


12-31-2007

Limnological Assistance for the Lake Mead National Recreation Area in Meeting the Challenge of the Water 2025 Initiative: Quarterly Progress Report, Period Ending: December 31, 2007

Margaret N. Rees

University of Nevada, Las Vegas, peg.rees@unlv.edu

Follow this and additional works at: https://digitalscholarship.unlv.edu/pli_lake_mead_limnology

 Part of the [Earth Sciences Commons](#), [Environmental Sciences Commons](#), [Fresh Water Studies Commons](#), and the [Terrestrial and Aquatic Ecology Commons](#)

Repository Citation

Rees, M. N. (2007). Limnological Assistance for the Lake Mead National Recreation Area in Meeting the Challenge of the Water 2025 Initiative: Quarterly Progress Report, Period Ending: December 31, 2007. 1-14.

Available at: https://digitalscholarship.unlv.edu/pli_lake_mead_limnology/2

This Report is protected by copyright and/or related rights. It has been brought to you by Digital Scholarship@UNLV with permission from the rights-holder(s). You are free to use this Report in any way that is permitted by the copyright and related rights legislation that applies to your use. For other uses you need to obtain permission from the rights-holder(s) directly, unless additional rights are indicated by a Creative Commons license in the record and/or on the work itself.

This Report has been accepted for inclusion in Limnological Studies by an authorized administrator of Digital Scholarship@UNLV. For more information, please contact digitalscholarship@unlv.edu.



QUARTERLY PROGRESS REPORT

University of Nevada, Las Vegas
Period ending: December 31, 2007

Cooperative Agreement Number H8R07060001
Task Agreement Number J8R07070010

Limnological Assistance for the Lake Mead National Recreation Area in
Meeting the Challenge of the Water 2025 Initiative

Executive Summary

- The limnologist position has been announced.

Project 1

- Review of the draft Boulder Basin Adaptive Management Plan is underway.

Project 2

- Development of a white paper expressing the joint needs of the entities involved in Water 2025 projects is being coordinated.

Project 3

- A bibliographic reference spreadsheet organizing literature citations related to quagga and zebra mussel research has been completed.

Project 4

- A comprehensive literature search of Lake Mead limnology is well underway; an Access database has been designed to organize reference citations; and a special collections library at UNLV is being established to house original rare documents and other pertinent materials uncovered during the data-mining effort.

Project 5

- The dates January 13-15, 2009 have been agreed upon for the Lake Mead Science Symposium; the UNLV Moyer Student Union has been secured as the event venue; and three of six session summaries have been drafted.

Project 6

- Topics to be covered in the Ecological Monitoring Plan for Lakes Mead and Mohave have been preliminarily established; review and summarization of

existing Water 2025-related projects at Lake Mead NRA is underway; a project summary sheet is under development.

Attachments

- Draft Memorandum of Understanding for a Lake Mead Special Collection at the UNLV University Libraries
- Draft Lake Mead Science Symposium Breakout Session Summaries

Program Development Activities

Hiring

The Public Lands Institute (PLI) has begun the search for a limnologist to work with Dr. Gerstenberger in completion of Projects 1, 2, and 3 of this Task Agreement. The official position title is, “Research Assistant Professor in Environmental Health Science, A Joint Position between the Public Lands Institute and the Department of Environmental and Occupational Health.” Advertisements have run or are on going at the following job-search outlets:

- Las Vegas Review Journal newspaper advertisement (11/11/2007)
- HigherEdjobs.com Web site (11/9/2007 to date)
- North American Lake Management Society Web site (11/1/2007 to date)
- Public Lands Institute Web site (11/13/2007 to date)
- UNLV Employment Opportunities page (http://hr.unlv.edu/Employment_Svcs/) of the UNLV Web site (11/9/2007 to date)

In addition, project staff members have e-mailed the announcement directly to various limnological laboratories and centers such as the Wisconsin Center of Limnological Research to distribute to potential applicants. As of December 18, 2007, three applicants have applied, but only one is qualified for the position. During the next quarter, the position announcement will be more widely distributed if an eligible candidate does not apply during the final weeks of December.

Meetings

The following meetings were held during the course of this quarter. Minutes have been documented by PLI, distributed to attendees, and posted to GroveSite:

October 09, 2007	Interagency Water 2025 Meeting, SNWA River Mountains Water Treatment Facility
October 11, 2007	Interagency Quagga Mussel Meeting, SNWA River Mountains Water Treatment Facility
October 25, 2007	NPS/PLI Project Meeting, Lake Mead NRA Headquarters
November 26, 2007	Interagency Water 2025 Meeting, SNWA River Mountains Water Treatment Facility
December 06, 2007	NPS/PLI Project Meeting, Lake Mead NRA Headquarters

Project 1 Technical Assistance to LAME with Interagency Monitoring Program

Principal Investigator, Shawn Gerstenberger, has received a draft copy of the Boulder Basin Adaptive Management Plan (BBAMP). A review of the document is underway. Committee meetings of the BBAMP are planned to begin in the next quarter.

Project 2 Science Support for Water 2025 Interagency Monitoring & Research Initiatives

Substantive activity on this project will commence with the hiring of the limnologist (see Hiring, above). Dr. Gerstenberger has initiated the development of a brief document (i.e., a white paper) articulating agreed-upon, interagency needs for Water 2025 Interagency Monitoring Research Initiatives. This document will aid in communicating with entities that could potentially supply resources and funding that can be shared. The interagency team has already identified the need for a dedicated electrofishing boat, but additional needs remain to be determined. Dr. Gerstenberger has asked participants to submit 3-4 needs per agency, which will be tabulated and presented for discussion at the next Interagency Water 2025 meeting on January 8, 2008. This activity is also applicable to Project 3, below.

Project 3 Technical Assistance related to Quagga Mussel and Other Nuisance Species

At the Interagency Quagga Mussel Meeting (10/11/2007), Graduate Assistant Sara Mueting (UNLV) distributed a paper copy of the Microsoft Excel bibliographic spreadsheet in which she has cited and organized approximately 420 quagga and zebra mussel references among 11 categories. The categories are:

- | | |
|------------------------|-------------------|
| • Abiotic Interactions | • History |
| • Biotic Interactions | • Monitoring |
| • Contaminants | • Mussels in Diet |
| • Control | • Water Quality |
| • Endocrine | • Other |
| • Genetics | • History |

The electronic bibliography, which includes links to papers and abstracts, has been delivered to Mr. Kent Turner (ATR).

Ms. Mueting has also been administering 100th Meridian boater surveys at Lake Mead starting in October. The surveys will continue until fall 2008. UNLV Institutional Review Boards have reviewed and approved (7/02/2008) the study and survey administrators have been approved (10/05/2007) by the UNLV Office for the Protection of Research Subjects. The National Park Service also approved (10/25/2007) the study. As of December 17, 2007, Ms. Mueting has conducted 34 contact surveys at the following locations: Echo Bay (10), Callville Bay (4), Lake Mead Marina (5), Hemenway Harbor (15). Ms. Mueting has also distributed windshield surveys on vehicles at Echo and Callville Bays. Ms. Mueting provided a brief update on the surveys at the recent 100th

Meridian Initiative annual meeting in Las Vegas (November 27-28, 2007) with a PowerPoint presentation titled, “100th Meridian Surveys at Lake Mead 2007.” Also in support of Project 3, UNLV has assisted Mr. Turner in establishing science and monitoring projects at Lake Mead NRA that could fill data gaps while a pre/early quagga mussel infestation baseline still exists. At the October 9, 2007 Interagency Water 2025 Team Meeting and the October 11, 2007 Interagency Quagga Mussel Meeting, Mr. Turner announced a request for proposals (RFP) for the approximate sum of \$80,000. Dr. Gerstenberger electronically distributed the RFP to group participants. Six proposals were submitted. Ms. Muetting co-authored a multi-agency proposal with Dr. Gerstenberger, Dr. Jim LaBounty (Southern Nevada Water Authority), Mr. Chris Holdren (Bureau of Reclamation), and Wen Baldwin (volunteer, Lake Mead NRA) to start a quagga mussel substrate study on Lake Mead. This study’s main objective is to find a suitable substrate for long-term monitoring of the quagga mussel.

Dr. Jennell Miller (UNLV PLI) coordinated an external peer review among the following five experts, each of whom reviewed all six proposals:

- David Britton, Ph.D. (USFWS, Arlington, Texas)
- Theodore Kennedy (USGS, Grand Canyon Monitoring & Research Center)
- Susan J. “Jerrie” Nichols (USGS, Great Lakes Science Center)
- Charles O’Neill, Jr., Ph.D. (Cornell University / New York SeaGrant)
- Robert McMahon, Ph.D. (University of Texas at Arlington)

The purpose of the peer review was to assist the Quagga Mussel Core Team in project assessment; as a technical review, however, peer-review results will not be the only deciding factor. Dr. Miller synthesized the peer-review results and distributed them on December 17, 2007 at a meeting of the Quagga Mussel Core Team. The core team will announce their final funding decision and recommend additions and/or changes to project design for approved projects in the upcoming weeks.

Project 4 Strategic Data Mining for Lake Mead

Under the direction of Mr. Jim Pollard (UNLV Harry Reid Center), Gretchen Andrew (UNLV Harry Reid Center) is conducting a comprehensive literature search to identify research projects on Lake Mead. Ms. Andrew has organized the found citations within a Microsoft Access database, which she developed for this project. At the November 26, 2007 Interagency Water 2025 Meeting, attendees were apprised of the progress of the data-mining effort and asked to contribute to its development by furnishing Ms. Andrew with locations of historic data and reports. The draft database was provided on CD to Mr. Turner (12/6/2007), and it is currently under review by Lake Mead NRA staff.

As of December 17, 2007, 1,645 bibliographic citations for journal articles, agency reports, professional papers, theses and dissertations, maps, photographic collections, data reports, news articles, and other literature have been added to the database. Of those, at least 576 entries are confirmed to be focused either exclusively or heavily on Lake

Mead NRA. The citations are categorized according to one or more of the following 27 general topic areas:

- Air Quality
- Aquatic Biota
- Aviation/Remote Sensing
- Biological Assessment
- Biology
- Climatology
- Contaminants
- Cultural Resources
- Ecological Restoration
- Engineering
- Environmental Assessment
- Fisheries
- Geoscience
- Herpetology
- Invasive Species
- Hydrology
- Law and Policy
- Limnology
- Mammalogy
- Ornithology
- Photography
- Riparian and Shoreline Resources
- Soil Science
- Threatened and Endangered Species
- Unknown
- Vegetation
- Water Quality
- Water Resources
- Wildlife Management

Citation metadata fields for the Access database are: (1) Record number; (2) Category; (3) In NatureBib?; (4) Author(s); (5) Year; (6) Title; (7) Source; (8) Lake Mead Focused?; (9) Study Location; (10) Study Duration; (11) Study Parameters; (12) Notes; and (13) Data Location. If the required information is readily available, entries for fields 9, 10, and 11 are completed. However, some documents require a more thorough review to elucidate this information. For those documents, fields 9, 10, and 11 are left blank until a prioritization of citations warranting a more extensive review is completed. The following repositories, shown in Table 1 below, were visited to gather the citation information, which is included in the Access database:

Table 1. Source and Results of Search Activities for Inclusion in Access Database.

Entity	Activities Conducted/Materials Collected	Remaining Activities
University of Nevada, Las Vegas (UNLV)	<ul style="list-style-type: none"> • Searched UNLV Libraries' electronic databases for "Lake Mead" • Obtained list of Biology Department theses/dissertations from William Pratt. 	<ul style="list-style-type: none"> • Visit UNLV Special Collections • Visit book stacks • Perform additional searches of the electronic database with additional search phrases
Bureau of Reclamation, Lower Colorado Regional Office	<ul style="list-style-type: none"> • Obtained a CD containing the office's database. 	<ul style="list-style-type: none"> • Cross-reference the project database with the Reclamation database; eliminate duplicate records from and add missing records to the project database
Southern Nevada Water Authority (SNWA)	<ul style="list-style-type: none"> • Visited the online SNWA database. 	<ul style="list-style-type: none"> • Cross-reference the project database with the SNWA database; eliminate duplicate records from and add missing records to the project database
U.S Fish and Wildlife Service (USFWS)	<ul style="list-style-type: none"> • Requested information from the Las Vegas Office of USFWS 	<ul style="list-style-type: none"> • Cross-reference provided citations with USGS endocrine disruption and contaminants studies

Entities, which remain to be visited include:

- Nevada Department of Wildlife
- UNLV Biology Department
- Arizona Fish and Wildlife
- Wastewater facilities
- Las Vegas Valley Water Reclamation District
- National Science Service
- City of Las Vegas
- University of Arizona (particularly the 1971 model)
- NPS (Permit files)

The Interagency Water 2025 meeting participants also provided the following leads for further data-mining investigations: diver studies; USGS Science Review Team's Quagga Mussel Reviews; Sumner Fisheries and surveys from 1952 and 1953; and angler reports, especially those related to threadfin and gizzard shad. The above sources and leads will be investigated for pertinent information in the upcoming quarter. In addition, Mr. Pollard will review the database to ensure relevancy of the bibliographic citations and Ms. Andrew will revise the database based upon Mr. Pollard's and NPS staff's comments. Mr. Turner and the Interagency Water 2025 meeting participants have been advised that prioritizing projects for data mining is the next step in this project, following completion of the bibliographic database.

Principal Investigator Dr. Craig Palmer (UNLV Harry Reid Center) and Ms. Andrew met on November 16, 2007 to discuss working with NatureBib, the National Park Service's (NPS) bibliographic database for scientific citations. Ms. Andrew obtained a NatureBib login and password, which enables her to access and add to the database. Ms. Andrew is in the process of comparing the citations in the project's Access database against those in NatureBib. She is also adding to the NatureBib collection. Any questionable citations are added to an offline version of the NatureBib database for the NPS bibliographic coordinator to review and add at his/her discretion.

Dr. Gerstenberger suggested creating a UNLV Library Special Collection as a clearinghouse for all rare documents identified and procured during the data-mining effort. Drs. Palmer and Miller met with the Special Collections Librarian Dr. Peter Michel on October 30, 2007 to describe the intent of and discuss the process for setting up a new Lake Mead Special Collection. A limited collection of Lake Mead reports already exists within the library. The idea was met with enthusiasm. Dr. Miller has drafted a Memorandum of Understanding (MOU; see attached Draft Memorandum of Understanding for a Lake Mead Special Collection at the UNLV University Libraries) articulating the agreement between PLI, Lake Mead NRA, and UNLV Libraries to populate, manage, maintain, and make accessible a Lake Mead NRA limnology special collection. The draft MOU is currently under review by all parties; we anticipate that it will be finalized and signed in the upcoming quarter.

Project 5 Lake Mead Science Symposium

Participants agreed at the October 9, 2007 Interagency Water 2025 meeting that the Lake Mead Science Symposium will take place January 13-15, 2009. The event venue, secured by symposium coordinator, Kathy Lauckner, will be the UNLV Moyer Student Union. Concurrent session topics and technical committee members have been finalized as follows:

- **Lake Management**
Kent Turner (NPS) and Chris Holdren (BOR)
- **Limnology and Water Quality**
Jim LaBounty (SNWA) and Mike Lico (USGS)
- **Environmental Contaminant Issues**
Michael Rosen (USGS) and Steve Goodbred (USGS)
- **Aquatic Biota and Fisheries**
Jon Sjoberg (NDOW), Erik Orsak (USFWS), and Tom Burke (BOR)
- **Riparian and Shoreline Resources**
Scott Abella (UNLV) and Jef Jaeger (UNLV)
- **Emerging Issues**
Peggy Roefer (SNWA) and Shawn Gerstenberger (UNLV)

The technical committees have submitted drafts for three of the six session summaries (see Attachment: Lake Mead Science Symposium Breakout Session Summaries). Once all six session summaries are received, they will be reviewed and approved by Mr. Turner (ATR).

Ms. Lauckner will not continue as the symposium coordinator beyond December 2007. Public Lands Institute Director, Dr. Peg Rees and Drs. Palmer and Miller will meet in the upcoming weeks to discuss a process and strategy to complete this project in Ms. Lauckner's absence. Immediate tasks are as follows:

- Obtain finalized session summaries from technical committees.
- Initiate symposium Website design, including general information about the conference and template for electronic abstract and paper submission.
- Design "save the date" card.
- Obtain cost estimates for mailing lists.
- Continue to create symposium agenda.
- Meet with UNLV Student Union staff and view the venue; plan optional location logistics of the talks and contact the chairs with options for presentations.

Project 6 Lake Mead Monitoring Plan

Drs. Palmer and Miller have identified and conducted a preliminary review of seven existing water resource management/monitoring plans, including:

- *Capitol Lake: A Vision for the Next Ten Years* 2003 – 2013 (2002; Washington)
- *San Juan River Monitoring Plan and Protocols* (2000; Albuquerque, New Mexico)
- *Lake Erie Lakewide Management Plan* (2006)
- *The Water Way Strategy* (2001; Wisconsin)
- *Middle Boulder Creek Water Source Management Work Plan* (2002; Colorado)
- *Comprehensive Everglades Restoration Plan* (Florida)
- *Onondaga Lake Progress Report* (2006; New York)

Based upon the efforts described within documents, Dr. Palmer suggested at the November 26, 2007 Interagency Water 2025 meeting, that an ecological monitoring plan for Lakes Mead and Mohave set lake monitoring standards for nutrients, habitats, fisheries, and biological integrity. And, that the monitoring be used to inform modeling, restoration, and protection efforts. Topic areas covered collectively by the seven existing programs include:


- | | |
|-----------------------|---------------------------------------|
| • Water Quality | • Wildlife (populations and habitat) |
| • Water Quantity | • Invasive Species (plant and animal) |
| • Watershed Processes | • Native Plants |
| • Native Fishes | • Historic/Cultural Resources |
| • Sport Fisheries | • Recreation |
| • Fish Habitat | • Threatened and Endangered Species |

Participants did not wish to add or remove any topics from the above list. Therefore, Dr. Palmer and Miller intend to include these topic areas, and potentially others that may arise, in the development of the ecological monitoring plan for Lakes Mead and Mohave.

Dr. Miller has received copies of agreements for all Water 2025-related projects underway at Lake Mead NRA that were funded through the Southern Nevada Public Land Management Act. These documents are currently under review to understand existing limnological projects occurring at Lakes Mead and Mohave. Summary sheets for each agreement are being prepared.

Also under development is a summary document that will set the stage for the ecological monitoring plan. This brief document will highlight the value of Lake Mead, summarize limnological study efforts underway, and discuss other relevant factors. The draft summary document will be submitted to Mr. Turner for review in the upcoming quarter.

Submitted by:


Margaret N. Rees,
Project Administrator

December 31, 2007
Date

Attachments

DRAFT MEMORANDUM OF UNDERSTANDING

This Memorandum of Understanding (“MOU”) is made and entered into by and between the following parties:

Party: Public Lands Institute (PLI)

Dr. Margaret “Peg” Rees

Associate Vice President for Research & Community Outreach

4505 Maryland Parkway

Las Vegas, NV 89154-2040

Party: University Libraries

Dr. Peter Michel

Director of Special Collections

4505 Maryland Parkway

Las Vegas, NV 89154-47010

Party: National Park Service, Lake Mead National Recreation Area

Mr. Kent Turner

Chief of Resources

601 Nevada Way

Boulder City, NV 89005

The parties do mutually agree as follows:

1. UNLV University Libraries Department of Special Collections (Special Collections) will work cooperatively and collaboratively with the Public Lands Institute (PLI) to create a special collection titled, “Lake Mead NRA Limnology” on behalf of the National Park Service’s Lake Mead National Recreation Area (Lake Mead NRA). This special collection will expand a previously established special collection titled, “xxx.”
2. Using standard archival practices, Special Collections will preserve, conserve, and house materials submitted by PLI on behalf of Lake Mead NRA for the Lake Mead NRA Limnology special collection.
3. Special Collections will create a bibliographic record of each submitted item and enter the record into the University Libraries’ searchable electronic catalogue.
4. Special Collections will digitize a select number of rare documents and create PDFs accessible online through UNLV University Libraries’ Ebrary service.
5. The MOU may be amended to provide additional services as needed with supplementation of funds commensurate with additional services.

6. The points-of-contact regarding this agreement are as follows:

- a. Public Lands Institute
Dr. Margaret “Peg” Rees
Executive Director
4505 Maryland Parkway
Las Vegas, NV 89154-2040
- b. University Libraries, Department of Special Collections
Dr. Peter Michel
Director
4505 Maryland Parkway
Las Vegas, NV 89154-7010
- c. National Park Service, Lake Mead National Recreation Area
Mr. Kent Turner
Chief of Resources
601 Nevada Way
Boulder City, NV 89005

Services Provided:

Lake Mead, part of the Colorado River System, is located approximately 30 miles southeast of Las Vegas. It is the largest reservoir in the United States and the sole source of drinking water for 1.6 million Las Vegas residents. More than twenty million downstream users draw their drinking water from Lake Mead. Lakes Mead and Mohave are managed by the National Park Service as a National Recreation Area (NRA). The increasing urbanization of Las Vegas and the Southern Nevada Region raise concerns over potential impacts to the existing high water quality of the lakes, terrestrial wildlife, and fish that are dependent upon them. Limnological research supported by various entities has and continues to occur at Lake Mead National Recreation Area. It is crucial that documents associated with this research, past and present, be preserved in a central clearinghouse.

The Public Lands Institute and Lake Mead NRA entered into a cooperative partnership titled, “Limnological Assistance for the Lake Mead National Recreation Area in Meeting the Challenge of Water 2025.” As part of this agreement, the Public Lands Institute has agreed to conduct a data mining effort and make historic data more readily available. The first step in this process has been to uncover and amass literature and other materials related to Lake Mead NRA research. Found documents include original, historic reports. An interagency review team has agreed that UNLV University Libraries Special Collections is the ideal repository for housing and making historic Lake Mead-related documents more available.

Special Collections houses unique, rare, and specialized research material that documents the history, culture and physical environment of the city of Las Vegas, the Southern

Nevada region, the gaming industry, and the University of Nevada Las Vegas. This project fits well within the mission of the Department of Special Collections.

Supervision: *(The operating department and the person responsible for supervision)*

Review: Any of the three participating parties may request a review of this MOU on an annual basis.

This MOU enables the negotiation of services between the Public Lands Institute and University Libraries, Department of Special Collections.

As of this __th day of _____2007, the parties have signed this Memorandum of Understanding (MOU) between the Public Lands Institute, University Libraries, Department of Special Collections, and the Lake Mead National Recreation Area.

Signed: _____

Margaret “Peg” Rees, Ph.D.
Executive Director, Public Lands Institute (PLI)
peg.rees@unlv.edu

Signed: _____

Peter Michel, Ph.D.
Director, University Libraries, Department of Special Collections
peter.michel@unlv.edu

Signed: _____

Kent Turner
Chief of Resources, Lake Mead National Recreation Area,
National Park Service
kent_turner@nps.gov

Draft Lake Mead Science Symposium Breakout Session Summaries

Lake Management Session

The purpose of the Lake Management Concurrent Session is to disseminate information on current management plans, initiatives, and frameworks relating to the overall programmatic management of resources within Lakes Mead, Lake Mohave, or the lower Colorado River region incorporating Lakes Mead and Mohave. The lake management session invites papers and discussion on overall reservoir planning and management, including recreational planning, environmental planning, and water use and management planning. Examples of ongoing projects that would seem to apply include the Systems Convenience Operations Program Adaptive Management Plan process, the Lake Mead NRA Lake Management Plan, recreational economic and use studies, development of long term monitoring and research goals under the "Water 2025" program funded by the Southern Nevada Public Lands Management Act, and quagga mussel management and response planning.

Goals of the Lake Management Session: The main goal of the Lake Management Concurrent Session is to document ongoing resource management initiatives or resource planning efforts in support of development of an overall understanding of the range of such management activities underway within Lake Mead NRA. That understanding will assist in analysis of overall management activities to support an interagency needs assessment of management actions necessary to meet mutual management objectives. The secondary goal is to disseminate information on these management initiatives to a broad public to enhance public understanding of the overall management objectives for Lakes Mead and Mohave, and to assist the overall state of the knowledge in reservoir management. Additional objectives include dissemination of information from studies or surveys in support of management planning.

Please contact Kent Turner (Kent_Turner@nps.gov) or Chris Holdren (choldren@do.usbr.gov) for further details.

Limnology and Water Quality Session

-- need session summary --

Please contact Jim LaBounty (jim.labounty@snwa.com) or Mike Lico (mlico@usgs.gov) for further details.

Aquatic Biota and Fisheries Session

-- need session summary --

Please contact Jon Sjoberg (sjoberg@ndow.org), Erik Orsak (Erik_Orsak@fws.gov), or Tom Burke (tburke@lc.usbr.gov) for further details.

Riparian and Shoreline Resources Session

-- need session summary --

Please contact Scott Abella (scott.abella@unlv.edu) or Jef Jaeger (jef.jaeger@unlv.edu) for further details.

Environmental Contaminant Issues Session

Environmental contaminants in Lake Mead have a wide variety of sources as the surrounding watershed has been developed since the 1930s. This session is looking for research on any aspect of environmental contaminants in Lake Mead including trace elements, legacy pesticides, industrial compounds, and especially emerging contaminants like, pharmaceuticals, hormones, and personal care products. Specific topics to be addressed include; 1) sources and origins, 2) fate and transport, 3) distribution (spatial & temporal); 4) effects on aquatic biota, and 5) reducing sources and remediation of effects. Research on environmental contaminants in all media including, water, bed sediment, and biota are appropriate. Both oral presentations and posters are available.

Please contact Michael Rosen (mrosen@usgs.gov) or Steve Goodbred (goodbred@usgs.gov) for further details.

Emerging Issues Session (Peggy Roefer and Shawn Gerstenberger)

The Emerging Issues session provides the opportunity for a diverse group of researchers to identify emerging issues at the Lake Mead National Recreation Area related to human & ecological health. One of the main objectives of this session is to facilitate communication among state, local and federal government, private industry, environmental groups, municipalities, and the academic community regarding emerging issues. Information from this symposium will be useful in formulating collaborative investigations that contribute to enhancing the management of the resource. Specific examples of emerging issues include, but are not limited to, the recent introduction of the quagga mussel and gizzard shad, infrastructure changes in Lake Mead, and drought.

Please contact Peggy Roefer (Peggy.Roefer@snwa.com) or Shawn Gerstenberger (shawn.gerstenberger@unlv.edu) for further details.