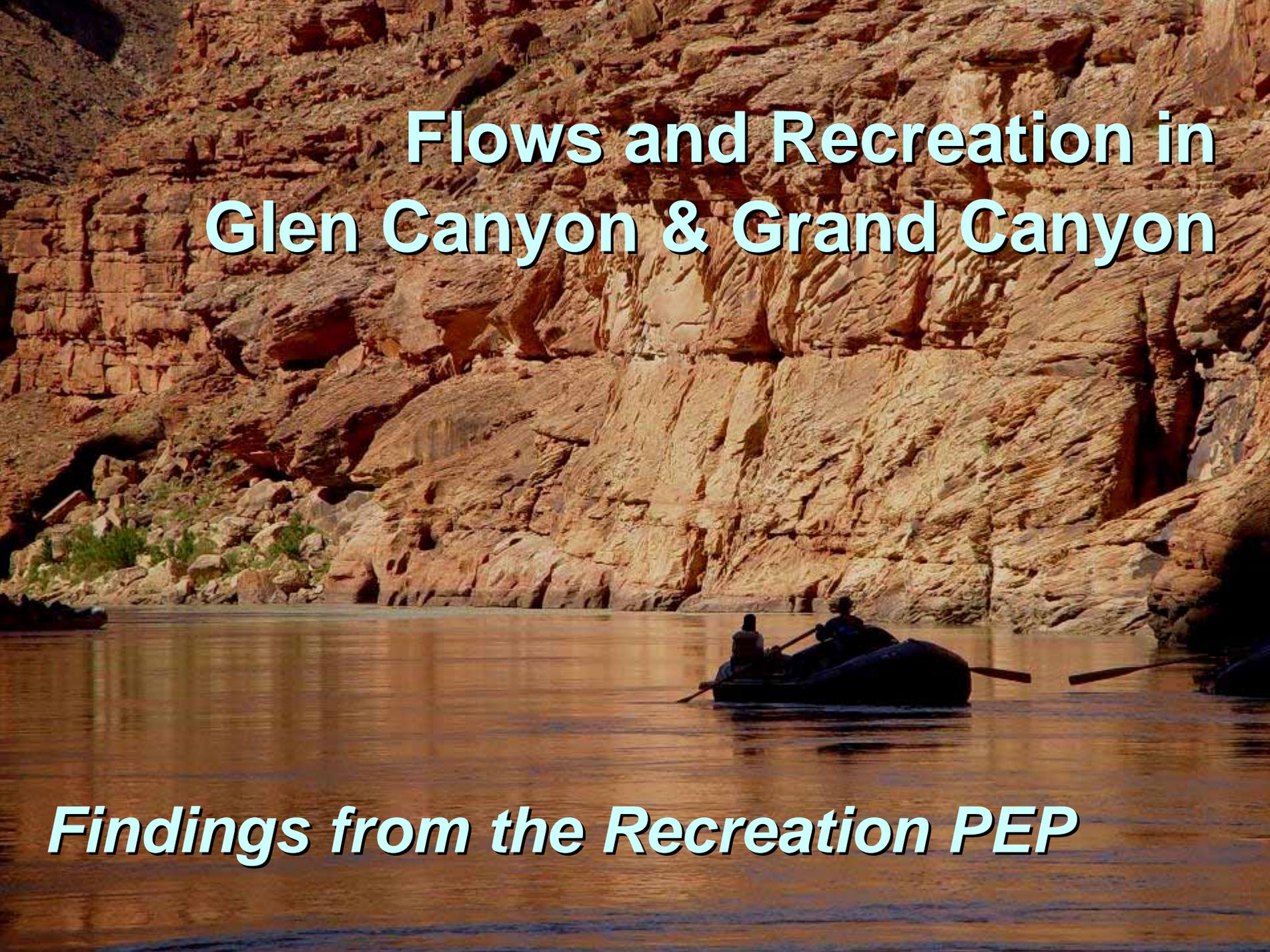


**Glen Canyon Dam Adaptive Management Work Group  
Agenda Item Information  
March 7-8, 2006**

<p><u>Agenda Item</u> Recreation Protocol Evaluation Panel (PEP)</p>
<p><u>Action Requested</u> √ Information item only; we will answer questions but no action is requested.</p>
<p><u>Presenters</u> Helen Fairley, Cultural Program Manager, Grand Canyon Monitoring and Research Center</p>
<p><u>Previous Action Taken</u> √ By AMWG: AMWG approved funding for this PEP in FY04; project was deferred with AMWG approval to FY05.  √ By TWG: TWG reviewed the report and received an oral briefing from Panel chairperson, Dr. John Loomis, at the November 29, 2005 TWG meeting.</p>
<p><u>Relevant Science</u> The Recreation PEP reviewed all prior GCMRC sponsored recreation-related research and monitoring as well as recent recreation research and monitoring by NPS-GRCA.</p>
<p><u>Background Information</u> √ I have attached the background information to be included in the AMWG packet that is distributed 30 days before the meeting, and posted on the website.</p>

A photograph of a river flowing through a canyon with high, layered rock walls. Two people are in a small inflatable boat on the water. The text "Flows and Recreation in Glen Canyon & Grand Canyon" is overlaid in white with a black outline.

# Flows and Recreation in Glen Canyon & Grand Canyon

*Findings from the Recreation PEP*

# Presentation Agenda

**Introduction**

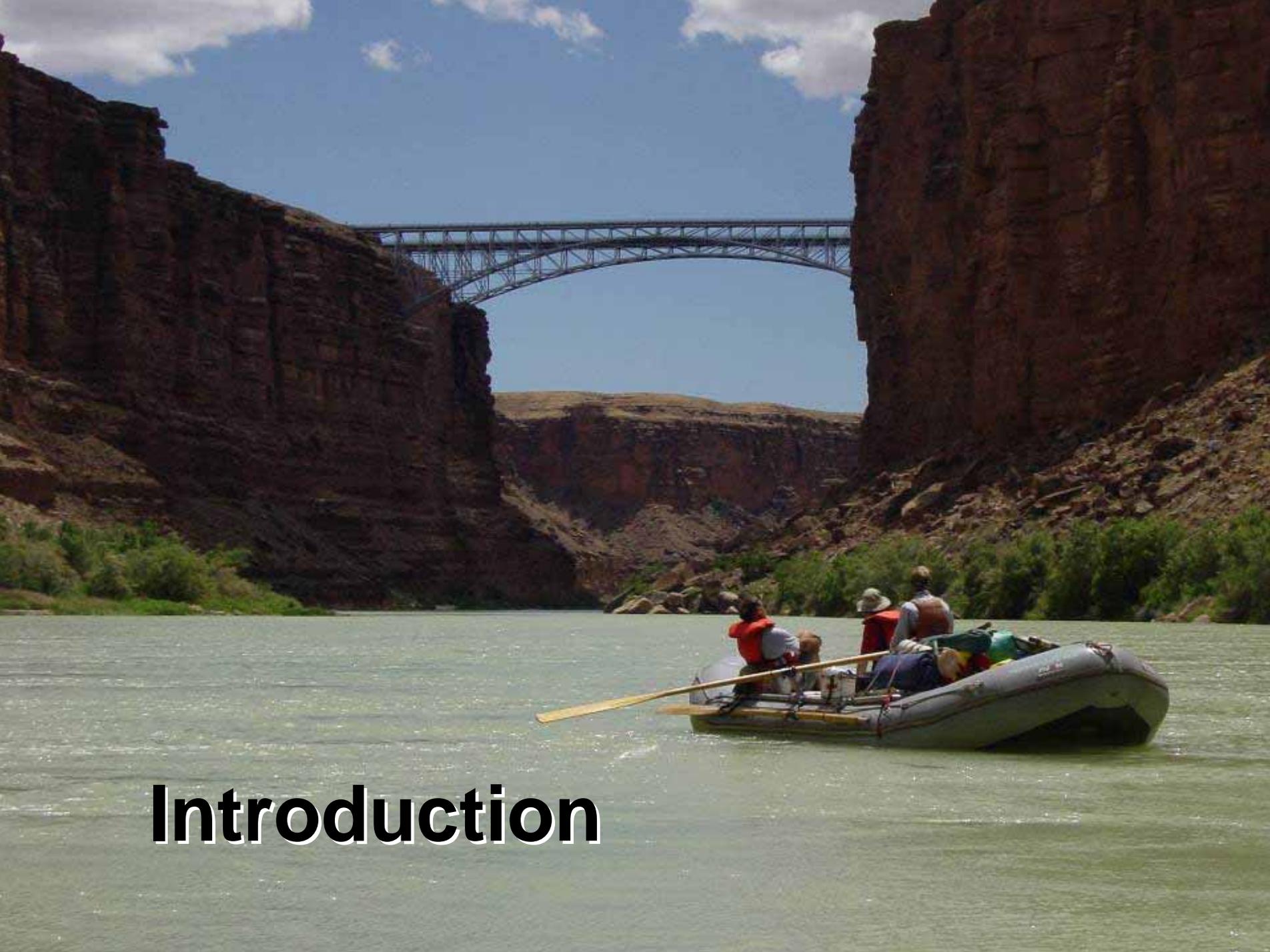
**Recreation PEP Methods**

**General findings**

**Conceptual model**

**Recommendations by management objective**

- **Visitor and wilderness experience**
- **Visitor safety**
- **Beaches and camping**
- **Visitor – research interaction**



# Introduction

# 1992 Grand Canyon Protection Act

Grand Canyon Protection Act of 1992  
SEC. 1802. PROTECTION OF GRAND CANYON NATIONAL PARK.  
(a) In General. -- The Secretary shall operate Glen Canyon Dam in accordance with the additional criteria and operating plans specified in section 1804 and exercise other authorities under existing law in such a manner as to protect, mitigate adverse impacts to, and improve the values for which Grand Canyon National Park and Glen Canyon National Recreation Area were established, including, but not limited to natural and cultural resources and visitor use.

Long term monitoring shall include necessary research & studies on natural, recreational & cultural resources of Grand Canyon NP & Glen Canyon National Recreation Area

...includes natural & cultural resources, and visitor use

# **Recreation Use = Major Industry**

**180,000 user-days in Grand Canyon**

**40,000 day use rafters in Glen Canyon**

**20,000 angler-days in Glen Canyon**

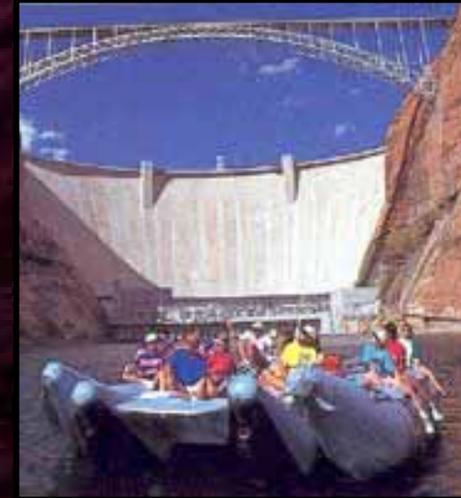
**\$40 million annual economic benefits**

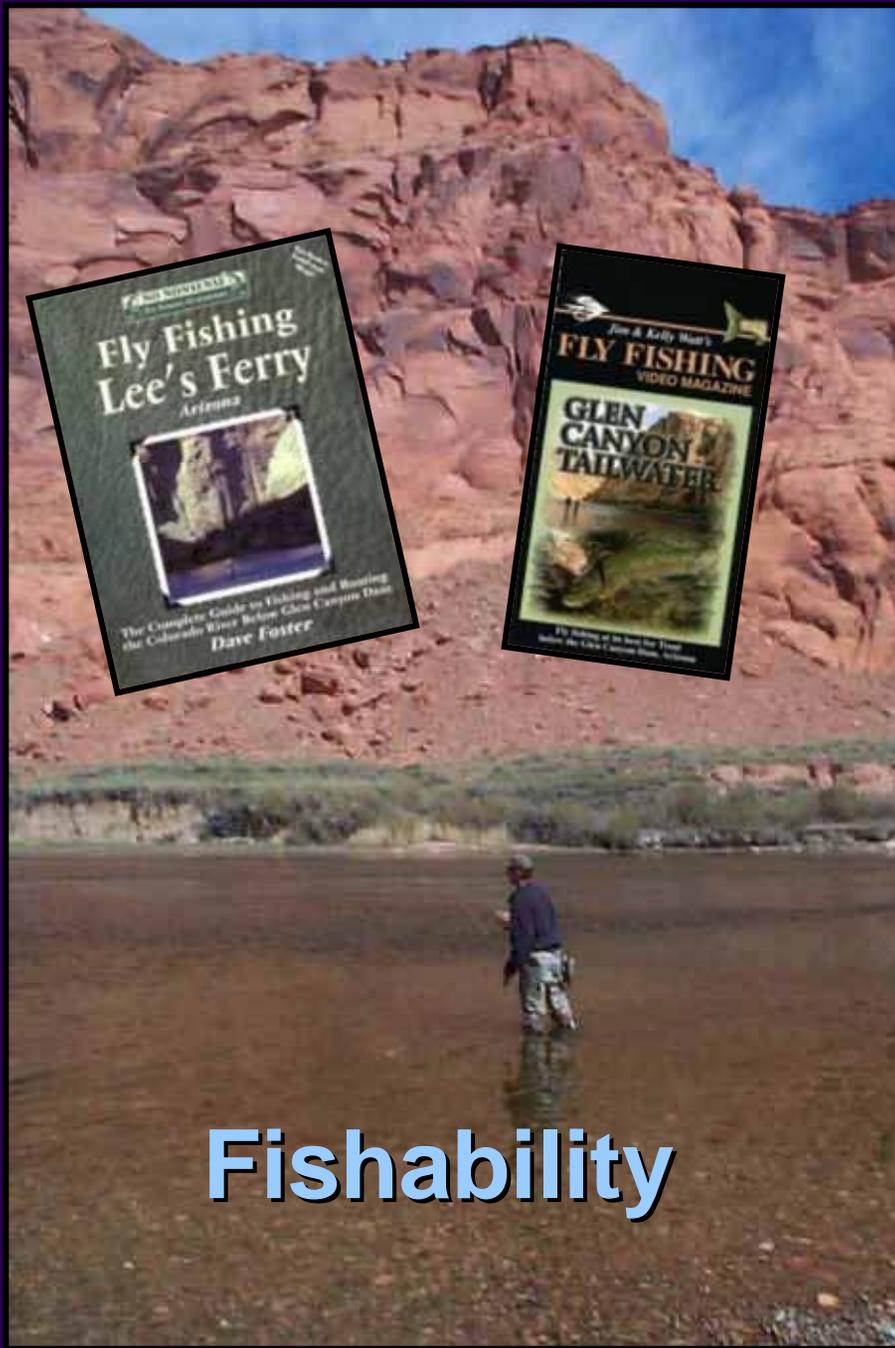
**600 jobs in Northern Arizona**

**Dam operations affect...**

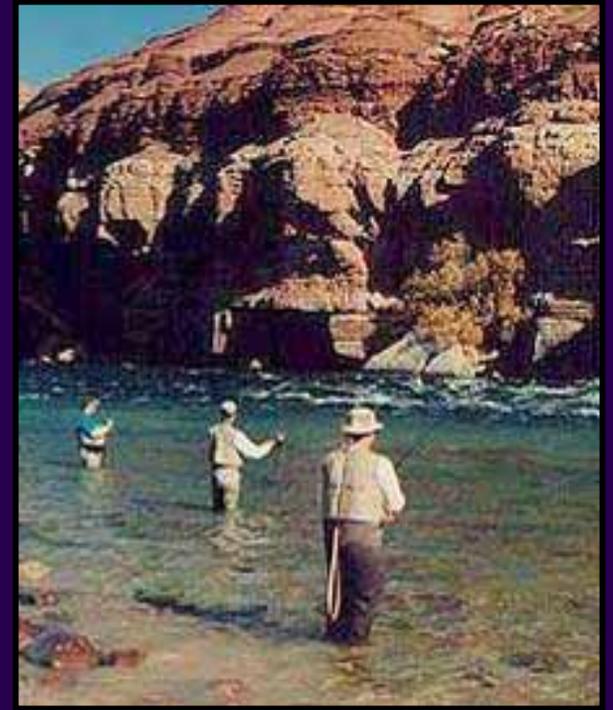


# Boatability and access to fishing in Glen Canyon





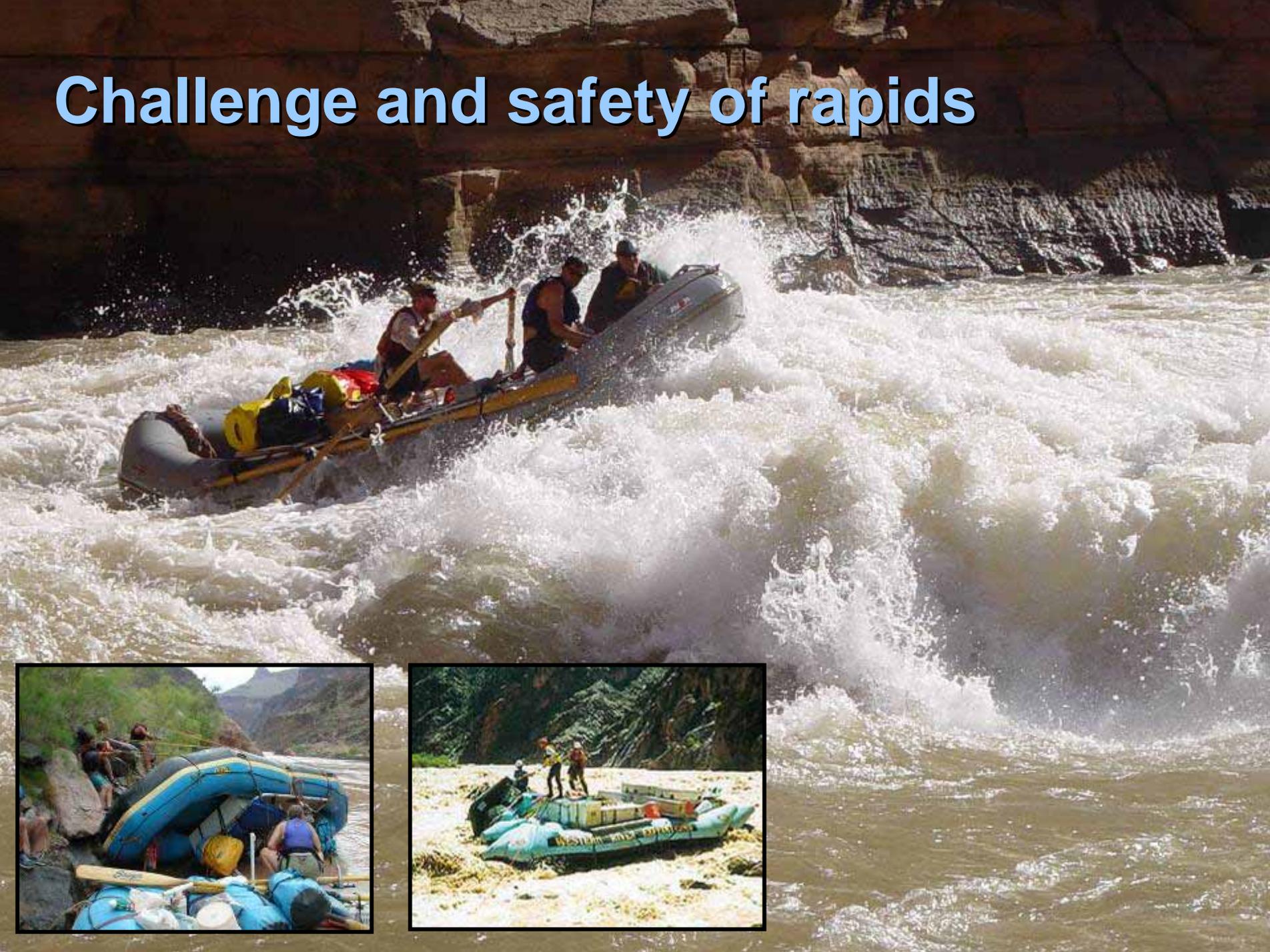
**Fishability**





**Size, frequency & quality of beaches**

# Challenge and safety of rapids



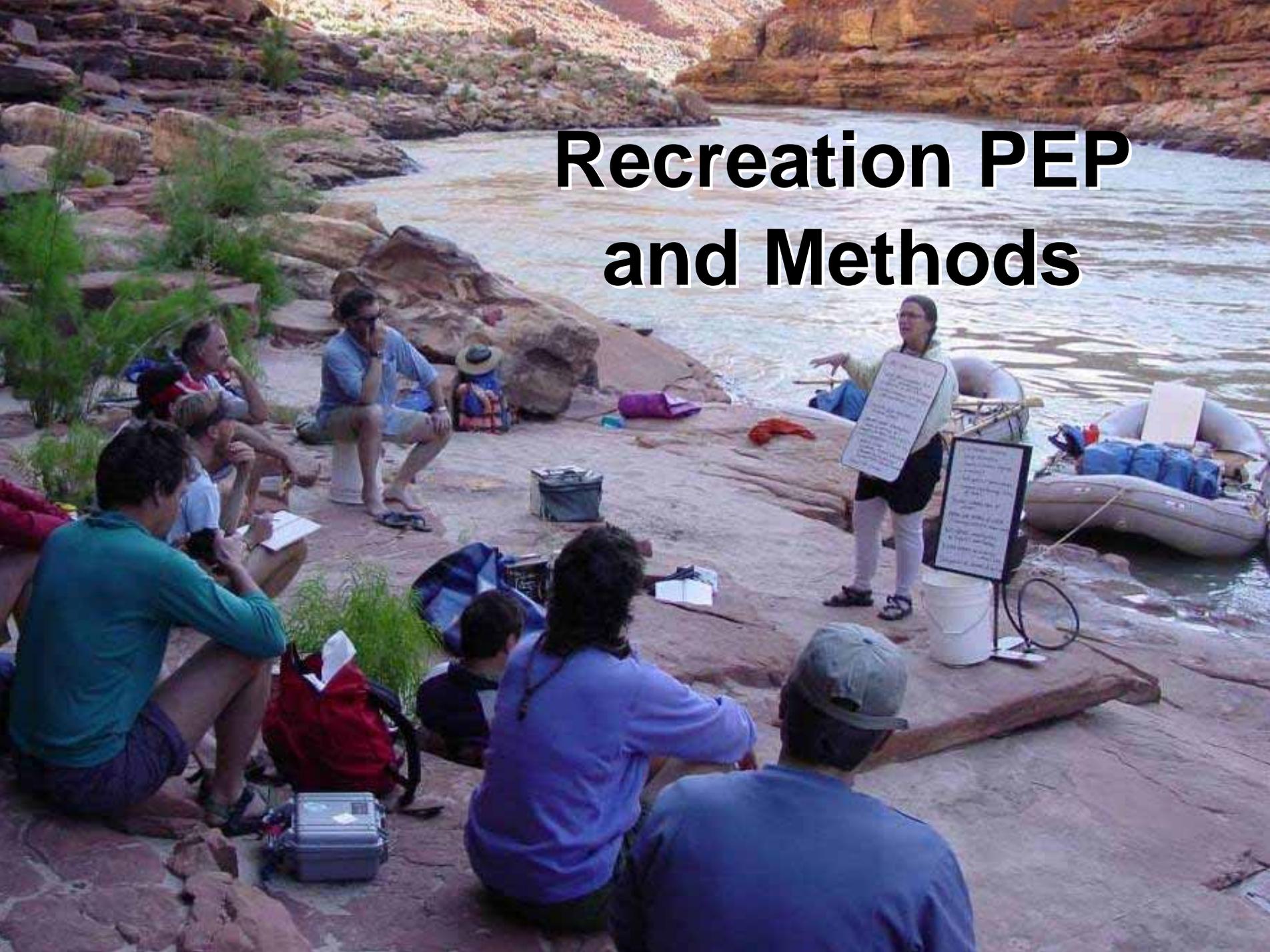


**Rate of travel and “discretionary time”**

# Encounters & crowding



# Recreation PEP and Methods



# PEP Objectives and Format

## General Recommendations Regarding

- Implementing the Legal mandate
- AMWG recreation objectives
- GCMRC recreation program

## Specific Recommendations

- Conceptual model to guide monitoring
- For each AMWG recreation management objective



## PEP Methods:

Select presenters & Panel

14-day trip in Grand Canyon

Review recreation research and monitoring needs

Review Literature to date





PEP Team



# Presenters and logistics

# General Recommendations



# Review of AMWG Recreation Goals and Objectives

## Goal:

“Improve/maintain recreation experience quality”

## Objectives:

9.1 Visitor experience

9.2 Visitor safety

9.3 Beaches and campsites

9.4 Wilderness experiences

9.5 Maintain visitor experiences affected  
by GCMRC monitoring activities

PEP concludes these are appropriate objectives  
but...

# Assessment of Current Recreation Monitoring Program

- **Current Monitoring is not comprehensive:**
  - e.g., Less on Glen Canyon, Grand Canyon attraction sites
- Not regular or concurrent with flow experiments
- Small proportion of \$7m GCMRC budget
- **Despite this...consistent progress on:**
  - Monitoring camping beach size
  - GCMRC research impacts on visitor experiences
- **However...less consistent progress on:**
  - Visitor experience
  - Visitor safety
  - Wilderness experience

# To Improve Recreation Monitoring...

- 1. Increase recreation expertise & representation**
  - **GCMRC**
  - **TWG**
  - **SAB**
- 2. Fund recreation commensurate with...**
  - **Importance of recreation**
  - **Funding of other resources**
- 3. Use conceptual model to guide monitoring**

# Conceptual Model to Guide Monitoring

1. Management actions  
From BuRec, NPS, & AZGF

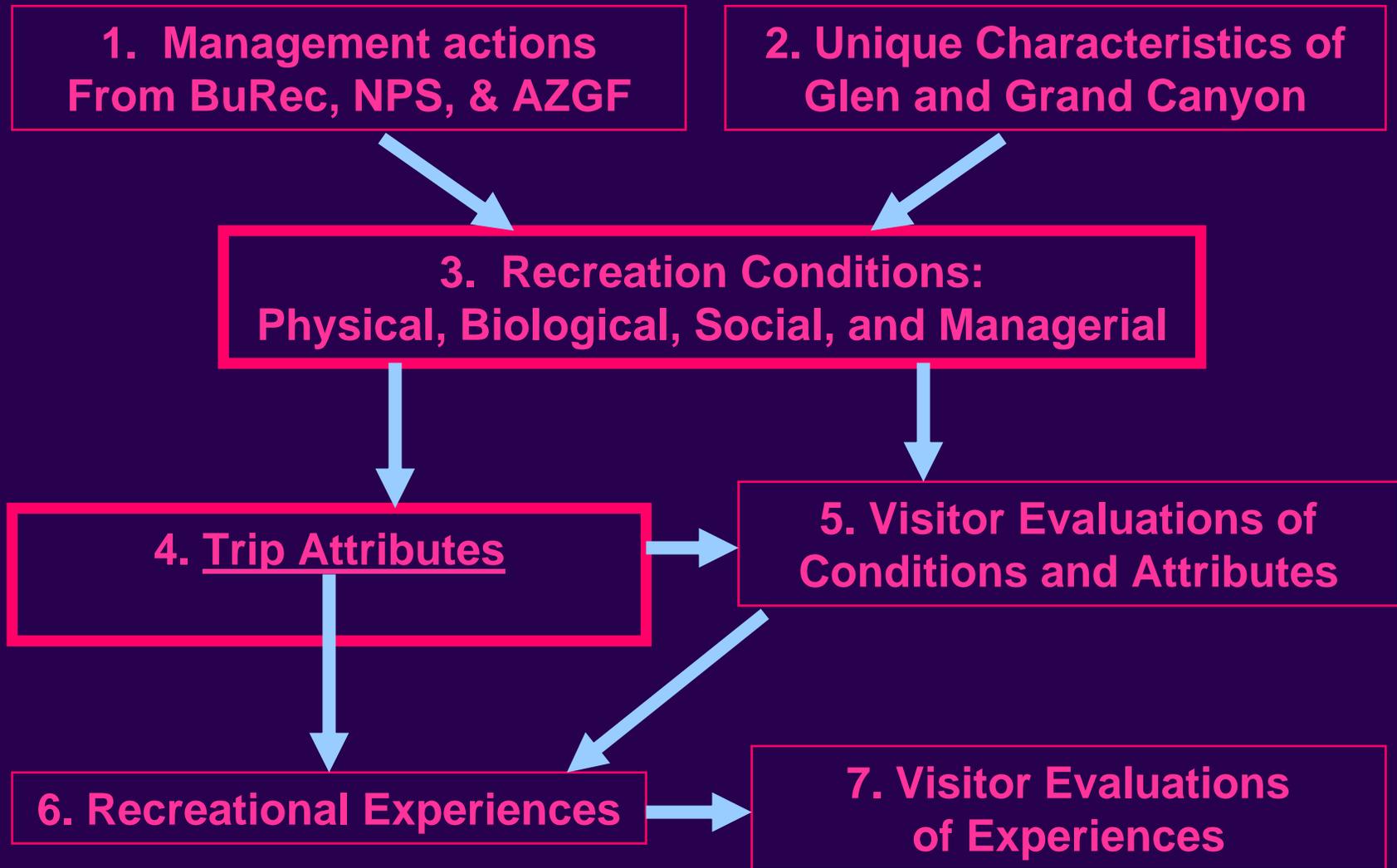
2. Unique Characteristics of  
Glen and Grand Canyon

3. Recreation Conditions:  
Physical, Biological, Social, and Managerial

4. Trip Attributes: rapids,  
safety, encounters,  
rate of travel



# Conceptual Model to Guide Monitoring





# **Specific Recommendations for Management Objectives**

# 9.1/9.4 Visitor and Wilderness Experience

**Understand: flows → attributes → experiences**

e.g., size/number of rapids, encounters, “discretionary time”

**Use this relationship to focus monitoring on attributes**

**Determine economic benefits of attributes**

Use conceptual model & survey data to understand tradeoffs between trip attributes and their economic value to visitors

**Other specific information needs**

Can agency information mitigate sub-optimal flows/experiences?

Understand effects flow on the benefits & impacts of  
“discretionary time”

Effects of use, encounters, and other social impacts on solitude

Deeper understanding of experiences & dam-influenced attributes

Recreation impacts at camps, day use, and attraction sites

## 9.2 Visitor Safety

**Continue NPS flow-accident reporting system**

**Continue NPS shore observation program**

**Establish baseline...monitor during experiments**

**Provide flow change information to visitors**

**Monitor if visitors use info; evaluations of information**

**Improve flow → incident/accident reporting**

**Routine safety/health monitoring in Glen Canyon**

**Do high flows improve beach sanitary conditions?**

## 9.3 Beaches and Camps

### Campsite atlas: Inventory current/past campsites

Physical characteristics: Location, size, shade, boat mooring, etc.

Visitor evaluations: Capacities, links to trip schedules/needs

### Campsite trend monitoring

Continue GCMRC campsite/beach monitoring

More sophistication: multiple slope criteria, systematic and representative sampling

Integrate social capacity evaluations

Emphasize sampling & evaluations in critical/limiting reaches

### Research needs:

Beach size / other attributes and social capacity

Visitor evaluations of camp attribute trade-offs

## **9.5 Visitor Experience & GCMRC Monitoring**

### **Improve research permitting**

**Minimize research trips in peak recreation season & minimize competing with visitors for prime camping & stops**

### **Improve communication about research**

**Press releases, launch information, etc.**

**Research: evaluate research-visitor interaction**

**Thanks for the invitation...**



***-- Recreation PEP Participants***

A wide, deep canyon with layered rock walls and a river with rapids flowing through it. The canyon walls are composed of reddish-brown and tan rock, showing distinct horizontal strata. The river is a milky turquoise color, with white water rapids in the foreground. The sky is clear and blue.

**Questions?**

Photos by Doug  
Whittaker, Bo Shelby  
& Neil Moisey