Glen Canyon Dam Adaptive Management Work Group
Agenda Item Information
February 9-10, 2011

Agenda Item

Grand Canyon Monitoring and Research Center (GCMRC) Updates – Informational Items

Action Requested

✓ Information item only; we will answer questions but no action is requested.

Presenters

This item will be presented as a written report only with no presentation. However, time will be set aside for questions with regard to this item as well as other written reports.

Previous Action Taken

N/A

Relevant Science

See below.

Background Information

Ecosystem Modeling Workshop (October 2010)

The last eco-modeling workshop was convened October 13-15, 2010 at Saguaro Lake Ranch in Mesa, AZ and was mainly focused on continued aquatic modeling of the Lees Ferry tailwaters reach and the confluence reach near the Little Colorado River. The workshop was led by Dr. Carl Walters (GCMRC senior ecologist) and attended by most of the GCMRC biology program staff, aquatic food web and fisheries cooperators, and a number of the TWG representatives.

Attached are preliminary points from the workshop. (See Attachment 1, starting on page 5.)

For more information, contact Ted S. Melis (tmelis@usgs.gov, 928.556-7282).

Workshops and Activities Update for the Year

Knowledge Assessment II Workshops

GCMRC will convene two knowledge assessment workshops, the first with experts (workshop I) and the second with TWG (workshop II), during spring and summer 2011 to review and revise the 2005-6 knowledge assessment draft report on the basis of new findings derived from the 2007-11 MRP projects.

For more information, contact: Ted S. Melis (tmelis@usgs.gov, 928.556-7282).

PEP - Integrated Quality-of-Water, Lake Powell & Food web research Projects

A Protocol Evaluation Panel review is planned for summer 2011 and will be coordinated between the PHYS/MODELING & SURVEY and BIOLOGY programs at the GCMRC. Dates for the PEP have not yet been determined.

For more information, contact: Ted S. Melis (tmelis@usgs.gov, 928.556-7282).

Cultural Resources Monitoring R&D Review Workshop

At the request of Grand Canyon National Park, GCMRC is organizing a one day workshop in mid-February to review results of the Phase I work of the Cultural Monitoring R&D project and the plan for implementation of Phase II (pilot monitoring) in FY2011-2013. The workshop will review accomplishments of the project to date, will assess whether the proposed pilot program meets previously identified needs for monitoring under GCPA and NHPA, and will explore potential additional methods to address monitoring information needs that may not be covered with the currently proposed pilot program. Tentative dates for the workshop are February 15 or 16 (or both days), 2011.

For more information, contact Helen Fairley (928.556-7285, hfairley@usgs.gov).

Economics 101 training

A one-day basic economics training workshop for TWG and AMWG members is scheduled for March 7, 2011 in Phoenix at the Arizona Water Resources Department Verde Conference Room. The purpose of this workshop is to provide TWG and AMWG members with a basic introduction to the concepts and rationales underlying socioeconomic studies in general, to clarify common terms and methods, and to provide an overview of how various types of analyses (market, non-market, non-use studies) could be to interpreted and applied to inform AMP decisions. It is designed to prepare participants to effectively engage in future discussions regarding the implementation of studies and interpretation of study results. A brief overview of hydropower economic issues and assessment methods will be included in this workshop.

For more information, contact Helen Fairley (928.556-7285, hfairley@usgs.gov).

Tribal Integration Workshop

A two-day Tribal Integration Workshop will be held in April or May 2011. The purpose of this workshop is to review and discuss existing tribal monitoring programs in relation to the goals and objectives of core monitoring for the Adaptive Management Program, and to develop a plan for integrating current tribal monitoring programs within the AMP core monitoring framework, where feasible and appropriate.

For more information, contact Helen Fairley (928.556-7285, hfairley@usgs.gov).

Sociocultural Program Update

For more information, contact Helen Fairley, GCMRC Sociocultural Program Manager (hfairley@usgs.gov, 928.556-7285).

Cultural Monitoring Research and Development Project: Project Status and 2011 Plan

After a two-year delay due to NPS permitting concerns in FY2008 and FY2009, GCMRC resumed and completed fieldwork on Phase I of the Cultural Monitoring Research and Development (R&D) Project in FY2010.

In April and September 2010, USGS staff from GCMRC and Menlo Park, CA completed data collection using terrestrial lidar surveys at ten sites (AZ C:5:31, AZ:C:13:006, AZ C:13:99, AZ C:13:336, AZ C:13:321, AZ C:13:009(B), AZ C:13:346, AZ C:13:348, AZ B:10:225. and AZ G:3:72). In addition to continuing to monitor topographic change due to erosion and deposition of sediment, the 2010 work focused on exploring the use of lidar for monitoring changes in archaeological structures, surface artifact distributions, and biological soil crusts – all of which are important indicators of archaeological site stability and change.

In addition to the lidar work, GCMRC continued to operate and maintain 11 weather stations and 14 sand traps to track how sediment derived from fluvial deposits and local weather events affect the archeological sites. Since the last AMWG update in August 2010, another open file report has been published and several additional reports are currently undergoing independent peer-review; a complete list of publications and unpublished reports resulting from this project is attached below.

Phase II of the cultural monitoring project, which is the pilot monitoring phase of this project, is scheduled to begin in 2011. The National Park Service has requested, and GCMRC has agreed to host, a workshop to review the Phase I accomplishments and Phase II plan before initiating Phase II fieldwork. This workshop is tentatively scheduled for Feb 15-16, 2011. GCMRC has a cooperative agreement with Dr. Francis Smiley of NAU to assist with the selection of a stratified random sample of sites to be monitored during Phase II. The sample will be stratified to ensure that it represents the full range of site types and geomorphic settings in the Colorado River ecosystem. The pilot program, which is anticipated to run from FY2011 through 2013, will allow GCMRC to refine the sample size necessary for characterizing ecosystem-wide site conditions, given the wide diversity of site types and geomorphic conditions in the CRE. The pilot program will also be used to address logistical issues related to monitoring a broader cross-section of archaeological sites throughout the CRE.

In addition to the workshop to review the cultural R&D project, GCMRC has committed to host a tribal monitoring integration workshop in spring 2011. Previously, this workshop was scheduled to occur in fall 2010, but due to several other workshops being scheduled by USGS and Reclamation to assist with the EA development process, GCMRC decided to postpone this one to April or May 2011. This workshop will focus on integration of tribal monitoring programs within the AMP's overall goals and objectives for core monitoring. It may also address the integration of tribal perspectives in Reclamation's Section 106 program. More information about both of these workshops will be forthcoming shortly.

Cultural Monitoring R&D Project: Summary of Publications & Unpublished Reports

Cultural Program Publications in FY2010

Draut, A.E., Sondossi, H.A., Hazel, J.E., Jr.,, Andrews, T., Fairley, H.C., Brown, C.R., and Vanaman, K.M., 2009, 2008 Weather and aeolian sand-transport data from the Colorado River corridor, Grand Canyon, Arizona: U.S. Geological Survey Open-File Report 2009-1190, 98 p., accessed on August 23, 2010, at http://pubs.usgs.gov/of/2009/1190/.

Draut, A.E., Hazel, J.E., Jr., Fairley, H.C., and Brown, C.R., 2010, Aeolian reworking of sandbars from the March 2008 Glen Canyon Dam high-flow experiment in Grand Canyon, *in* Melis, T.S., Hamill, J.F., Bennett, G.E., Coggins, L.G., Jr., Grams, P.E., Kennedy, T.A., Kubly, D.M., and Ralston, B.E., eds., Proceedings of the Colorado River Basin Science and Resource Management Symposium, November 18-20, 2008, Scottsdale, Arizona: U.S. Geological Survey Scientific Investigations Report 2010-5135, 325-331 p., accessed on July 15, 2010, at http://pubs.usgs.gov/sir/2010/5135/.

Draut, A.E., Sondossi, H.A., Dealy, T.P., Hazel, J.E., Jr., Fairley, H.C., and Brown, C.R., 2010, 2009 weather and aeolian sand-transport data from the Colorado River corridor, Grand Canyon, Arizona: U.S. Geological Survey Open-File Report 2010-1166, 98 p. http://pubs.usgs.gov/of/2010/1166/.

Fairley, H.C., and Sondossi, H., 2010, Applying an ecosystem framework to evaluate archaeological site condition along the Colorado River in Grand Canyon National Park, Arizona, *in* Melis, T.S., Hamill, J.F., Bennett, G.E., Coggins, L.G., Jr., Grams, P.E., Kennedy, T.A., Kubly, D.M., and Ralston, B.E., eds., Proceedings of the Colorado River Basin Science and Resource Management Symposium, November 18-20, 2008, Scottsdale, Arizona: U.S. Geological Survey Scientific Investigations Report 2010-5135, 333-341 p., accessed on July 15, 2010, at http://pubs.usgs.gov/sir/2010/5135/.

Documents prepared in FY10 currently undergoing review or revision

Draut, A., (in review), Effects of River Regulation on Aeolian Landscapes. MS currently undergoing journal review.

Hereford, R., Bennett, G.E., and Fairley, H.C., (in review), Precipitation Variability of the Grand Canyon Region, 1893 to 2009, and Its Effects on Gullying of Holocene Terraces and Associated Archaeological Sites in Grand Canyon: U.S. Geological Survey Open-File Report 20XX-XXXX.

Schott, N. D., Hazel, J.E., Fairley, H.C., Kaplinski, M., and Parnell, R.A., (in review), Gully Monitoring in Grand Canyon National Park, Arizona, 1996 to 2010, with Emphasis on the March 2008 High Flow Experiment: U.S. Geological Survey Open-File Report 20XX-XXXX.

Sondossi, H.A. and Fairley, H.C., (in revision) An Analysis of Potential for Glen Canyon Dam Releases to Inundate 242 Cultural Sites in Grand Canyon National Park, Arizona: U.S. Geological Survey Open-File Report 20XX-XXXX

Previous Publications and Reports (2006-2009)

Collins, B.D., Brown, K.B., and Fairley, H., 2008. Evaluation of Terrestrial LIDAR for Monitoring Geomorphic Change at Archaeological Sites in Grand Canyon National Park, Arizona: U.S. Geological Survey, Open File Report 2008-1384, 60 p. [http://pubs.usgs.gov/of/2008/1384/].

Collins, B.D. and Kayen, R., 2006. Applicability of Terrestrial LIDAR Scanning for Scientific Studies in Grand Canyon National Park, Arizona, U.S. Geological Survey, Open File Report 2006-1198, 27p, Menlo Park, California, [http://pubs.usgs.gov/of/2006/1198/].

Collins, B.D., Minasian, D., and Kayen, R., 2009. Topographic Change Detection at Select Archaeological Sites in Grand Canyon National Park, Arizona, 2006-2007: U.S. Geological Survey, Scientific Investigations Report 2009-5116, 97p. [http://pubs.usgs.gov/sir/2009/5116/].

Draut, A.E., Andrews, T., Fairley, H.C., and Brown, C.R., 2009, 2007 Weather and aeolian sand-transport data from the Colorado River corridor, Grand Canyon, Arizona: U.S. Geological Survey Open-File Report 2009-1098, 110 p. [http://pubs.usgs.gov/of/2009/1098/].

Draut, A.E., Sondossi, H.A., Hazel, J.E. Jr., Andrews, T.A., Fairley, H.C., Brown, C.R., and Vanaman, K.M., 2009, 2008 weather and aeolian sand-transport data from the Colorado River corridor, Grand Canyon, Arizona: U.S. Geological Survey Open-File Report 2009-1190. [http://pubs.usgs.gov/of/2009/1190/].

Fairley, H.C. and Sondossi, H., 2010, Applying an Ecosystem Framework to Evaluate Archaeological Site Condition along the Colorado River in Grand Canyon National Park, Arizona, *In* Melis, T.S., Hamill, J.F., Coggins, L.G., Jr., Grams, P.E., Kennedy, T.A., Kubly, D.M., and Ralston, B.E., eds., Proceedings of the Colorado River Basin Science and Resource Management Symposium, November 18-20, 2008, Scottsdale, Arizona. U.S. Geological Survey Scientific Investigations Report 2010-5135, p. 333-341.

Unpublished Reports

Leap, L., n.d., Fiscal Year 2007 Report for Interagency Agreement between National Park Service, Grand Canyon National Park, and the U.S. Geological Survey, Grand Canyon Monitoring and Research Center to Collaborate in the Development of Long-Term Monitoring Protocols for Archaeological Resources of the Colorado River Corridor in Grand Canyon that may be Affected by the Operation of Glen Canyon Dam. Draft report submitted October 3, 2008 to U.S. Geological Survey Grand Canyon Monitoring and Research Center, Flagstaff.

O'Brien, G. and Pederson, J., 2009, Geomorphic Attributes Of 232 Cultural Sites Along The Colorado River In Grand Canyon National Park, Arizona. Final report dated July 20, 2009. Submitted by Department of Geology, Utah State University, Logan, to U.S. Geological Survey, Grand Canyon Monitoring and Research Center, Flagstaff.

O'Brien, G. and Pederson, J., 2009, Gully Erosion Processes and Parameters at Six Cultural Sites Along the Colorado River in Grand Canyon National Park, Arizona. Final draft report dated July 20, 2009, submitted by Department of Geology, Utah State University, Logan, to U.S. Geological Survey, Grand Canyon Monitoring and Research Center, Flagstaff.

Attachment 1

Food Web Presentations

- Discussion about basal resources of food web and energy flows to native & nonnative fish (Rosi-Marshall, Kennedy, Cross, Baxter)
- Discussed New Papers on New Zealand Mudsnail (Cross et al., 2010) and 2008 HFE response (Cross et al. in review)
- New Production estimates from team were incorporated into ecopath modeling (Walters et al.)
- Discussions about Native and Non Native fish interactions & competition for 3 high quality food items

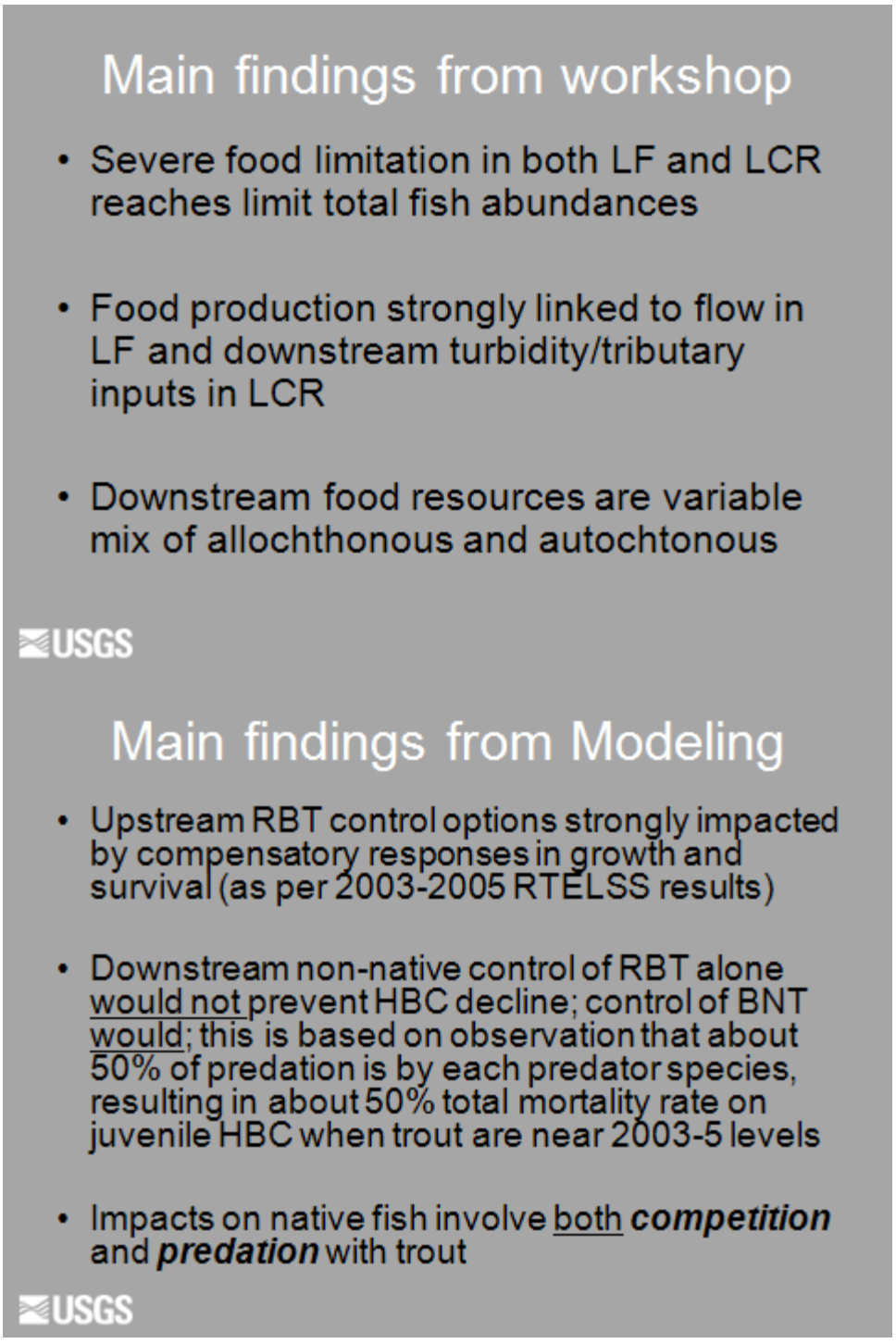
USGS

Lees Ferry Rainbow Trout Model Previewed (Korman et al. in prep)

OBJECTIVES: Lees Ferry RBT Modeling

- Estimate Inter-annual Trend in Recruitment in Lees Ferry
  - Relate to GCD operations and other factors (e.g., basin hydrology, density, etc.)
- Estimate extent of outmigration from Lees Ferry to Marble Canyon
  - evidence for outmigration
  - # of fish that leave
  - size and season when outmigration occurs
  - Inter-annual variation in outmigration (what causes it)
- Estimate Inter-annual trend in recruitment in Marble Canyon
  - Is there evidence of substantial local recruitment?
- Estimate inter-annual trend in total abundance in Lees Ferry and Marble Canyon
  - Relate to management objectives (100 k in LF, 0 in MC)
  - Support other research objectives (evaluation of LF food limitation hypothesis)

USGS


Main findings from workshop
• Severe food limitation in both LF and LCR reaches limit total fish abundances
• Food production strongly linked to flow in LF and downstream turbidity/tributary inputs in LCR
• Downstream food resources are variable mix of allochthonous and autochtonous
USGS
Main findings from Modeling
• Upstream RBT control options strongly impacted by compensatory responses in growth and survival (as per 2003-2005 RTELSS results)
• Downstream non-native control of RBT alone would not prevent HBC decline; control of BNT would; this is based on observation that about 50% of predation is by each predator species, resulting in about 50% total mortality rate on juvenile HBC when trout are near 2003-5 levels
• Impacts on native fish involve both competition and predation with trout
USGS

Where & when to control trout?

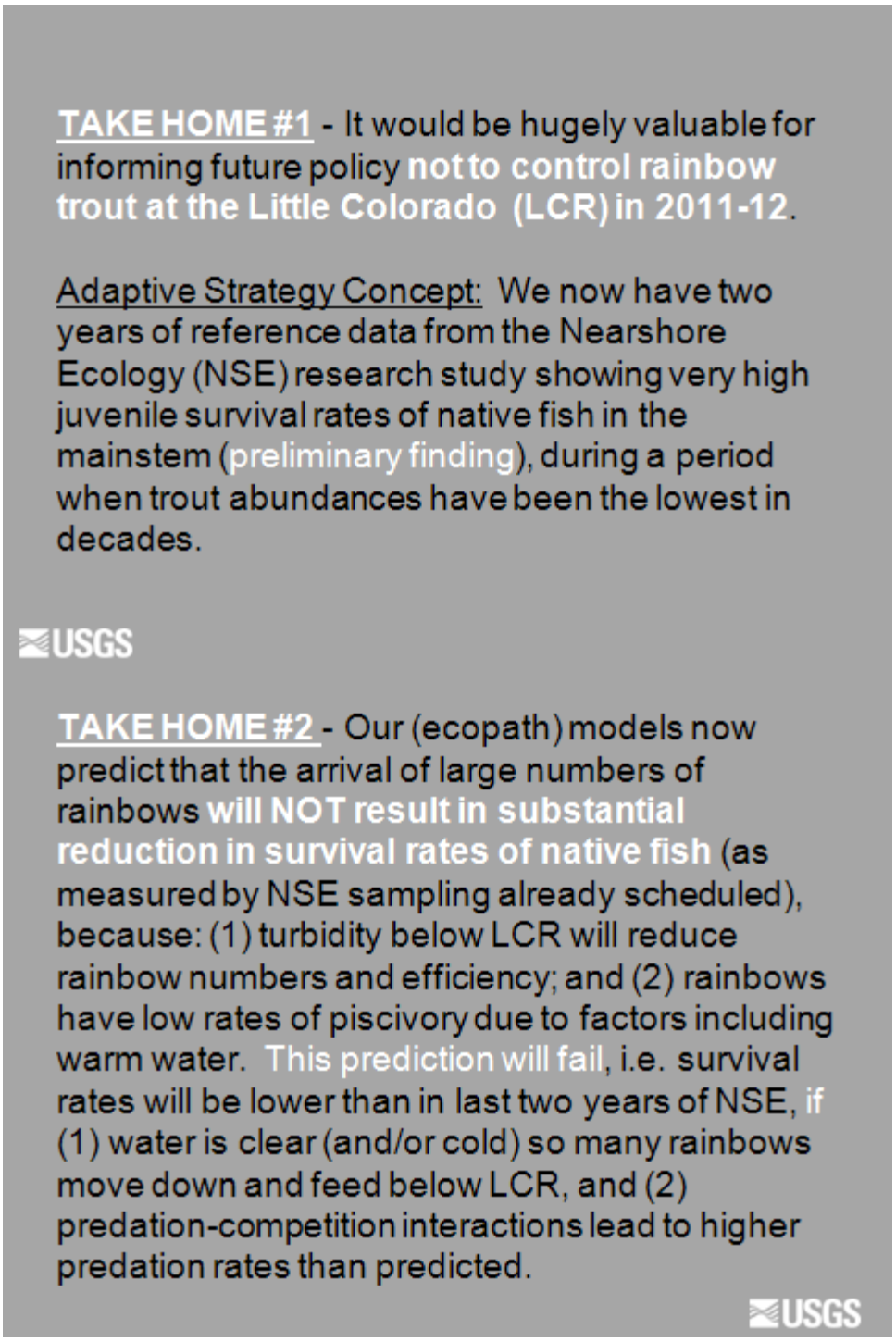
	Above Lees Ferry	Lees Ferry to Badger	Little Colorado
Eggs and fry	Ineffective due to compensatory survival (when by 0_2, flow)	NA	NA?
Juveniles (100-200 mm)	Might be ineffective, 30 days for 75% removal	2011 experiment	Effective, and for BNT
Larger fish	Would be ineffective (increased compensation)	NA	Effective, and for BNT

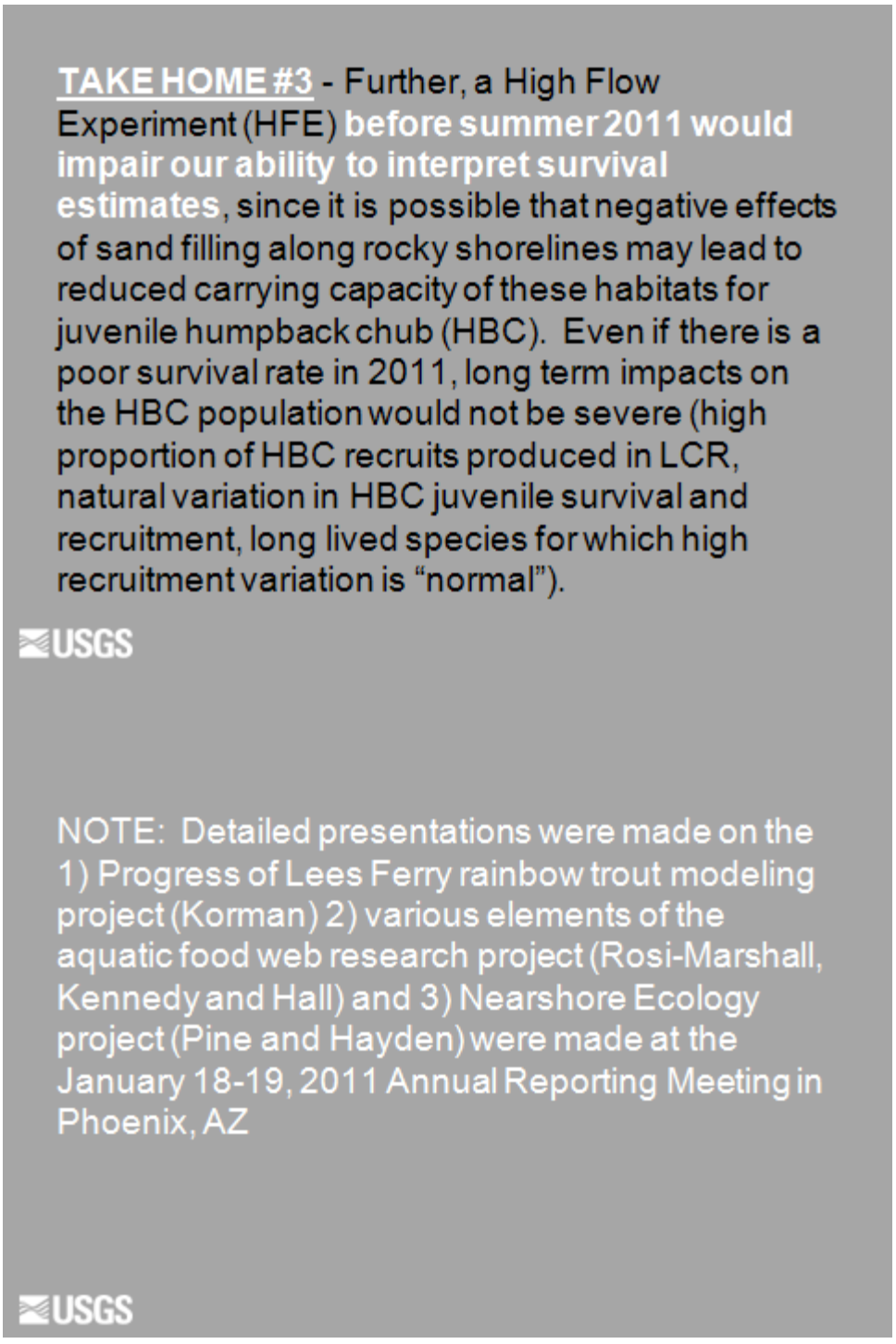
USGS

How to control rainbow trout?

- Mechanical removal variants OR Translocation
- Harvest netting, contract fishing, weirs
- Flow controls, e.g. fast downramping, more severe e.g. 2,500 cfs trout suppression low flows and/or load following (pre-MLFF style operation)
- Sediment curtain (operate dam to enhance natural turbidity OR import fines)

USGS


TAKE HOME #1 - It would be hugely valuable for informing future policy not to control rainbow trout at the Little Colorado (LCR) in 2011-12.
Adaptive Strategy Concept: We now have two years of reference data from the Nearshore Ecology (NSE) research study showing very high juvenile survival rates of native fish in the mainstem (preliminary finding), during a period when trout abundances have been the lowest in decades.
USGS
TAKE HOME #2 - Our (ecopath) models now predict that the arrival of large numbers of rainbows will NOT result in substantial reduction in survival rates of native fish (as measured by NSE sampling already scheduled), because: (1) turbidity below LCR will reduce rainbow numbers and efficiency; and (2) rainbows have low rates of piscivory due to factors including warm water. This prediction will fail, i.e. survival rates will be lower than in last two years of NSE, if (1) water is clear (and/or cold) so many rainbows move down and feed below LCR, and (2) predation-competition interactions lead to higher predation rates than predicted.
USGS


TAKE HOME #3 - Further, a High Flow Experiment (HFE) before summer 2011 would impair our ability to interpret survival estimates, since it is possible that negative effects of sand filling along rocky shorelines may lead to reduced carrying capacity of these habitats for juvenile humpback chub (HBC). Even if there is a poor survival rate in 2011, long term impacts on the HBC population would not be severe (high proportion of HBC recruits produced in LCR, natural variation in HBC juvenile survival and recruitment, long lived species for which high recruitment variation is "normal").
USGS
NOTE: Detailed presentations were made on the 1) Progress of Lees Ferry rainbow trout modeling project (Korman) 2) various elements of the aquatic food web research project (Rosi-Marshall, Kennedy and Hall) and 3) Nearshore Ecology project (Pine and Hayden) were made at the January 18-19, 2011 Annual Reporting Meeting in Phoenix, AZ
USGS

Glen Canyon Dam Adaptive Management Work Group
Agenda Item Information
February 9-10, 2011

Agenda Item

Programmatic Agreement Status Report

Action Requested

✓ This is an information item.

Presenter

This item will be presented as a written report only with no presentation. However, time will be set aside for questions with regard to this item as well as other written reports.

For more information, contact Glen Knowles, Chief, Adaptive Management Group, Upper Colorado Region, Bureau of Reclamation, gknowles@usbr.gov, 801.524-3781.

Previous Action Taken

N/A

Relevant Science

N/A

Background Information

In 1994, the Bureau of Reclamation (Reclamation), the Advisory Council on Historic Preservation, Arizona State Historic Preservation Office, and other parties agreed on a Programmatic Agreement (PA) to fulfill Section 106 of the National Historic Preservation Act requirements for Glen Canyon Dam operations. The PA has stipulations for identification of properties eligible to be added to the National Register of Historic Places, monitoring to determine effects to those properties, and development of a preservation plan. Under the PA, the NPS has monitored sites and objects that are eligible to be added to the National Register for their historic or archeological information values. Tribes have monitored sites or resources of tribal concern.

Programmatic agreements designed to satisfy an agency's Section 106 responsibilities remain in force until terminated; however, if agencies fail to carry out terms of a PA, the agency must complete standard Section 106 review for each individual undertaking that otherwise would be covered by the PA. Without terminating the PA, Reclamation and other consulting parties ceased working on the PA in 2008 and instead began to follow the standard Section 106 review process with the development of a memorandum of agreement for archeological data recovery. Work was conducted in 2008 and 2009 under separate MOAs. Signatories to the 2008 and 2009 MOAs included Reclamation, NPS, BIA, the Arizona State Historic Preservation Office, Hualapai Indian Tribe, the Advisory Council on Historic Preservation, the Colorado River Energy Distributors Association, Western Area Power Administration, The Pueblo of Zuni, and the Paiute Indian Tribe of Utah. The data recovery was conducted under a treatment plan developed by Drs. Jonathan Damp and Joel

Pederson at Utah State University. A synthesis report of this work is in preparation and will be available in Summer 2011. However, archeological data recovery that was proposed in 2010 could not be agreed upon by the consulting parties.

Next Steps

Agreements under Section 106, whether PAs or MOAs, require the consulting parties to agree on ways to accommodate historic preservation concerns as the undertaking proceeds. Because the parties could not agree on resolution of effect in 2010, Reclamation is currently completing Section 106 review for each individual undertaking that otherwise would be covered by an agreement document, in accordance with 36 CFR 800.4 through 800.6 and the Advisory Council's guidance. A meeting of the 1994 PA signatories is planned for January 31, 2011. Interested persons or members of the public may be involved in the discussions because Reclamation anticipates that the newly proposed EIS will become a new undertaking, necessitating Section 106 compliance.

Glen Canyon Dam Adaptive Management Work Group
Agenda Item Information
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Agenda Item

Lees Ferry Trout Fishery Ad Hoc Group Update

Action Requested

✓ Information item.

Presenters

This item will be presented as informational write-up only with no presentation. However, time will be set aside for questions with regard to this item as well as other informational write-ups.

For more information, contact Sam Spiller, Lower Colorado River Coordinator, US Fish and Wildlife Service, sam_spiller@fws.gov, (602) 242-0210, ext. 240.

Previous Action Taken

✓ Other:
The Bureau of Reclamation (Reclamation) executed an experimental high flow test of approximately 41,500 cfs for 60 hours beginning March 4, 2008. Prior to that test, on February 29, 2008, Reclamation completed an Environmental Assessment (EA) for the proposed action. The EA describes Mitigation Measures that were to be conducted, including Reclamation's agreement to "… work with the [Fish and Wildlife Service], [National Park Service], and [Arizona Game and Fish Department] to propose measures within the GCDAMP [Glen Canyon Dam Adaptive Management Program] dedicated to improving communication between management agencies and the angling guides, dependent local businesses, and the public. These proposed measures include creation of an ad hoc group within the GCDAMP to facilitate discussion among trout fishing guides and anglers, Marble Canyon business owners, recreational rafting companies, and other interested parties regarding proposed experimental actions affecting these resources . . ." The final EA and the FONSI, along with public comments received and other pertinent documents, can be found at http://www.usbr.gov/uc/envdocs/ea/gc/2008hfe/index.html.

✓ By AMWG:
At its May 2008 meeting, AMWG passed the following motion by consensus:

> That the AMWG form a "Lees Ferry Trout Fishery Ad Hoc Group" to make a recommendation to the AMWG by its next meeting on the following two Environmental Assessment (EA) mitigation commitment items:
>
> 1. How the AMWG, consistent with the EA, might facilitate discussion among trout fishing guides and anglers, Marble Canyon business owners, recreational rafting companies, and other interested parties regarding proposed experimental actions affecting these resources, to include a projected schedule for meetings, cost-effective location, and whether Federal and State agencies should serve as support to the work of this ad hoc group, and

2. Whether and how AMWG should be involved in updating the Lees Ferry Trout Management Plan, including whether the AMP should sponsor workshops that could be used to help develop the specific aspects of the management plan, and including an assessment of work, projected schedule, and cost-effective locations.

Relevant Science

✓ The following describes the relevant research or monitoring on this subject:
See the SCORE report at http://www.gcmrc.gov/products/score/2005/score.htm.

Background Information

During the April 29-30, 2009 Glen Canyon Dam Adaptive Management Work Group (AMWG) meeting, the Lees Ferry Trout Fishery Ad Hoc Group reported the following management recommendations from the fishing guides at Lees Ferry, which were intended to sustain the trout fishery. These recommendations should be considered as high flow experiments are contemplated.

- High flow tests should be conducted as early in late winter as possible and no later than the end of February.
- They should occur prior to the spring and summer aquatic food base growing season and before late February and early March to have less impact on commercial businesses if anglers cancel trips.
- Perhaps early in February is the optimum time to have High Flow Tests to avoid negative economic consequences.

During the April 16, 2010 Marble Canyon Business Community Meeting at the Marble Canyon Lodge, agenda topics discussed included status and trends of Lees Ferry trout fishery and foodbase program, Bureau of Reclamation discussion of High Flow Experiment protocol, future management options for Lees Ferry fishing regulations, and Tribal concerns regarding mechanical removal of trout.

Another meeting will be held January 28, 2011. Due to the expected availability of draft Environmental Assessments (EAs) for the High Flow Experiment Protocol and Non-native Fish Control, discussions will include these documents and their proposed actions. Recommendations might be developed at that meeting for advice or recommendations to the AMWG.

Glen Canyon Dam Adaptive Management Work Group
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Agenda Item

Development of a Lower Colorado River Fishes Recovery Implementation Program

Action Requested

✓ Information item only.

Presenter

This item will be presented as a written report only with no presentation. However, time will be set aside for questions with regard to this item as well as other written reports.

For more information, contact Sam Spiller, Lower Colorado River Coordinator, U.S. Fish and Wildlife Service, sam_spiller@fws.gov, (602) 242-0210, ext. 240.

Previous Action Taken

✓ By AMWG: AMWG unanimously approved the following motion (drafted by the Humpback Chub Recovery Consultation Ad Hoc Group (Chaired by Sam Spiller with Co-leads Rod Kuharich and Larry Stevens) in December 2006:
Because the lack of a recovery program for the humpback chub is impeding the progress of the GCDAMP, AMWG recommends that the Secretary of the Interior charge the Fish and Wildlife Service to lead the development of a Lower Colorado River fish recovery implementation program (LCRRIP) to include the humpback chub in Marble and Grand Canyons by the end of 2008.

✓ Other: In response to the December 2006 AMWG motion on the Lower Colorado River fish recovery implementation program, Deputy Interior Secretary Lynn Scarlett, on May 21, 2007, wrote the following in a memorandum to the AMWG:
"The department recognizes the importance of efforts that will assist in the conservation of the endangered humpback chub, and agrees with the need for achieving recovery of humpback chub throughout its geographic range. The Department also recognizes that while GCDAMP efforts undertaken pursuant to AMWG recommendations, such as the non-native removal efforts since 2002, have contributed to the stabilization of the humpback chub population in the Grand Canyon, further efforts beyond that of the GCDAMP are desirable. The principal reason for this is that recovery of the humpback chub exceeds the limited authority and role of the GCDAMP, which pursuant to its charter, serves as an advisory committee on the operation of Glen Canyon Dam, and related actions.

"Consistent with the goal of the AMWG recommendation, and based on input from the DOI Policy Group, the Department has instructed the Fish and Wildlife Service to take the lead in developing a recovery implementation program for the humpback chub population in Grand Canyon. We believe that this effort should be prioritized and we anticipate considering similar efforts for other endangered Colorado River fish after an appropriate effort to assist in recovery of the humpback chub program has been developed. The recovery implementation program is not intended to displace the GCDAMP or the Lower Colorado River Multispecies Conservation Program, but rather complement the efforts of these programs in areas of endeavor beyond their scope or authority. We have asked that by September 2007, the Fish and Wildlife Service provide feedback to the AMWG on a timeline, scope, and development of an outreach program to potentially involved stakeholders, the GCDAMP and LCRMSCP, and will have reported their findings back to the DOI Policy Group. The Service also will identify any information needs to

develop the recovery implementation program that they believe should be addressed through the Long-term Experimental Plan EIS process."

Relevant Science

✓ The following describes the relevant research or monitoring on this subject:
See the SCORE report at http://www.gcmrc.gov/products/score/2005/score.htm.

Background Information

The U.S. Fish and Wildlife Service (FWS) was directed by the Department to "…begin the process of exploring development of a Recovery Implementation Program [RIP] for endangered native fishes in the Lower Colorado River, including humpback chub below Marble and Grand Canyons, and will provide an initial report to the Glen Canyon Dam Adaptive Management Program (AMWG) at the next AMWG meeting."

FWS advised AMWG that a report on the strategy had been developed and provided to Brenda Burman (then-Secretary's Designee) in September 2007. Shortly after this, former Deputy Secretary Lynn Scarlett agreed to conduct the March 2008 High Flow Test. In May 2008, Ms. Burman and Bob Snow advised FWS that the report should be updated to incorporate the 2008 Biological Opinion for the March 2008 High Flow Test. FWS did not work on the strategy document due to legal advice that we should await resolution of pending litigation.

The FWS has now revised the strategy document, and it is presently under internal review. This draft discusses how a recovery program could be developed for the humpback chub and other aquatic species in a manner that is habitat-based and includes non-listed native aquatic species. The inclusion of other species and the emphasis on a habitat-based program would make the program consistent with the protection, mitigation, and improvement commitments of the Grand Canyon Protection Act for Grand Canyon National Park and Glen Canyon National Recreation Area. The program would also be subject to the various laws, compacts, treaties, and other commitments for water delivery and use within the Colorado River basin, and consistent with other relevant Federal laws and authorities, including the Endangered Species Act and Fish and Wildlife Coordination Act.

A recovery implementation program could be incorporated as an alternative under the Environmental Impact Statement (EIS) planning process for the Long Term Experimental and Management Plan. The FWS currently lacks funding and sufficient staff to initiate work for this type of an effort.