### Ecosystem Studies

1. **a.** Effect of Discharge on Shoreline Channel and Tributary Velocities and the Effect of Thermal Inputs on Mainstem Temperatures  
   PI: Frank Protiva, Shephard-Wesnitzer, Inc.
2. **b.** Effect of Discharge and Flows on Temperatures in Aquatic Habitats.  
   PI: Wm. Vernieu, GCMRC
3. **c.** Monitoring Effects of the Test Flow on Suspended Sediment and Turbidity Levels in the Main Channel of the Colorado River.  
   PI: Nancy Homewerter
4. **a.** Monitoring Effects of Test Flows on Sand Storage in the Main Channel and Eddy Complexes  
   PI: Rod Parmell, NAU
5. **a.** Effect of Steady vs. Fluctuating Flows on Creation of "Vegetated Shoreline" for Juvenile Fish and Recruitment of Exotic Plants in Newly Available Habitat.  
   PI: Mike Kearsley, NAU
6. **b.i.** Effect of Low Steady Flows on Drift and Benthic Biomass and Composition in the Lees Ferry Reach and Downstream  
   PI: Dean Blinn, NAU
7. **b.ii.** Effect of Low Steady Flows on Drift and Benthic Biomass and Composition in the Lees Ferry Reach  
   PI: Dean Blinn, NAU
8. **c.** Algal Colonization and Recolonization Response Rates During Experimental Low Summer Steady Flows  
   PI: Dean Blinn, NAU and Mike Yard, GCMRC
9. **a.** Effect of Steady Flows on Relative Abundance and Distribution of Young-of-year Fish Along Shoreline Below the Little Colorado River  
   PI: Rich Valdez, SWCA
10. **b.** Monitoring of the Colorado River Fish Community  
    PI: Barbara Ralston, GCMRC; Bill Persons, AGFD
11. **c.** Effects of Flow and Temperature Releases from Glen Canyon Dam on the Accessibility of Suitable Habitat for HBC Juveniles in the Colorado River.  
    PI: Steve Wiele, USGS; Josh Korman, Ecometric
12. **d.** Effect of Low Summer Steady Flows on Lees Ferry Trout  
    PI: Bill Persons, AGFD

### Lake Powell Studies

1. Effects of the Low Steady Summer Flow Experiment on the Stratification, Composition, and Hydrodynamics of Lake Powell, and the Downstream Effects of that Limnology.  
   PI: Susan Hueftle and Bill Vernieu, GCMRC

### Integrated Monitoring of Sand Storage and Budget Studies

1. Additional Channel-Bed Substrate Mapping  
   PI: R. Antina, D. Rubin, D. Hoag, P. Chavez
2. A Collaborative Project Before, During, and After the 31,000 cfs Fall Test Flow With Integrated and Alternative Methods to Monitor Sand Transport and Storage  
   • Team lead & synthesis - Schmidt
D. **AERIAL PHOTOGRAPHY AND REMOTE SENSING**

1. Topographic Base Map
2. 1. Pre spring 31,000 cfs CIR and B&W Orthophotography
   2. CIR and B&W orthophotography of 1st 100 miles
      a. Thermal IR
      b. Pre fall 31,000 cfs B&W
      c. Peak 31,000 cfs CIR
      d. Post fall 31,000 cfs B&W
3. CIR of entire CRE (annual overflight with supplement)

3. Survey support: Equipment purchase, rental, etc.

E. **SOCIO-CULTURAL WORK**

1. Whitewater boating safety below Lees Ferry
   PI: Linda Jalbert, NPS
2. Economic impacts to concessionaires: angling & whitewater boating
   PI: Yeon-su Kim, NAU
3. Economic impacts to power customers
   PI: Clayton Palmer, WAPA
4. Changes in whitewater boating trip characteristics
   PI: NPS and NAU
5. Changes in campable beach area.
   PI: Lambert

F. **LOGISTICS**

1. 22' and 32' boat rentals, purchase two 30 HP motors, purchase 2 satellite phones, purchase additional trip equipment (kitchen, stove, water purification, coolers, boxes, etc.). Electrofisher and motor set up.

G. **INFORMATION SYNTHESIS AND DISSEMINATION**

1. Science Symposium
2. Contributed Papers Volume
3. GCMRC Program Manager's Synthesis

H. **LSSF SCIENCE PLANNING**

1. Meetings/Travel, etc.