

Development of a Budget Recommendation from the TWG to the AMWG

August 21, 2018

Seth Shanahan, TWG Chair

Triennial Budget and Work Plan Process¹

Month	Year-2 (2018)
January	Annual reporting meeting (1-2 days) followed by 1-day TWG meeting with a primary emphasis on reporting results/findings/scientific advances on previous work plan.
April	BAHG and TWG considers potential changes to the Fiscal Year 2 TWP based on criteria in section 2.7.
June	TWG recommends Fiscal Year 2 (2019) budget of TWP to AMWG.
August	AMWG recommends Fiscal Year 2 (2019) budget of TWP to SOI.

- Section 2.7 criteria
 - Scientific requirement or merit
 - Administrative needs
 - New initiatives

¹ Passed by TWG on 10/19/16

BAHG

- Leadership
 - Co-chairs – Carlee Brown and Shane Capron
- Roles and responsibilities
 - “...will help Reclamation and GCMRC develop and bring to the TWG budgets that are prepared for full TWG discussion...”
 - etc.
- Coordination
 - Conference calls on May 18 and 31

BAHG/TWVG Discussions

- Unanticipated funding available
 - Higher CPI, delay in higher overhead
- Suitability of bug flow monitoring
 - Drift sampling, substrate work
- Groundwork for TMF's
- Reinstigate reduced activities (some not all)
 - Trout monitoring in Glen Canyon
- Payments for incentivized harvest

TWG Motion Passed by Consensus

- The TWG recommends that the AMWG recommend for approval to the Secretary of the Interior, the Fiscal Year 2019 budget as described in the budget tables dated May 18, 2018 for BOR and June 22, 2018 for GCMRC and as revised by the TWG on June 25, 2018

RECLAMATION

Managing Water in the West

FY 2019 Proposed Budget and Workplan

**Adaptive Management Work Group Meeting
August 23-23, 2018**

Katrina Grantz

Bureau of Reclamation

Glen Canyon Dam Adaptive Management Program



U.S. Department of the Interior
Bureau of Reclamation

Where are we in the Triennial Work Plan Process?

FY 17

- Heavy lifting, develop and recommend the FY 18-20 TWP

FY 18

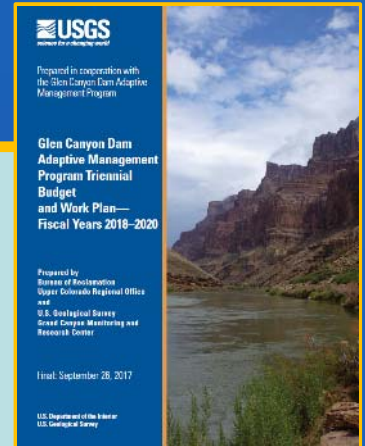
- Easy times, review, revise and recommend FY19 year of the TWP

FY 19

- Some work to do, do we need to change anything?

FY 20

- Heavy lifting, develop and recommend the FY 21-23 TWP



FY 19 Budget Planning

**Start with AMWG
recommended
FY 18-20 Budget and
Work Plan**

**Determine whether any
adjustments need to be
made for FY19
(e.g., changes in CPI,
changes in science,
carryover, adjustments in
implementation)**



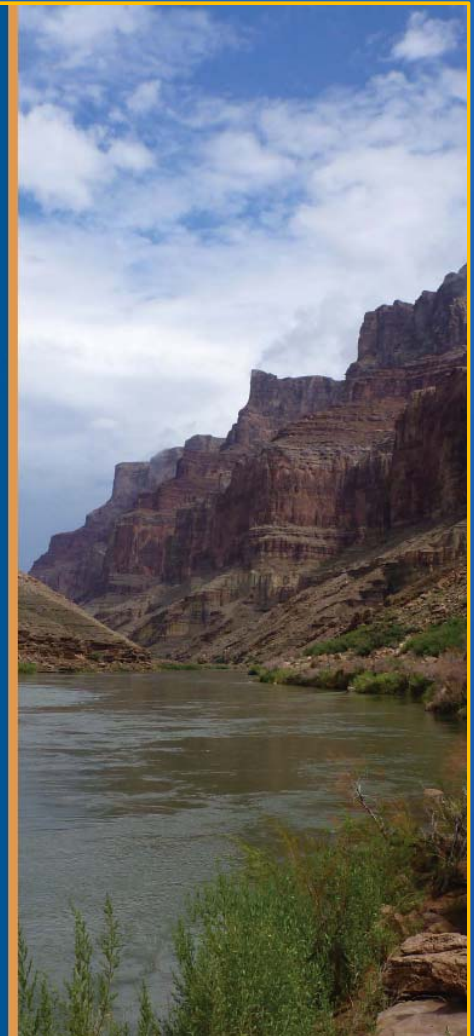
Prepared in cooperation with
the Glen Canyon Dam Adaptive
Management Program

**Glen Canyon Dam
Adaptive Management
Program Triennial
Budget
and Work Plan—
Fiscal Years 2018–2020**

Prepared by
Bureau of Reclamation
Upper Colorado Regional Office
and
U.S. Geological Survey
Grand Canyon Monitoring and
Research Center

Final: September 26, 2017

U.S. Department of the Interior
U.S. Geological Survey



GCDAMP Budget FY 2019

Total: Reclamation and GCMRC

Reclamation Adaptive Management Program Budget Summary FY2019				
		2018	2019	2020
	<i>CPI assumption</i>	2.2%	1.0%	1.0%
	GCDAMP Total	\$ 11,156,449	\$ 11,268,013	\$ 11,380,694
	Reclamation Total (20%)	\$ 2,231,290	\$ 2,253,603	\$ 2,276,139
	GCMRC Total (80%)	\$ 8,925,159	\$ 9,014,410	\$ 9,104,555

* Values adjusted to 2.2% CPI in FY18

AMWG and TWG

Reclamation Adaptive Management Program Budget Summary FY2019				
		2018	2019	2020
A	Adaptive Management Work Group	\$ 433,100	\$ 434,400	\$ 440,300
	<i>percent of BOR budget</i>		19%	19%
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
	<i>percent of BOR budget</i>		9%	9%
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 (TWG Chair - \$17,914)	\$ 25,300	\$ 25,553	
	(trout spring monitoring trip - \$7,639)	\$ 25,300		\$ 25,809
B.5	TWG Other	\$ 10,120	\$ 10,221	\$ 10,323

* Values adjusted to 2.2% CPI in FY18

Reclamation Administration

Reclamation Adaptive Management Program Budget Summary FY2019		2018	2019	2020
C	Program Admin, ESA Compliance, and Mgmt Actions	\$ 957,700	\$ 995,720	\$ 1,044,351
	<i>percent of BOR budget</i>		44%	46%
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 (end of FY18 projected balance = ~\$1.8M)			
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

Reclamation Adaptive Management Program Budget Summary FY2019		2018	2019	2020
D	Cultural Resources	\$ 638,000	\$ 619,000	\$ 585,000
	<i>percent of BOR budget</i>		27%	26%
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
	NHPA section 106 Contingency Fund <i>(end of FY18 projected balance = ~\$29K)</i>			
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 FY2019				
		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		\$ 2,231,290	\$ 2,253,603	\$ 2,276,139

* Values adjusted to 2.2% CPI in FY18



GCMRC FY 2019 Proposed Budget

**Adaptive Management Work Group Meeting
August 22-23, 2018**

Scott VanderKooi

Southwest Biological Science Center

Grand Canyon Monitoring and Research Center

U.S. Department of the Interior
U.S. Geological Survey

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



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

- GSA and City of Flagstaff reached an understanding regarding lease rates in August
- USGS postponing signing lease until clarity on budget situation is achieved
- Tentative occupancy mid to late FY2020, overhead does not increase until building is occupied.
- FY 2019 overhead on GCDAMP funds: Current projection ~ 15.5%, pass-through rate = 3.0%

FY 2019 Proposed Budget Revisions

- Revised budgets using updated overhead rate
- Eliminated use of Native Fish Conservation Contingency 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)
- Added Lees Ferry monitoring trip per TWG recommendation – funded by Reclamation
- Added project to inform design of potential Trout Management Flows



FY2019 Proposed Budget By Project

Project	Project Description	Original FY18-20 TWP	Proposed*
A	Streamflow, Water Quality, and Sediment Transport and Budgeting in the Colorado River Ecosystem	\$1,251,097	\$1,200,563
B	Sandbar and Sediment Storage Monitoring and Research	\$1,110,925	\$1,050,430
C	Riparian Vegetation Monitoring and Research	\$485,251	\$515,457
D	Geomorphic Effects of Dam Operations and Vegetation Management for Archaeological Sites	\$293,737	\$269,393
E	Nutrients and Temperature as Ecosystem Drivers: Understanding Patterns, Establishing Links and Developing Predictive Tools for an Uncertain Future	\$232,715	\$253,773
F	Aquatic Invertebrate Ecology	\$811,143	\$746,223
G	Humpback Chub Population Dynamics throughout the Colorado River Ecosystem	\$1,674,368	\$1,636,689
H	Salmonid Research and Monitoring	\$725,679	\$717,393
I	Warm-Water Native and Non-Native Fish Research and Monitoring	\$581,299	\$580,977
J	Socioeconomic Research in the Colorado River Ecosystem	\$252,145	\$237,351
K	Geospatial Science and Technology	\$230,728	\$273,590
L	Remote Sensing Overflight in Support of Long-term Monitoring and LTEMP	\$75,000	\$75,000
M	Administration	\$1,477,793	\$1,356,209
N	Hydropower Monitoring & Research	\$13,482	\$12,365
GCMRC Total Budget		\$9,215,361	\$8,925,412



*W/ revised CPI and overhead rates

FY 2019 Proposed Budget Summary

	Original FY18-20 TWP	Proposed
GCMRC Total Budget	\$9,215,361	\$8,925,412
Anticipated GCMRC AMP Funds (80%)*	\$8,908,567	**\$9,023,212
Over/Under Budget	(\$306,794)	**\$97,800
Additional Funding:		
Native Fish Conservation Contingency Fund	\$294,000	\$0
Anticipated Carryover (From Previous FY)	\$174,508	**\$174,508
Sum of Over/Under Budget + Additional Funding	\$161,714	**\$272,308
Funds Planned to Carryover to FY2020	(\$161,713)	**(\$161,713)
Remainder	\$1	**\$110,595
New Projects:		
Trout Management Flow Design Work		**\$110,595

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

**** Preliminary, subject to revision**

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



Questions?

