

# RECLAMATION

*Managing Water in the West*

## **Upper Missouri Climate Impact Assessment: Overview**

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U.S. Department of the Interior  
Bureau of Reclamation

# Outline

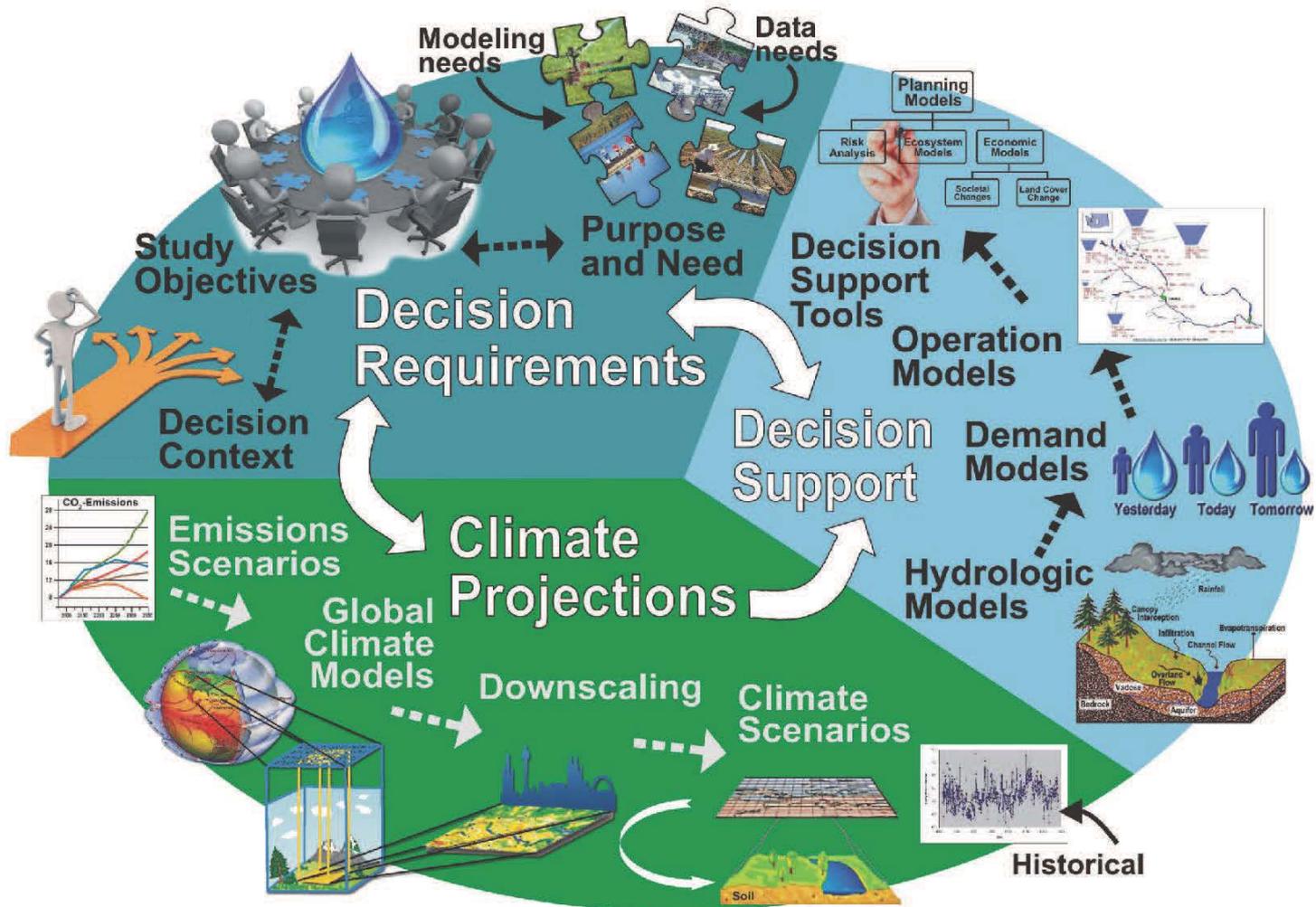
- Purpose and background
- Study area
- Scenario planning approach
- Study framework
- Impacts Assessment components



*Canyon Ferry Reservoir*

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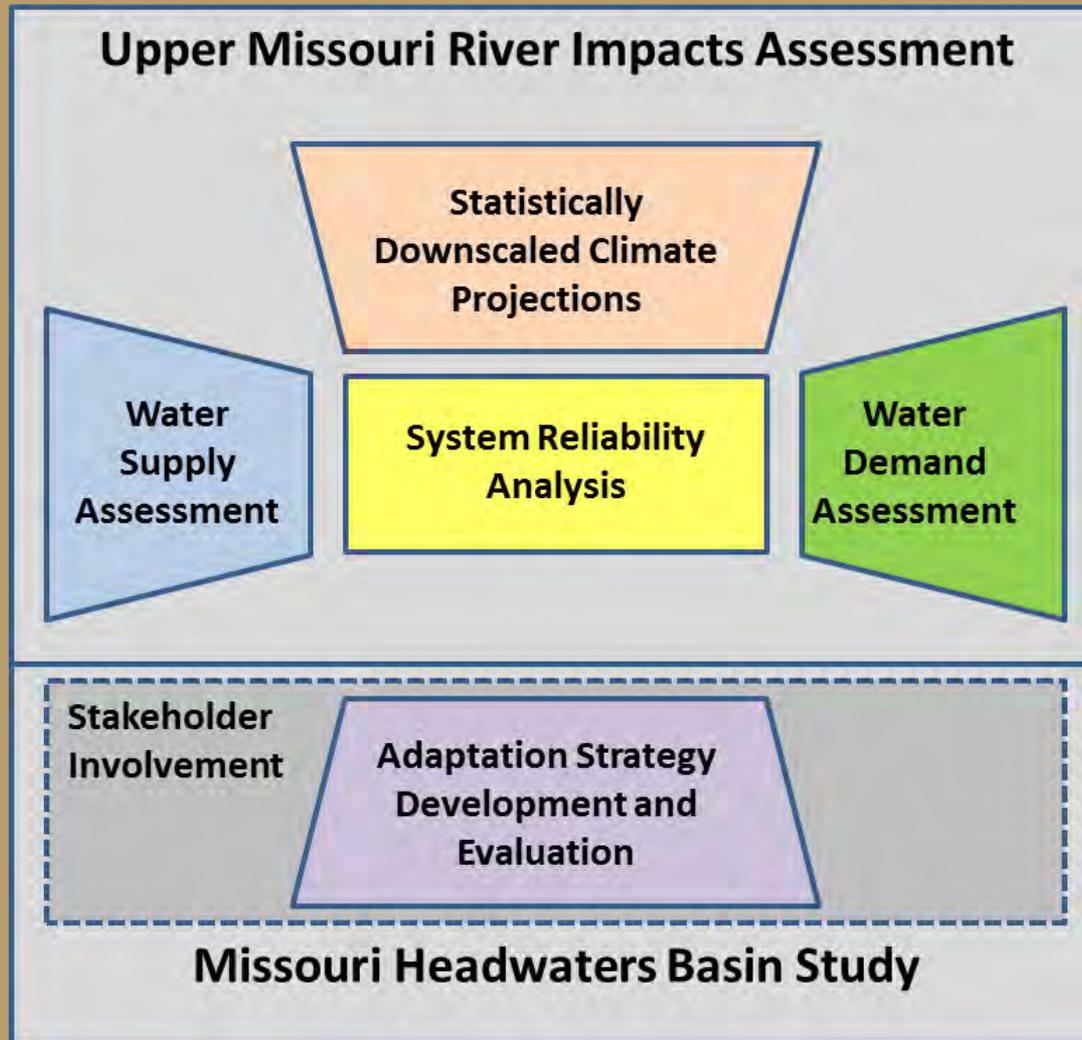
# Purpose and Background



# Impacts Assessment and Basin Study Area

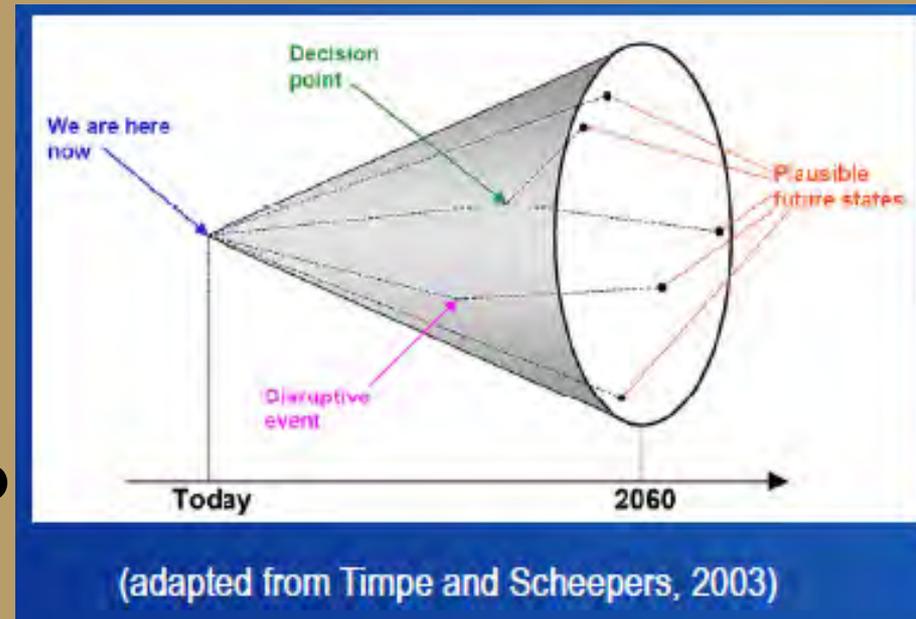


# Study framework



# Scenario Planning: Addressing an uncertain future

- Future influences on water supply and demand are uncertain
  - Influences include climate, population, land use, etc.
- The Impact Assessment uses a scenario approach to explore the impacts of a range of climate future states



# Impacts Assessment Components

## Water Supply Assessment

Available  
Groundwater  
Information

Surface Hydrology  
Model  
VIC

Paleo Analysis

Climate Inputs (CMIP3&5)  
Precip and Temp

## System Risk and Reliability Analysis

Management  
Models  
RiverWare

Trade Off Analysis of  
Adaptation  
Strategies

## Water Demand Assessment

Human Influenced  
Consumptive Uses  
ET Demands  
M&I, RD Demands

Other Consumptive  
Uses and Losses  
Lake Evaporation

Non Consumptive Uses

Climate Inputs (CMIP3&5)  
Precip and Temp

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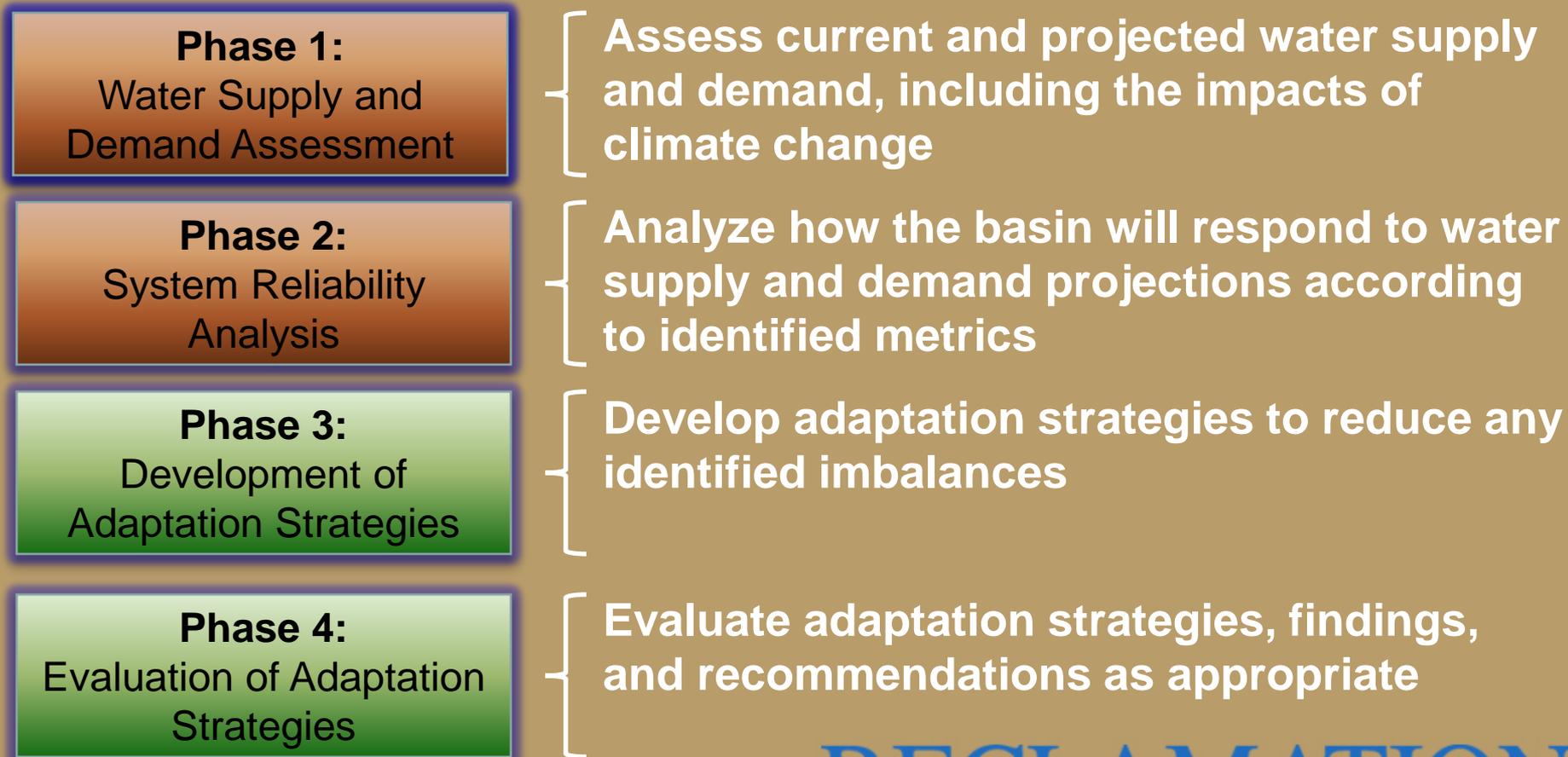
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# Phases of the Upper Missouri Climate Impacts Assessment and Basin Study

## *Study Elements*



# Water Supply and Demand Assessments

- **Assess current and future “natural” water supply**
  - **Inflow absent human activities**
- **Focus on runoff and factors affecting runoff**
  - **Examples: climate, snowpack, ET, landscape characteristics**
- **Assess current and future demands**
  - **Examples: agricultural, evaporative, environmental, municipal and industrial**
  - **Utilize multiple climate and demand scenarios**



*Clark Canyon Reservoir*

# Impacts Assessment and Basin Study

- **Analyze the impacts of potential climate change on various resource categories:**
  - **Fish, wildlife, and their habitats (including candidate, threatened, and endangered species)**
  - **Water allocations and deliveries**
  - **Water quality**
  - **Recreation**
  - **Flood control**
  - **Hydroelectric power generation**

# Questions?



*Willow Creek Feeder Canal*

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