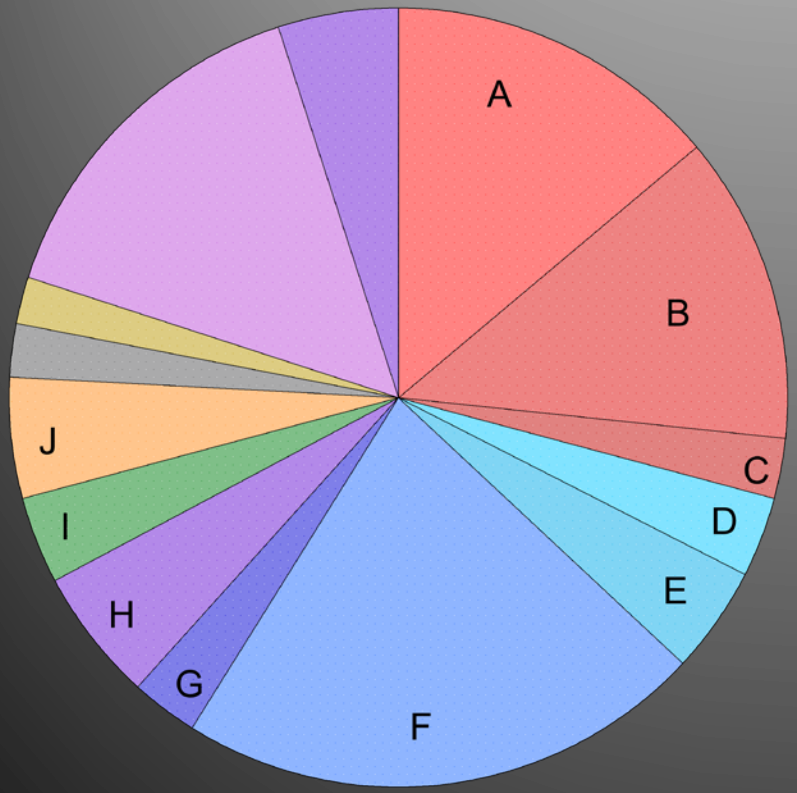
GCMRC Budget Update

Jack Schmidt
US Geological Survey
Grand Canyon Monitoring and Research Center

FY 2013

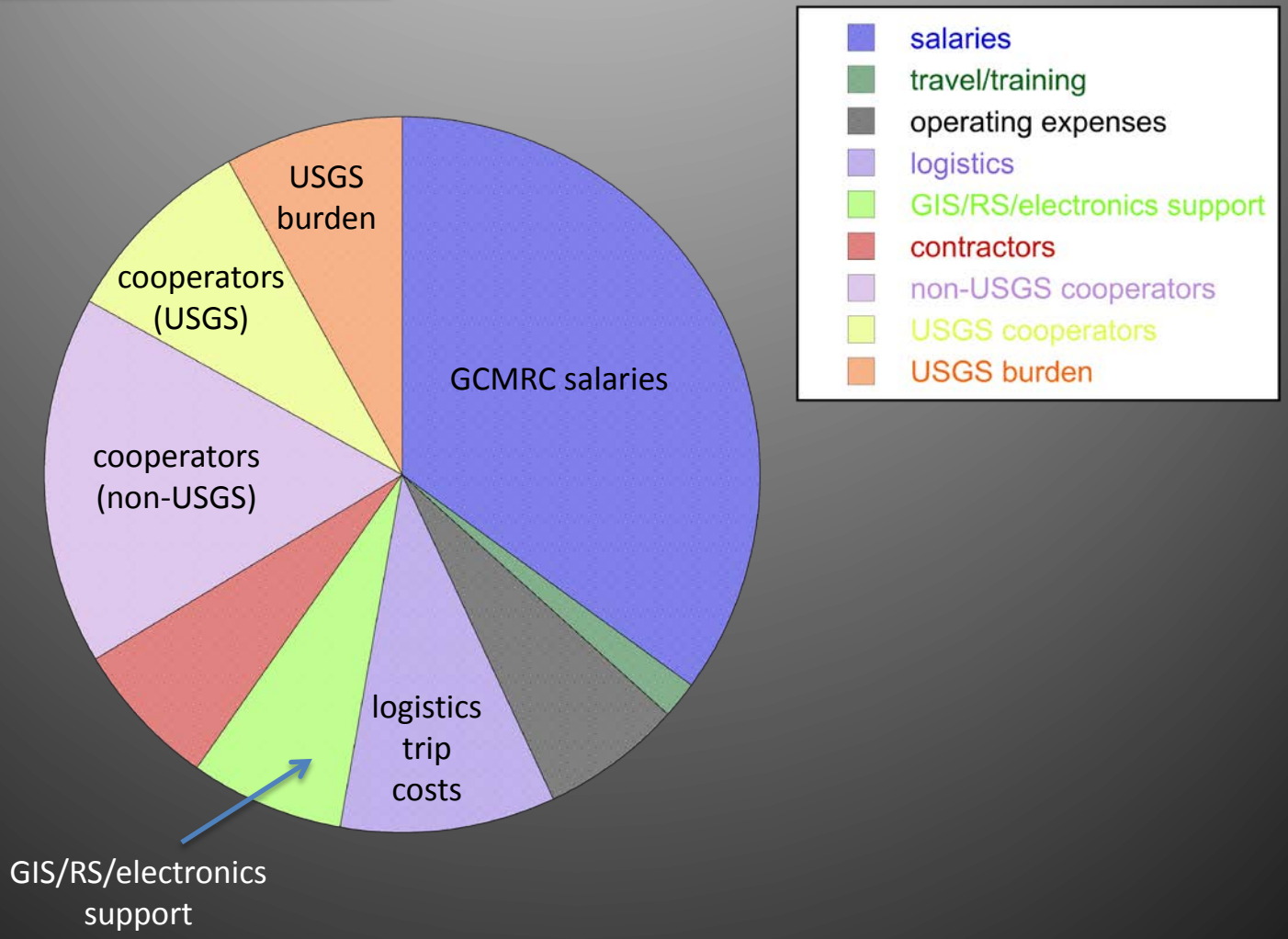
FY 13: $10,447,000 *[$10,441,000]*



- A. Sandbars and sediment storage ....
- B. Streamflow, water quality, sediment
- C. Lake Powell
- D. Mainstem humpback chub aggregations
- E. Humpback chub early life history
- F. Monitoring native and nonnative fishes
- G. Interactions between trout and native fish
- H. Factors limiting growth of Rainbow Trout
- I. Riparian vegetation monitoring
- J. Cultural resources monitoring and research
- Economist and support
- Independent review
- USGS administration
- quadrennial overflight

FY 2013

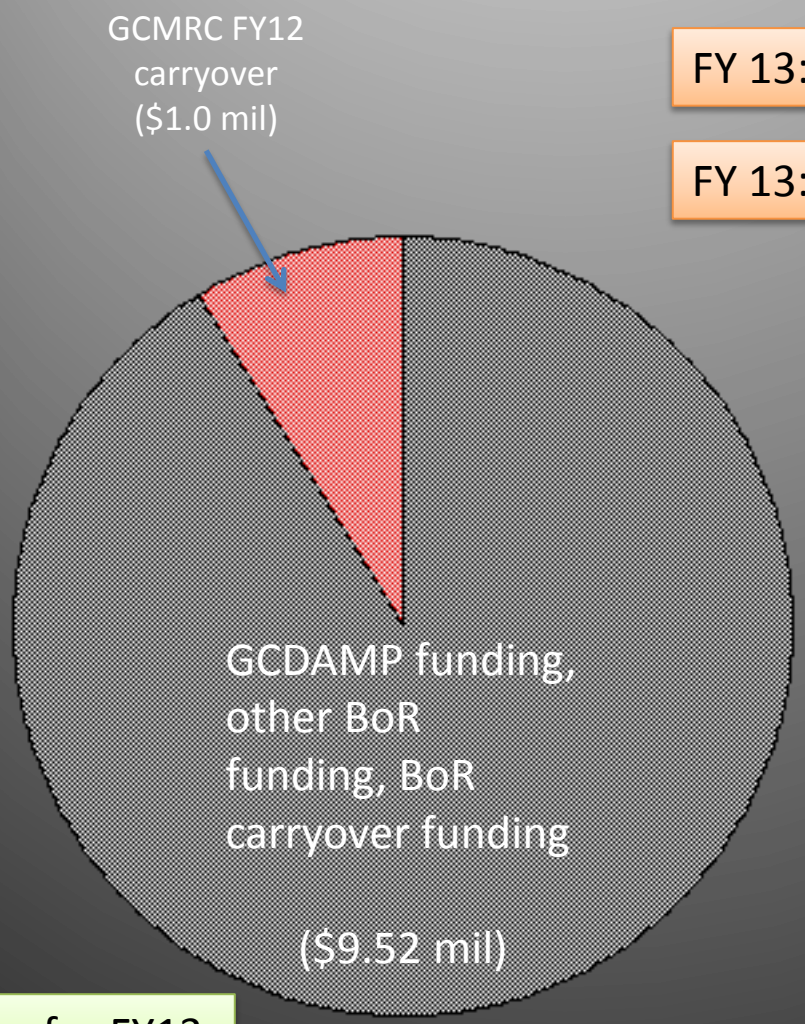
FY13: general budget categories



FY 2013

FY 13: $10,493,000 (budgeted)

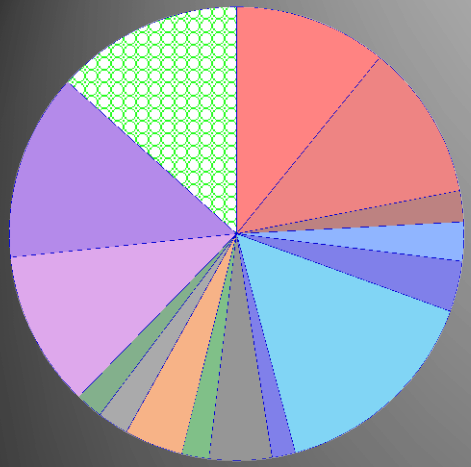
FY 13: $9,962,000 (actual)

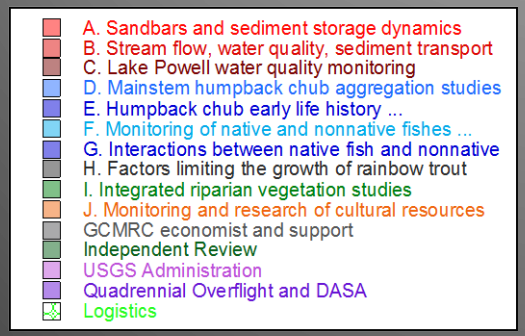


Sources of funding for FY13

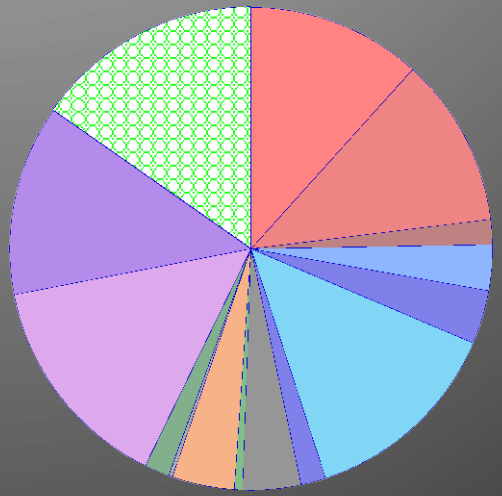
USGS
science for a changing world

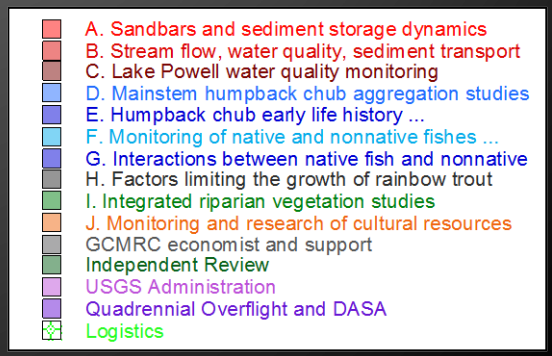
Budgeted Expenses
FY 13



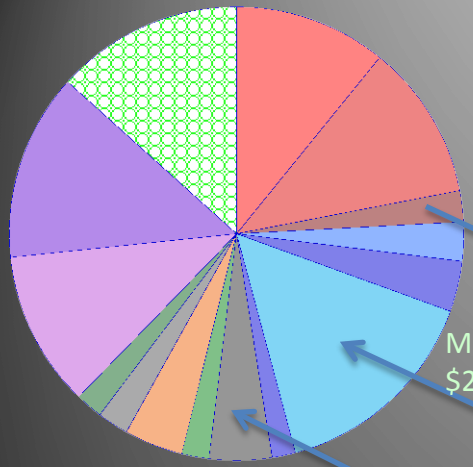


Actual Expenses
FY 13





Budgeted Expenses FY 13



Lake Powell:
$70,000 under

Monitoring:
$208,000 under

Factors:
$67,000 under

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- B. Stream flow, water quality, sediment transport
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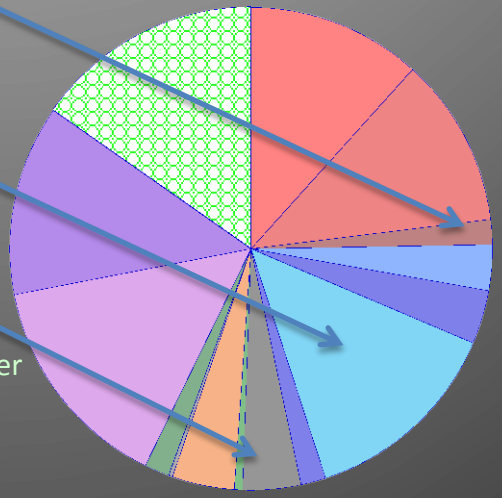
- F. Monitoring of native and nonnative fishes ...
- G. Interactions between native fish and nonnative
- H. Factors limiting the growth of rainbow trout
- I. Integrated riparian vegetation studies
- J. Monitoring and research of cultural resources
- GCMRC economist and support
- Independent Review
- USGS Administration
- Quadrennial Overflight and DASA
- Logistics

Actual Expenses FY 13



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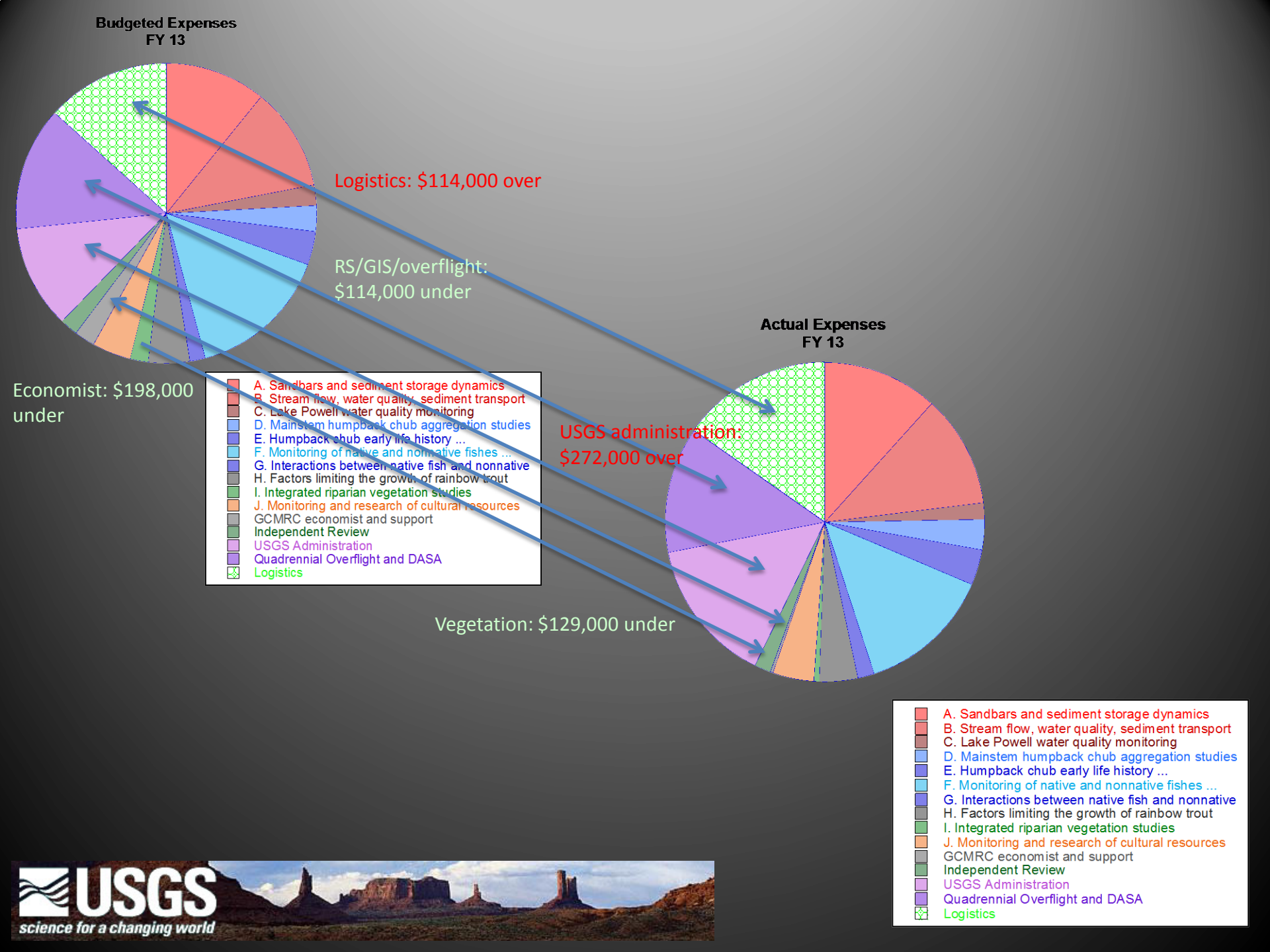
Budgeted Expenses
FY 13
Logistics: $114,000 over
RS/GIS/overflight:
$114,000 under
Economist: $198,000
under
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Independent Review
USGS Administration
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Logistics
Actual Expenses
FY 13
USGS administration:
$272,000 over
Vegetation: $129,000 under
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USGS
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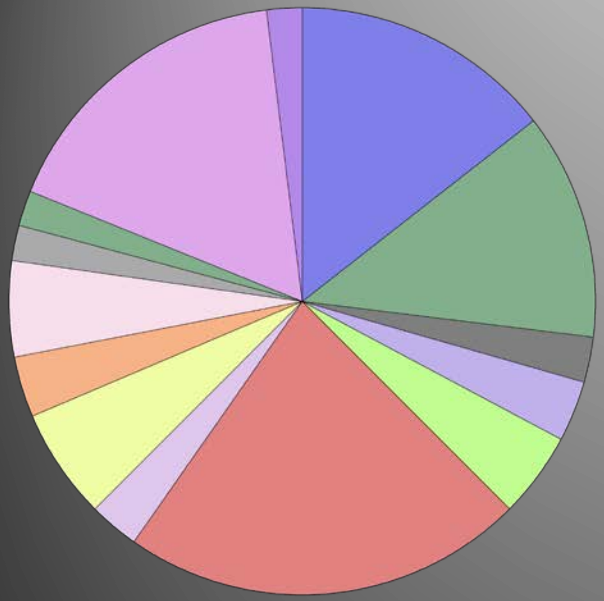
FY 2014



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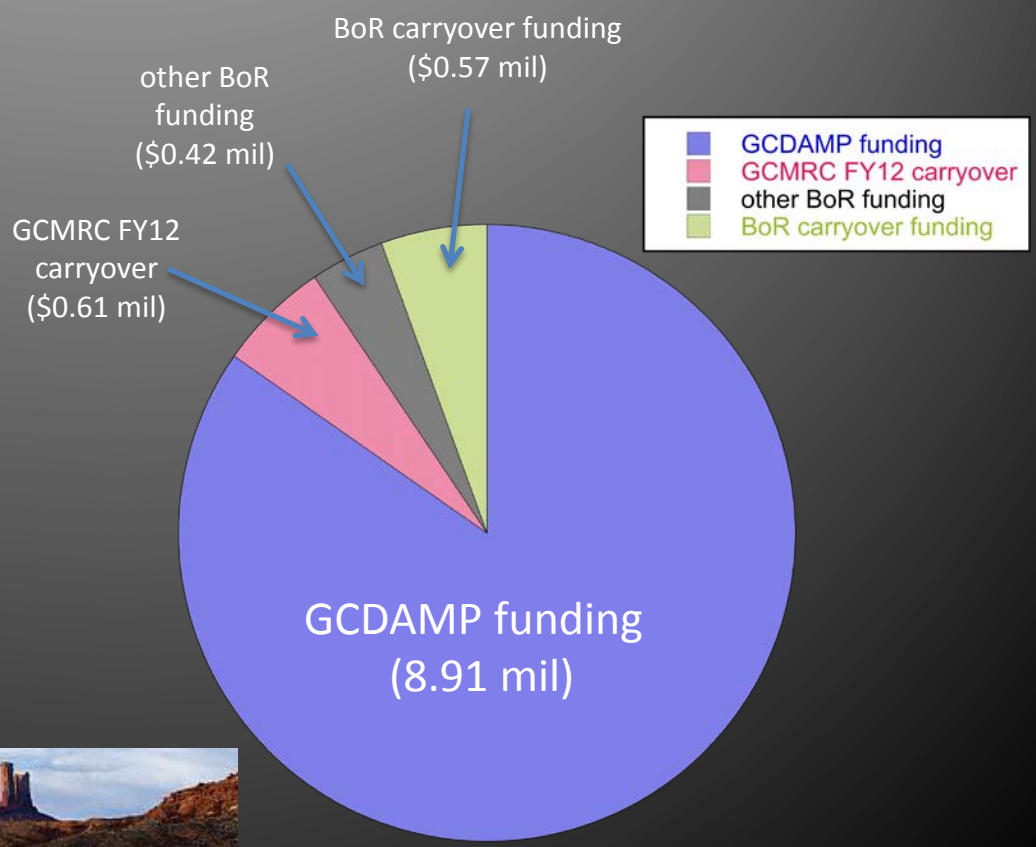
FY14 -- $10,518,400



Extra funding to be used in FY14:

F. Monitoring fish: $190,000

K. Economist: $200,000

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moving forward

Some Questions/Issues to Ponder in Developing FY15/16 BWP

- Relation among FY13/14 BWP projects, 2004 Priority Science Questions, HFE Protocol EA, and NNFC EA. **Do the EAs and the associated FoNSIs redefine how GCMRC addresses the 2004 Priority Science Questions**?
- Have the 2004 Priority Science Questions been subsumed by the LTEMP process? **How is the development of the FY15/16 BWP to be guided by the LTEMP EIS?**
- **Have the expectations of the AMWG/TWG regarding monitoring and research needs been redefined?**

Status of 2004 Priority Science Questions

moving forward

1) **Why are humpback chub not thriving, and what can we do about it? How many humpback chub are there and how are they doing?**
   a) Decade long focus on humpback chub population estimation and on humpback chub ecology indicates substantial improvement in humpback chub population
   b) FY13/14 BWP has a large focus on humpback chub ecology (4 projects)
2) **What is the best flow regime?**
   a) This is the focus of the HFE Protocol EA and of the LTEMP EIS now being planned.
3) **What will happen when we test or implement a TCD? How should it be operated? …**
   1) Temperature has been a major focus of GCMRC research regarding the food base and interactions between trout and chub.
   2) Temperature issues are being evaluated within the LTEMP EIS process.
4) **What is the impact of [fine] sediment loss and what should we do about it?**
   1) Project A is a comprehensive investigation of the distribution of fine sediment, and its results are being linked with resource attributes
   2) Other project reports linking fine sediment loss with campsite changes are overdue; specific linkages are being addressed in reports now being finalized.
5) **Which cultural resources, including TCPs, are within the APE, which should we treat, and how do we best protect them?**
   1) Project J3 specifically is linked with APE designation.
   2) Monitoring of specific cultural properties remains a controversial issue

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Questions, Expectations, Concerns

moving forward

Secretarial Directive concerning Environmental Assessments for (1) High-flow Experimental Releases, and (2) Non-native Fish Control (May 23, 2012: "I direct … USGS … to undertake coordinated implementation of the actions and commitments described and analyzed in the Environmental Assessments …")

2011 Desired Future Conditions Ad Hoc Group
(April 30, 2012: SoI directed AMWG "to utilize these DFCs to inform and guide the AMWG's future considerations")

General Science Plans for the Environmental Assessments

Assistant Secretary's Guidance Concerning Research and Monitoring Priorities in GCMRC science planning (March 31, 2011, memo)

Core Monitoring Plan (February 18, 2011, draft)

Monitoring and Research Plan (April 2009)

Priority Questions and Program Goals (August 2004)

moving forward

FY 13/14 Biennial Work Plan

spring/summer/fall 2013: *first field season*

fall/winter 2013: *data analysis and interpretation*

winter 2014: *Annual Reporting Meeting (January) focuses on interpretation of 2013 field season data in a broad scientific and management context*

spring/summer/fall 2014: *second field season*

fall/winter 2014: *data analysis and report preparation*

winter 2015: *Annual Reporting Meeting (January) focuses on preliminary final findings of FY 13/14 BWP*

FY 15/16 Biennial Work Plan

winter 2014: *receive stakeholder input based on Annual Reporting Meeting; work with AMWG/TWG and develop preliminary FY 15/16 work plan*

spring 2014: *BWP development in collaboration with TWG and TWG/BAHG*

summer 2014: *refinement of BWP; consideration by AMWG (August)*

fall/winter 2014: *budget/contract finalization*

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Some Thoughts on Moving Forward in Monitoring and Research

B. Stream flow, water quality, and sediment transport … (no significant change)

A. Sandbars and sediment storage dynamics … (no significant change)

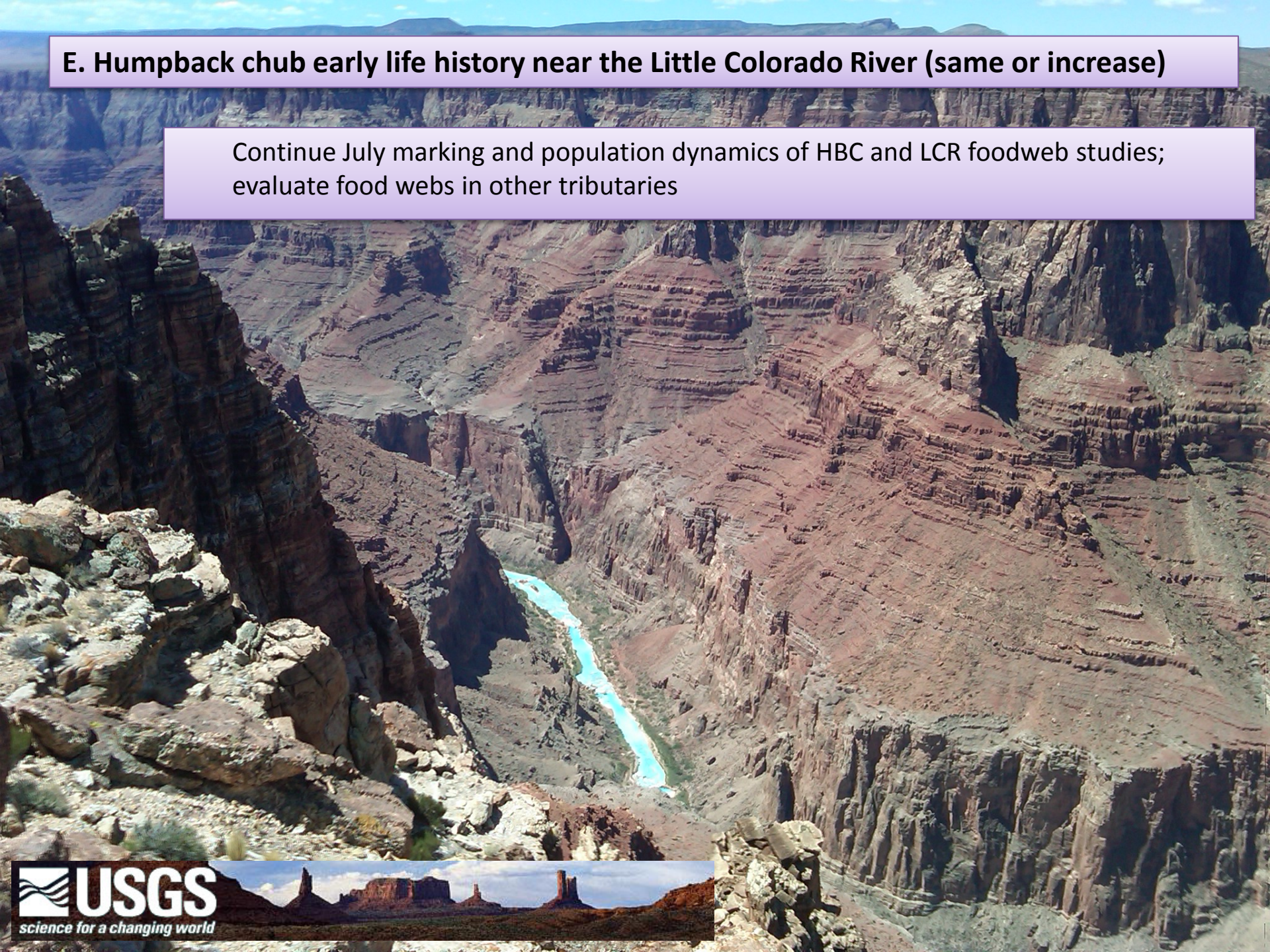
C. Water quality monitoring of Lake Powell and Glen Canyon Dam releases [uncertain]

D. Mainstem humpback chub aggregation studies (decrease)

Return to one trip per year; population estimation effort done; continue mainstem production and rear

E. Humpback chub early life history near the Little Colorado River (same or increase)

Continue July marking and population dynamics of HBC and LCR foodweb studies; evaluate food webs in other tributaries



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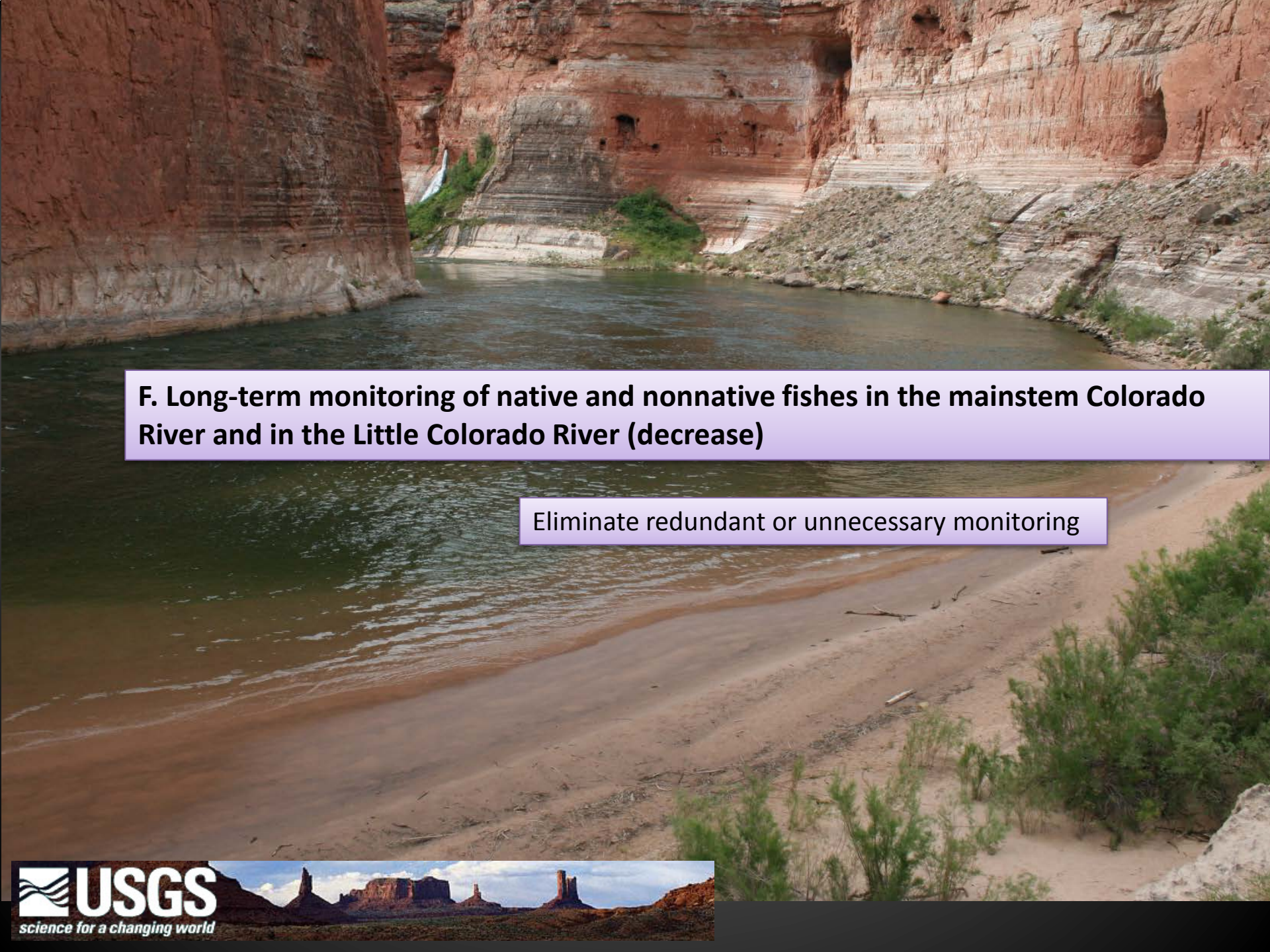

F. Long-term monitoring of native and nonnative fishes in the mainstem Colorado River and in the Little Colorado River (decrease)

Eliminate redundant or unnecessary monitoring

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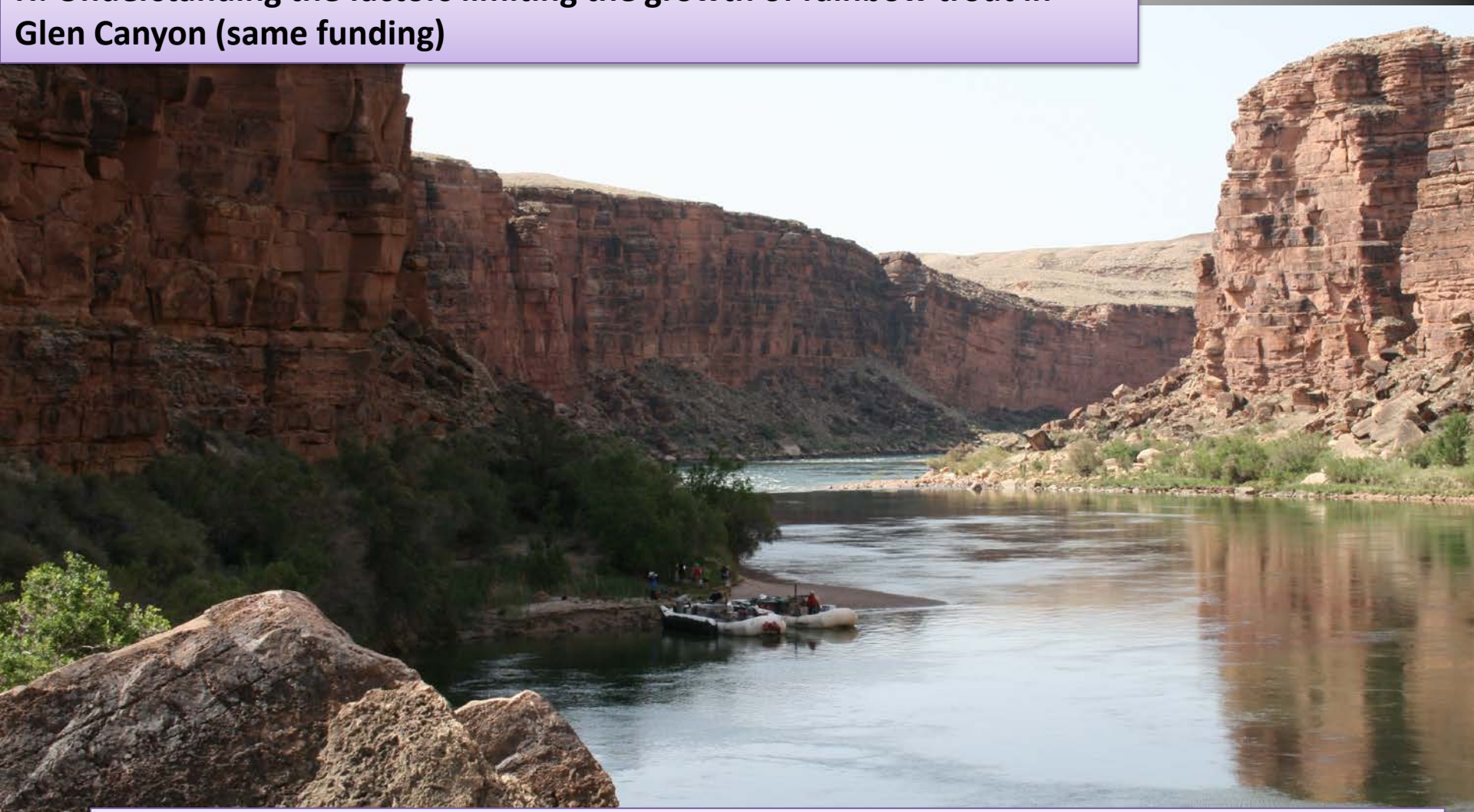
G. Interactions between native fish and nonnative trout (equal or increase)

Funding projection: Equal or increase

Continue or expand laboratory experiments and pilot brown trout removals with NPS

H. Understanding the factors limiting the growth of rainbow trout in Glen Canyon (same funding)



Trout growth trial and bioenergetics modeling should be done; one more year for tailwater synthesis; continue algae production modeling and efforts to characterize invertebrate abundance, distribution, and drift

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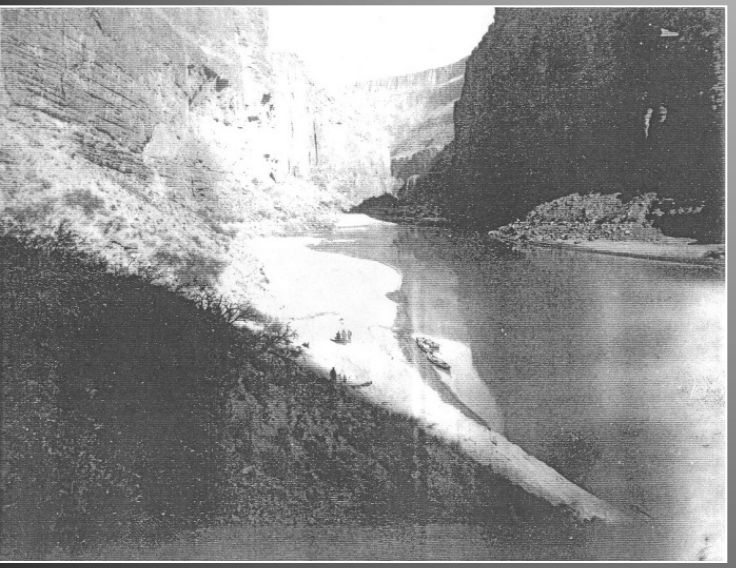
I. Integrated riparian vegetation studies (same or uncertain)



Continue monitoring, model development, and remotely sensed data analysis

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J. Cultural Resources (same or uncertain)

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Socio-Economic Resources

GCMRC economist and research support (increase)

Independent Reviews (shift to BoR)

Logistics (same or decrease)

USGS/GCMRC overhead/administration (increase)