

# 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 Middle and Lower Brazos
- 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**



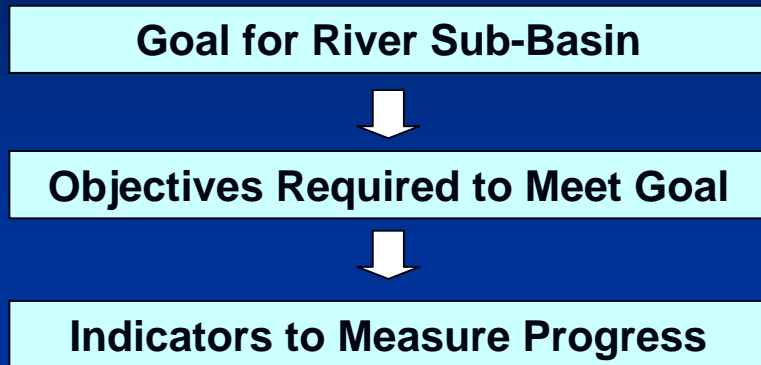
**Data Integration  
to Generate Flow  
Recommendations**



**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



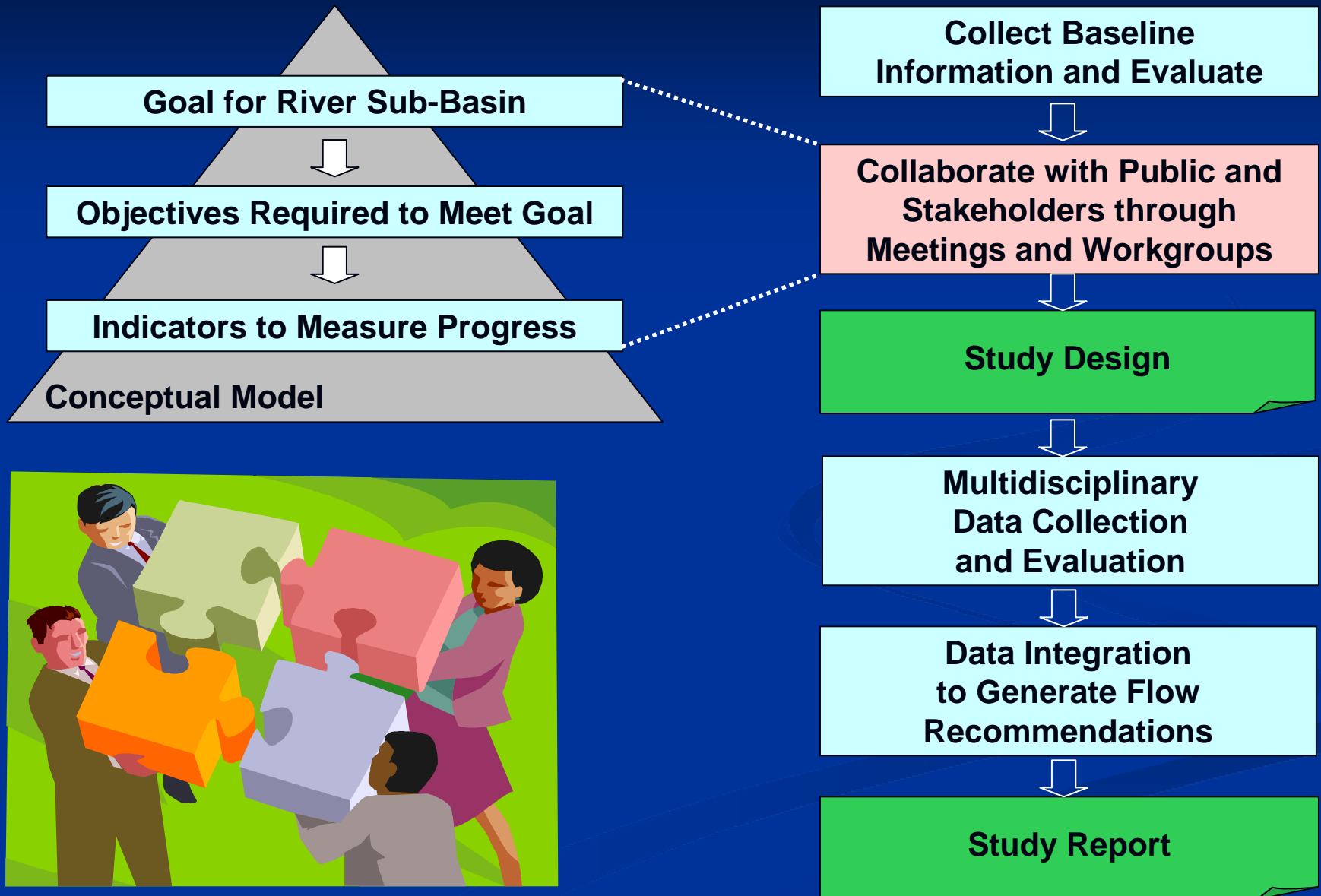
Data Integration to Generate Flow Recommendations



Study Report



# How Objectives Fit in the Process



# Example: Murray-Darling Basin

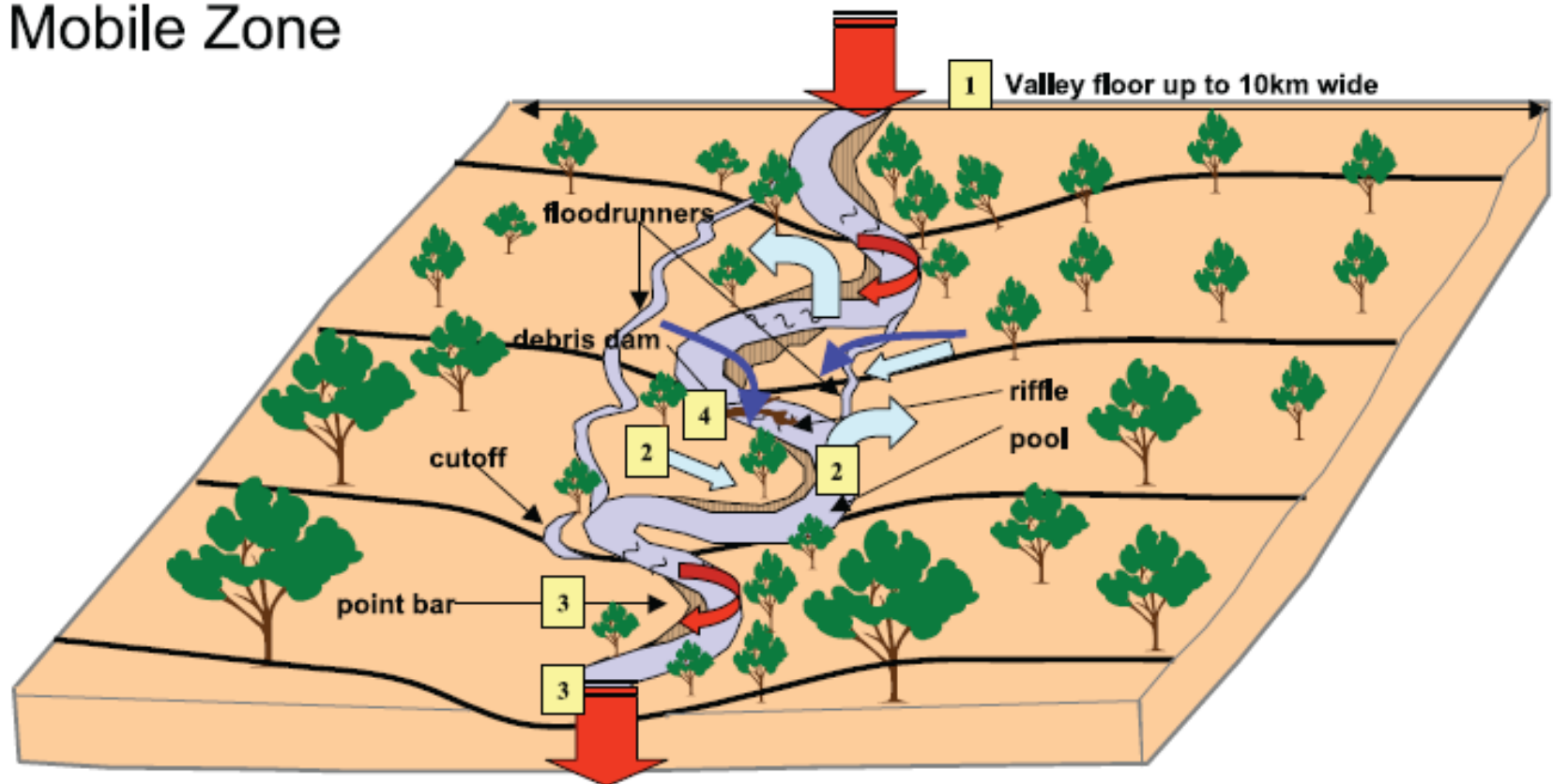
- **Goal:** "a healthy, working river – one that assures us of continued prosperity, clean water and a flourishing environment."





# Conceptual Model: Murray-Darling Basin

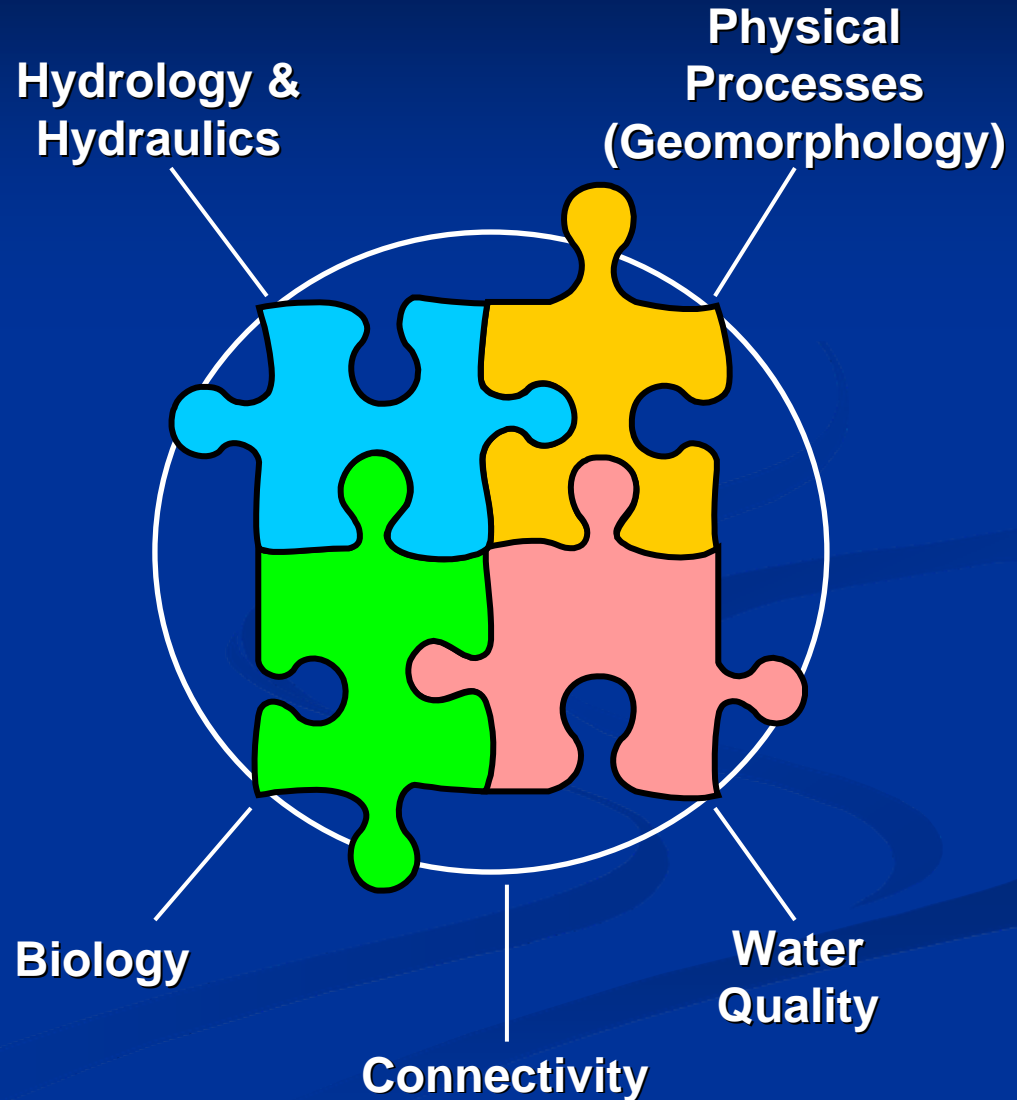
## Mobile Zone





# Example: Murray-Darling Basin

## ■ Objectives:

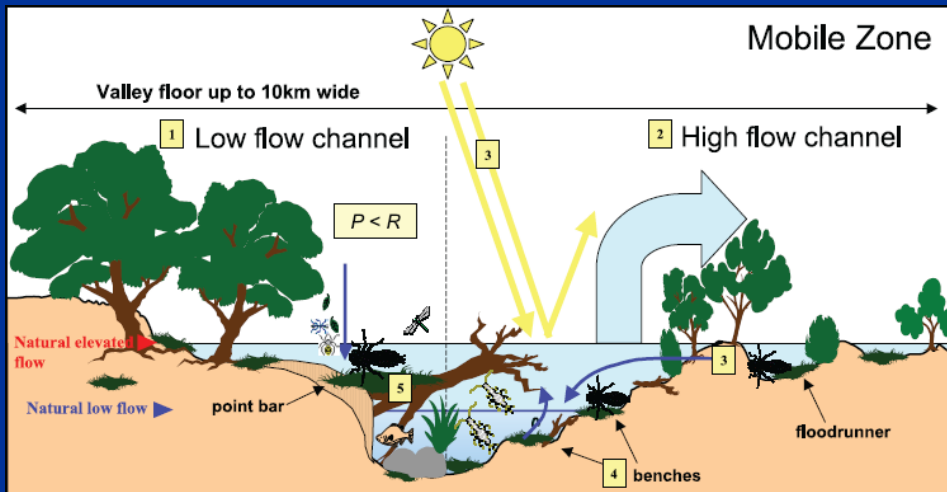
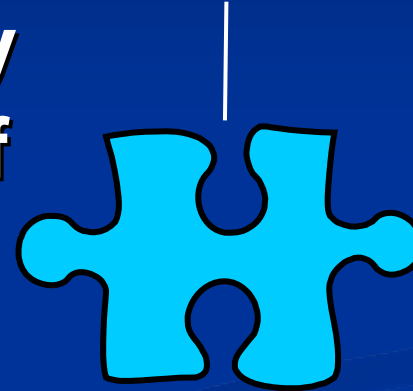


# Goal: a healthy, working river

## ■ Objectives:

1. Reinststate ecologically significant elements of the flow regime

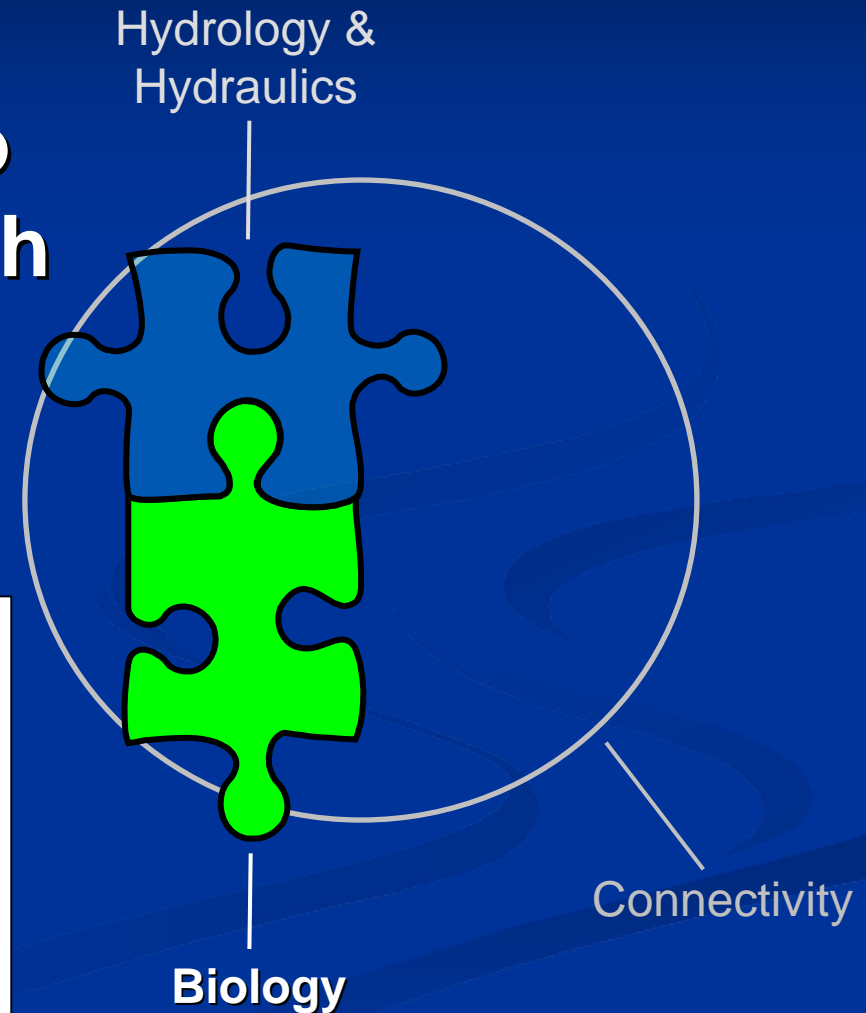
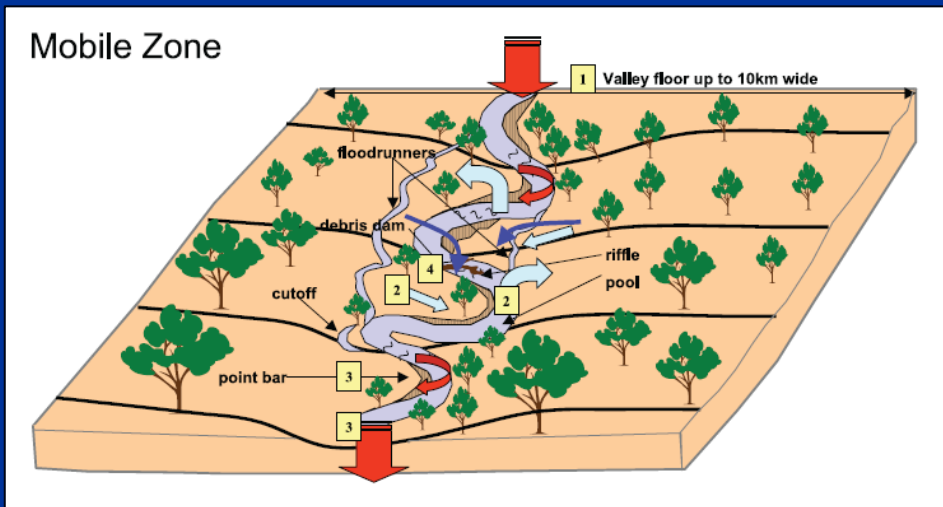
Hydrology &  
Hydraulics



# Goal: a healthy, working river

## ■ Objectives:

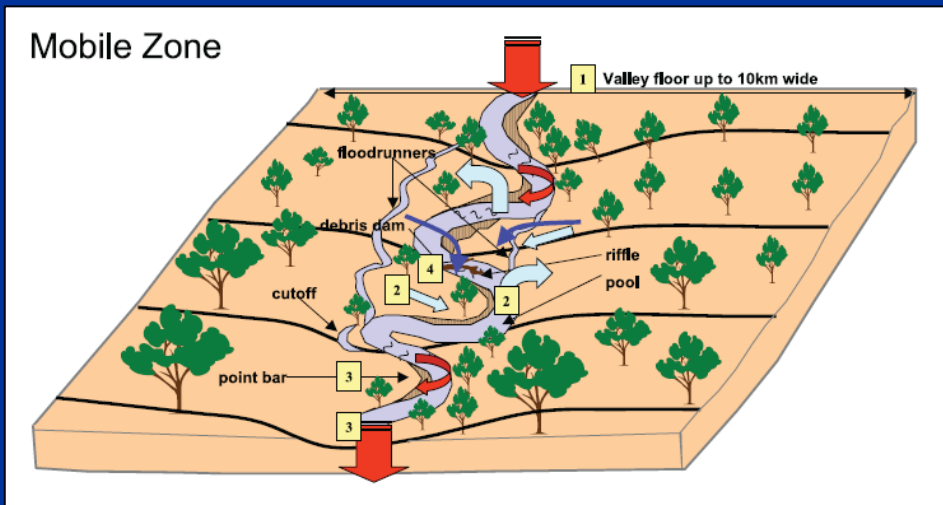
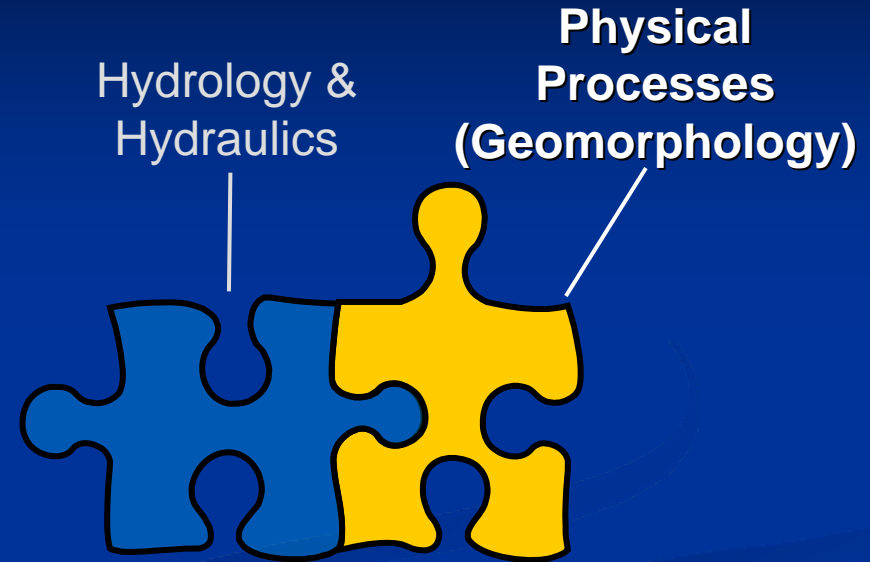
### 2. Overcome barriers to migration of native fish species



# Goal: a healthy, working river

## ■ Objectives:

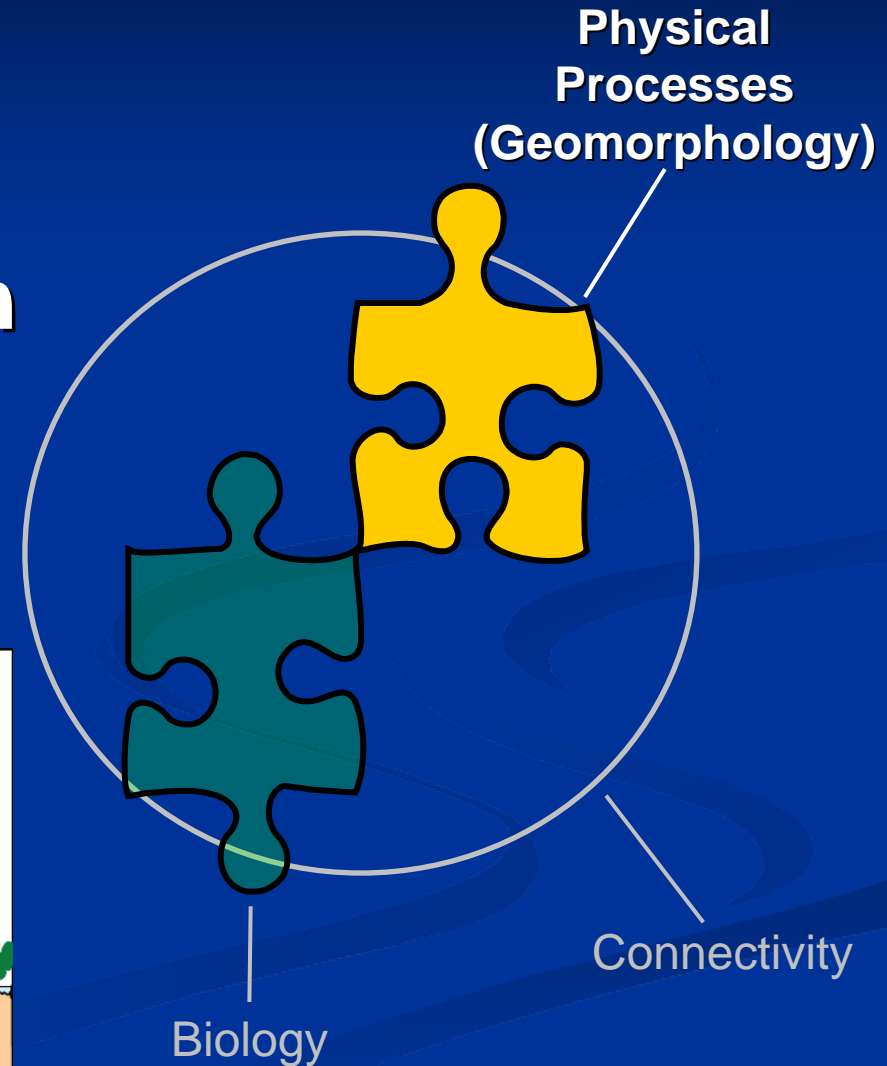
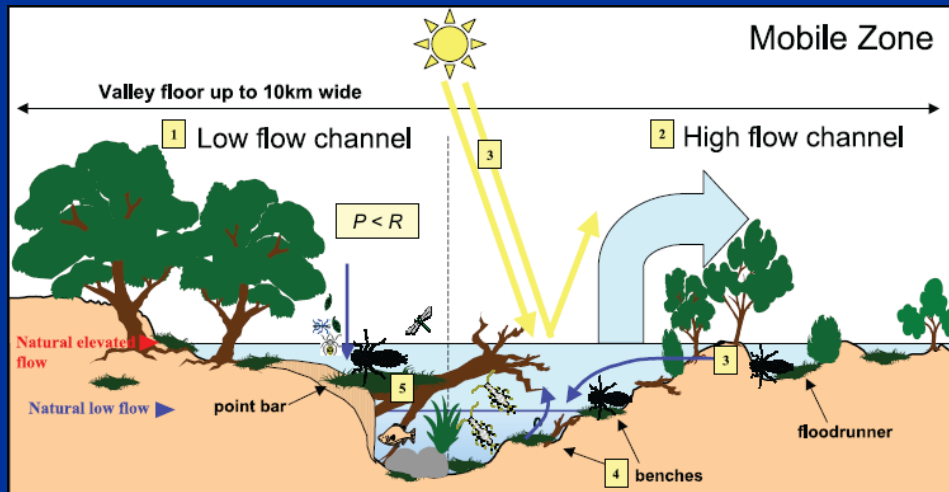
### 3. Maintain current levels of channel stability



# Goal: a healthy, working river

## Objectives:

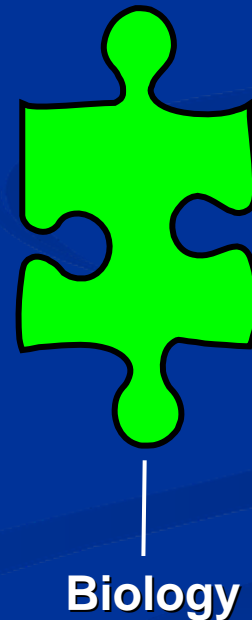
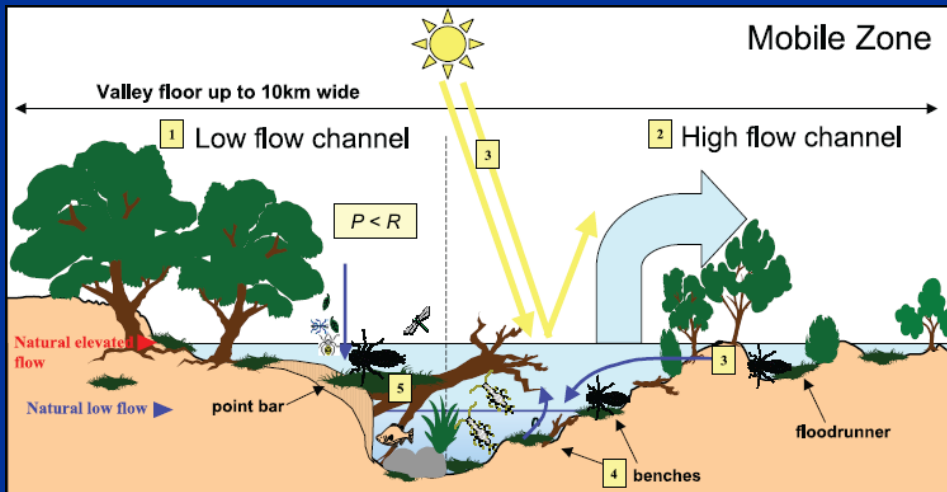
### 4. Protect and restore key habitat features in the river and riparian zone



# Goal: a healthy, working river

## ■ Objectives:

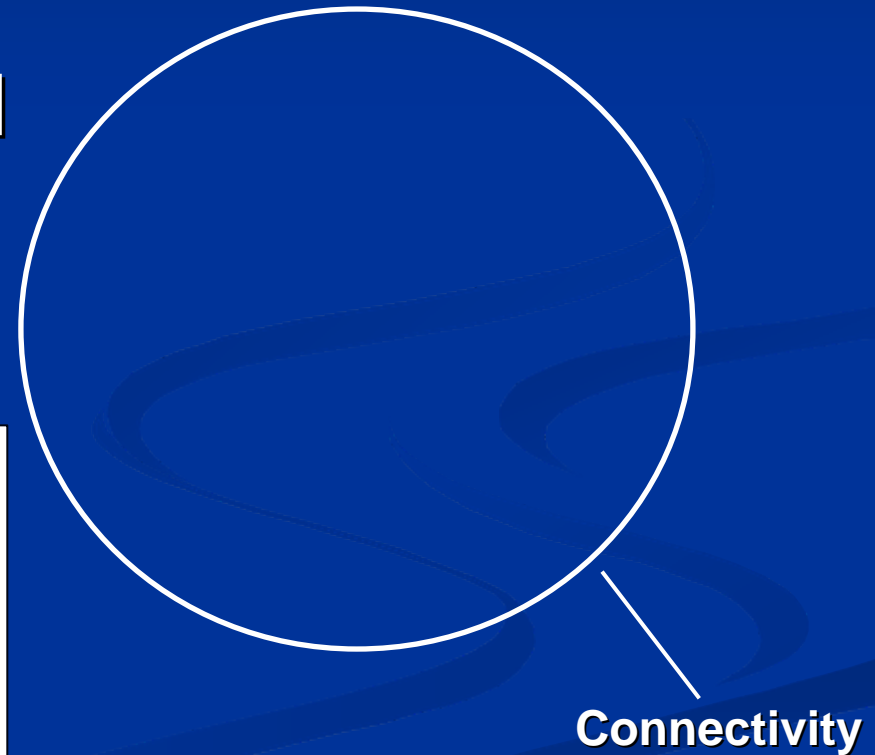
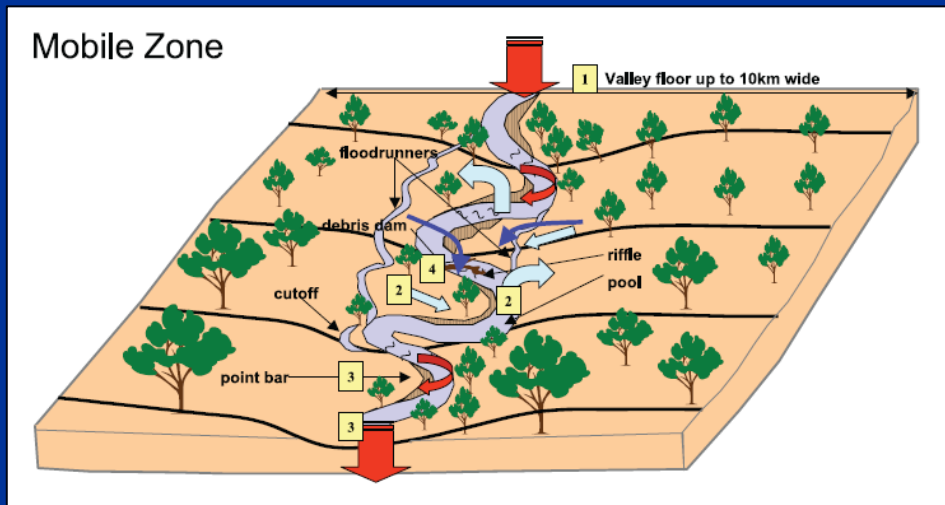
### 5. Prevent the extinction of native species from the riverine system



# Goal: a healthy, working river

## ■ Objectives:

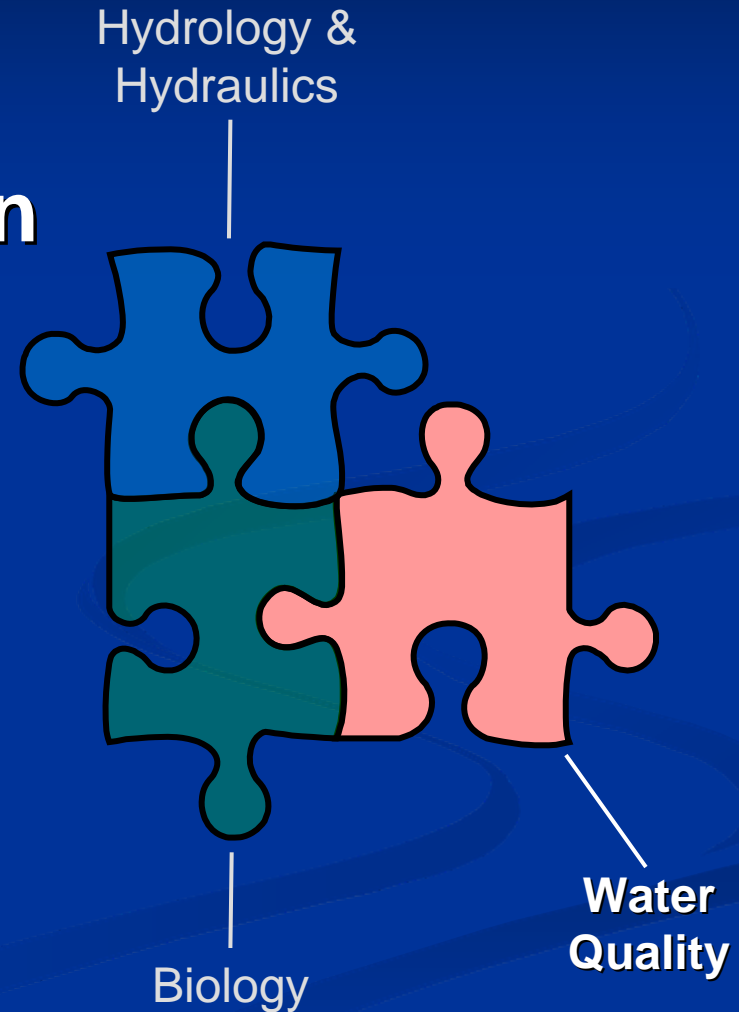
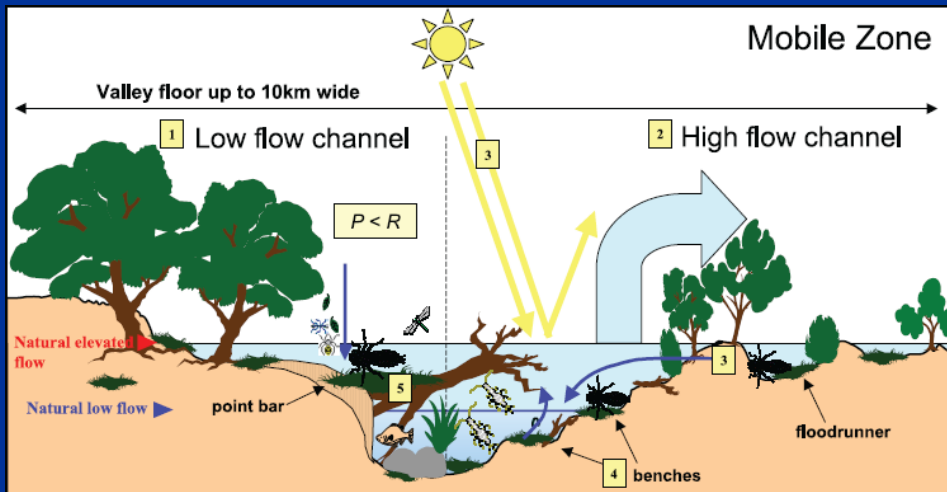
### 6. Improve connectivity between the river and riparian zone



# Goal: a healthy, working river

## Objectives:

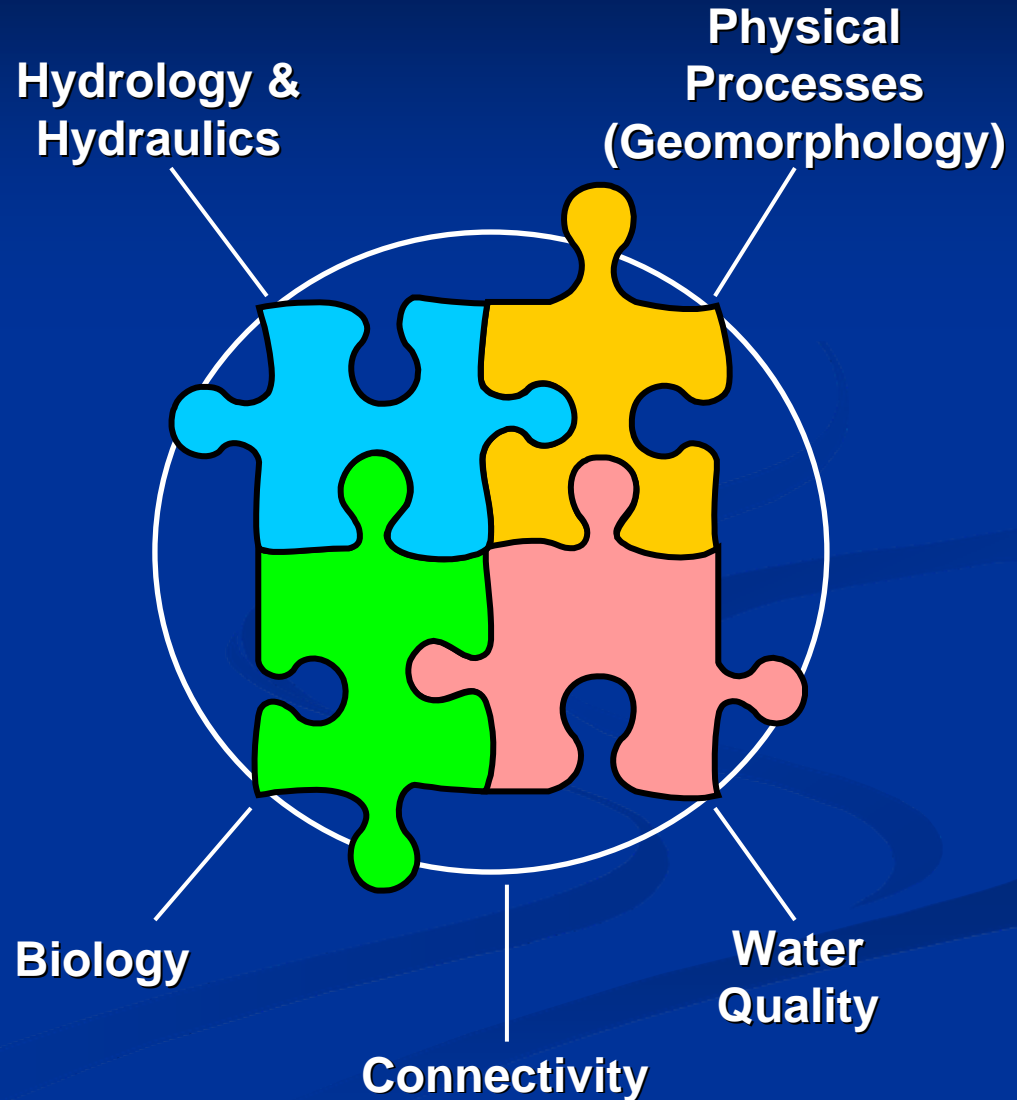
### 7. Manage flow-related water quality to sustain ecological processes and productive capacity





# Example: Murray-Darling Basin

## ■ Objectives:

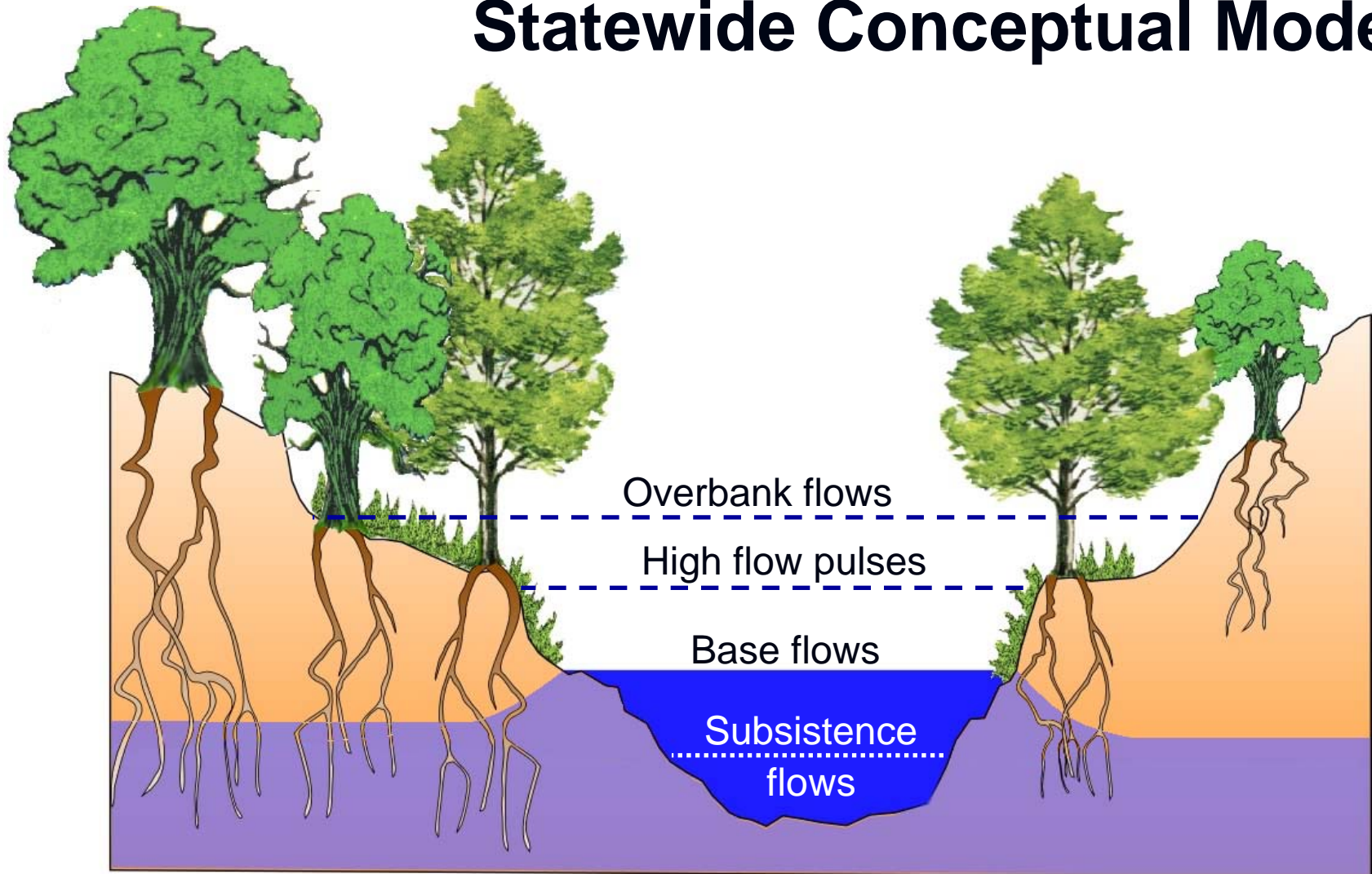


# Middle & Lower Brazos Sub-basin

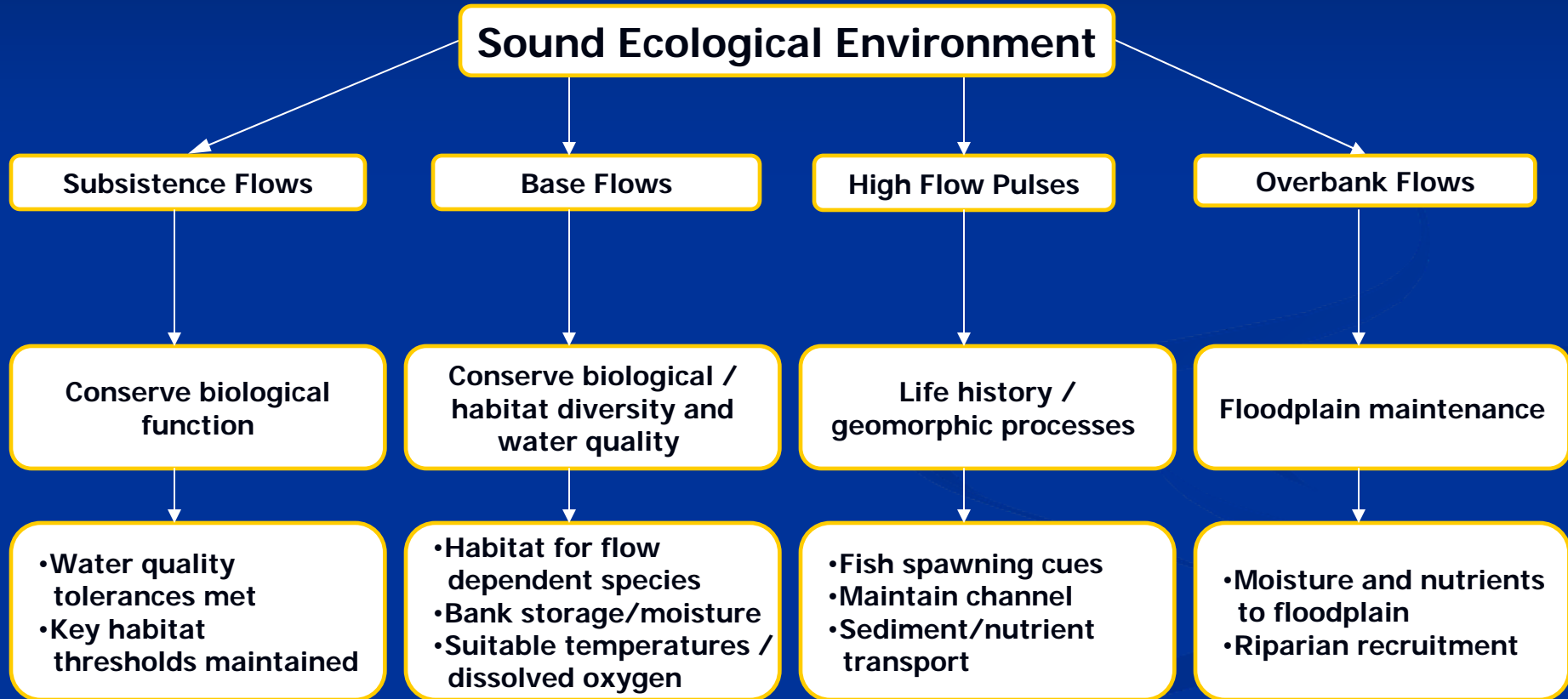
- **Statewide Goal:** “A resilient, functioning ecosystem characterized by intact, natural processes and a balanced, integrated, and adaptive community of organisms comparable to that of the natural habitat of the region.”
- **Specific Goal:** “A Middle and Lower Brazos River that provides for sustainable environmental, economic, and social uses.”

# Middle & Lower Brazos Sub-basin

## Statewide Conceptual Model



# Simple Conceptual Model



# Middle & Lower Brazos Sub-basin

## ■ 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

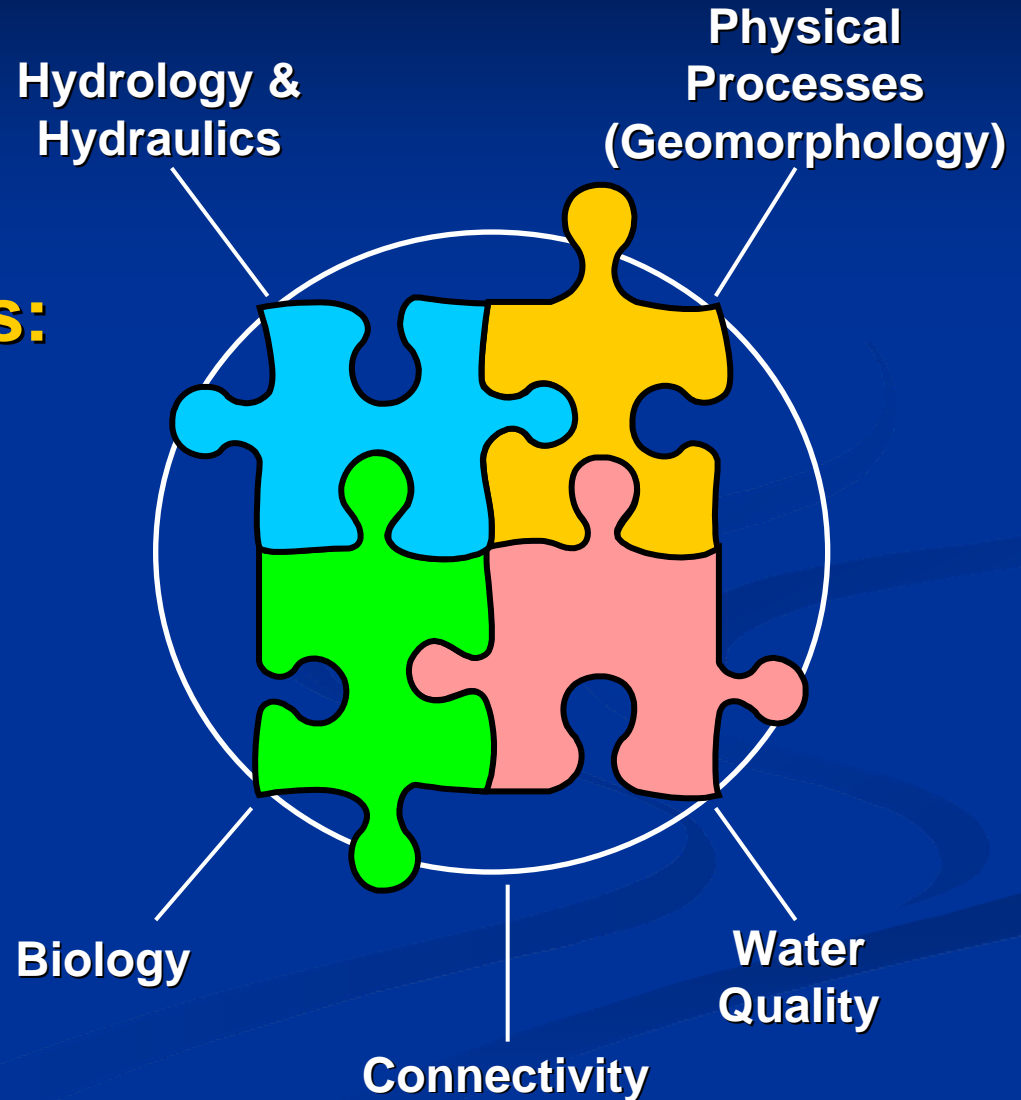
- Examine the integrity of the biological community
- Examine biodiversity within the system
- Define the influence and relationship of other riverine components relative to biology of system.”

## ■ Specific Objectives: ?

# Middle & Lower Brazos Sub-basin

- **Specific Objectives:**

?



# Middle & Lower Brazos Sub-basin

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

# Middle & Lower Brazos Sub-basin

Did we miss anything?

- Key Components
- Key Concerns
- Local Values





**Questions?**