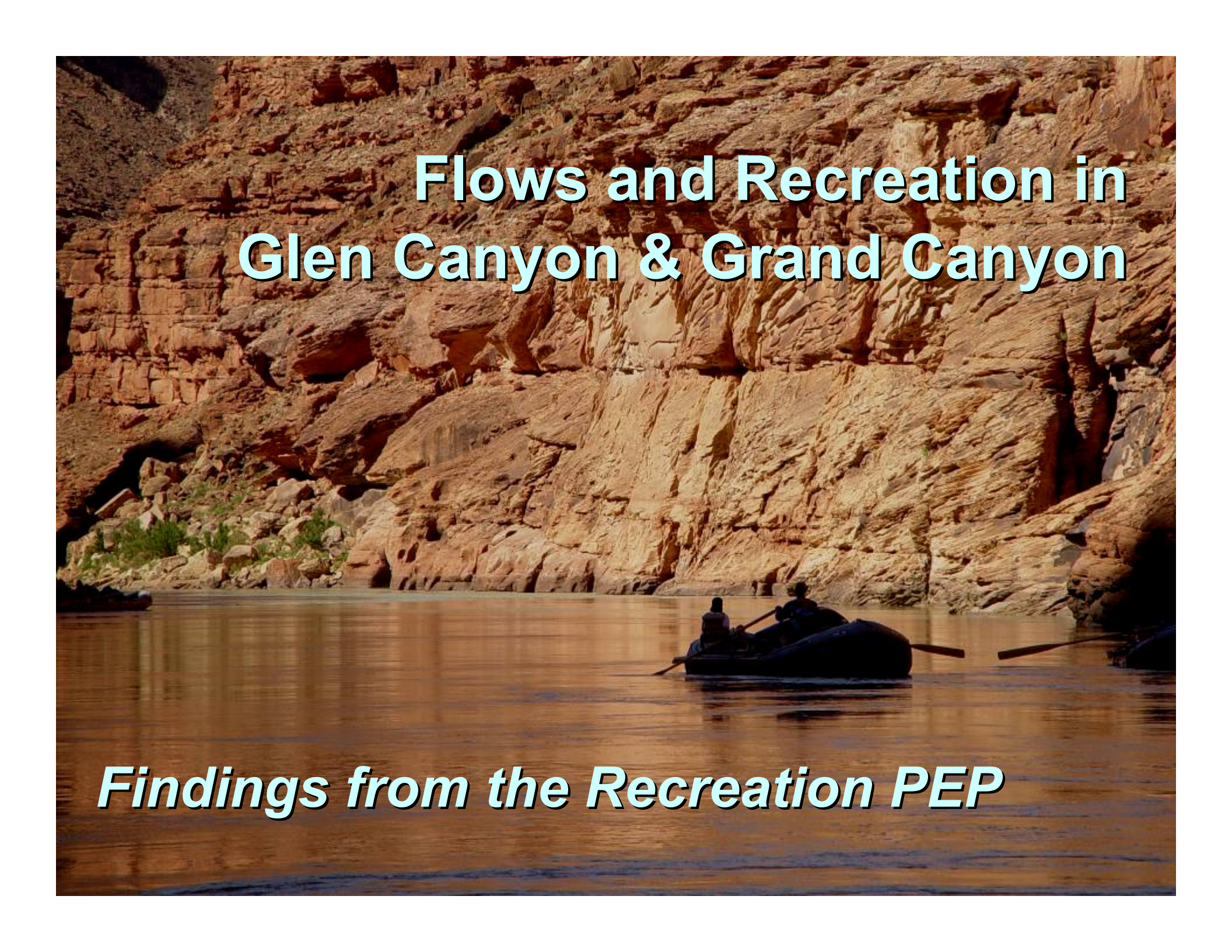




Flows and Recreation in Glen Canyon & Grand Canyon

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

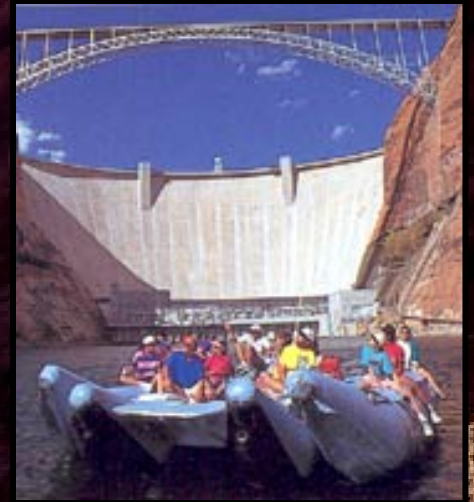
\$40 million annual economic benefits

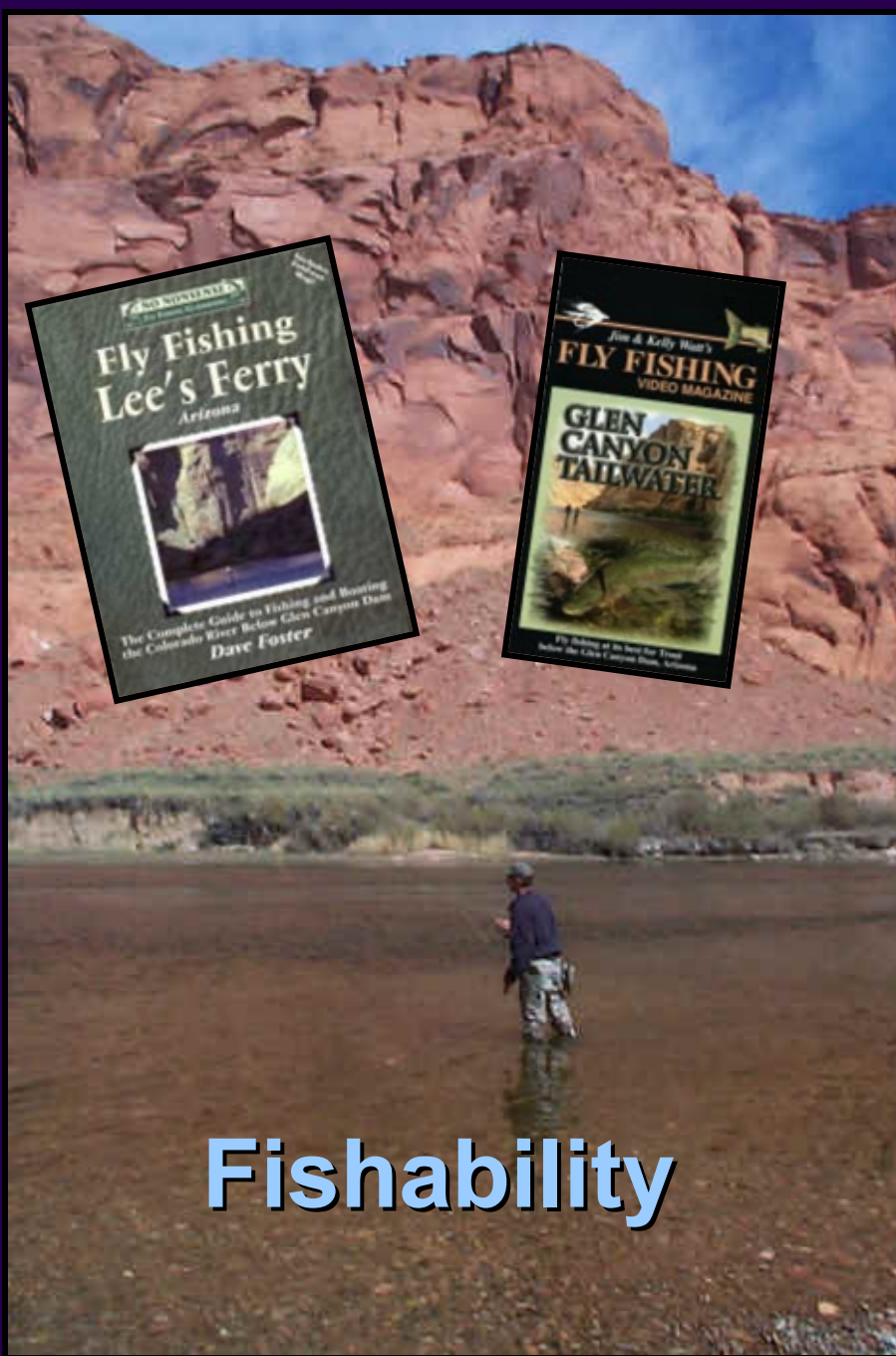
600 jobs in Northern Arizona

Dam operations affect...



Boatability and access to fishing in Glen Canyon





Fishability





**Size, frequency & quality of
beaches**

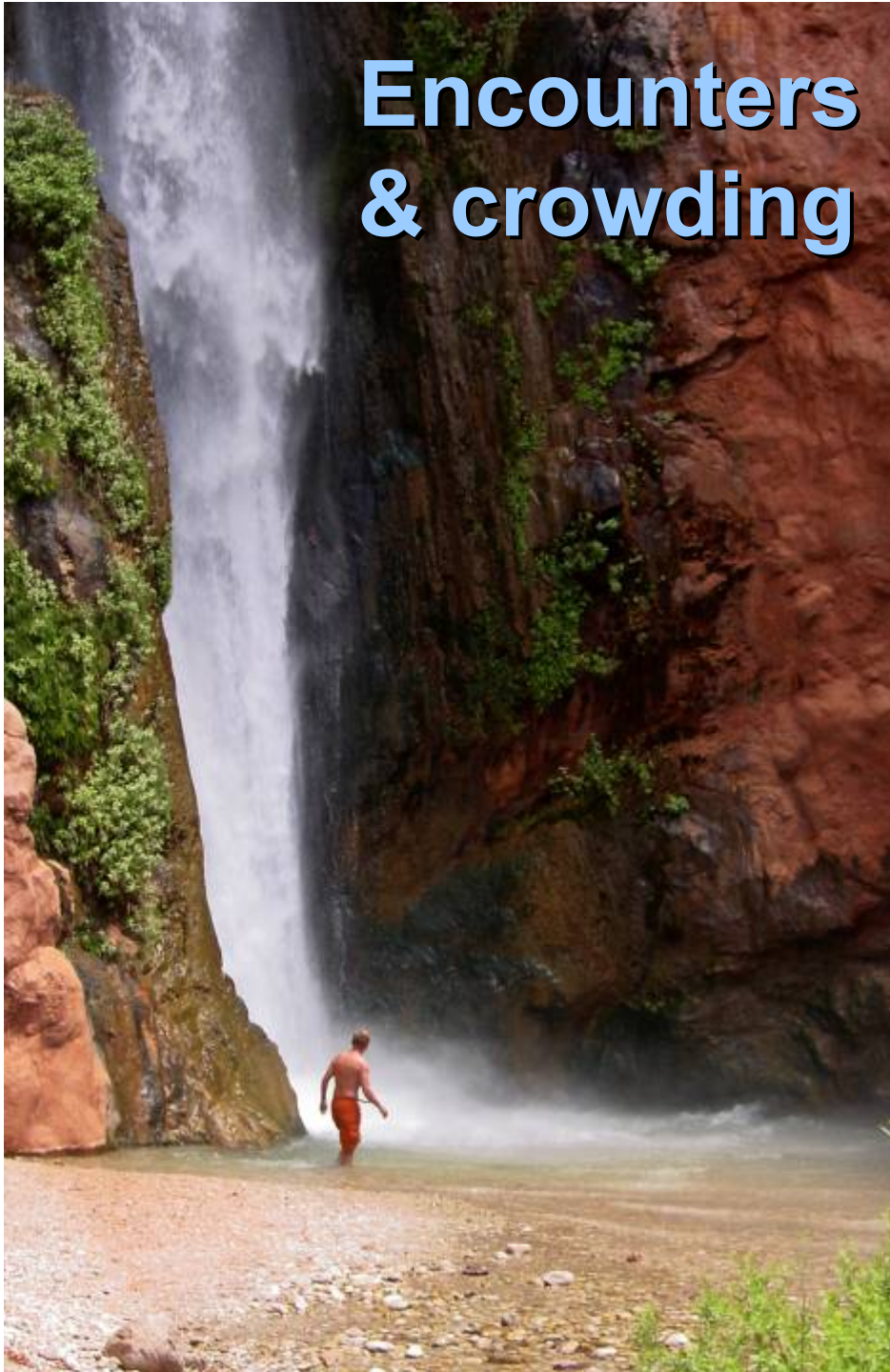
Challenge and safety of rapids



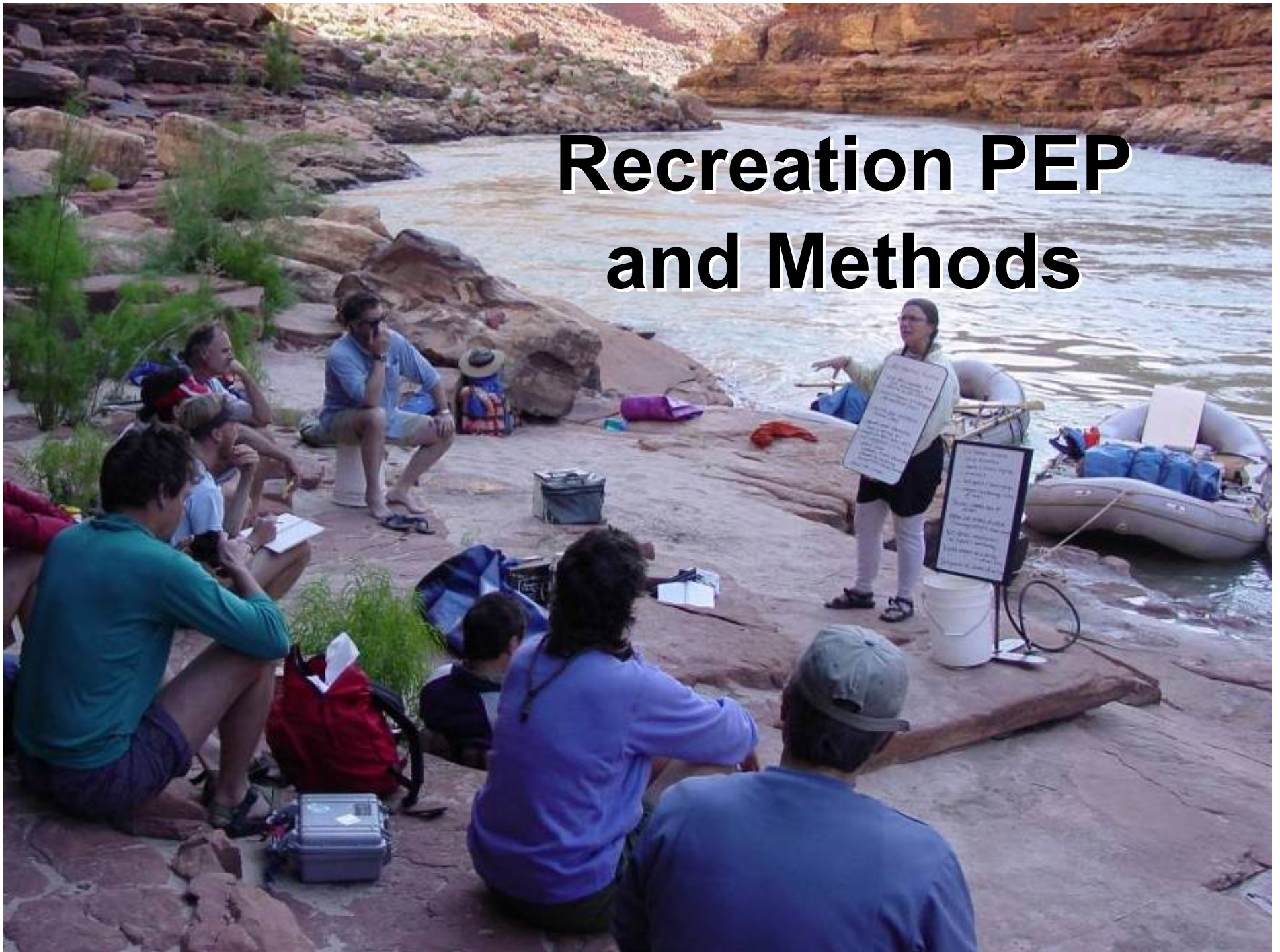


Rate of travel and “discretionary time”

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

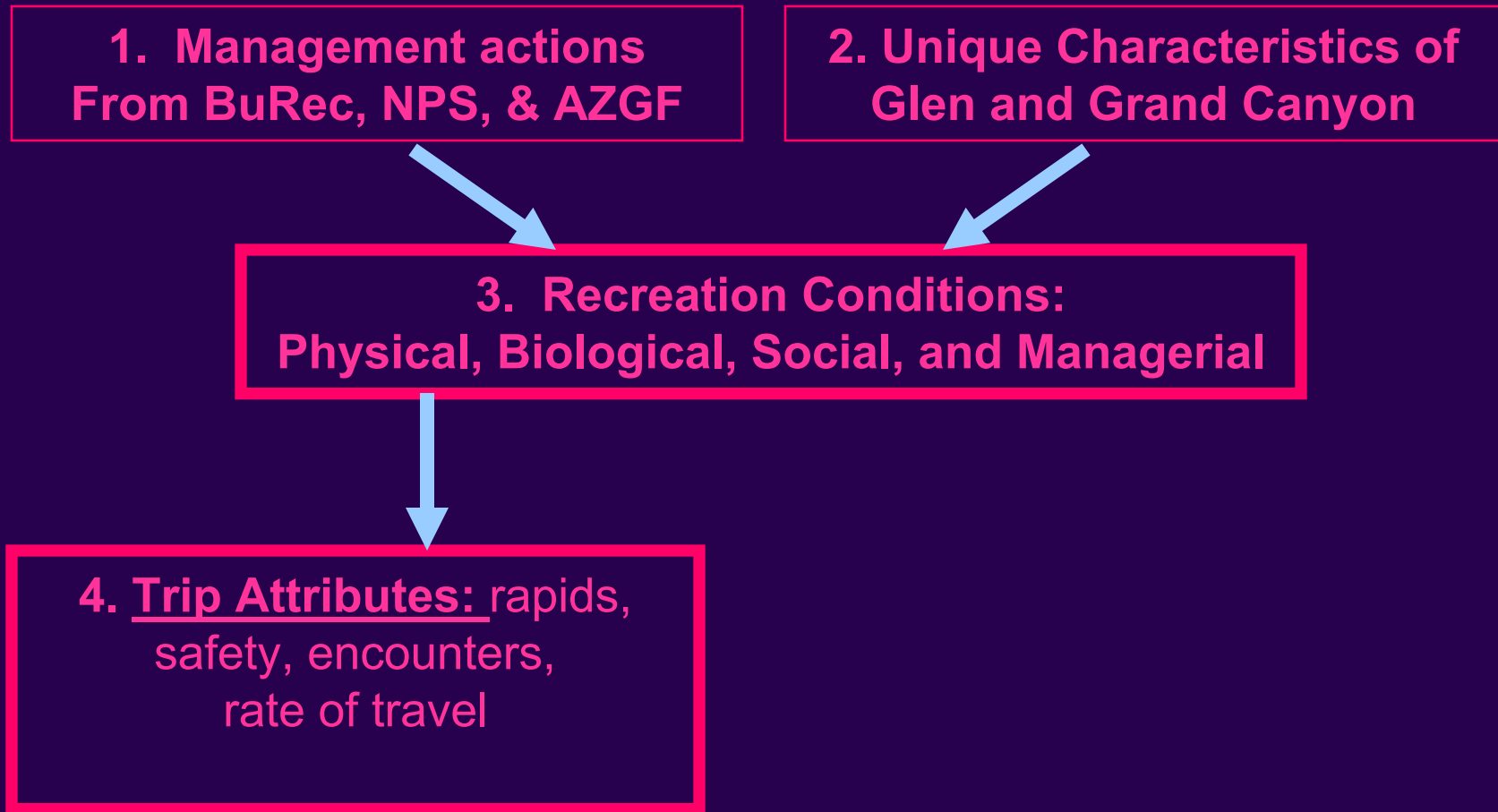
Conceptual Model to Guide Monitoring

**1. Management actions
From BuRec, NPS, & AZGF**

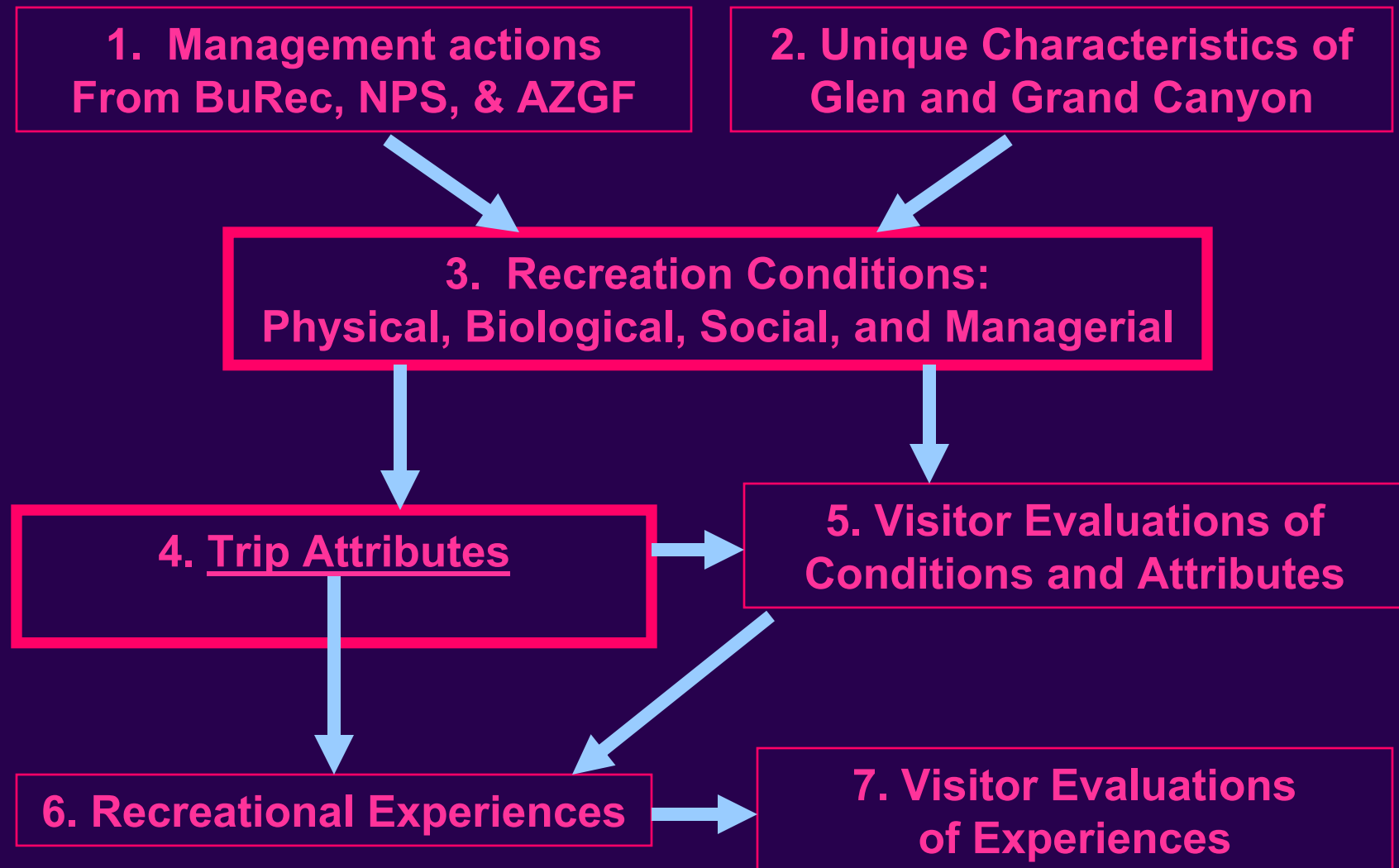
**2. Unique Characteristics of
Glen and Grand Canyon**

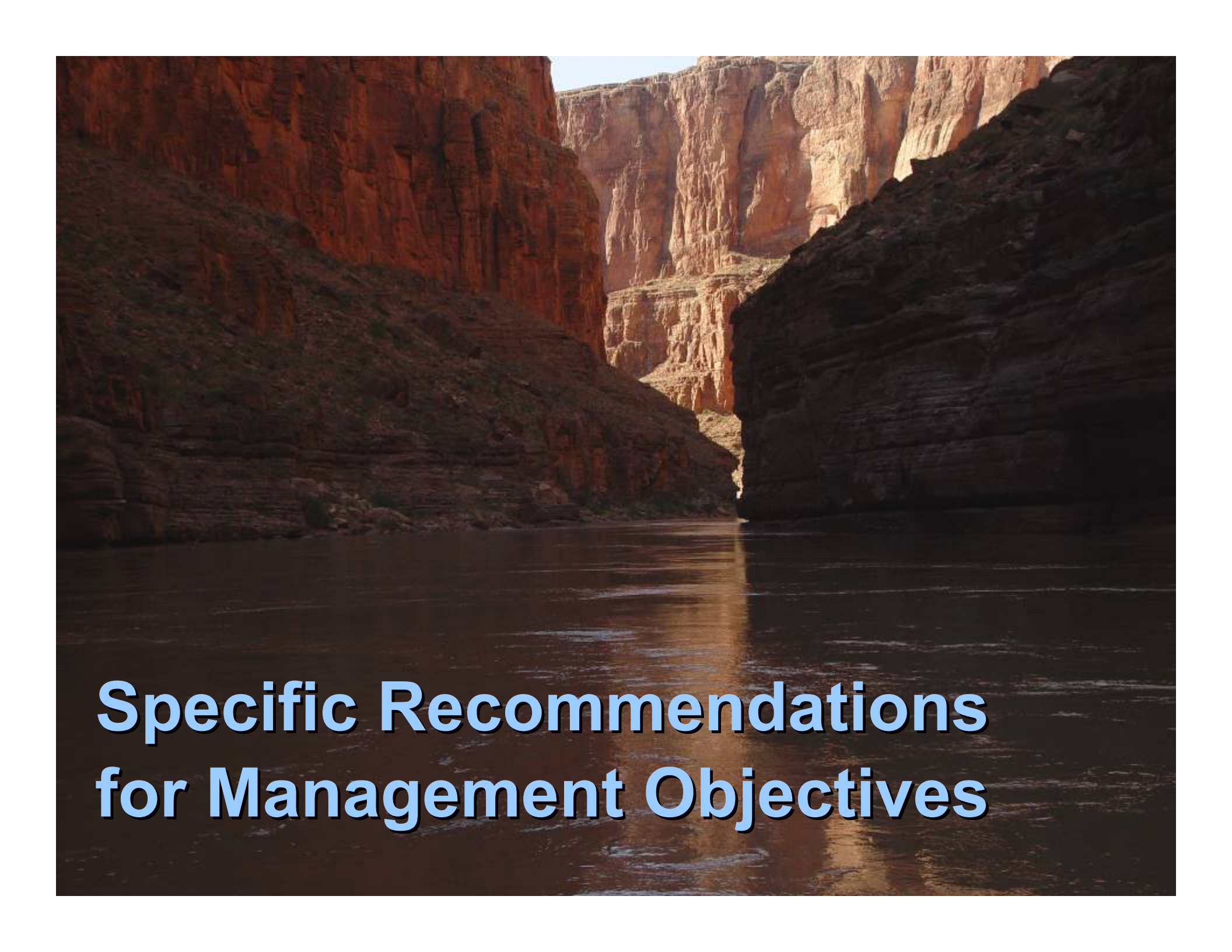
**3. Recreation Conditions:
Physical, Biological, Social, and Managerial**

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/experiments?

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



Questions?

Photos by Doug
Whittaker, Bo Shelby
& Neil Moisey