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Water Quality Monitoring and Assessment Columbia and Missouri Rivers

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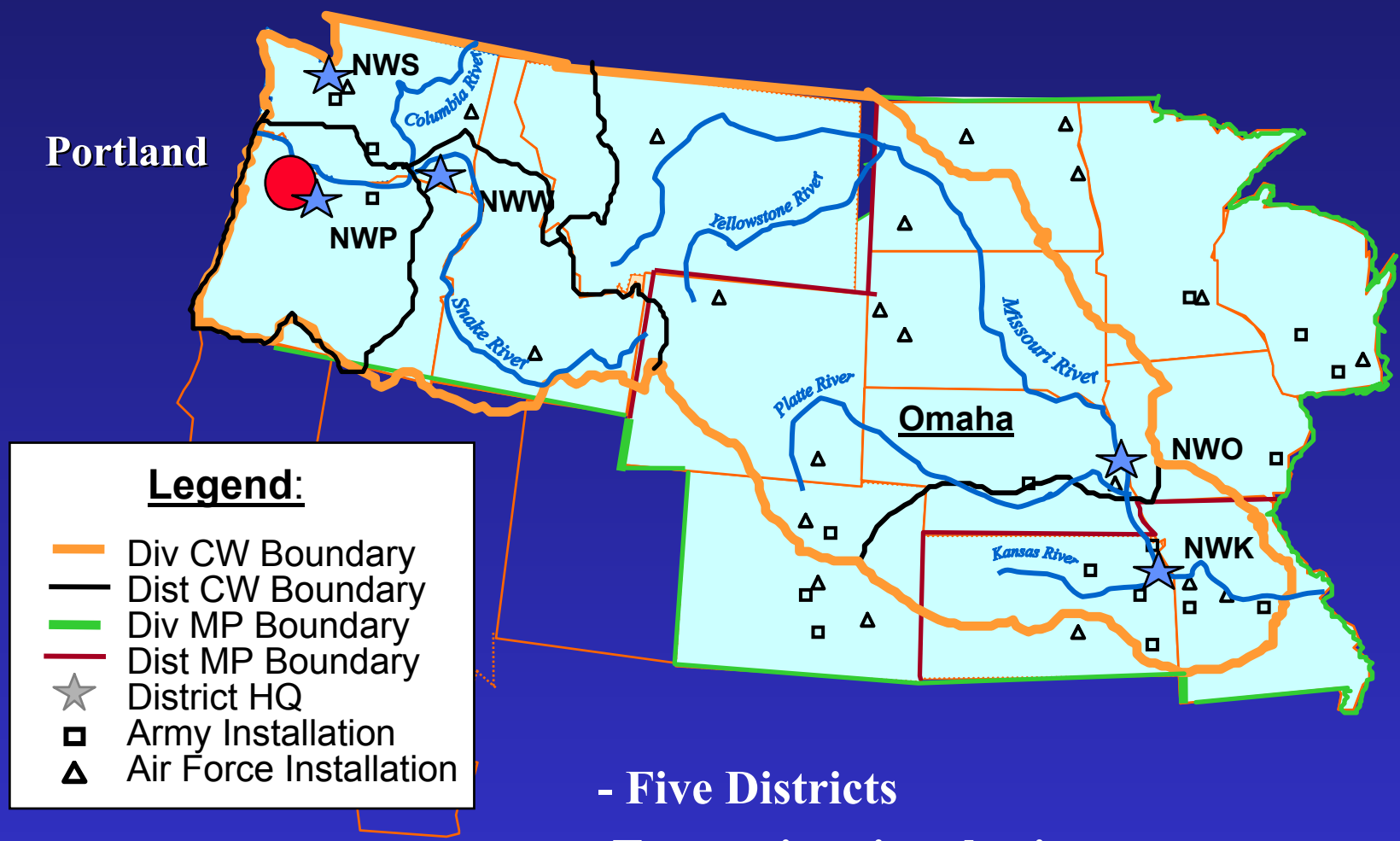

- Five Districts
- Two major river basins

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USACE Environmental Operating Principles

Principle #6: ***Build and share an integrated scientific, economic and social knowledge base that supports a greater understanding of the environment and impacts of our work.***

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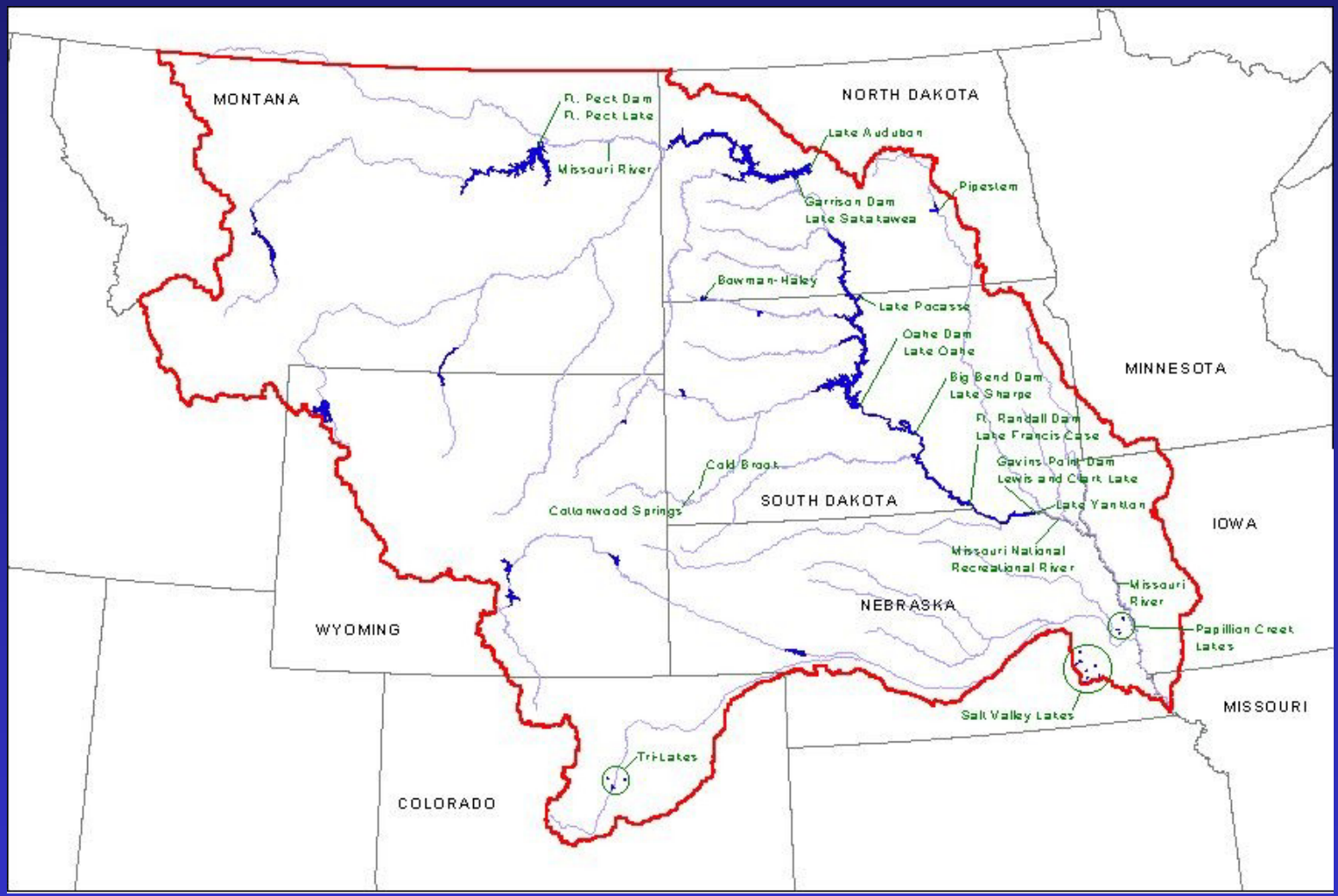
Missouri River



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Water Quality Monitoring

- Reservoir and release sites
- Several samples per year
- Chemical and physical parameters

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Ft. Peck
Special Assessment

- Test of warm water releases
- Temperature loggers at 17 sites
- Turbidity data
- Biological monitoring

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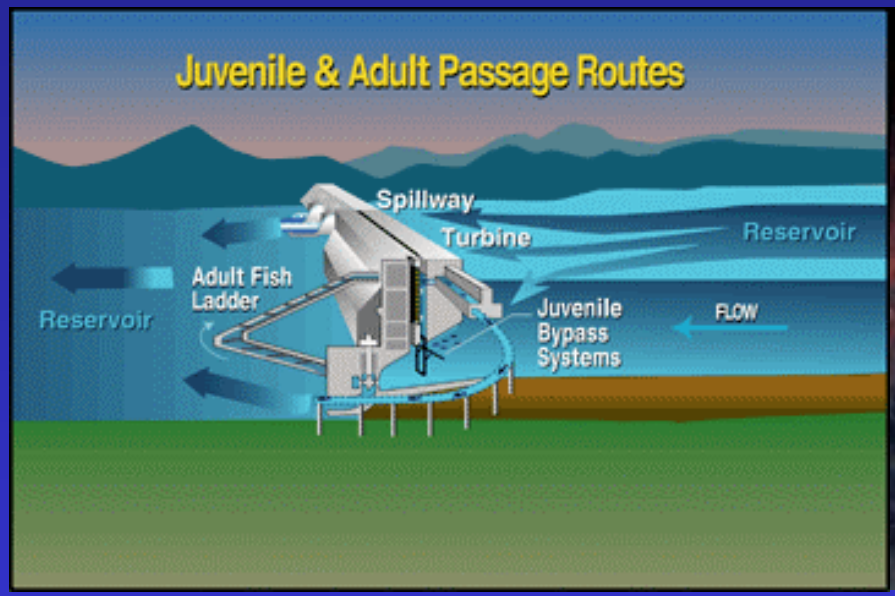
WQ Monitoring for Daily Operations

- NMFS Biological Opinion calls for spill for fish passage
- Juvenile bypass operations linked to total dissolved gas levels



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Total Dissolved Gas Monitoring

- State standard of 110 % TDG
- BiOp recommends spill up to 120%
- Variances of state standard requires hourly monitoring

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Total Dissolved Gas Monitoring Stations

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Total Maximum Daily Loads for TDG

- 3 Segments
  - Lower Columbia
  - Lower Snake
  - Middle Columbia
- TDG data and Corps models used by states/EPA to develop load allocations

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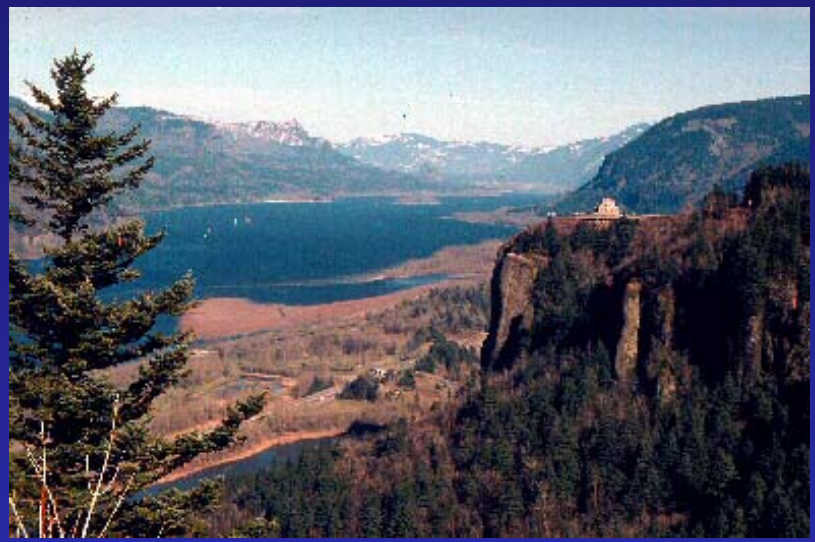
Summary



Water Quality monitoring tailored to meet the needs of Missouri and Columbia River Basins

Routine water quality monitoring to assess operations and changes in reservoir and river conditions

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Summary

Data sharing with other entities (e.g. TMDLs)

Intensive monitoring of key parameters for operations

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Designing a Great River Assessment

- Monitoring tied to Corps projects – either existing operating projects or assessing new projects
- Design of monitoring plan varies and driven by assessment/model being used
- Sharing data/analysis is critical