

RECLAMATION

Managing Water in the West

FY 2019 Proposed Budget

Adaptive Management Working Group Webinar
May 22, 2018

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Glen Canyon Dam Adaptive Management Program



U.S. Department of the Interior
Bureau of Reclamation

GCDAMP Budget FY 18-20

GCDAMP Budget – Total from power revenues

FY 18 = \$11,156,000 (2.2% CPI)

Reclamation = \$2,231,000

GCMRC = \$8,925,000

FY 19 = \$11,268,000 (1.0% CPI)

Reclamation = \$2,254,000

GCMRC = \$9,014,000

FY 20 = \$11,381,000 (1.0% CPI)

Reclamation = \$2,276,000

GCMRC = \$9,106,000

AMWG and TWG

		2018	2019	2020
A	Adaptive Management Work Group	\$ 433,100	\$ 434,400	\$ 440,300
A.1	Adaptive Management Work Group Costs (BOR)	\$ 227,140	\$ 228,000	\$ 232,000
A.2	AMWG Member Travel Reimbursement	\$ 20,240	\$ 20,300	\$ 21,000
A.3	AMWG Reclamation Travel	\$ 20,240	\$ 20,300	\$ 21,000
A.4	AMWG Facilitation Contract	\$ 75,000	\$ 75,000	\$ 75,000
A.5	Public Outreach - Reclamation public affairs, POAG	\$ 25,300	\$ 25,500	\$ 25,700
A.6	Public Outreach- Administrative History	\$ 50,000	\$ 50,000	\$ 50,000
A.7	AMWG Other	\$ 15,180	\$ 15,300	\$ 15,600
B	Technical Working Group	\$ 202,400	\$ 204,424	\$ 206,468
B.1	TWG Costs (BOR)	\$ 121,440	\$ 122,654	\$ 123,881
B.2	TWG Member Travel Reimbursement	\$ 25,300	\$ 25,553	\$ 25,809
B.3	TWG Reclamation Travel	\$ 20,240	\$ 20,442	\$ 20,647
B.4	TWG Chair Reimbursement/Facilitation	\$ 25,300	\$ 25,553	\$ 25,809
B.5	TWG Other	\$ 10,120	\$ 10,221	\$ 10,323

* Values adjusted to 2.2% CPI in FY18

Reclamation Administration

		2018	2019	2020
C	Program Admin, ESA Compliance, and Management Actions	\$ 957,700	\$ 995,720	\$ 1,044,351
C.1	Administrative Support for NPS Permitting	\$ 112,000	\$ 113,120	\$ 114,251
C.2	Contract Administration	\$ 75,000	\$ 75,000	\$ 75,000
C.3	Integrated Stakeholder River Trip		\$ 40,000	\$ -
C.4	Science Advisors Program	\$ 150,000	\$ 150,000	\$ 150,000
C.5	Experimental Management Fund	\$ 408,700	\$ 417,600	\$ 425,100
C.6	Native Fish Conservation Contingency Fund	carryover from previous years		
C.7	Experimental Vegetation Treatment	\$ 145,000	\$ 200,000	\$ 220,000
C.8	Evaluation of means to prevent fish passage through GCD			\$ 50,000
C.9	Evaluation of temperature control methods at GCD	\$ 50,000		
C.10	Ridgway Rail and Southwest Willow Flycatcher monitoring	\$ 17,000	\$ -	\$ 10,000

* Values adjusted to 2.2% CPI in FY18

Cultural Resources

		2018	2019	2020
D	Cultural Resources	\$ 638,000	\$ 619,000	\$ 585,000
D.1	Reclamation Cultural Resources Program Management	\$ 123,000	\$ 126,000	\$ 126,000
D.2	Support to Reclamation for cultural resources compliance	\$ 150,000	\$ 40,000	\$ 40,000
D.3	Cultural Resources Monitoring - Grand Canyon	\$ 47,000	\$ 48,000	\$ 48,000
D.4	Cultural Resources Monitoring - Glen Canyon	\$ 34,000	\$ 25,000	\$ 26,000
D.5	Documentation of Navajo, Hualapai, and Paiute TCPs	\$ 30,000	\$ -	\$ -
D.6	Associative values studies for TCPs	\$ -	\$ 100,000	\$ 100,000
D.7	Cultural sensitivity training development - tribal expertise	\$ 10,000	\$ 15,000	\$ 15,000
D.8	Cultural sensitivity training video		\$ 20,000	\$ 25,000
D.9	Hualapai archive project	\$ 40,000	\$ 40,000	\$ -
D.10	Contingency fund for NHPA section 106 compliance	\$ 29,000	\$ 30,000	\$ 30,000
D.11	Tribal cultural resources monitoring	\$ 175,000	\$ 175,000	\$ 175,000
D.12	<i>Tribal participation in AMP (not funded by power revenues)</i>	\$ 475,000	\$ 475,000	\$ 475,000

* Values adjusted to 2.2% CPI in FY18

Totals

Reclamation Adaptive Management Program Budget Summary FY2018-2020				
		2018	2019	2020
A	Adaptive Management Work Group	\$ 433,100	\$ 434,400	\$ 440,300
B	Technical Working Group	\$ 202,400	\$ 204,424	\$ 206,468
C	Program Admin, ESA Compliance, and Mgmt Actions	\$ 957,700	\$ 995,720	\$ 1,044,351
D	Cultural Resources	\$ 638,000	\$ 619,000	\$ 585,000
TOTAL Reclamation Budgeted		\$ 2,231,200	\$ 2,253,544	\$ 2,276,119

* Values adjusted to 2.2% CPI in FY18

GCDAMP Budget FY 18-20

Native Fish Conservation Contingency Fund

FY 18 = ~\$1,600,000 → \$ 1,800,000*

FY 19 = ~\$1,800,000 → \$ 2,100,000*

FY 20 = ~\$2,100,000 → \$ 2,500,000*

* assumes little/ no use of Native Fish Conservation Contingency Fund during the respective FY



GCMRC FY 2019 Proposed Budget

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May 22, 2018

Scott VanderKooi

Southwest Biological Science Center

Grand Canyon Monitoring and Research Center

A. Streamflow, Water Quality, and Sediment Transport and Budgeting in the Colorado River Ecosystem

Project Elements

1. Stream gaging
2. Water quality
3. Sediment transport and budgeting

B. Sandbar and Sediment Storage Monitoring and Research

Project Elements

1. Sandbar monitoring using topographic surveys and remote cameras
2. Bathymetric and topographic mapping for monitoring long-term trends in sediment storage
3. Control network and survey support



C. Riparian Vegetation Monitoring and Research

Project Elements

1. Ground-based riparian vegetation monitoring
2. Imagery-based riparian vegetation monitoring at the landscape scale
3. Vegetation responses to Long-Term Experimental and Management Plan (LTEMP) flow scenarios
4. Vegetation management decision support

D. Geomorphic Effects of Dam Operations and Vegetation Management for Archaeological Sites

Project Elements

1. Geomorphic effects of dam operations and vegetation management
2. Cultural resources synthesis to inform Historic Preservation Plan

E. Nutrients and temperature as ecosystem drivers: understanding patterns, establishing links and developing predictive tools for an uncertain future

Project Elements

1. Temperature and nutrients in the Colorado River ecosystem – patterns, drivers, and improved predictions
2. Linking temperature and nutrients to metabolism and higher trophic levels

F. Aquatic Invertebrate Ecology (Food Base)

Project Elements

1. Influence of dam operations on the food base
2. Aquatic food base status at humpback chub monitoring locations
3. Terrestrial-aquatic linkages
4. Glen Canyon food base monitoring and research
5. Are undesirable shifts in the Glen Canyon prey base facilitating expansion of brown trout?

G. Humpback chub population dynamics throughout the Colorado River Ecosystem

Project Elements

1. Humpback chub population modelling
2. Annual spring/fall humpback chub abundance estimates in the lower 13.6 km of the Little Colorado River (LCR)
3. Juvenile chub monitoring near the LCR confluence
4. Remote PIT array monitoring in the LCR
5. Monitoring humpback chub aggregation relative abundance and distribution
6. Juvenile chub monitoring – West
7. Chute Falls translocations
8. Havasupai translocation feasibility (FY2020)
9. Backwater seining

H. Salmonid Research and Monitoring

Project Elements

1. Experimental flow assessment of trout recruitment
2. Rainbow trout and brown trout recruitment and outmigration model
3. Using early life history and physiological growth data from otoliths to inform management of rainbow trout and brown trout populations in Glen Canyon
4. Rainbow trout monitoring in Glen Canyon

I. Warm-Water Native and Non-Native Fish Research and Monitoring

Project Elements

1. System-wide native and invasive aquatic species monitoring
2. Improved early detection of warm-water invasive fish
3. Assess the risks warm-water nonnative fish pose to native fish

J. Socioeconomic Monitoring and Research in the Colorado River Ecosystem

Project Elements

1. Tribal perspectives for, and values of, resources downstream of Glen Canyon Dam: tribal member population survey
2. Applied decision and scenario analysis

K. Geospatial Science and Technology

Project Elements

1. Geospatial data management, processing and documentation
2. Access to geospatial data holdings
3. Remote monitoring systems and technological engineering



L. Remote Sensing Overflight in Support of Long Term Monitoring and LTEMP

Project Elements

1. Remote sensing overflight in support of long term monitoring and LTEMP

M. Administration

Project Elements

1. Administration
2. Logistics
3. IT



N. Hydropower Monitoring and Research

Project Elements

1. Hydropower monitoring and research



New USGS Flagstaff Science Building and Overhead Projection

- New GSA contract with City of Flagstaff by end of FY 2018, but as early as May
- New building expected to be completed within 18 months of contract signing
- Overhead does not increase until building is occupied
- FY 2019 overhead on GCDMAP funds: Current projection ~ 15.5%, pass-through rate = 3.0%
 - Rates unchanged from FY 2018

FY 2019 Budget Revisions

- Revised budgets using reduced overhead rate
- Eliminated use of Native Fish Consv. Fund
- Increased salaries to retain key capacities/staff (Projects A, C, E, G, H, I, K)
- Increased cooperative agreements to partially offset previous reductions (AGFD, USFWS)
- Request for support from Experimental Fund for work to help design future Trout Management Flows

FY2019 Revised Budget Summary

Project	Project Description	FY18-20 TWP	Revised
A	Streamflow, Water Quality, and Sediment Transport and Budgeting in the Colorado River Ecosystem	\$1,251,000	\$1,224,000
B	Sandbar and Sediment Storage Monitoring and Research	\$1,111,000	\$1,051,000
C	Riparian Vegetation Monitoring and Research	\$485,000	\$520,000
D	Geomorphic Effects of Dam Operations and Vegetation Management for Archaeological Sites	\$294,000	\$269,000
E	Nutrients and Temperature as Ecosystem Drivers: Understanding Patterns, Establishing Links and Developing Predictive Tools for an Uncertain Future	\$233,000	\$258,000
F	Aquatic Invertebrate Ecology	\$811,000	\$747,000
G	Humpback Chub Population Dynamics throughout the Colorado River Ecosystem	\$1,674,000	\$1,649,000
H	Salmonid Research and Monitoring	\$726,000	\$723,000
I	Warm-Water Native and Non-Native Fish Research and Monitoring	\$581,000	\$587,000
J	Socioeconomic Research in the Colorado River Ecosystem	\$252,000	\$237,000
K	Geospatial Science and Technology	\$231,000	\$279,000
L	Remote Sensing Overflight in Support of Long-term Monitoring and LTEMP	\$75,000	\$75,000
M	Administration	\$1,478,000	\$1,356,000
N	Hydropower Monitoring & Research	\$13,000	\$12,000
	GCMRC Total Budget	\$9,215,000	\$8,987,000

(Amounts rounded to nearest \$1,000)

FY 2019 Budget Summary

	From FY 18-20TWP	**Current Estimate
GCMRC Total Budget	\$9,215,000	\$8,987,000
	Planned CPI	*Actual CPI
Anticipated GCMRC AMP Funds (80%)	\$8,909,000	\$9,014,000
Over/Under Budget	(\$307,000)	\$27,000
Additional Funding:		
Native Fish Conservation Contingency Fund	\$294,000	\$0
Anticipated Carryover (From Previous FY)	\$175,000	\$175,000
Total Additional Funding	\$469,000	\$175,000
Total Planned to Carryover to FY2020	(\$162,000)	(\$162,000)
Remainder	\$0	**\$40,000
Experimental Fund:		
Trout Management Flow Design Work		\$120,000

Lake Powell: \$71,000 (Not Funded by GCDAMP). Waiting for funding obligation.

*Consumer Price Index (CPI) FY18 = 2.2%, **FY19 = 1.0 %

**** Preliminary, subject to revision**

(Amounts rounded to nearest \$1,000)

A wide-angle photograph of a deep, rugged canyon. The canyon walls are composed of layered red and brown rock, showing signs of erosion. A river with a greenish-brown hue flows through the bottom of the canyon. A small, sandy beach is visible on the right side of the river. The sky is overcast with grey clouds.

Questions?