FY 2006 Projects
for
Biological Resources

February 2-3, 2005, TWG meeting
B.1. Terrestrial compliance monitoring (KAS and SWWF)

- CMIN tasks/questions (5.1.1; 5.2.1; 6.7.1):
  - Determine and track the abundance and distribution of Kanab ambersnail at Vaseys Paradise in the lower zone (below 100,000 cfs) and the upper zone (above 100,000 cfs).
  - Determine and track the size and composition of the habitat used by Kanab ambersnail at Vaseys Paradise.
  - Determine and track the abundance, distribution, and reproductive success of southwestern willow flycatcher in the Colorado River ecosystem.

- Data Acquisition:
  - Spring and fall survey trips to Vaseys Paradise, logistics supports Elves Chasm and Deer Creek translocation surveys.
  - Three surveys in May, June, July for SWWF

- Data Management, Analysis, Dissemination
  - Data reports and data accessioned into GCMRC Database
  - Incorporation into SCORE report

Total Budget = $221,260.00
B.2. R&D – Aquatic Food Base, Organic Mass Balance, and Food web Linkage Program

Problem: Determine if food is limiting to fish community in CRE
What are the primary sources of food energy
Necessary step to food base monitoring development

RIN – 11 of 23 research IN’s are ranked at 5 or above for in sequencing process—involves food limiting questions, food value, trophic linkages.

CMIN (1.1.1 – 1.5.1): Determine and track composition and biomass of primary producers, benthic invertebrates and drift in Glen Canyon and below the Paria in the CRE.

Objective:
- Define food web dynamics in the CRE for fisheries in Glen Canyon and below the Paria
- Following linkage identification, develop monitoring methods that are biologically meaningful, cost effective and meet AMP needs.

Total Food base, Organic mass balance budget = $460,575/yr.
B.3. CM - Status and Trends of Downstream Fish Community

- **Core Monitoring (CMIN 2.1.1; 2.1.2; 2.4.1)**
  - Status and Trends of HBC in Little Colorado River and salmonids in the mainstem
  - Exploration of other methods for purposes of improving mainstem monitoring efforts and CMIN 2.4.1; 2.6.1.

- **Data Acquisition**
  - Spring/fall abundance assessment 15 km; spring abundance assessment lower 1200 m.
  - Spring electroshocking mainstem trip – salmonids
  - Incorporation of section below Diamond Creek in monitoring data set.
  - Backwaters seining trip, HBC aggregations in mainstem

- **Data analysis, management, dissemination**
  - Trip reports, electronic data delivered to GCMRC
  - Annual reports
  - Incorporation of findings into SCORE report

**Total S&T Downstream Fish Community Budget = $967,725/yr**
B.4. CM – Status & Trends of Lees Ferry trout

- CMIN tasks/questions (4.1.1-4.1.7): Determine...pop est. age II +; Proportional stock density; growth rate; +/- whirling disease; spawning habitat quality/quantity; % natural recruitment.

- Acquisition:
  - Creel program – angler use, catch and harvest (surrogate for abundance) CMIN 4.1
    - Monthly sampling
  - Electrofishing – size composition, relative abundance, condition, whirling disease samples. CMIN 4.1.2, 3, 4, 5
    - 3 times/year, 9 fixed and 27 stratified random sample sites.
    - Detects 6-10% linear change in abundance over 5-years.

- Data Mgmt, Analysis, Dissemination
  - Annual reports from principle investigator, results incorporated into SCORE
  - Data accessioned into GCMRC Database

Total S&T Lees Ferry Trout Budget = $118,450/yr
B.5. HCA: Concurrent Estimates of Humpback Chub

- **Recovery Program**
  - In-stream concurrent estimates
  - Simulation modeling – outcome of spring 2005 workshop will be used to determine the necessity of field
  - Funds may be used for other HCA project – e.g., warm water species suppression

- **Data analysis, management, dissemination**
  - Trip reports, electronic data delivered to GCMRC
  - Annual reports
  - Incorporation of findings into SCORE report

Total Concurrent estimate budget = $250,240/yr.
B.1. Terrestrial Monitoring

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## B. 2. Aquatic Food Base Initiative

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### B.3. Downstream Fish Monitoring

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# B.5. HCA – Concurrent Estimates

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