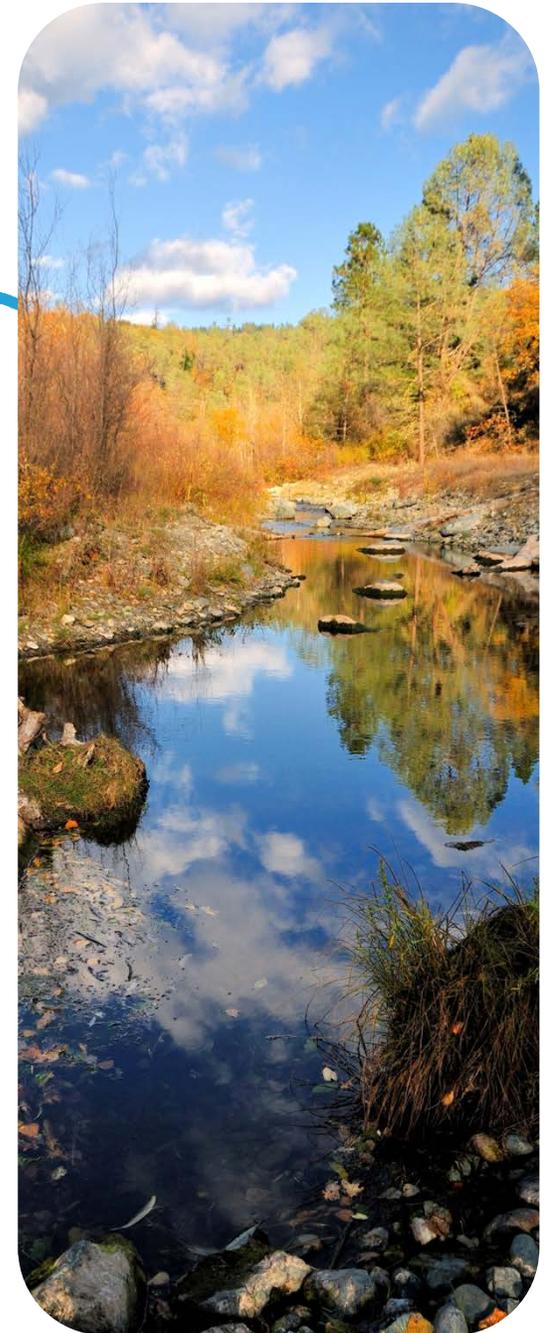




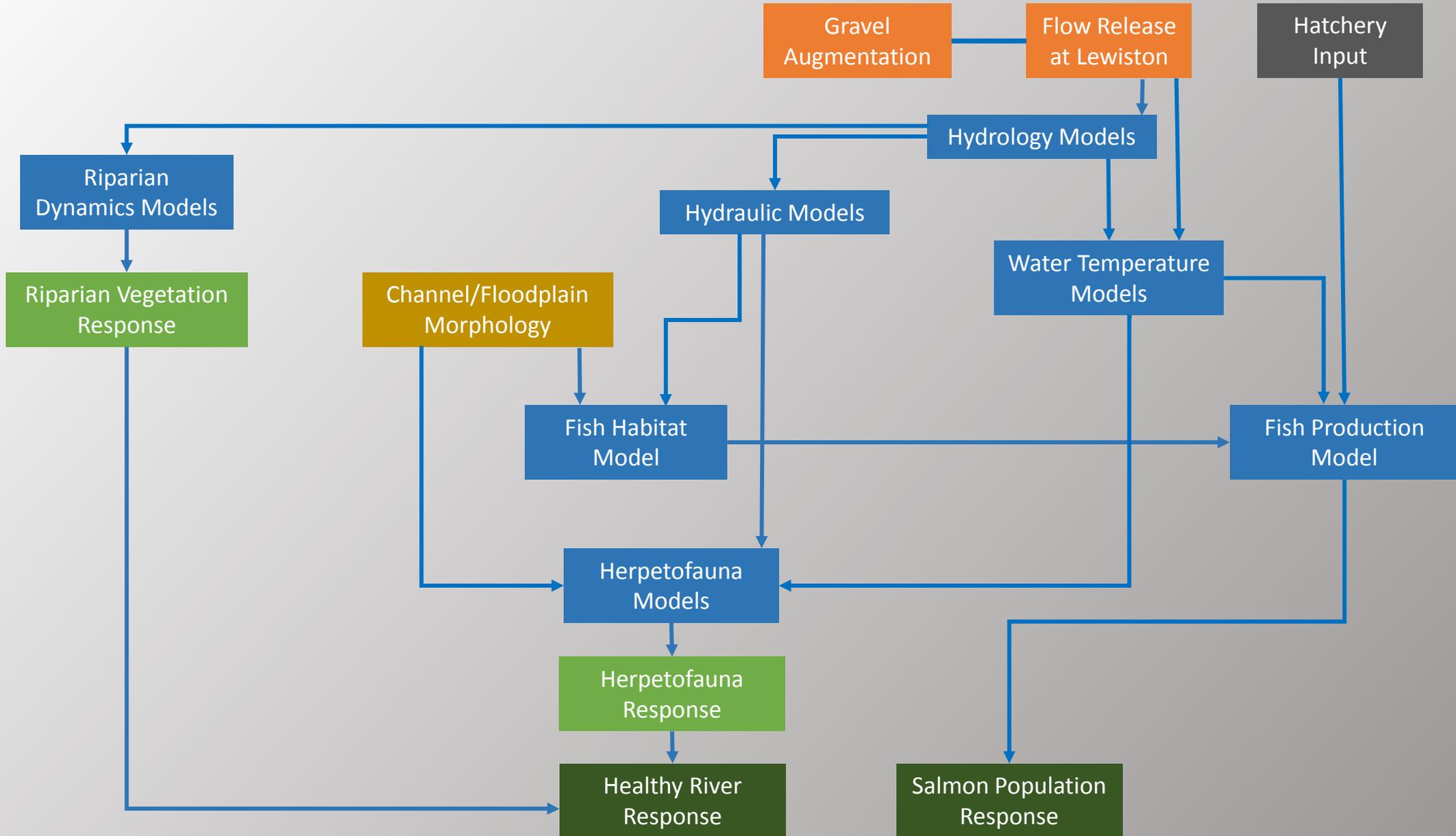
Decision Support System Workshop

NEXT STEPS IN DSS DEVELOPMENT AND IMPLEMENTATION

J. Tyrell DeWeber
Oregon Cooperative Fish & Wildlife
Research Unit

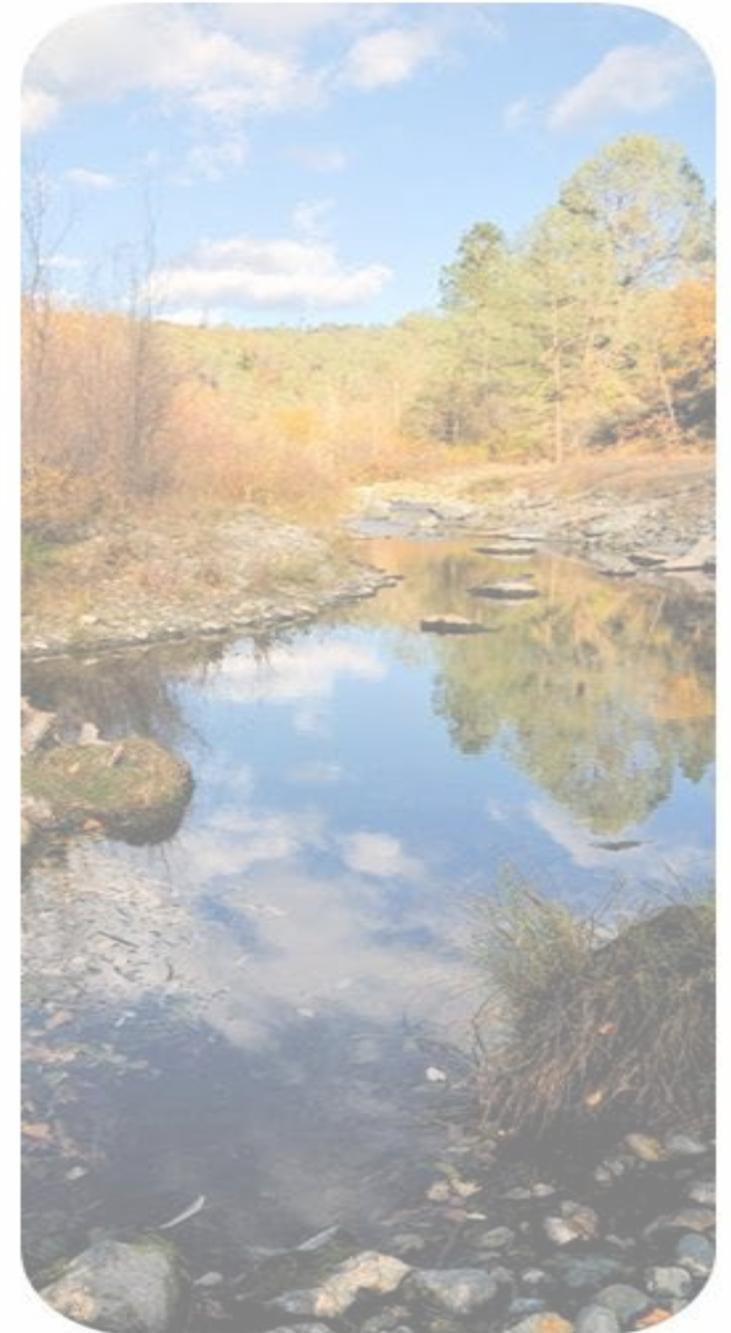


OVERVIEW OF DSS COMPONENTS



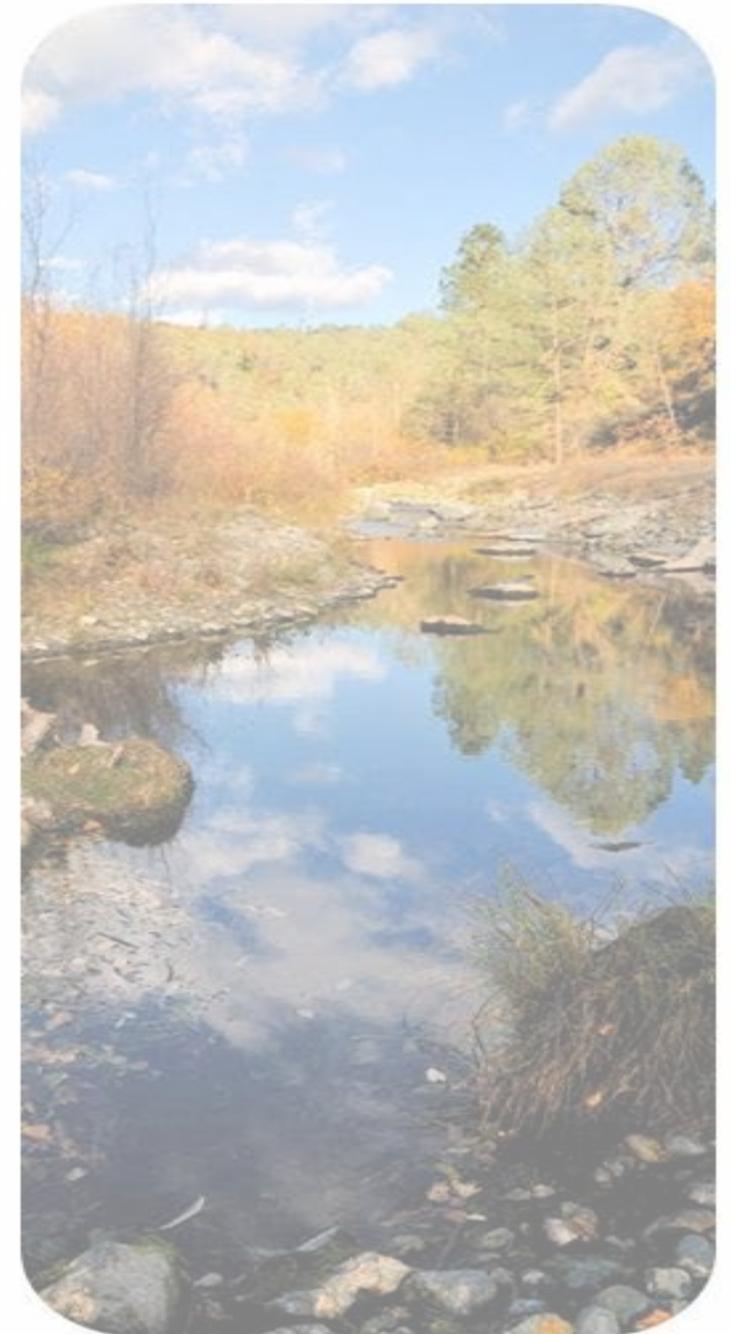
Utility of Current DSS

- Link flow schedules to:
 - Fish production, riparian and wildlife
- Support annual flow decision
 - Predicted outputs for different hydrographs
 - Focused on fundamental objectives
 - Transparent decision process
 - Repeatable process



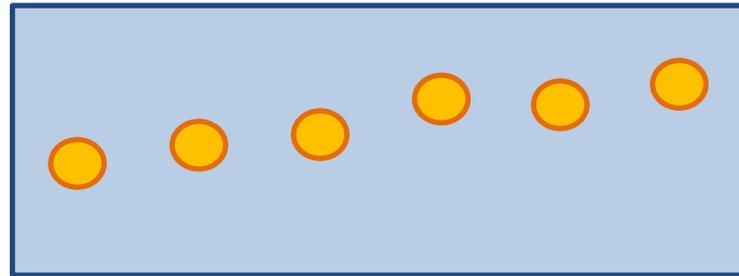
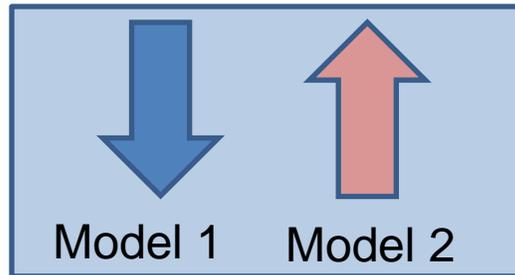
Utility of Current DSS

- Framework for adaptive management
 - Compare predictions with monitoring

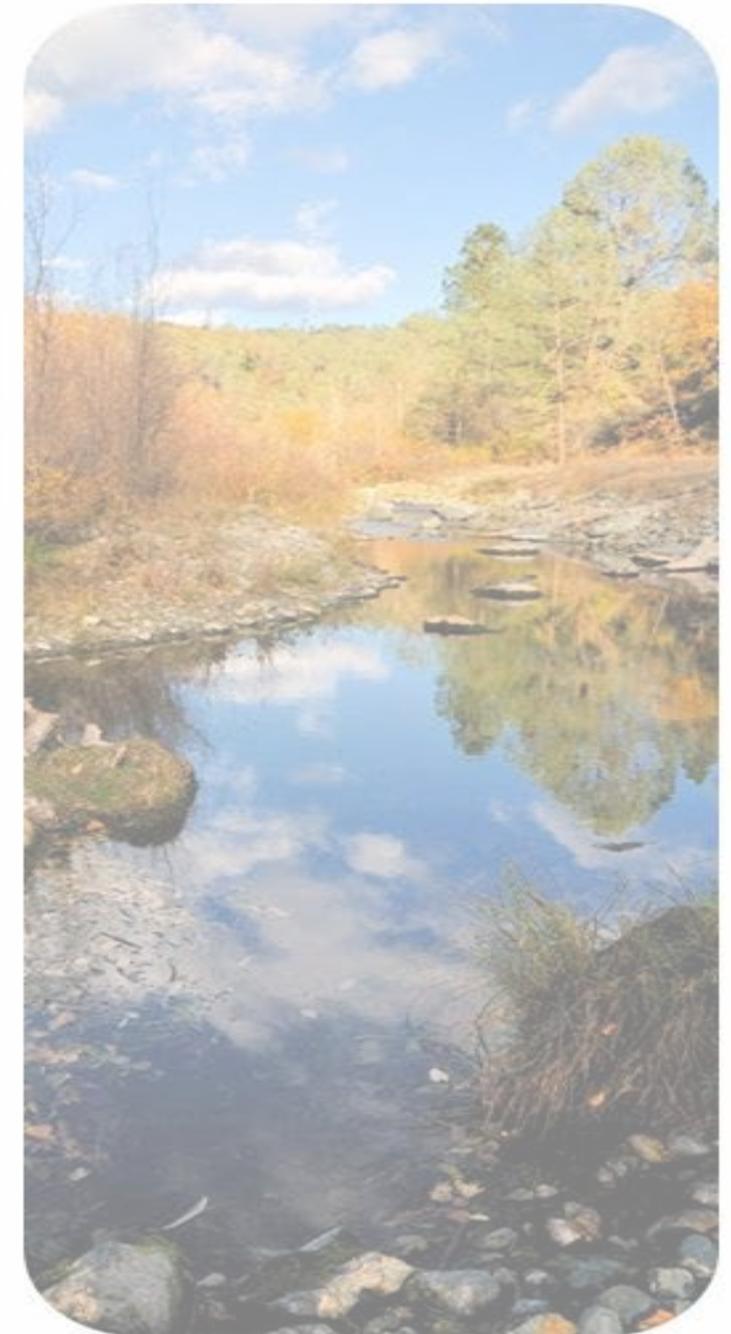


Utility of Current DSS

- Framework for adaptive management
 - Compare predictions with monitoring
 - Compare alternative hypotheses



- Learn and improve management
- Big step forward if implemented



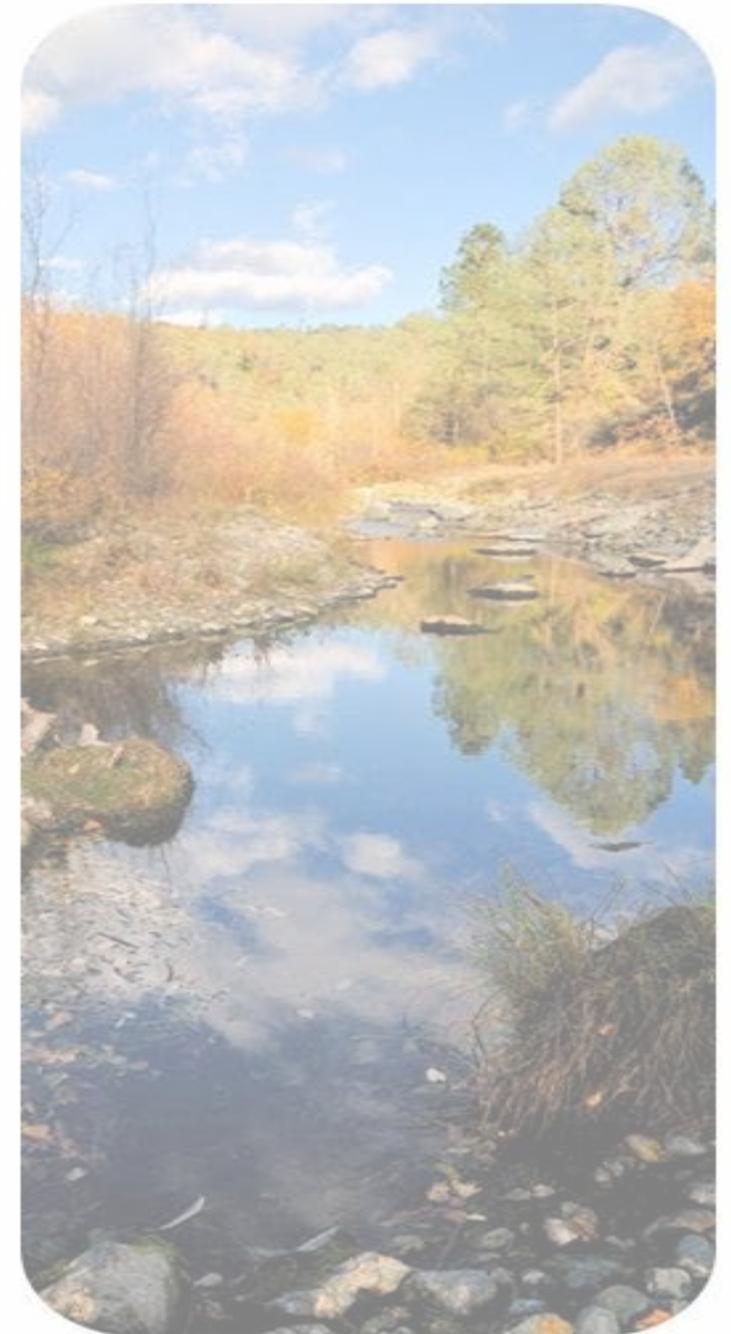
Next Steps for DSS

- **Need clearly defined objectives and performance metrics**

Objective = something we care about

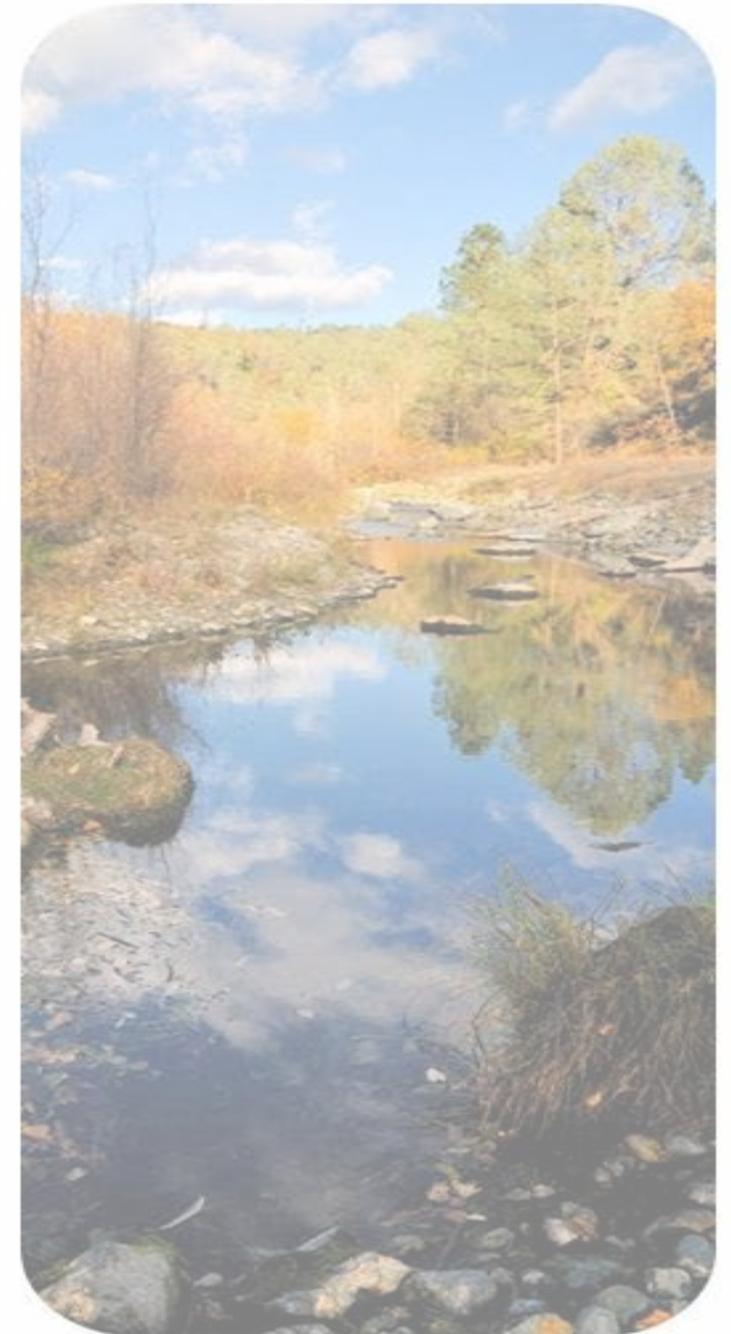
Performance metrics = clearly defined attributes of objectives

- **Example: Natural fish production**
 - Performance metric: Total abundance of naturally produced outmigrants



Next Steps for DSS

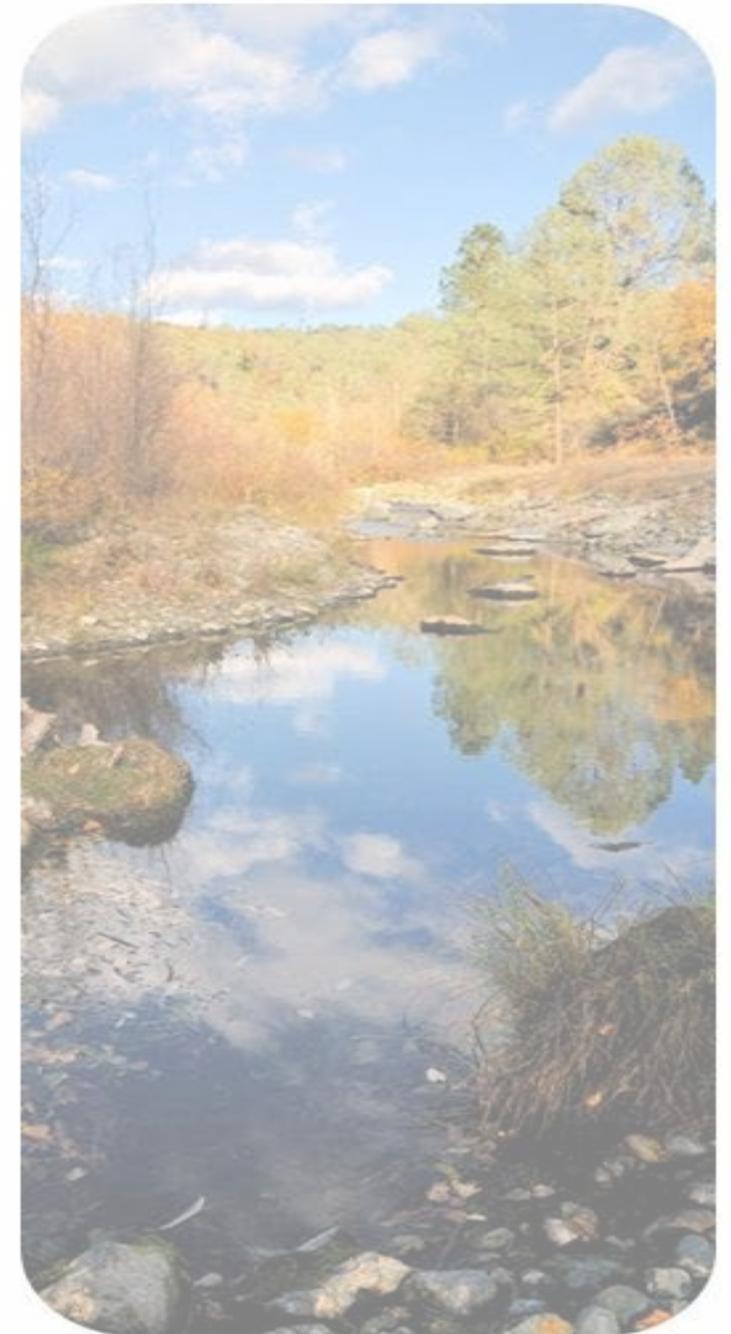
- **Need clearly defined objectives and performance metrics**
- What is a healthy river?
 - How do we describe it?
 - Bed mobility? Groundwater fluctuation?
 - Do we use biological endpoints?
 - Example: Riparian vegetation represents multiple processes
- What is needed to support decision?



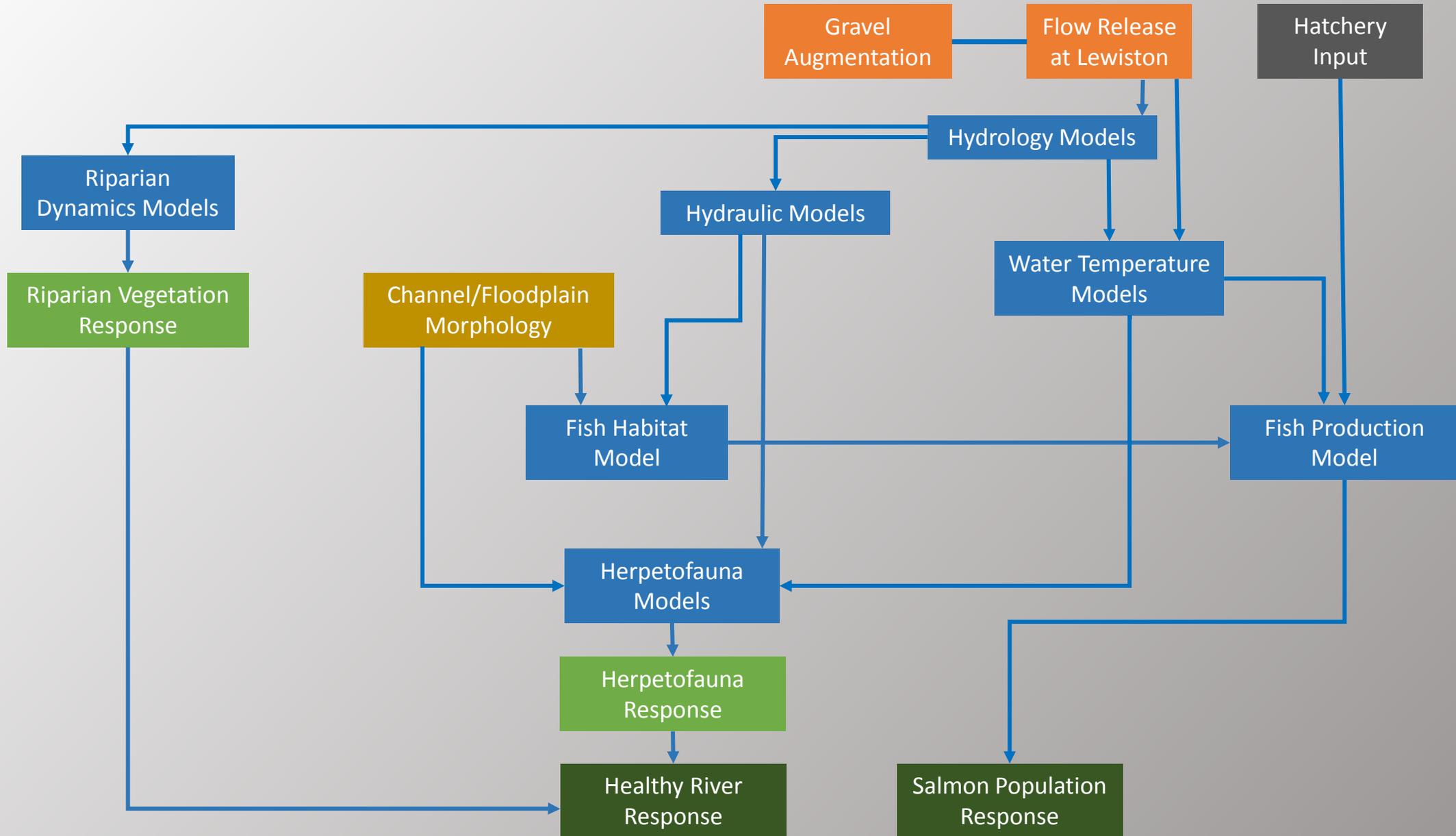
Next Steps for DSS

Complete Development

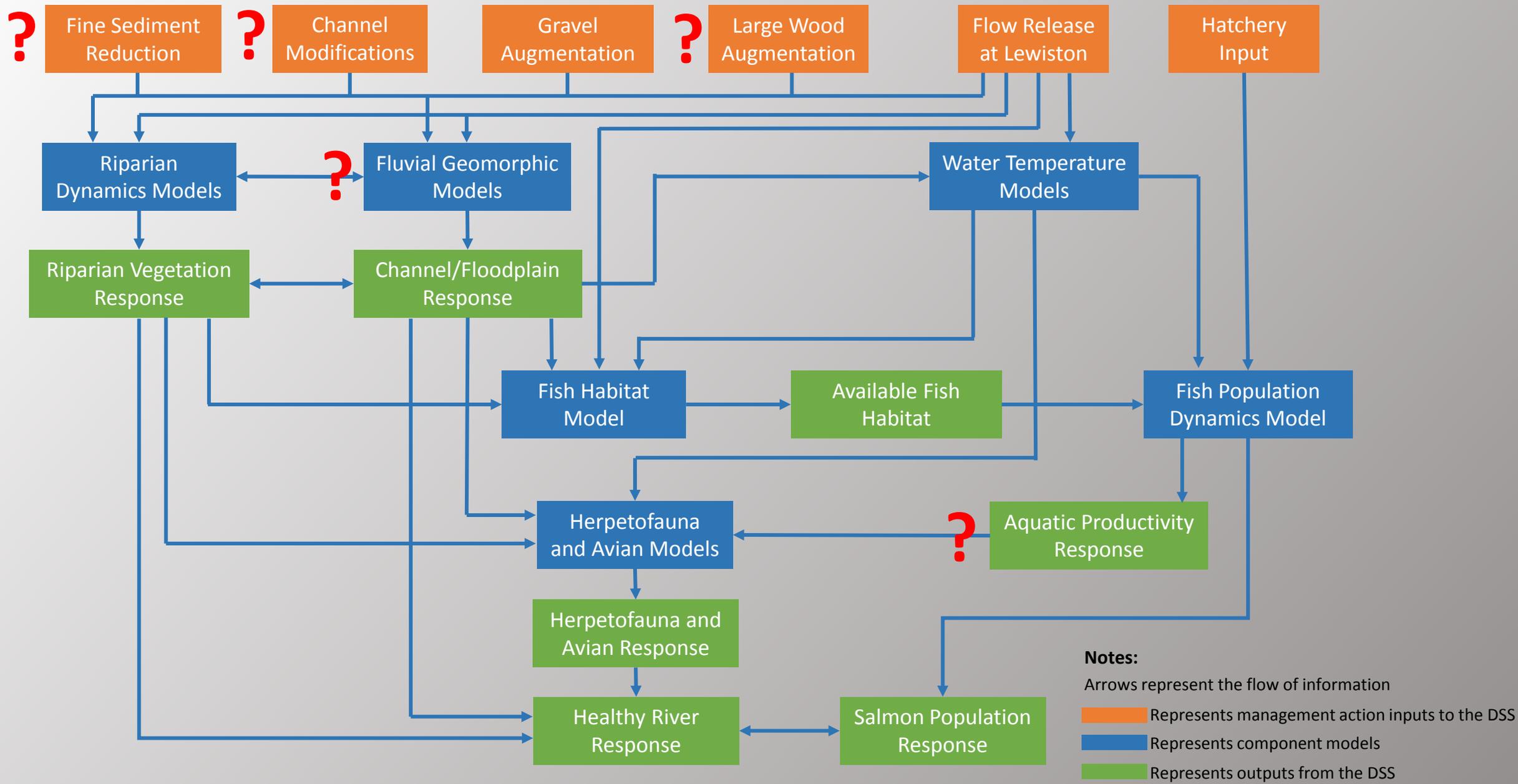
- Some pieces aren't developed yet
 - Should the DSS be expanded to include other attributes?
- Current focus on flows and gravel
 - Should other management actions be included?



OVERVIEW OF DSS COMPONENTS



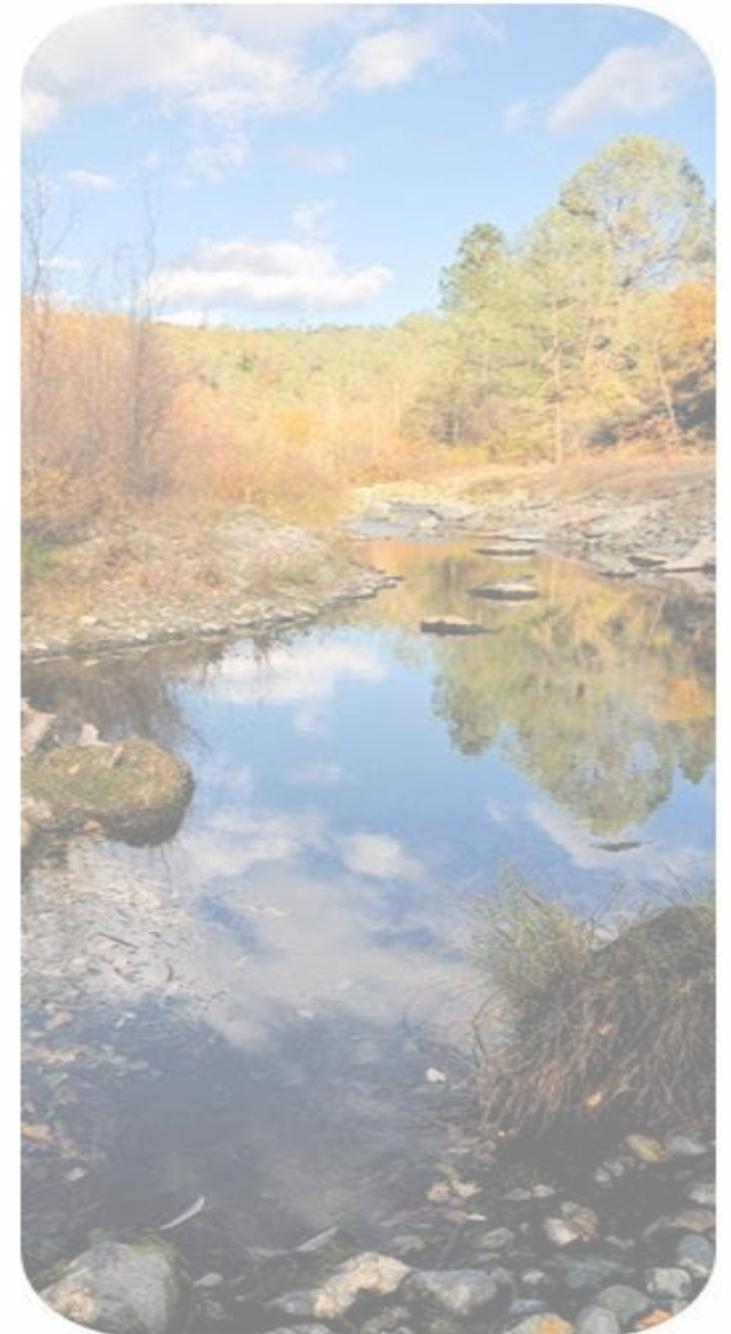
OVERVIEW OF DSS COMPONENTS

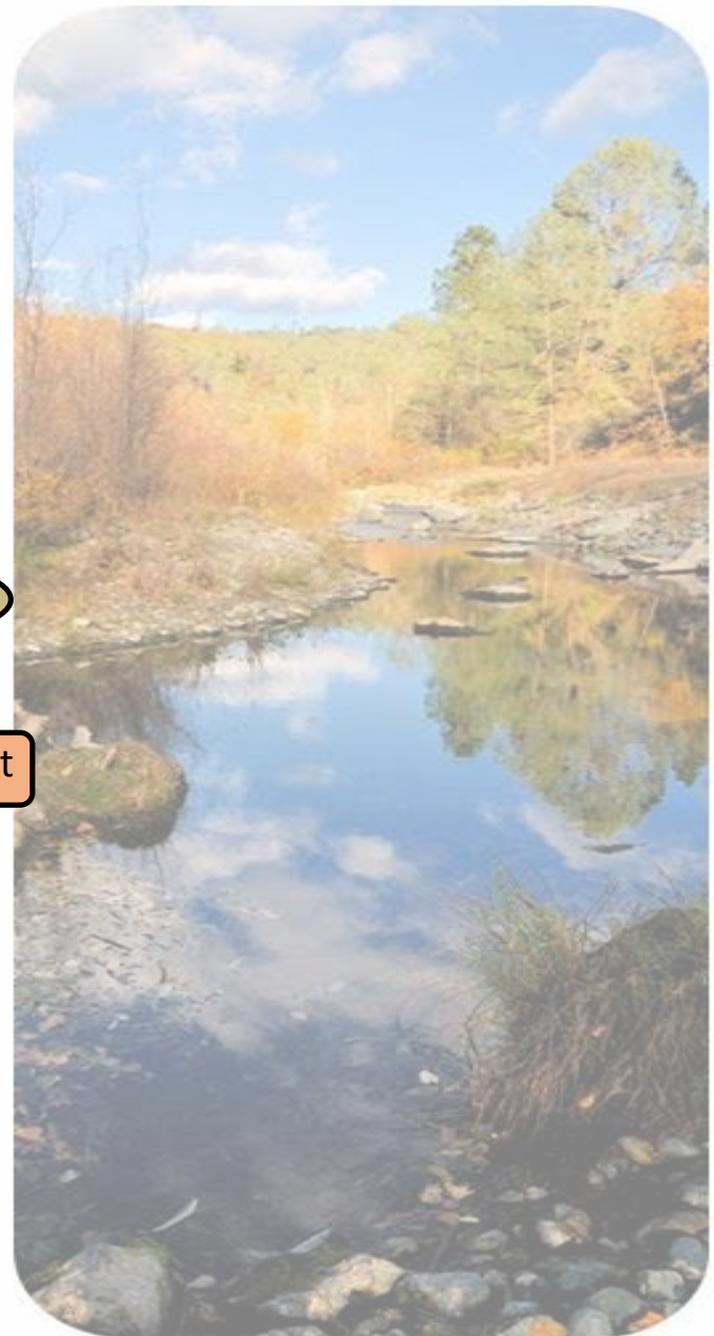
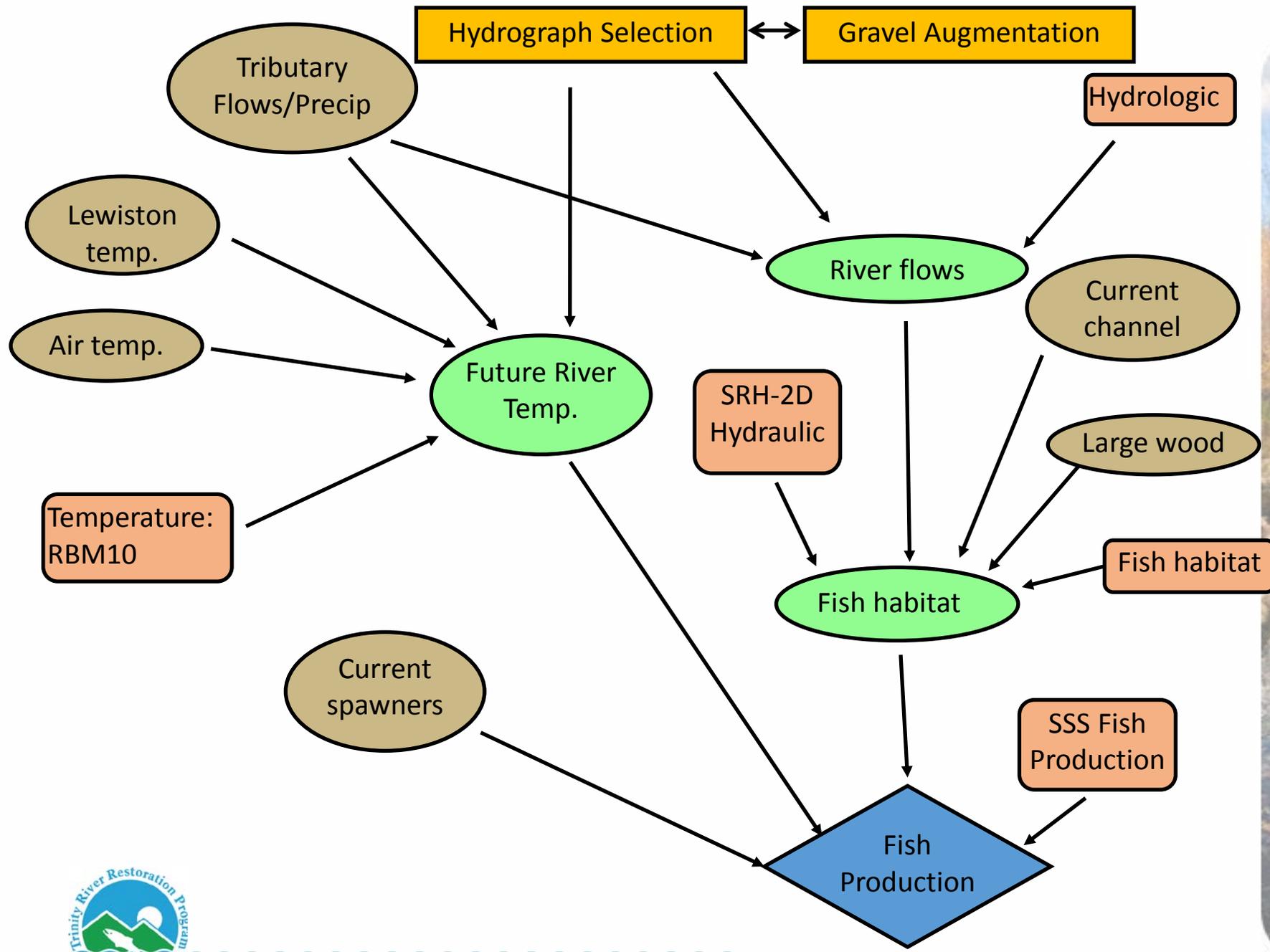


Next Steps for DSS

Develop influence diagrams

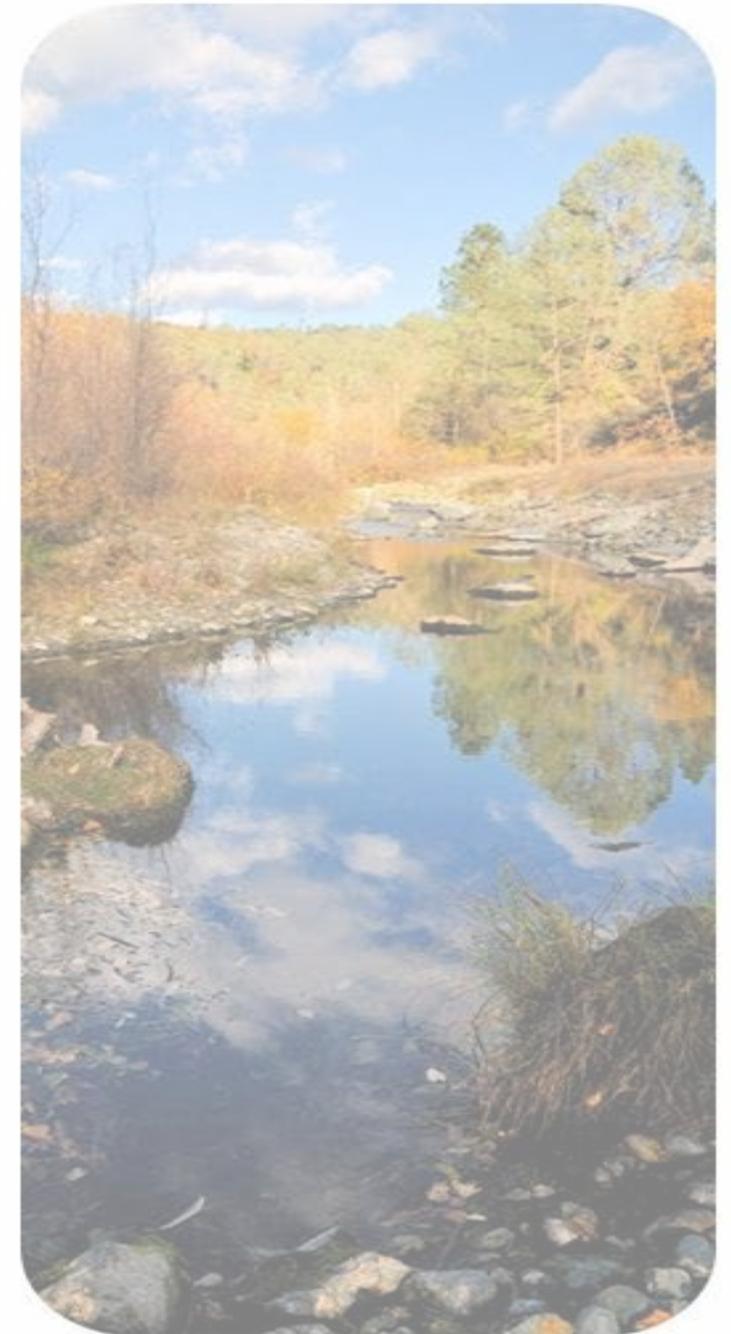
- Clearly show flow of information and relationships
- Makes probability based modeling more feasible
- Helps guide sensitivity analysis and monitoring





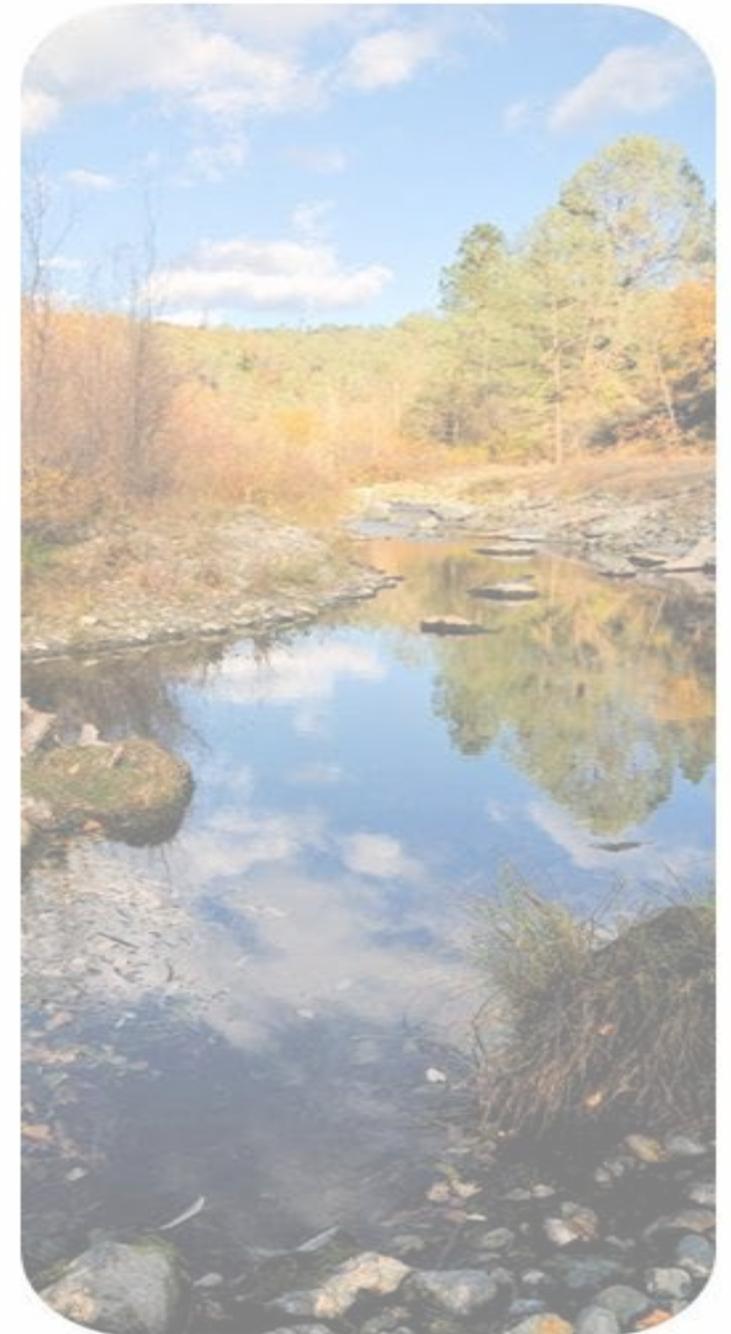
Next Steps for DSS

- Develop DSS output format
 - Ex: Should outputs be numeric, figures, etc.?
 - Requires input from TMC and TAMWG
- Build DSS structure
 - Currently models run in multiple places
 - Time intensive to get outputs
 - Can probably link all in a web tool



Next Steps for DSS

- Sensitivity Analyses
 - Identify important pieces that influence decisions
 - Focus additional monitoring efforts
- Adaptive management
 - Link monitoring data to predictions
 - Demonstrate how learning can occur
 - Develop alternative hypotheses



Next Steps for DSS

Questions or Additional thoughts?

