

Keynote Speakers

Day 1: Whit Gibbons
University of Georgia
Savannah River Ecology Laboratory

The Pros and Cons of Long-Term Ecological Research Based on Lessons from Five Decades

Day 1: Gary K. Meffe
University of Florida
Department of Wildlife Ecology and Conservation
Society for Conservation Biology

The Wisdom of the River: Why Argue with Several Million Years of Success?

Day 2: Carl Walters
University of British Columbia
Fisheries Centre

Surprise and Opportunity in Grand Canyon Adaptive Management

Overview

The U.S. Geological Survey Grand Canyon Monitoring and Research Center is proud to host the 2005 Colorado River Ecosystem Science Symposium. The event features presentations by leading scientists on the state of cultural, natural, and recreational resources in those portions of Grand Canyon National Park and Glen Canyon National Recreation Area affected by Glen Canyon Dam operations. The symposium will also summarize the effects of various experimental dam operations designed to protect downstream resources as required by the Grand Canyon Protection Act of 1992. The 2005 symposium marks the 10-year anniversary of the completion of the Operation of Glen Canyon Dam Final Environmental Impact Statement, the document that set the stage for the Adaptive Management Program and experimental efforts to mitigate the impacts of the dam on downstream resources.

Stakeholders, federal and university scientists, students, and the public are invited to attend.



For more information:

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The Glen Canyon Dam
Adaptive Management
Program Presents:

Colorado River Ecosystem Science Symposium 2005

October 25-27, 2005
Fiesta Inn Resort
Tempe, AZ

Organized by:
U.S. Geological Survey
Southwest Biological Science Center
Grand Canyon Monitoring and
Research Center



Day 1: October 25, 2005, The State of the Colorado River Ecosystem in Grand Canyon (SCORE) Presentations

8:30 **Dennis Fenn, U.S. Geological Survey (USGS)**, Welcome

8:40 **Keynote Speaker: Whit Gibbons, University of Georgia**, The Pros and Cons of Long-Term Ecological Research Based on Lessons from Five Decades

9:20 **Keynote Speaker: Gary K. Meffe, Society for Conservation Biology and University of Florida**, The Wisdom of the River: Why Argue with Several Million Years of Success?

10:00 **BREAK**

10:20 **Scott A. Wright, U.S. Geological Survey**, Influence of Glen Canyon Dam Operations on Downstream Sand Resources of the Colorado River in Grand Canyon

10:40 **Steven P. Gloss, U.S. Geological Survey**, Fishes of Grand Canyon

11:00 **Robert H. Webb, U.S. Geological Survey**, Climatic Fluctuations, Drought, and Flow in the Colorado River

11:20 **William S. Vernieu, U.S. Geological Survey**, Water Quality in Lake Powell and the Colorado River

11:40 **Theodore A. Kennedy, U.S. Geological Survey**, Aquatic Ecology: the Role of Organic Matter and Invertebrates

Noon **LUNCH** (On Your Own)

1:00 **John Loomis, Colorado State University**, Recreational Use Values and Nonuse Values of Glen and Grand Canyons

1:20 **Barbara E. Ralston, U.S. Geological Survey**, Riparian Vegetation and Associated Wildlife

1:40 **Mark K. Sogge, U.S. Geological Survey**, Birds of the Colorado River in Grand Canyon: a Synthesis of Status, Trends, and Dam Operation Effects

2:00 **Robert H. Webb, U.S. Geological Survey**, Debris Flows in Grand Canyon and the Rapids of the Colorado River

2:20 **David A. Harpman, Bureau of Reclamation**, Status and Trends of Hydropower Production at Glen Canyon Dam

2:40 **BREAK**

3:00 **Helen C. Fairley, U.S. Geological Survey**, Cultural Resources in the Colorado River Corridor

3:20 **Matt Kaplinski, Northern Arizona University**, Recreational Values and Campsites in the Colorado River Ecosystem

3:40 **Jeffrey E. Lovich, U.S. Geological Survey**, Lessons from 10 Years of Adaptive Management in Grand Canyon

4:00 **Panel Discussion**, SCORE Findings and Implications for the Glen Canyon Adaptive Management Program's Strategic Plan

5:30 **DINNER** (On Your Own)

7:00 **Poster Session and Technology Demonstrations**

Day 2: October 26, 2005

8:00 **Keynote Speaker: Carl Walters, University of British Columbia**, Surprise and Opportunity in Grand Canyon Adaptive Management

8:40 **Jack C. Schmidt, Utah State University**, One Hundred Years of Sand in Grand Canyon

9:00 **Joseph E. Hazel, Jr., Northern Arizona University**, A Tale of Two Floods: Comparing Sandbar Responses to the 1996 and 2004 High-Volume Experimental Flows on the Colorado River in Grand Canyon

9:20 **David J. Topping, U.S. Geological Survey**, Sediment Transport and Budget during the November 2004 Controlled-Flood Experiment, with Comparisons to the 1996 Controlled-Flood Experiment

9:40 **Mark Schmeeckle, Arizona State University**, Flow, Deposition, and Stability of Recirculation Eddy Bars in Response to Beach/Habitat-Building Flows

10:00 **Amy E. Draut, U.S. Geological Survey**, Investigating Effects of the November 2004 High-Flow Release from Glen Canyon Dam on Aeolian Sand-Transport Rates in the Colorado River Corridor, Grand Canyon, AZ

10:20 **BREAK**

10:30 **Lewis G. Coggins, U.S. Geological Survey**, Mechanical Removal of Nonnative Fishes in the Colorado River within Grand Canyon

10:50 **Josh Korman, Ecometric Research Inc.**, Effects of 2003–04 Fluctuating Flows from Glen Canyon Dam on the Early Life History Stages of Rainbow Trout in the Colorado River, Part 1: Effects on the Survival of Eggs and Alevins

11:10 **Josh Korman, Ecometric Research Inc.**, Effects of 2003–04 Fluctuating Flows from Glen Canyon Dam on the Early Life History Stages of Rainbow Trout in the Colorado River, Part 2: Effects on Young-of-Year Habitat Use, Growth, and Survival

11:30 **LUNCH** (On Your Own)

12:30 **John L. Sabo, Arizona State University**, What Determines the Length of Stream Food Chains?

12:50 **Michael D. Yard, EcoNatura**, Patterns within Patterns: Does Trophic Structure Influence Biotic Patterns within the Colorado River

1:10 **Yael A. Bernstein, Northern Arizona University**, Physical Factors that Influence Spatio/Temporal Differences in Benthic Invertebrate Availability near the Little Colorado River, Grand Canyon, AZ

1:30 **Courtney Giauque, Northern Arizona University**, Inter- and Intra-Annual Differences in the Availability of Drifting Invertebrates near the Little Colorado River, Grand Canyon, AZ

1:50 **Emily Thompson, Northern Arizona University**, Inter- and Intra-Annual Differences in Rainbow and Brown Trout Diet near the Little Colorado River, Grand Canyon, AZ

2:10 **BREAK**

2:30 **Michael D. Yard, EcoNatura**, Interactions between Environment and Biota that Influence Predation of Small Bodied Fish near the Little Colorado River, Grand Canyon, AZ

2:50 **Michael D. Yard, EcoNatura**, Response of Drifting Invertebrates and Organic Matter to Disturbance from High Experimental Flows Prescribed for the Colorado River, Grand Canyon, AZ

3:10 **S. Clayton Palmer, Western Area Power Administration**,
(1) Three Years of Experimentation at Glen Canyon Dam: the Electrical Power Economic Costs
(2) The Electrical Power Economic Impacts at Liberalizing Glen Canyon Dam Operational Constraints

3:30 **Panel Discussion**, Assessing the Value of Experimentation in Support of Glen Canyon Dam Adaptive Management Program Information Needs

4:30 **USGS Grand Canyon Monitoring and Research Center and Ecometric Research Inc.**, Update on Experimental Planning/Knowledge Assessment Review

5:30 **DINNER** (On Your Own)

Day 3: October 27, 2005

8:00 **William Pine, University of Florida**, Update on Status and Trends of Humpback Chub in Grand Canyon

8:20 **Keith A. Kohl, U.S. Geological Survey**, Effects of Spatial Accuracy Uncertainty on Change Detection and Scientific Analysis

8:35 **Michael L. Dennis, Shephard-Wesnitzer, Inc.**, Lies, Statistics, and Spatial Data Accuracy

8:50 **F. Mark Gonzales, U.S. Geological Survey**, Determining Water Surface Datums to Measure Hydrographic Elevations

9:05 **Michael J. Breedlove, Utah State University**, Using an Integrated, Remote-Sensing Methodology to Evaluate the Effects of Dam Operations on Fine-Grained Sediment Storage and Sandbar Restoration in the Eastern Grand Canyon

9:20 **Kristin Brown, U.S. Geological Survey**, 3D Laser Scanning (LiDAR Surveying) and Oblique Photogrammetry Assessment during the 2004 High Flow Test

9:35 **Glenn E. Bennett, U.S. Geological Survey**, Cable-to-the-Sky: Two-Way Telemetry Adaptive Control and Communications

9:55 **BREAK**

10:15 **Nancy Hornewer, U.S. Geological Survey**, Monitoring Streamflow on the Paria River at Lees Ferry

10:30 **Susan Hueftle, U.S. Geological Survey**, Further Effects of Drought and Drought Rebound on the Tailwaters of Glen Canyon Dam in 2003–05

10:45 **Christopher S. Magirl, U.S. Geological Survey**, An Improved Stars Model: Predicted Grand Canyon Water-Surface Elevations and Virtual Shorelines for Flows up to 200,000 cfs

11:00 **Abraham E. Springer, Northern Arizona University**, Evaluating Sandbar Stability with Groundwater Instrumentation and Modeling

11:15 **Peter G. Griffiths, U.S. Geological Survey**, Changes in Debris Fans and Rapids: 21 Years of Monitoring Debris Flows in Grand Canyon

11:35 **Stephen Wiele, U.S. Geological Survey**, Large-Scale Modeling of Flow, Sand Transport, and Sand Storage between Glen Canyon Dam and Phantom Ranch

11:55 **David J. Topping, U.S. Geological Survey**, High-Resolution Monitoring of Suspended-Sediment Concentration and Grain Size in the Colorado River in Grand Canyon Using Laser-Diffraction Instruments and a Three-Frequency Acoustic System

12:15 **Scott A. Wright, U.S. Geological Survey**, An Ex Post Facto Evaluation of Sand Mass Balance in Grand Canyon: Measurements Versus Rating Curves as a Means of Assessing the Value of Adaptive Management

12:30 **LUNCH** (On Your Own)

1:30 **Michael Kearsley, Northern Arizona University**, Trends in Terrestrial Riparian Resources, 2001–04

1:45 **Theodore A. Kennedy, U.S. Geological Survey**, Estimates of Systemwide Above-Ground Biomass and Terrestrial Vegetation Inputs for the Colorado River Ecosystem

2:00 **Robert Hall, University of Wyoming**, Linking Whole-System Carbon Cycling to Quantitative Food Webs in the Colorado River

2:15 **BREAK**

2:25 **Brian P. Kennedy, University of Michigan**, A Test of the Utility of Otolith Chemistry for Studying Humpback Chub Movements

2:40 **David Otis, Iowa State University**, Evaluation of the Statistical Properties of Grand Canyon Humpback Chub Population Parameter Estimates from ASMR and Alternative Mark-Recapture Models

3:00 **Marlis R. Douglas, Colorado State University**, Conservation Genetics of *Gila Cypha* in the Colorado River Ecosystem: Shallow History

3:20 **Michael E. Douglas, Colorado State University**, Conservation Genetics of *Gila Cypha* in the Colorado River Ecosystem: Deep History

3:40 **R. Scott Rogers, Arizona Game and Fish Department**, Electrofishing in the Grand Canyon, 2000–05 Status and Trends

4:00 **David Ward, Arizona Game and Fish Department**, Little Colorado River, Lower 1200 Meter Fish Monitoring Trends, 1987–2005

4:15 **Closing Remarks**

5:00 **End of Symposium**