

**U.S. Geological Survey Southwest Biological Science Center
Grand Canyon Monitoring and Research Center
Colorado River Science Symposium
October 28 – 30, 2003
Program Schedule**

DAY 1 – OCTOBER 28, 2003

8:00 a.m. Welcome and Introductions – Jeff Lovich, Chief,
USGS SBSC Grand Canyon Monitoring and Research Center (GCMRC)

Plenary Session: Colorado River Law
Invited Speaker: Bennett Raley, Assistant Secretary Water and Science

MORNING SESSION 1 – PHYSICAL RESOURCES – 8:30 – 10:10 a.m.

8:30 – 8:50 Long-term Aggradation of the Longitudinal Profile of the Colorado River in Grand Canyon, Robert Webb, Peter Griffiths, **Christopher Magirl**, USGS

8:50 – 9:10 Frequency of Debris Flows in Grand Canyon, **Peter Griffiths**, USGS

9:10 – 9:30 Overview of Integrated Fine-Sediment Monitoring in Colorado River Ecosystem, John “**Jack**” Schmidt, **Utah State University**, and others

9:30 – 9:50 Canyon in a Box: Flume Studies of Sand Transport in Grand Canyon and Implications Modeling and Management, Peter Wilcock and **Paul E. Grams**, **John Hopkins University**

9:50 – 10:10 Fine-grained Sediment Inventory and Change Detection in the Grand Canyon River Corridor Using Airborne Digital Imagery, **Michael Breedlove**, GCMRC

BREAK - 10:10 – 10:30 a.m.

MORNING SESSION 2 – PHYSICAL RESOURCES – 10:30 a.m. – 12:10 p.m.

10:30 – 10:50 Results from Modeling of Sand Deposition as a Function of Discharge and Sandbar Surveys: How Effective are Powerplant Flows at Making New Sand Deposits?, **Stephen Wiele**, USGS; Joseph Hazel, NAU; Paul E. Grams, John Hopkins University; Josh Korman, Ecometric Associates, Inc.; John “**Jack**” Schmidt, Utah State University; Peter Wilcock, USGS

10:50 – 11:10 Survey and Hydrography Technology, **Matthew Kaplinski**, **Northern Arizona University**, and others

11:10 – 11:30 Relative Roles of Channel and Eddy Storage in the Colorado River in Marble Canyon: New Insights Monitoring Individual Sites and Longer Reaches, **Joseph Hazel**, **Northern Arizona University**, and others

Day 1 - Oct. 28 – Physical Resources (cont'd); Information Technology; Poster Session & Social Hour

11:30 – 11:50 Sediment Mass Balance in Marble and Grand Canyons Using Laser and Acoustic Technologies, **David Topping, GCMRC**, and others

11:50 – 12:10 Bed-sediment Grain Size and Influence on Sediment Transport, **Brian Lockwood, UCSC**, David Rubin, GCMRC, and others

LUNCH - 12:10 – 1:30 (*POSTER SET UP - time available now or at end of day)

AFTERNOON SESSION 1 – INFORMATION TECHNOLOGY- 1:30 – 2:50 p.m.

1:30 – 1:50 Processing Multi-beam Data, **Mark Gonzales, GCMRC**

1:50 – 2:10 Rim and River Control Network - Problems and Solutions, **Keith Kohl, GCMRC**

2:10 – 2:30 Side-scan Sonar Surveys of the Colorado River Bed, **Roberto Anima, USGS**, and others

2:30 – 2:50 Geomorphic Change Detection in Grand Canyon: Comparison of 2000 LIDAR and 1923 Survey Data, **Christopher Magirl, USGS**

BREAK - 2:50 – 3:10 p.m.

AFTERNOON SESSION 2 – INFORMATION TECHNOLOGY- 3:10 – 4:50 p.m.

3:10 – 3:30 Data Management at the GCMRC, **Michael Liszewski, GCMRC**

3:30 – 3:50 The GCMRC Library Scanning Project, **Stephanie Wyse, GCMRC**

3:50 – 4:10 Grand Canyon Integrated Database Management System, Chris Flaccus, GCMRC, **Cory Lochridge**, James Slebodnick (Center for Data Insight)

4:10 – 4:30 Building an Integrated Ecological Spatial Database for the Grand Canyon Using Spatial Database Engine, Internet Map Server, and Oracle Database Management System, **Steven Mietz, USGS GCMRC**

4:30 – 4:50 Using the Survey Database for Science, **Kristin Brown GCMRC**, Cory Lochridge, (Center for Data Insight)

4:50 *POSTER SET-UP

POSTER SESSION & SOCIAL HOUR - 5:15 – 9:00 p.m.

*Poster session/social hour will be held in same room as symposium

DAY 2 - OCTOBER 29, 2003

MORNING SESSION 1 - EXPERIMENTAL STUDIES: SESSION 1 - LSSF- 8:30 - 10:10 a.m.

- 8:30 - 8:50 Synthesis of Results and Application to River Management, **John "Jack" Schmidt, Utah State University**, Theodore Melis, GCMRC, and others
- 8:50 - 9:10 Effects of a Low Steady Summer Flow Experiment on Native Fishes of the Colorado River in Grand Canyon, Arizona, **Melissa Trammell, Richard Valdez**, Stephen Carothers, and R.J. Ryel, **SWCA, Inc.**
- 9:10 - 9:30 Responses of Native and Non-Native Species to Two Managed Flow Regimes Below Glen Canyon Dam, Grand Canyon, AZ, Marianne Porter, University of California Irvine, **Michael Kearsley, Northern Arizona University**
- 9:30 - 9:50 Modeling Effects of Discharge on Habitat Quality and Dispersal of Juvenile Humpback Chub (*Gila cypha*) in the Colorado River, Grand Canyon, **Josh Korman, Ecometric Research, Inc.**, Steven Wiele, USGS, Margaret Torizzo
- 9:50 - 10:10 Longitudinal and Near-shore Warming of the Colorado River During LSSF Experiment, **William Vernieu, GCMRC**

BREAK - 10:10 - 10:30 a.m.

MORNING SESSION 2 - EXPERIMENTAL STUDIES: SESSION 2 - LSSF- 10:30 - 11:50 a.m.

- 10:30 - 10:50 Pre-and-Post LSSF side Scanning Sonar - Character of the River Bed Along the FIST Reaches of the Colorado River, **Roberto Anima, USGS**, Florence Wong, David Hogg, Fredrick Payne, and Nenah Board, USGS.
- 10:50 - 11:10 Implications of Low Steady Summer Flows on Boating Safety and Other Recreational Aspects, **Linda Jalbert, National Park Service**
- 11:10 - 11:30 Aquatic Food Base Response to the 2000 and 2003 Experimental Flows in Glen and Grand Canyon National Parks, **Joseph Shannon, Northern Arizona University**; Emma Benenati, Dean Blinn, Kristin Straka, Allen Haden, NAU.
- 11:30 - 11:50 Economic and Financial Effects to Electrical Power Production from Experimentation at Glen Canyon Dam; LSSF and Proposed Sediment Retention Flows and Non-Native Fish Removal Flows, **Clayton Palmer, Western Area Power Administration**, Clark Burbidge, Heather Patno, WAPA.

LUNCH - 11:50 a.m. - 1:30 p.m.

AFTERNOON SESSION 1 - EXPERIMENTAL STUDIES: SESSION 3 - MANIPULATIONS AND FLUCTUATING FLOWS - 1:30 - 2:30 p.m.

- 1:30 - 1:50 Brown Trout Removal in Bright Angel Creek, Grand Canyon National Park: A Potential Recovery Effort for Native Fishes, **William Leibfried, SWCA, Inc.**; Helen Johnstone, SWCA, Inc.; Jeff Cross, Grand Canyon National Park Science Center
- 1:50 - 2:10 Mechanical Removal of Non-native Fishes in the Colorado River within Grand Canyon: An Update on 2003 Operations and Results, **Lew Coggins, GCMRC**; Michael Yard, GCMRC
- 2:10 - 2:30 Spatial and Temporal Patterns in Rainbow Trout Redds and Fry in the Lees Ferry Reach of the Colorado River: Implications for Fluctuating Flows from Glen Canyon Dam, **Josh Korman, Ecometric Research**; Matt Kaplinski, and Joe Hazel, Namteck.

BREAK - 2:30 - 2:50 p.m.

AFTERNOON SESSION 2 - EXPERIMENTAL STUDIES: SESSION 4 - SOCIO-CULTURAL RESOURCES; RECREATION - 2:50 - 4:30 p.m.

- 2:50 - 3:10 High-resolution Photogrammetry and the Gully Erosion of Cultural Sites, **Joel Pederson, Utah State University**
- 3:10 - 3:30 Modeling of Sand Deposition in Archaeologically Significant Reaches of the Colorado River in Grand Canyon, **Stephen Wiele, USGS**; M. Torizzo
- 3:30 - 3:50 The Role of Eolian Sediment Transport in the Preservation of Archeological Features: A New Research Initiative in Grand Canyon National Park **Amy Draut, USGS**
- 3:50 - 4:10 Adopt A Beach Project: Long Term Monitoring of High-Demand Camping Beaches in Grand Canyon, **Kate Thompson, Grand Canyon River Guides**
- 4:10 - 4:30 Towards an Understanding of Social Impediments to Adaptive Management in Grand Canyon, **Christopher Updike, Northern Arizona University**
- 4:30 - 4:50 Archaeology of the Colorado Plateau and Grand Canyon: a Multimedia Interactive CD-ROM Educational Tool for 4th to 6th Grade Students, **George Gumerman IV, Northern Arizona University**

Panel Discussion: Cultural Resource Treatment Options -7:30 - 9:30 p.m. (panelists TBA)

DAY 3 – OCTOBER 30, 2003

MORNING SESSION 1 – EXPERIMENTAL STUDIES: NATIVE FISHES – 8:30 – 10:10 a.m.

- 8:30 – 8:50 Trends in the Recruitment and Abundance of the Little Colorado River Humpback Chub Population, **Lew Coggins, GCMRC**, Carl Walters, University of British Columbia
- 8:50 – 9:10 Efficacy of Monitoring Fishes in the Colorado River Through Grand Canyon, Arizona: Striking a Balance Between Modeling and Empirical Data Collection, **Helen Johnstone, SWCA, Inc.**; Melissa Trammell, and Richard Valdez, SWCA, Inc.
- 9:10 – 9:30 Anticipated Effects of a Temperature Control Device on Fishes of the Colorado River through Grand Canyon, Arizona, **R.A. Valdez, SWCA, Inc.**; M. Trammell, H. Johnstone, Stephen W. Carothers, and R.J. Ryel, SWCA, Inc.
- 9:30 – 9:50 Current Status and Trends of Lake Powell and Glen Canyon Dam Release Water Quality, **William Vernieu, GCMRC**
- 9:50 – 10:10 The Utility of Bioenergetics Models in Grand Canyon Fisheries Research, **Jim Petersen, USGS**; Craig Paukert, GCMRC; Jim Kitchell, University of Wisconsin

BREAK - 10:10 – 10:30 am

MORNING SESSION 2 – EXPERIMENTAL STUDIES: NATIVE FISHES – 10:30 – 11:50 a.m.

- 10:30 – 10:50 Recovery Goals For Humpback Chub and Adequacy of Management Actions in Grand Canyon, Arizona, **Richard Valdez, SWCA, Inc.**; R.T. Muth, T. Czaplá, R.J. Ryel, and Stephen W. Carothers, SWCA, Inc.
- 10:50 – 11:10 Genetic Interrelationships of *Gila cypha* in the Colorado River Ecosystem, **Marlis R. Douglas, Colorado State University**; Michael E. Douglas, CSU
- 11:10 – 11:30 Effective Population Sizes for *Gila cypha* in the Colorado River Ecosystem, **Michael E. Douglas, Colorado State University**; Marlis R. Douglas, CSU
- 11:30 – 11:50 Site Fidelity of Humpback Chub in Grand Canyon, **Craig Paukert, GCMRC**; Lew Coggins, GCMRC.

LUNCH - 11:50 a.m. – 1:10 p.m.

AFTERNOON SESSION 1 - NON-NATIVE FISHES - 1:10 - 2:50 p.m.

- 1:10 - 1:30 **Status, Trends and Long-term Monitoring of the Lee's Ferry Tailwater Fishery, 1991-2003, Joe E. Slaughter, IV, Arizona Game and Fish Dept.;** Andrew Makinster, David Speas, William R. Persons, AGFD
- 1:30 - 1:50 **An Evaluation of the Utility of Snorkel Surveys for Estimating Population Size and Tracking Trends In Relative Abundance of Rainbow Trout in the Lees Ferry Reach of the Colorado River, Josh Korman, Ecometric Research;** Michael Yard, GCMRC
- 1:50 - 2:10 **Long Term Monitoring of Rainbow Trout, Brown Trout, and Common Carp in the Grand Canyon, Scott Rogers, Arizona Game and Fish Dept.**
- 2:10 - 2:30 **Diet and Incidence of Predation for Rainbow and Brown Trout Near the Little Colorado River, Grand Canyon during Winter 2003, Michael Yard, GCMRC;** Lew Coggins, Melanie Caron, Erica Tietjen, GCMRC
- 2:30 - 2:50 **Genetic Assessment of Age-0 Trout Produced in the Grand Canyon Tributaries of the Colorado River, Dave Philipp, Illinois Natural History Survey**

BREAK - 2:50 - 3:10 p.m.

AFTERNOON SESSION 2 - BIOLOGICAL RESOURCES - 3:10 - 4:50 p.m.

- 3:10 - 3:30 **1996 - 2000 Avian Monitoring, John Spence, National Park Service**
- 3:30 - 3:50 **Stranding of Rainbow Trout during Experimental Fluctuating Releases from Glen Canyon Dam on the Colorado River, Wendy Batham, EcoPlan Associates, Inc.**
- 3:50 - 4:10 **Seasonal Light Variation in a Canyon-Bound River: Potential Effects on Distribution, Growth and Colonization of Photoautotrophs, Michael Yard, GCMRC;** Glenn Bennett, USGS; Steven Mietz, Lew Coggins, and Susan Huefle, SBSC GCMRC
- 4:10 - 4:30 **The Hopi Tribe Monitoring Project for Terrestrial Resources, Kristin Huisinga and Michael Yeatts, The Hopi Tribe**
- 4:30 - 4:50 **Ecology of the New Zealand Mudsnail (*Potamopyrgus antipodarum*) in the Colorado River below Glen Canyon Dam, Joseph Shannon, Northern Arizona University;** Heidi Kloeppel, NAU

Final remarks by Jeffrey Lovich, Chief, GCMRC