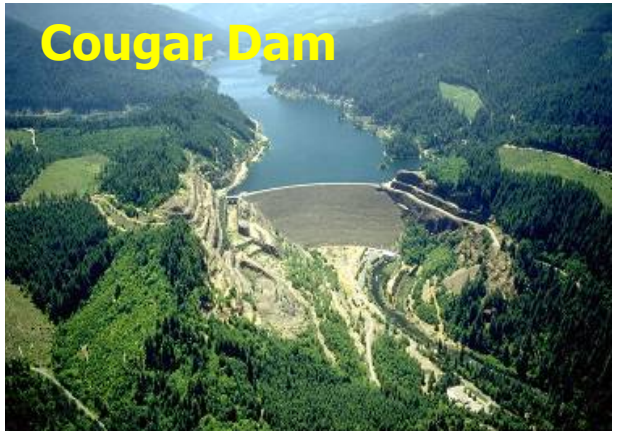
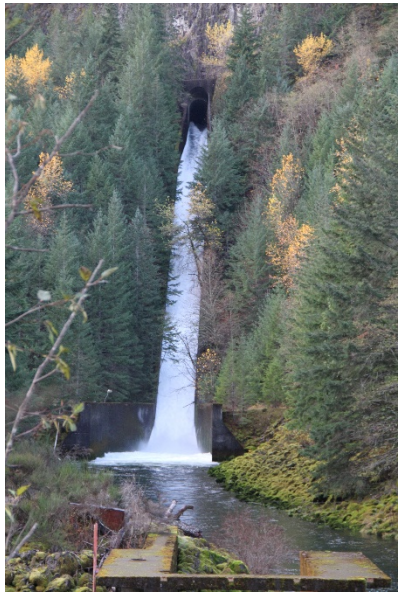
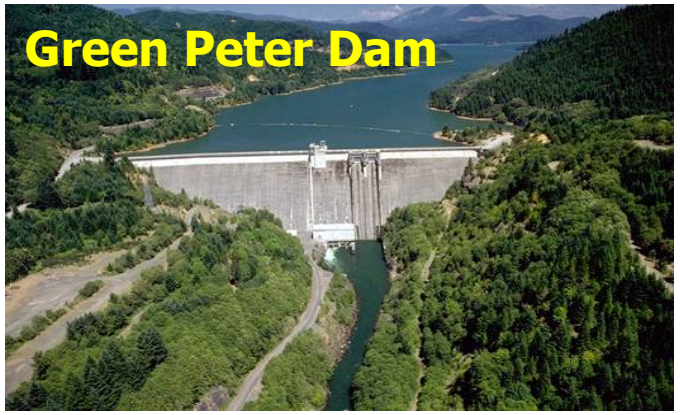
RESEARCH

- High Head Bypass Team began conducting studies in 2015
- We utilized the decommissioned bypass at Green Peter and the RO at Cougar Dam

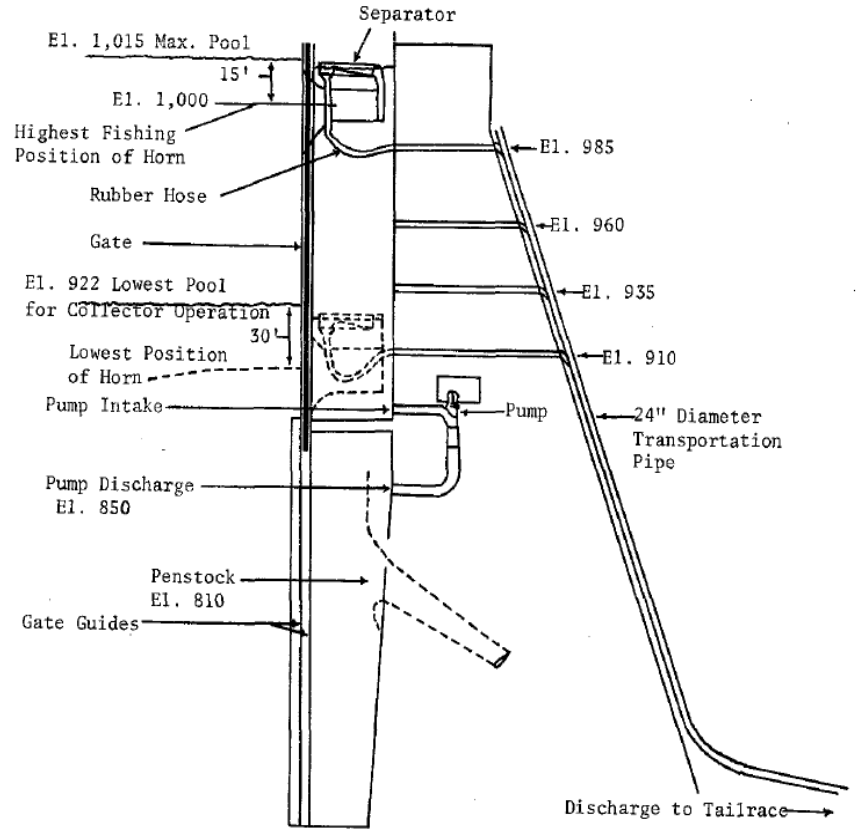




Cougar Regulating Outlet

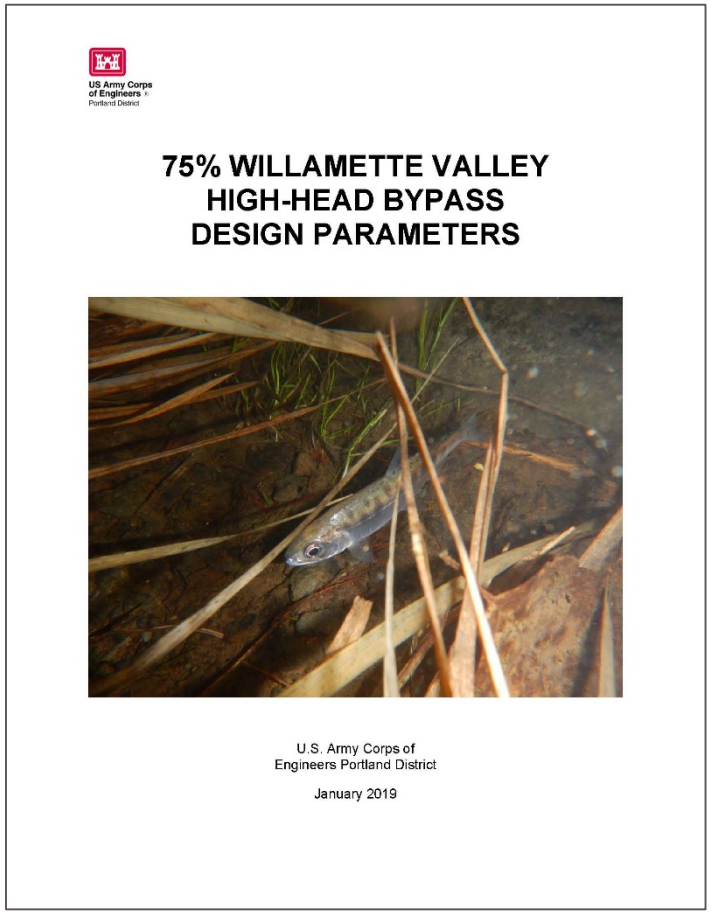


Green Peter Bypass



HIGH HEAD BYPASS DESIGN PARAMETERS REPORT

- We used the results from the studies, other research, literature, and NMFS Criteria Document to inform a design parameters report
  - Currently under review
- The HHB Team working concurrently and together with the Cougar and Detroit Teams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75% WILLAMETTE VALLEY
HIGH-HEAD BYPASS
DESIGN PARAMETERS

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NEXT STEPS – ENGINEERING DESIGN

- Develop alternatives for bypass
  - Hold a workshop with an A/E firm and external partners to brainstorm bypass alternatives
    - » Focus will first be for Cougar (Detroit later)
  - Develop Engineering Design Report (EDR)
- The HHB Team working concurrently and together with the Cougar and Detroit Teams
  - Coordinated with the Cougar team for placement of a potential bypass pipe on the collector and excavation of rock to accommodate the pipe

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NEXT STEPS – BIOLOGICAL EVALUATION

- Downstream Fish Passage Conveyance Research and Development
  - Hold a research framework workshop (OSU researchers, external partners, other researchers)
  - Develop hypotheses to test (trap and haul vs bypass or a combination)
  - Use information from the OSU lab studies (copepod infection, fish stress, etc.) to inform field studies
  - Conduct lab or field studies to test hypotheses

NEXT STEPS – BIOLOGICAL EVALUATION

VOLITIONAL HIGH HEAD BYPASS

- Design parameters (Document)
- Alternative Development (EDR)
- Alternatives/Design Charrette
- Recommended Design (DDR)

Infection levels observed in wild

Field study design & ability to infect

FISH HEALTH UNCERTAINTIES

- Fish health under alternative conveyance
- Hypothesis testing (fish stress)
- Model to evaluate stress metrics & mortality
- Model alternative conveyance under stress

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QUESTIONS

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