



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—involve 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

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

B.1. Terrestrial Monitoring

FUNDING HISTORY	Fiscal year				
	2002	2003	2004	2005	2006
Outside GCMRC Science/Labor	10,000	30,000	21,000	22,000	55,000
Logistics Field Support	40,000	33,000	37,000	35,000	45,000
Project Related Travel/Training	—	—	—	—	5000
Operations/Supplies	16,000	6,000	7,000	7,000	0
GCMRC Salaries	16,000	12,000	14,000	15,000	87,400
Project Subtotal	—	—	—	—	192,400
DOI Customer Burden (15%)	—	—	—	—	28,860
Project Total	82,000	81,000	79,000	79,000	221,260
% Total Outsourced	48%	69%	64%	63%	29%

B. 2. Aquatic Food Base Initiative

FUNDING HISTORY	Fiscal year				
	2002	2003	2004	2005	2006
Outside GCMRC Science/Labor	N/A	N/A	160,000	220,000	216,000
Logistics Field Support	N/A	N/A	40,000	40,000	100,000
Project Related Travel/Training	—	—	—	—	5,000
Operations/Supplies	N/A	N/A	18,000	25,000	0
GCMRC Salaries	N/A	N/A	30,000	30,000	79,500
Project Subtotal	—	—	—	—	400,500
DOI Customer Burden (15%)	—	—	—	—	60,075
Project Total	N/A	N/A	248,000	315,000	460,575
% Total Outsourced	N/A	N/A	~79%	~81%	54%

B.3. Downstream Fish Monitoring

FUNDING HISTORY	Fiscal year				
	2002	2003	2004	2005	2006
Outside GCMRC Science/Labor	469,000	570,000	596,000	546,000	550,000
Logistics Field Support	176,000	153,000	150,000	150,000	150,000
Project Related Travel/Training	—	—	—	—	5,000
Operations/Supplies	0	15,000	30,000	30,000	20,000
GCMRC Salaries	28,000	71,000	94,000	94,000	116,500
Project Subtotal	—	—	—	—	841,500
DOI Customer Burden (15%)	—	—	—	—	126,225
Project Total	673,000	809,000	870,000	820,000	967,725
% Total Outsourced	92%	88%	84%	83%	65%

B.4. Lees Ferry Trout

FUNDING HISTORY	Fiscal year			
	2003	2004	2005	2006
Outside GCMRC Science/Labor	90,000	116,000	80,000	90,000
Logistics Field Support	20,000	20,000	10,000	13,000
Project Related Travel/Training	—	—	—	—
Operations/Supplies	10,000	16,000	10,000	0
GCMRC Salaries	18,000	9,000	11,000	0
Project Subtotal	—	—	—	103,000
DOI Customer Burden (15%)	—	—	—	15,450
Project Total	138,000	161,000	111,000	118,450
% Total Outsourced	78%	83%	85%	87%

B.5. HCA – Concurrent Estimates

FUNDING HISTORY	Fiscal year				
	2002	2003	2004	2005	2006
Outside GCMRC Science/Labor	NA	NA	NA	NA	59,100
Logistics Field Support	NA	NA	NA	NA	95,000
Project Related Travel/Training	NA	NA	NA	NA	0
Operations/Supplies	NA	NA	NA	NA	0
GCMRC Salaries	NA	NA	NA	NA	63,500
Project Subtotal	NA	NA	NA	NA	217,600
DOI Customer Burden (15%)	NA	NA	NA	NA	32,640
Project Total	NA	NA	NA	NA	250,240
% Total Outsourced	NA	NA	NA	NA	27%