

Introduction to Objective Development

- Review Definitions (+ one new one)
- How Objectives fit into an Instream Flow Study
- Examples: Goal, Objectives, Indicators, and Conceptual Model
- Objectives for the Lower San Antonio
- Questions?



Definitions:

- **Goal:** a vision of a healthy environment for the river system that reflects local values
- **Objectives:** specific means to accomplish goal
- **Indicators:** measures that show progress in meeting objectives
- **Conceptual model:**
a representation of how a system is thought to function



How a Goal Fits in the Process

Goal Development Consistent with Sound Ecological Environment

Collect Baseline Information and Evaluate



Collaborate with Public and Stakeholders through Meetings and Workgroups



Study Design



Multidisciplinary Data Collection and Evaluation



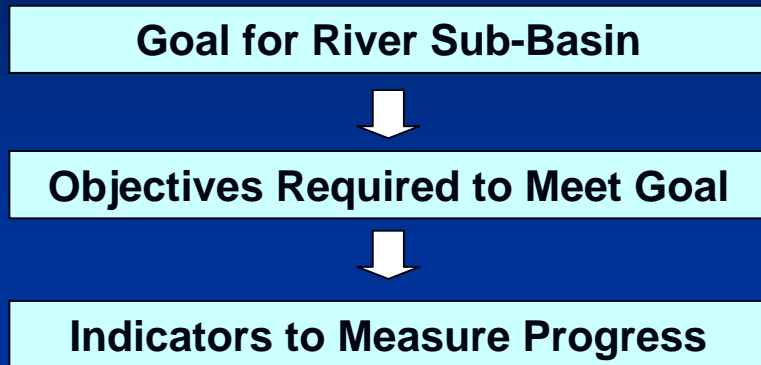
Data Integration to Generate Flow Recommendations



Study Report



How Objectives Fit in the Process



Collect Baseline Information and Evaluate



Collaborate with Public and Stakeholders through Meetings and Workgroups



Study Design



Multidisciplinary Data Collection and Evaluation



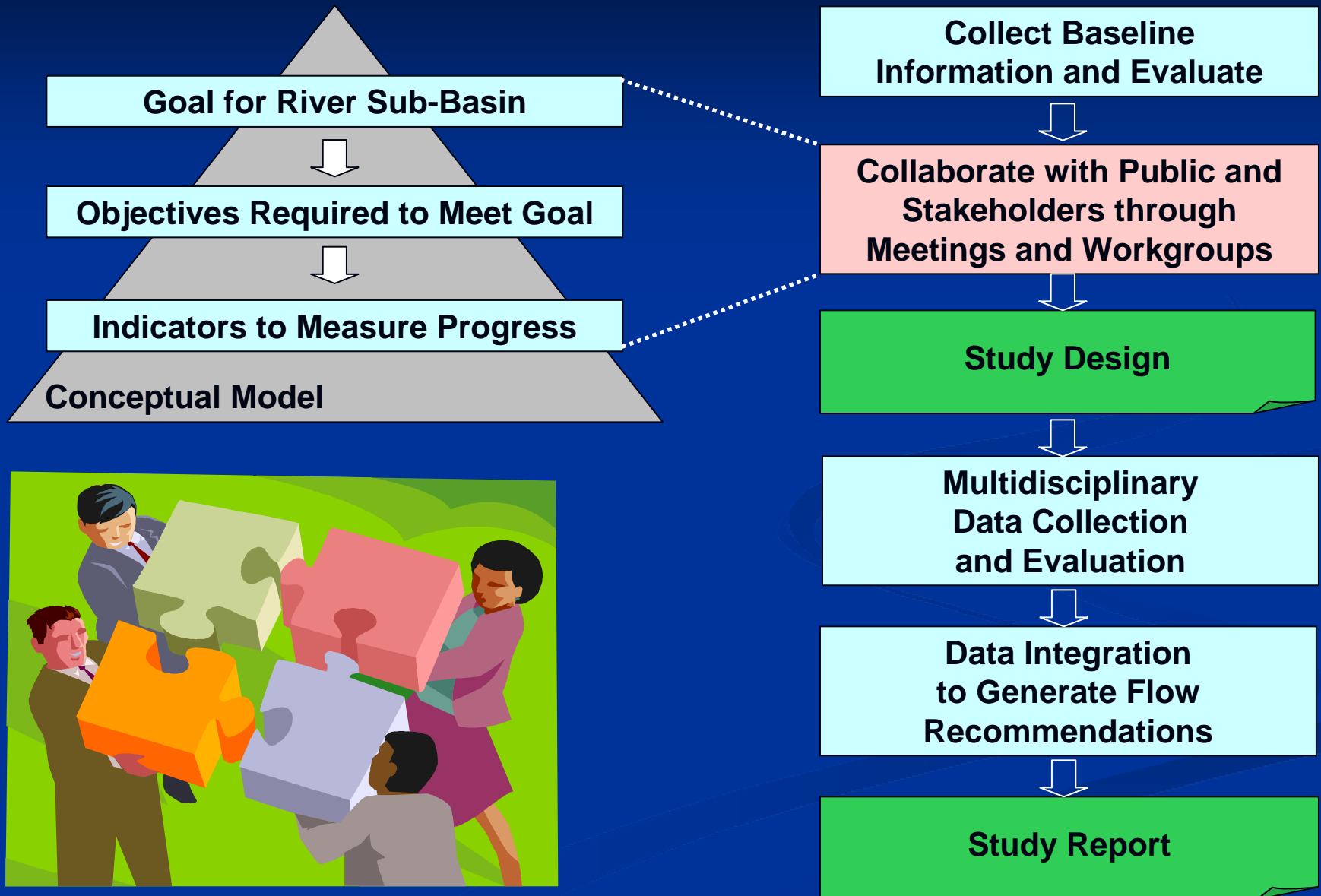
Data Integration to Generate Flow Recommendations



Study Report



How Objectives Fit in the Process



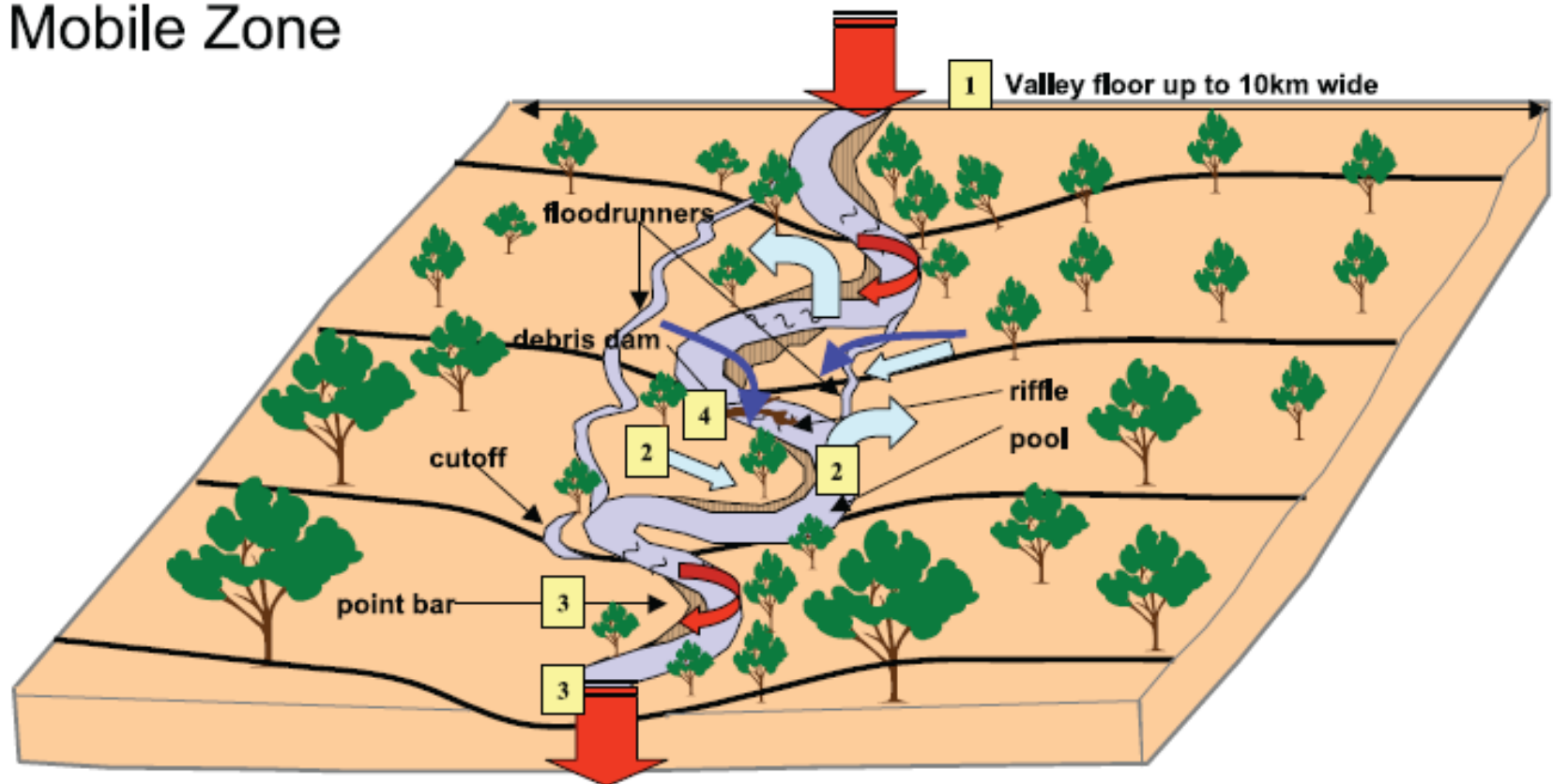
Example: Murray-Darling Basin

- **Goal:** "a healthy, working river – one that assures us of continued prosperity, clean water and a flourishing environment."



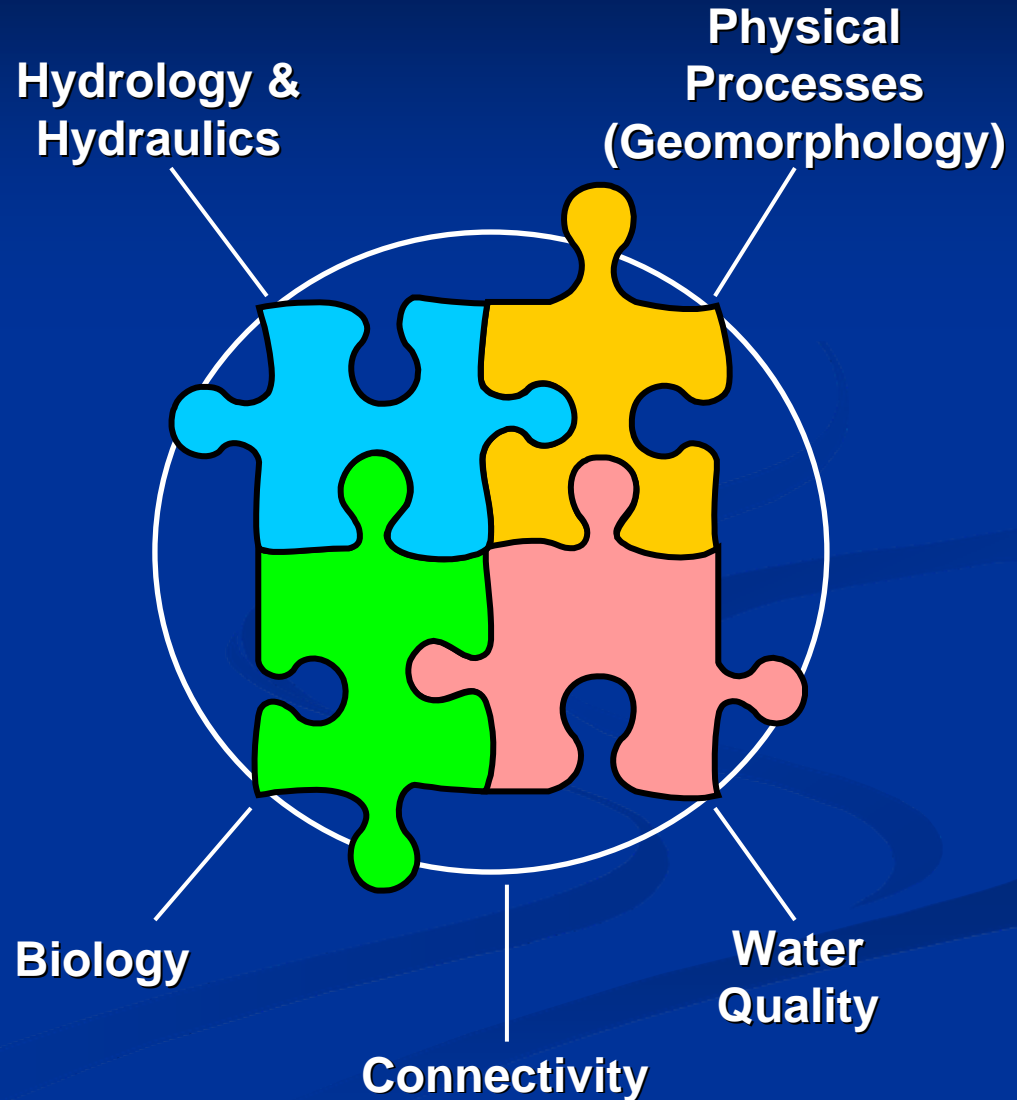
Conceptual Model: Murray-Darling Basin

Mobile Zone



Example: Murray-Darling Basin

■ Objectives:

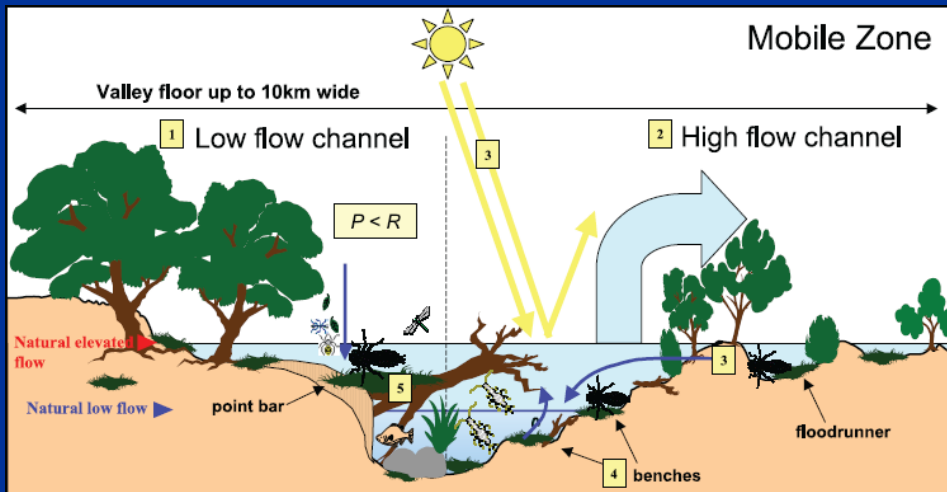
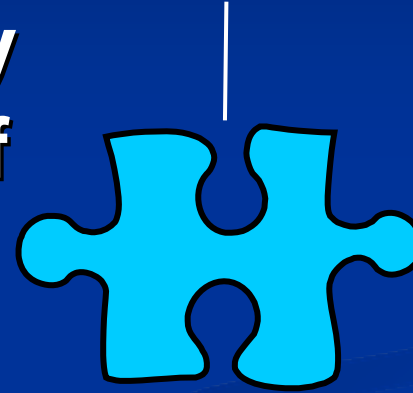


Goal: a healthy, working river

■ Objectives:

1. Reinststate ecologically significant elements of the flow regime

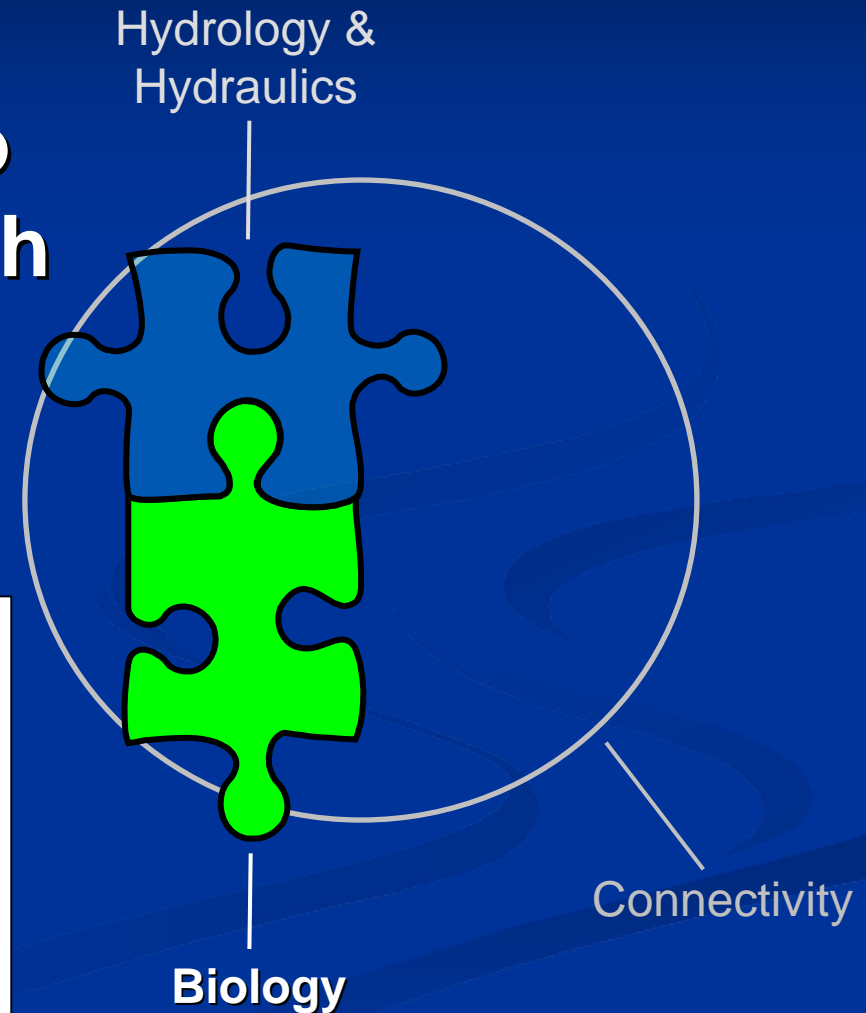
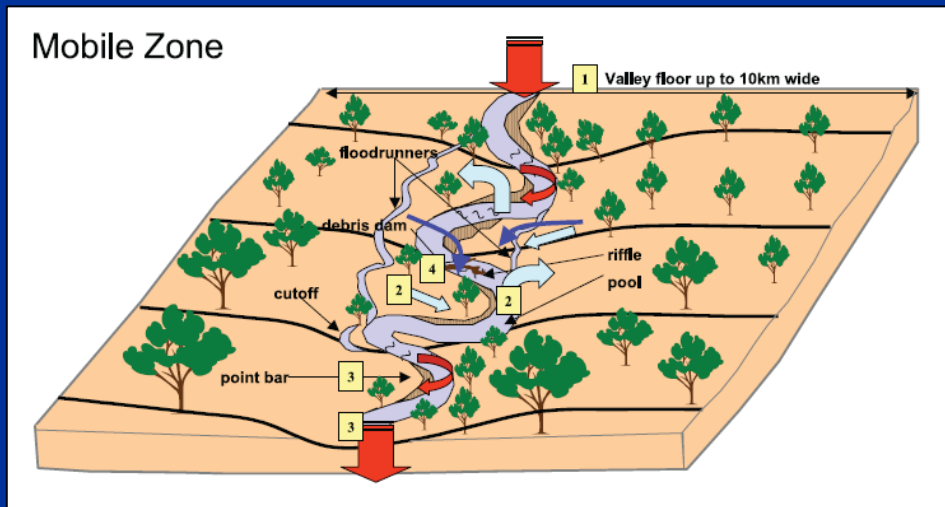
Hydrology &
Hydraulics



Goal: a healthy, working river

■ Objectives:

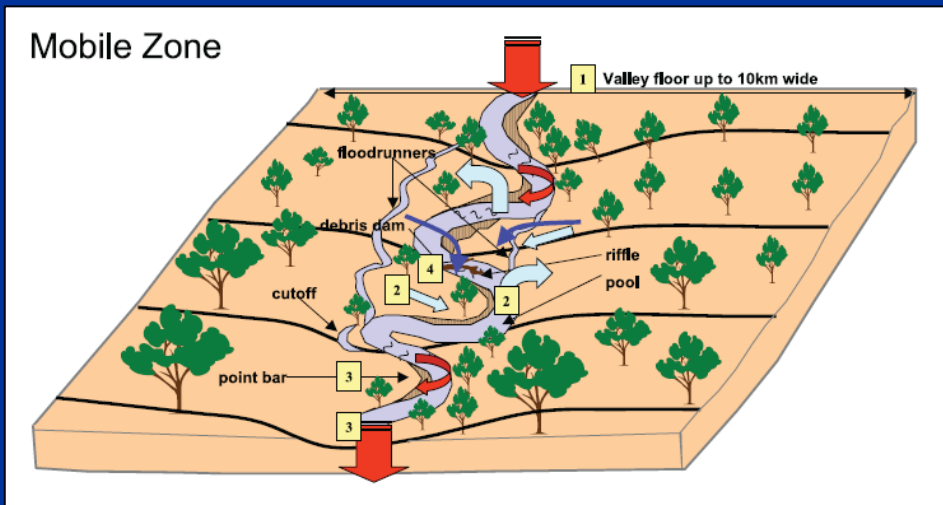
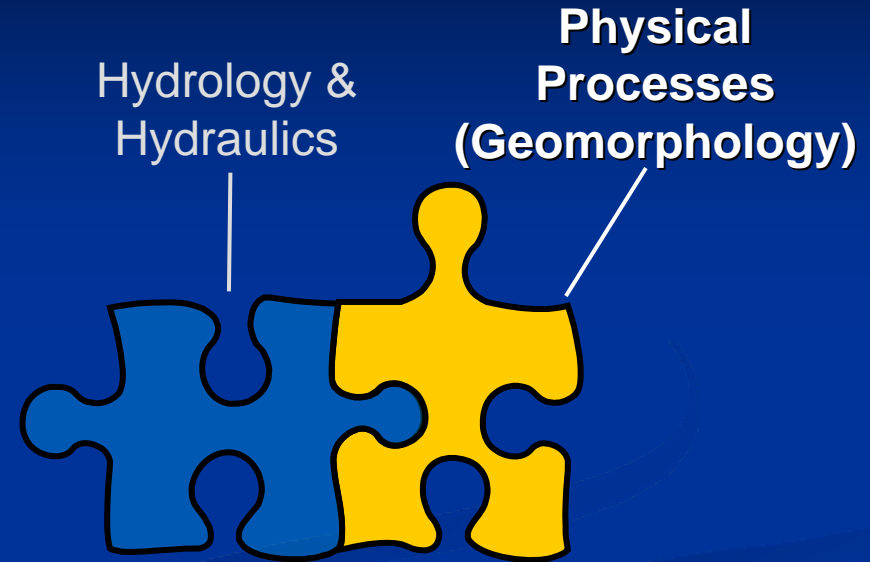
2. Overcome barriers to migration of native fish species



Goal: a healthy, working river

■ Objectives:

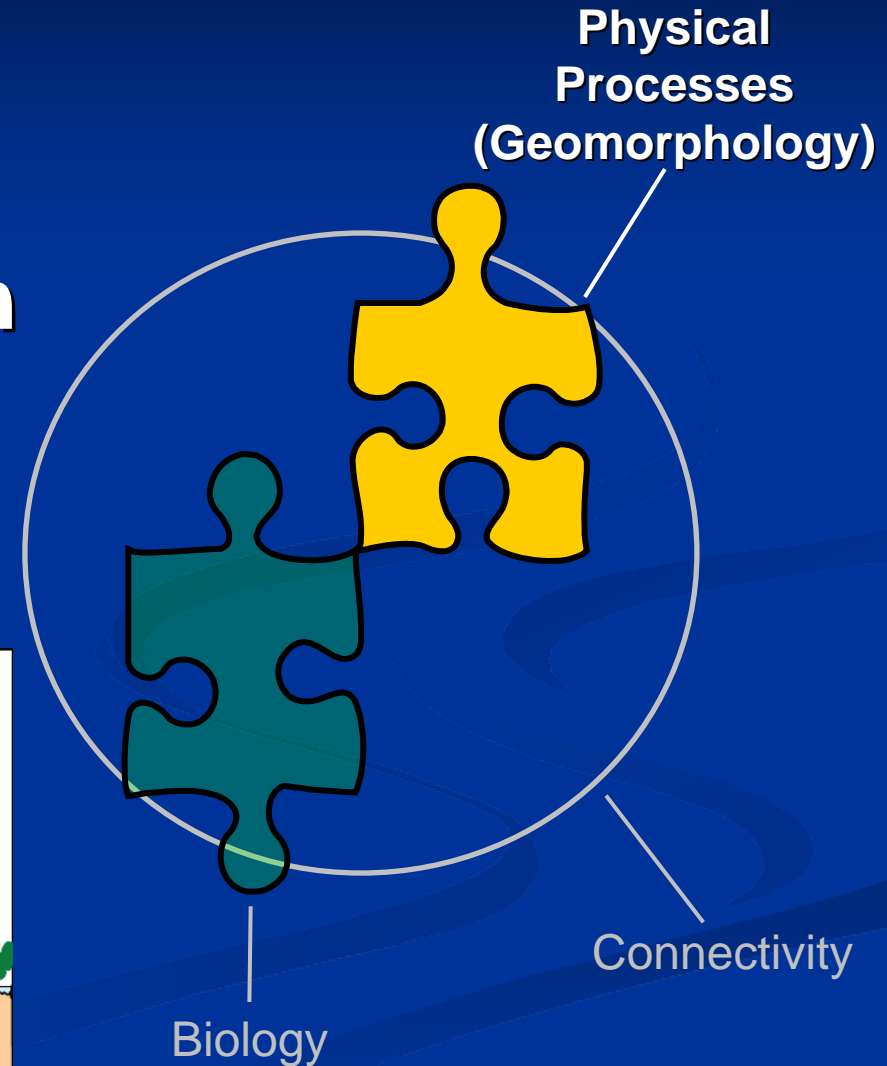
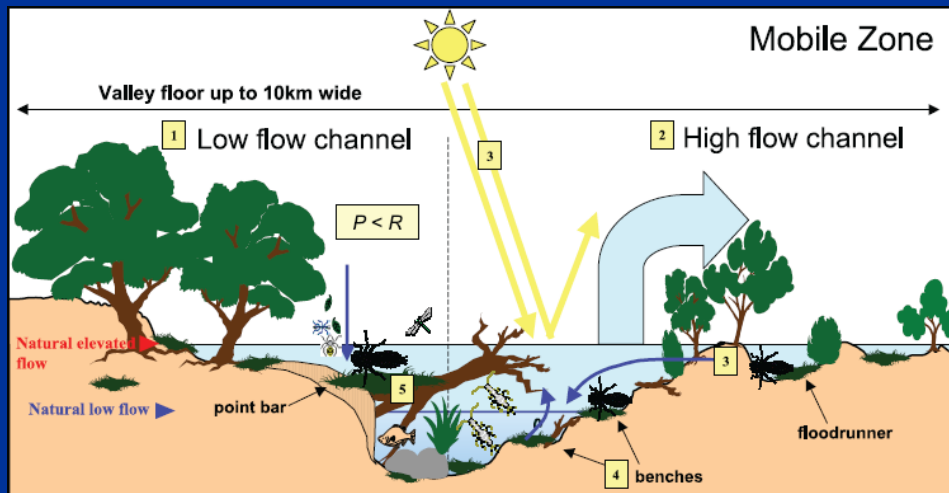
3. Maintain current levels of channel stability



Goal: a healthy, working river

Objectives:

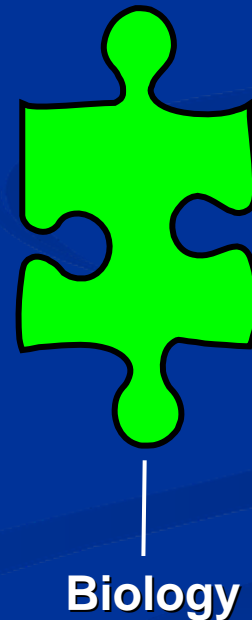
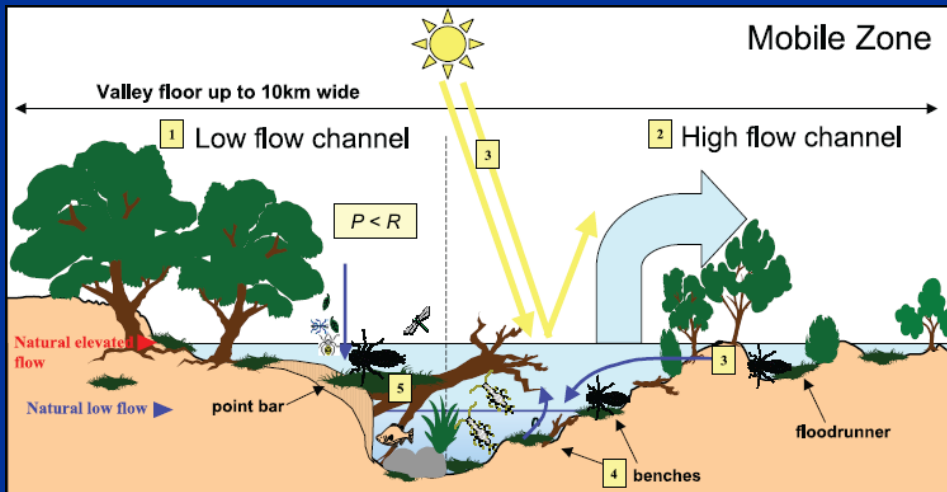
4. Protect and restore key habitat features in the river and riparian zone



Goal: a healthy, working river

■ Objectives:

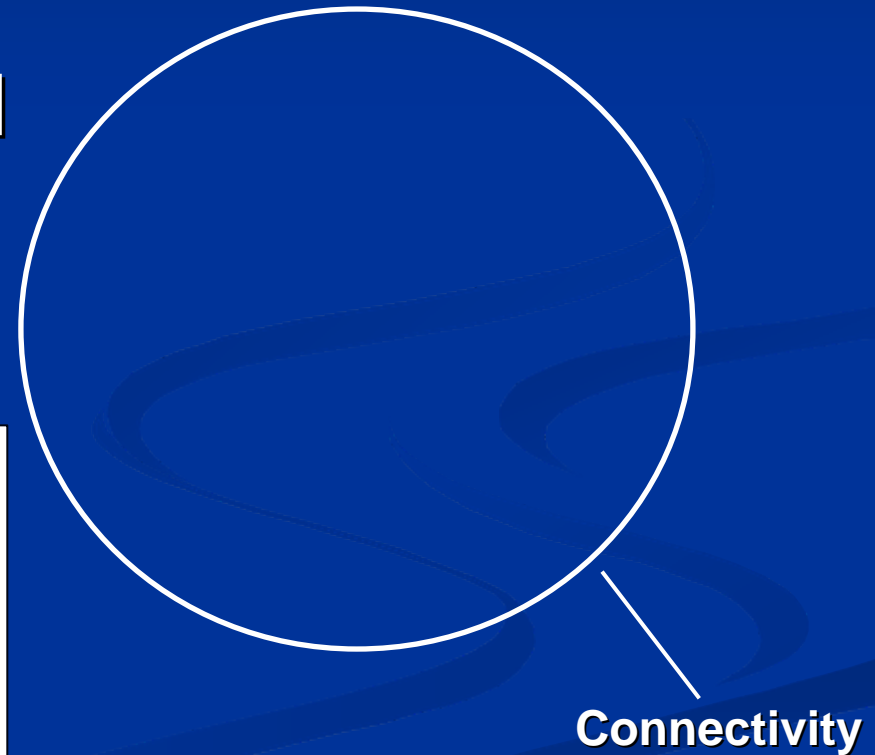
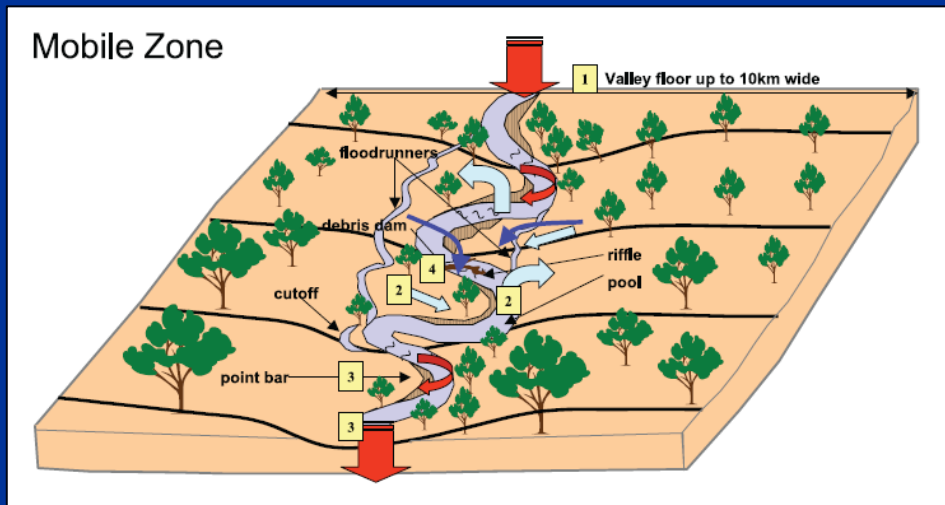
5. Prevent the extinction of native species from the riverine system



Goal: a healthy, working river

■ Objectives:

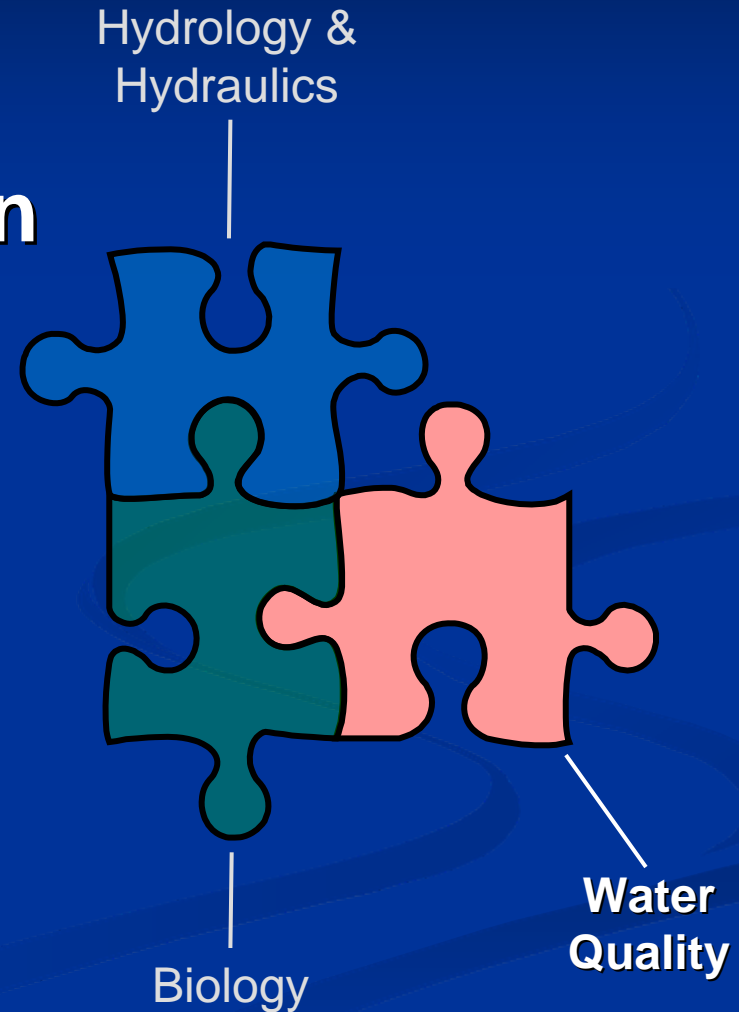
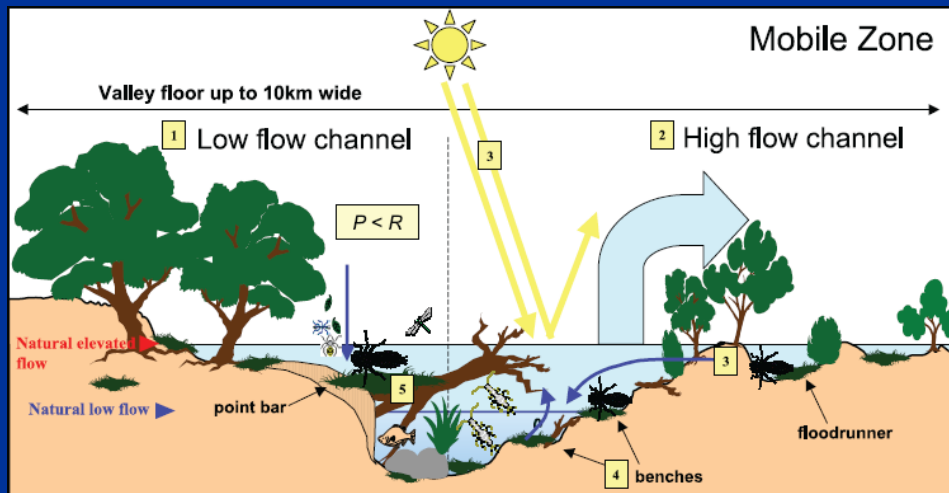
6. Improve connectivity between the river and riparian zone



Goal: a healthy, working river

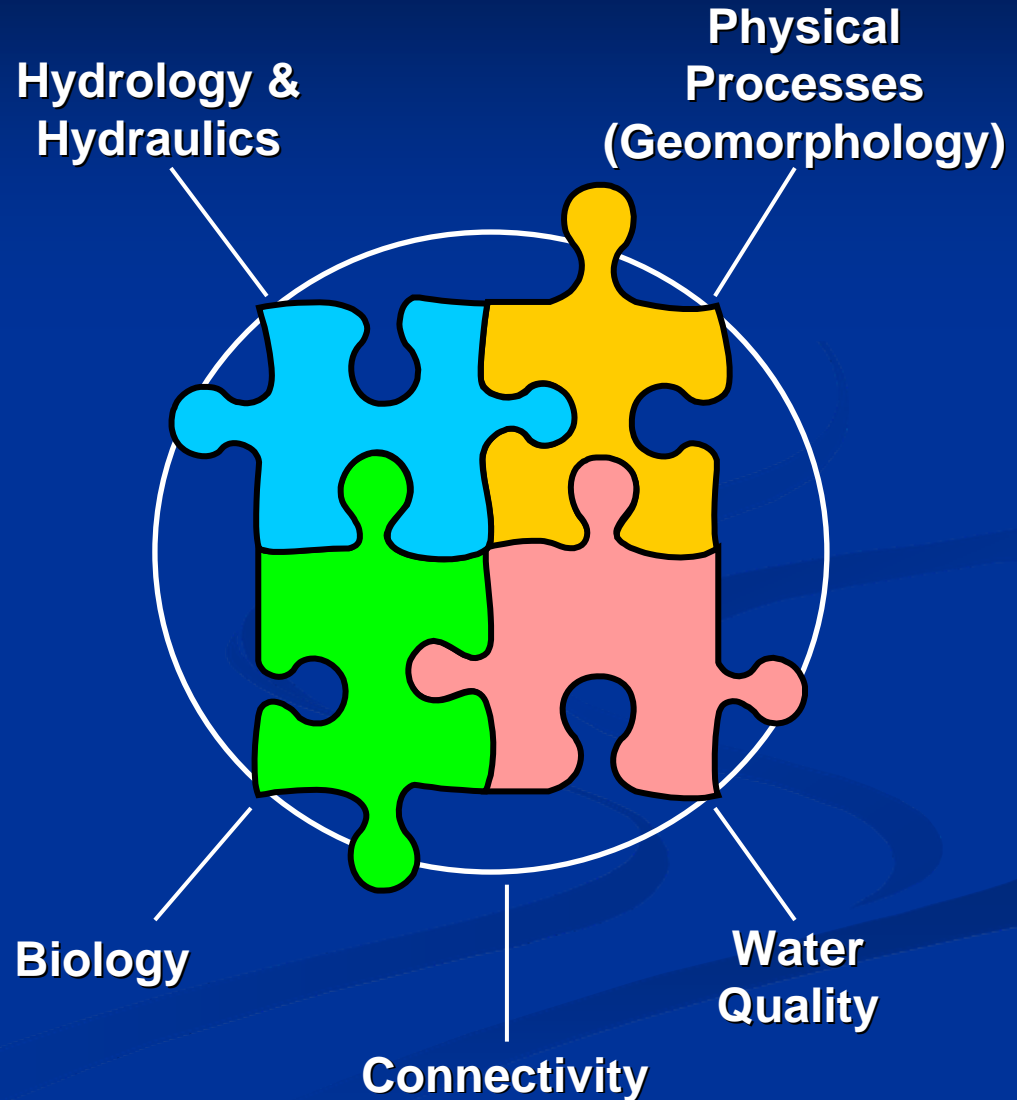
Objectives:

7. Manage flow-related water quality to sustain ecological processes and productive capacity



Example: Murray-Darling Basin

■ Objectives:

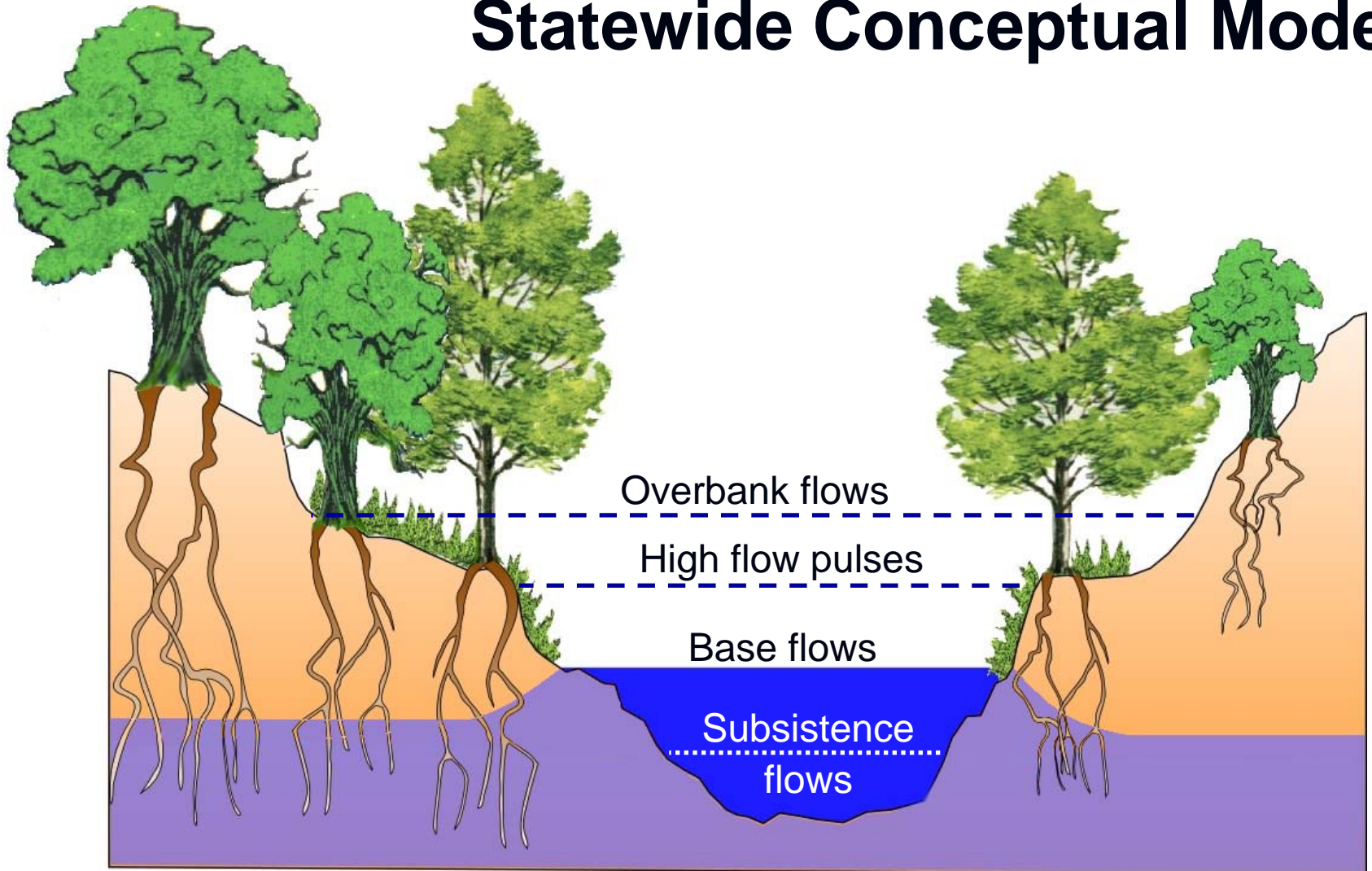


Lower San Antonio River System

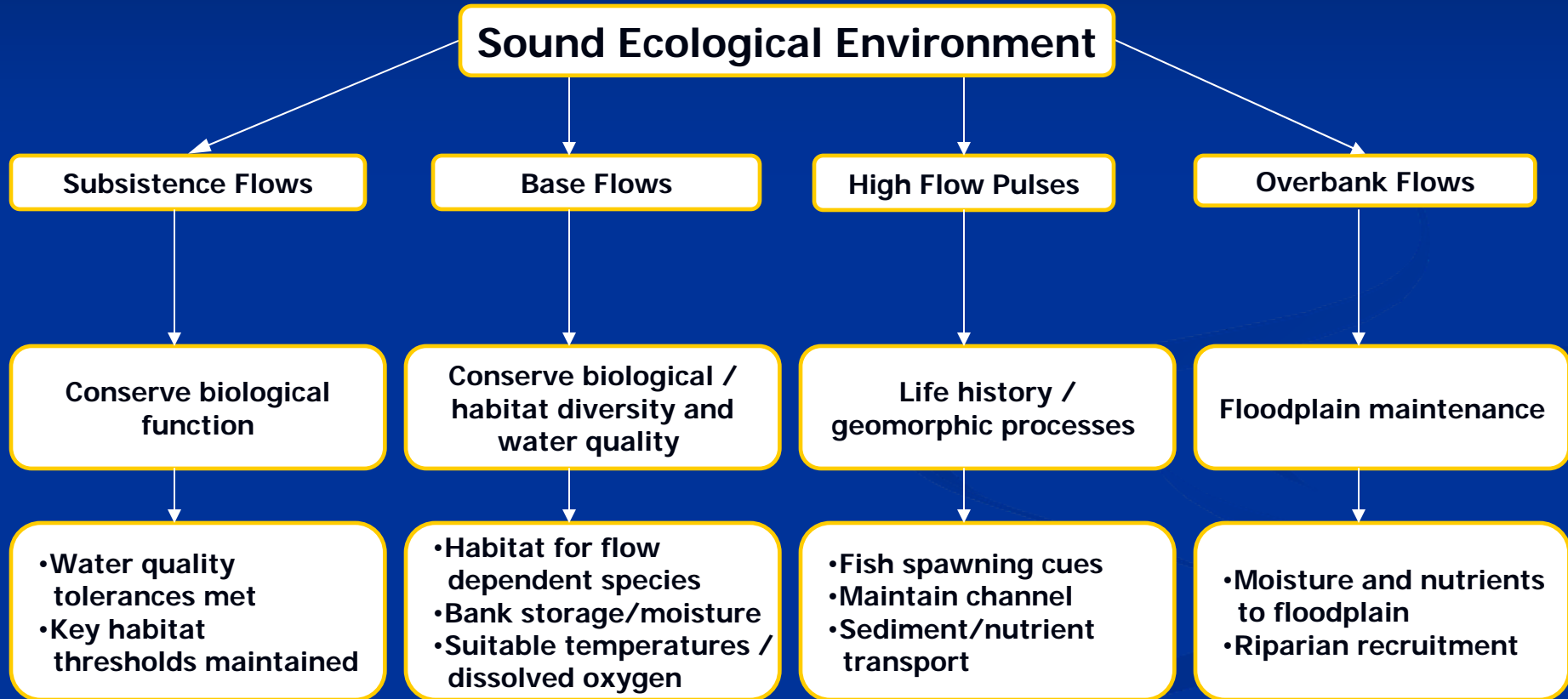
- **Statewide Goal:** “A resilient, functioning ecosystem characterized by intact, natural processes and a balanced, integrated, and adaptive community of organisms comparable to that of the natural habitat of the region.”
- **Specific Goal:** “The goal for the Lower San Antonio River system is a naturally functioning and sustainable ecosystem that supports a balance of ecological benefits and economic, recreational, and educational uses.”

Lower San Antonio River System

Statewide Conceptual Model



Simple Conceptual Model



Lower San Antonio River System

■ **Statewide Objectives:**

“Evaluate intact natural processes:

- Characterize system hydrology and hydraulics
- Examine status of geomorphic processes within the system
- Characterize system water quality
- Define connectivity issues within the system

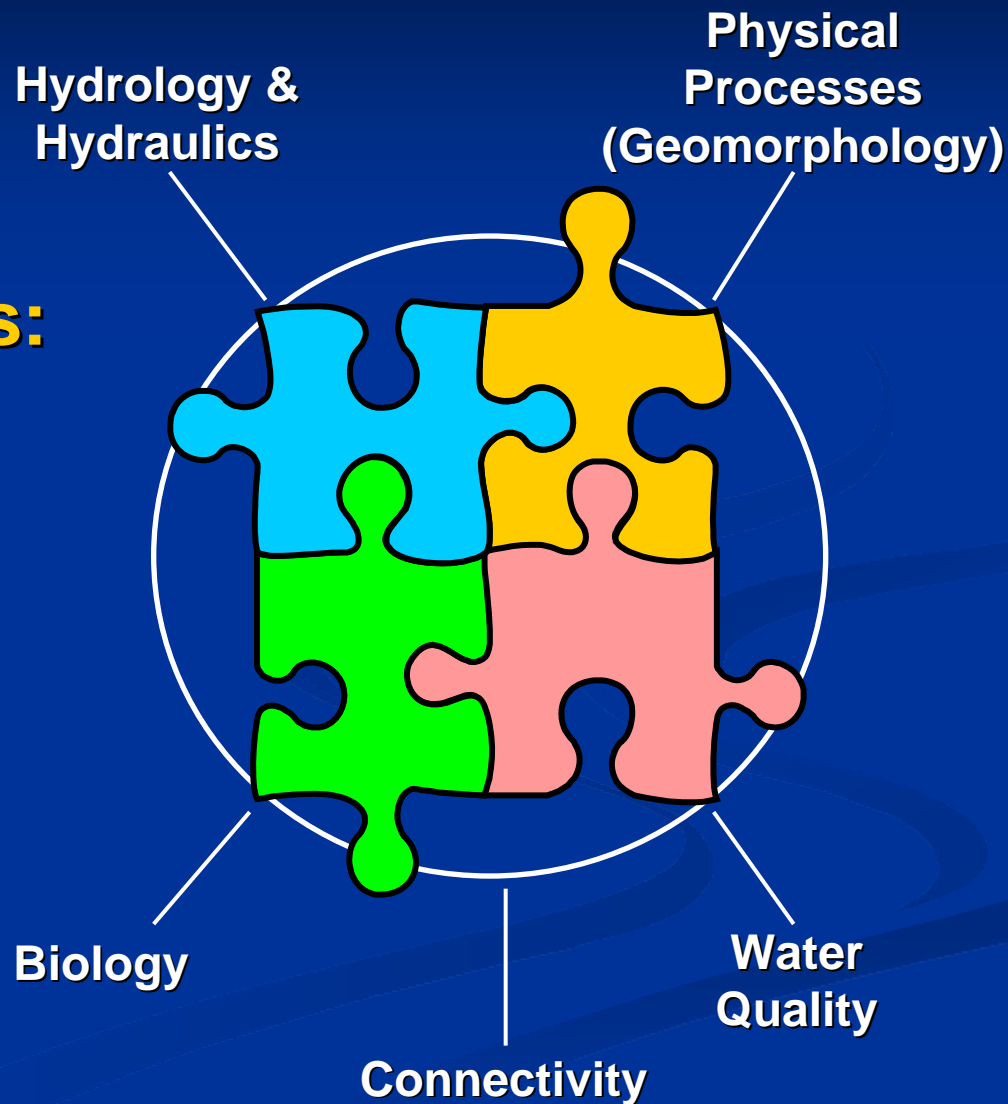
Evaluate biological communities

- Examine the integrity of the biological community
- Examine biodiversity within the system
- Define the influence and relationship of other riverine components relative to biology of system.”

■ **Specific Objectives: ?**

Lower San Antonio River System

- **Specific Objectives:**



Lower San Antonio River System

	WATER QUALITY	HYDROLOGY AND HYDRAULICS	BIOLOGY	GEOMORPHOLOGY	CONNECTIVITY
SUBSISTENCE FLOWS					
BASE FLOWS	?				
HIGH FLOW PULSES					
OVERBANKING FLOWS					

Lower San Antonio River System

Did we miss anything?

- **Key Components**
- **Key Concerns**
- **Local Values**



Questions?