



## Experimental Release from Glen Canyon Dam to Benefit Grand Canyon

11/08/2012

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PAGE, Ariz. – The U.S. Department of the Interior will trigger the first “high-flow experimental release” at Glen Canyon Dam since 2008 on Monday, November 19. The release is part of a new long-term protocol announced in May by Secretary of the Interior Ken Salazar to meet water and power needs, as well as to allow better conservation of sediment downstream, more targeted efforts to control non-native fish predation, and continued scientific experimentation, data collection, and monitoring to better address the important resources in the Colorado River below Glen Canyon Dam.

In cooperation with five Interior agencies, the upcoming release is designed to take full advantage of sediment deposited by Colorado River tributaries as a result of recent rainstorms and monsoons. Scientists have determined that the right conditions exist to conduct a high-flow release to benefit downstream resources, including camping beaches, sandbars, backwater habitats, riparian vegetation, and archeological sites.

The total maximum release from the dam will reach approximately 42,300 cubic-feet-per-second, consisting of 27,300 cfs of full powerplant capacity releases and a bypass release through the four river outlet tubes sending an additional 15,000 cfs of water out over the Colorado River in a spectacular visual display. The total duration of the high-flow release will be nearly five days including 24 hours at the peak release.

**WHO:** Senior Department of the Interior and Agency Officials

**WHAT:** High-Flow Experimental Water Release from Glen Canyon Dam

**WHEN:** Monday, November 19, 2012

- Security screening will take place from 9:00 a.m. – 10:30 a.m. at the Carl Hayden Visitor Center
- The program will begin at 11:00 a.m.

**WHERE:** Glen Canyon Dam, Page, Arizona

**RSVP:** Glen Canyon Dam is a National Critical Infrastructure facility. Notification of special coverage requests must be made prior to the event and **members of the media must RSVP no later than November 14, 2012**, in order to undergo a required security clearance process. Please RSVP to: Lisa Iams, Bureau of Reclamation Public Affairs Office, 801-524-3673 (office); 801-891-3951 (cell), liams@usbr.gov.



### Regional Office Receives Service Member Patriot Award



By John Flores  
Program Analyst (Budget)  
Upper Colorado Region

During a recent deployment to train a group of Army Reservists in August of 2012, I encountered three soldiers that were facing the same issue that many soldiers face. The soldiers are from different units and different states, but they were tied to a bond that I am sure many of us in the military do not want to have. They are getting ready to join mobilizing units (their first mobilization), they each have families that rely on them for support, and they each felt that they may not have the support of their employers while they deployed. As you can imagine, the level of stress a deploying soldier can feel is at an all time high as they get ready to head "down range." The last thing you want to really be thinking about is what is the status of my civilian employment when I return and will I be able to support my family?

As an instructor, it is my responsibility to ensure these soldiers are in the right frame of mind to concentrate on their training and to be as mentally and physically prepared for what lies ahead. Through the counseling that I was



providing these young soldiers I found myself reflecting on where I worked and the level of support that I have received throughout my time at Reclamation. Although, I try and stay in touch as much as possible when I am away, I am always greeted with “we are glad you called, but please don’t worry about work, we will handle it while you are away.” The budget group makes the transition in and out for weeks or months seamless and it allows me to concentrate on things at hand while I am away. Some may not realize how big of a relief that can be, but in my eyes having the support of your employer is a great asset.

I wanted to take a moment and recognize my employer, and the employer of many service members throughout the Upper Colorado Region, so I started thinking that it wasn’t enough to just try and nominate my immediate boss, it goes much deeper than that, so I nominated Larry Walkoviak, Brent Rhees, Ann Gold, Mary Halverson, and Annie Lambert for the Service Member Patriot Award.

The Service Member Patriot Award recognizes organizations, supervisors, and bosses nominated by the service member for support provided directly to them during their time in the military. “The Patriot Award reflects the efforts made to support Citizen Warriors through a wide range of measures including flexible schedules, time off prior to and after deployments, caring for families, and granting leaves of absence if needed.”

It was an honor to be able to present Larry, Brent, Ann, Mary, and Annie their Patriot Awards on November 6, 2012. On behalf of myself and many other service members throughout Reclamation, specifically the Upper Colorado Region, a heartfelt thank you to Larry, Brent, Ann, Mary, Annie, and all managers and employees that support service members here at home, and while they are deployed. You are greatly appreciated!



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U.S. Department of the Interior  
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## Thoughts from the Front Office

A week or so ago, Larry, Brent, Mary Halverson, Annie Lambert and I were recognized by the Department of Defense, Office of Employer Support of the Guard and Reserve, for allowing guard members to fulfill their responsibilities during their military deployment without worrying about having a job to come back to.

I have not really thought too much about this over the years—it is always something that the Federal service has done. But the employee who nominated us for the award told a story about members from his unit who were fired from their jobs during their deployment. They had families to care for and, needless to say, their personal situation added additional stress to an already very stressful time.

It made me think about the things we always take for granted—like our freedom and our benefits as Federal employees. We don't always take time to recognize the good things that come as a result of others defending us and the benefits that we receive as public servants. As such, we have an obligation to support the men and women who fight for us abroad or otherwise support us at home who make sure we can go on with our lives uninterrupted.

We certainly need to thank them for their service and be grateful for all they do. One of the ways to do this is to provide employment opportunities for veterans after they return from duty.

Supervisors take training every year on veteran employment opportunities. In addition, you will be hearing more in the next little while about employment of veterans and employment of individuals with disabilities, which is becoming more of a focus for us Reclamation-wide.

We should be looking for ways to bring more of these individuals into our UC family where opportunities allow.

Thanks for all you do for the region and for Reclamation every day.

Ann

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## Reclamation Releases Narrows Project Final Environmental Impact Statement

By Jayne Kelleher  
Technical Writer/Editor  
Upper Colorado Regional Office

On November 5, 2012, the Bureau of Reclamation's Provo Area Office announced the availability of the final environmental impact statement (FEIS) on the Narrows Project, a non-Federal dam and reservoir proposed by the Sanpete Water Conservancy District (SWCD) on Gooseberry Creek in Sanpete County, Utah. As proposed, the SWCD would construct, operate, and maintain the Narrows Project, which would be funded with a variety of public and private financing and located in part on Federal lands. The project would enhance the irrigation and municipal water supplies for north Sanpete County, Utah.

Reclamation served as the lead agency in preparation of the FEIS and the U.S. Army Corps of Engineers (USACE) and U.S. Forest Service served as cooperating agencies. The FEIS describes and analyzes the potential effects of four project alternatives. The No Action Alternative represents the conditions of the affected areas in Sanpete and Carbon counties if the Project is not built. The three action alternatives represent three different versions of the Narrows Project, each differing in the size of the dam and reservoir. Analysis of three reservoir sizes enables the USACE to determine the Least Environmentally Damaging Practicable Alternative.

Under all three action alternatives, a supplemental water supply would be developed for presently irrigated lands and for municipal and industrial water users in north Sanpete County. The action alternatives would require diversion of up to 5,400 acre-feet of water annually from Gooseberry Creek drainage in the Colorado River Basin to northern Sanpete County in the Sevier River drainage basin.

The preferred alternative is to allow SWCD, a non-Federal entity, to build, operate, and maintain the largest dam considered with a reservoir capacity of 17,000 acre-feet of water stored behind a dam with a height of 120 feet, a crest length of 550 feet, and a reservoir surface area of 604 acres. The reservoir would produce an average yield of 5,136 acre-feet per year – 4,281 acre-feet of water for 15,420 acres of farmland and 855 acre-feet of water for municipal and industrial use (one acre-foot is sufficient to support a suburban family of four for 1 year). Irrigation is expected to yield a third crop of alfalfa in an area where usually only two crops are harvested.



Reclamation will not make a decision on the proposed action in the FEIS until at least 30 days after release of the FEIS. After this 30-day public review period, Reclamation will complete a Record of Decision that will state the action to be implemented and discuss all factors leading to that decision.

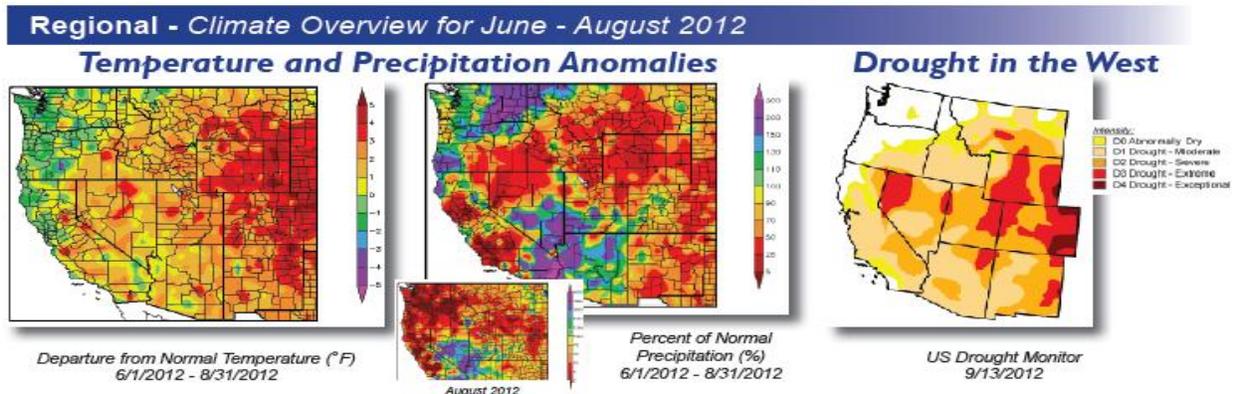
The FEIS is currently available on Reclamation's web site at: [www.usbr.gov/uc/envdocs/index.html](http://www.usbr.gov/uc/envdocs/index.html). The Record of Decision will be posted after the 30-day review period.

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## Bureau of Reclamation Drought Workshop



By Heather Hermansen  
Hydraulic Engineer (Hydrologic)  
Upper Colorado Region

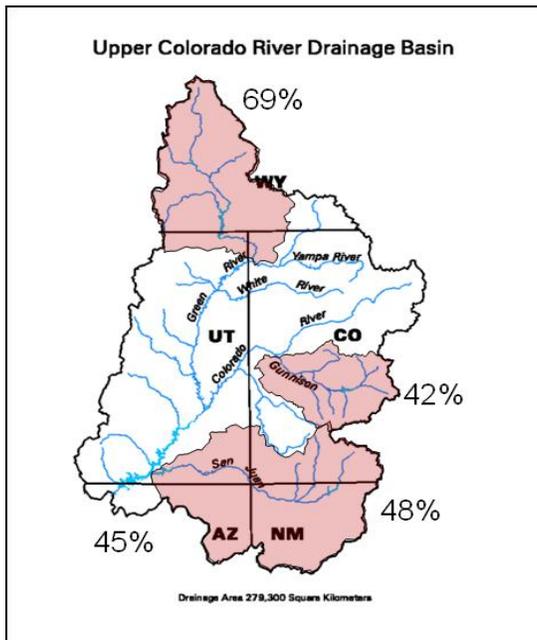
Reclamation managers, water operators and research scientists came together on November 6 through 7 with river and weather forecasters from the National Oceanic and Atmospheric Administration (NOAA) and drought specialists with the National Integrated Drought Information System (NIDIS) to discuss current past, present and future drought hydrology. NOAA and NIDIS, in coordination with the Western Governors' Association, presented the [western region quarterly climate impacts and outlooks](#), and discussed drought response on a national and regional level.

Each Reclamation region presented a 2012 summary of their basin, drought development, operational response, and interactions with customers and stakeholders on supply forecast, allocations, and management along with expectations for the coming year. Water operators rely heavily on forecasted future weather and river conditions. NOAA has regional River Forecast Centers (RFC) to assist water agencies in providing these forecasts. The Colorado Basin RFC presented the scientific processes used to forecast both the annual water supply and coming spring runoff and peak hydrology. The Pacific Northwest and Upper and Lower Colorado regions presented innovative modeling tools that are under development in coordination with the RFCs that provide a statistical breakdown of operational scenarios based on multiple hydrologic possibilities.

### ***Upper Colorado River Basin Water Year 2012 Summary***

Water year 2012 hydrologic conditions were dry across the entire Upper Colorado Region. Below is a snapshot of how dry conditions were in 2012 in the Upper Colorado River by subbasin with both the annual flow in millions of acre-feet (MAF) and percent of average flow compared against the 1981-2010 water years.





Basin	2012 Annual Flow MAF
Green River <i>above Flaming Gorge</i>	1.0 (69%)
Gunnison River <i>above Crystal</i>	0.50 (42%)
San Juan River <i>above Navajo</i>	0.52 (48%)
Upper Colorado River <i>above Lake Powell</i>	4.91 (45%)

**Figure 1.** On the left, map of the Upper Colorado River Drainage Basin with the Upper Green, Gunnison, and San Juan River Basins highlighted. On the right, a table containing water year 2012 annual flow by millions of acre-feet (MAF) and percent of average.

In the Upper Colorado River Basin, management of water for extreme hydrology, both drought and wet conditions, is a function of laws and agreements stretching back to the original Compact in 1922.<sup>1</sup> Records of Decision (ROD) and Environmental Impact Statements (EIS) over the last 10 years contain the parameters of water and reservoir management for Flaming Gorge Reservoir on the Upper Green River, the Aspinall Unit on the Gunnison River and Navajo Reservoir on the San Juan River.

Glen Canyon Dam and Lake Powell at the bottom of the system are operated in coordination with Lake Mead in the Lower Colorado Region. The Record of Decision on the Operation of the Colorado River Interim Guidelines for Lower Basin Shortages and the Coordinated Operations for Lake Powell and Lake Mead signed in December 2007 is fondly referred to as the “Interim Guidelines.” The Interim Guidelines, set to expire in 2016, were created to avoid curtailment of uses in the Upper Basin, minimum shortages in the Lower Basin and not adversely affect yield for development of water in the Upper Basin. It sets up 4 operational tiers for Glen Canyon Dam operations and 6 operational tiers for Lake Mead that are based on the elevations modeled in the 24-month study based on the projected 24-months of hydrology.

Taken together, these documents are the latest installments to the Law of the River and proscribe management objectives and commitments for the Upper Colorado River reservoir system. The Upper Colorado Region “responds” to drought through managing the reservoirs to fill the reservoir annually and meet the dry or moderately dry hydrologic commitments and targets set forth in the Records of Decision and Law of the River documents.

***Middle Rio Grande and Pecos River Basin Water Year 2012 Summary***

Carolyn Donnelly, Chief of the Water Resources Group in the Albuquerque Area Office, presented operations on the Middle Rio Grande and Pecos River Basins (Figure 2 shows maps of the basins). AAO operates its reservoirs according to Endangered Species Act (ESA) requirements, irrigation contracts, and international agreements with Mexico. Millions of dollars were spent in 2012 in order to keep water in these rivers to meet ESA requirements of continuous river flows through June 15 for the aquatic, wildlife, and riparian habitats. The AAO impacts were particularly significant: (1) Irrigation districts shut down in mid-August, (2) Albuquerque’s municipal use of water diverted from the Upper Colorado River Basin was curtailed, (3) 56,300 acre-feet (AF) of supplemental water was

<sup>1</sup> Additional Law of the River documents available at: <http://www.usbr.gov/lc/region/pao/lawofrvr.html>



required to meet the ESA flow targets, and (4) the AAO pumped over 10,000 AF from off-channel supplies directly into the river. The season has ended and the river is now running continuously without Reclamation needing to provide additional water supply. However, AAO is looking ahead in 2013 and preparing to enter into additional water contracts with irrigators, water districts, and New Mexico in order to provide the necessary river flows to meet ESA requirements.

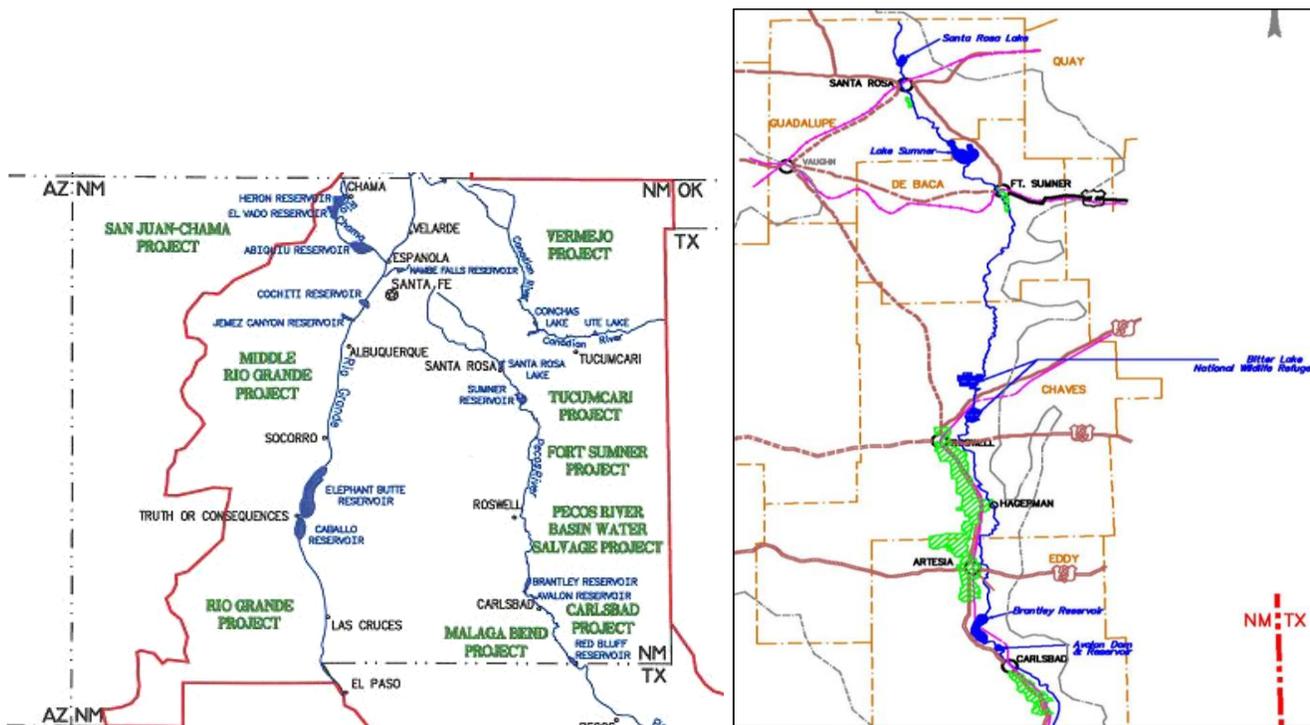


Figure 2. Middle Rio Grande Basin geography on the left and the Pecos River Basin geography on the right.

### Forecasting Water Year 2013 Conditions

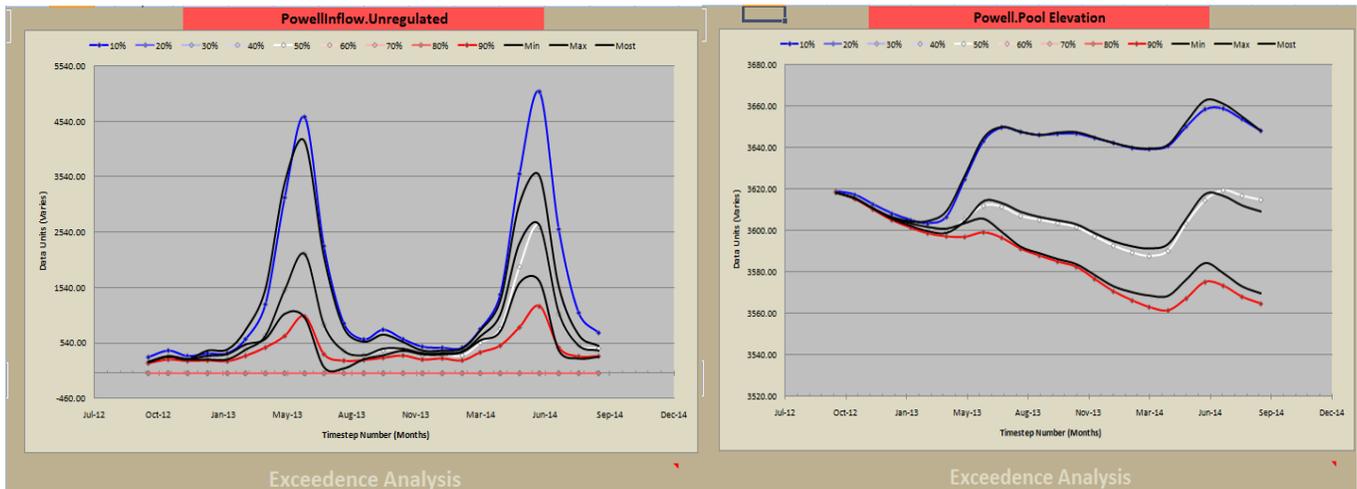
The Upper and Lower Colorado Region report future water releases in a document called the 24-month study. The 24-month study is both a hydrologic model and report that updated monthly and contains the next 24 months of forecasted hydrology and water operations. Development of Upper and Lower Colorado Regions' official annual operations use the 24-month study model, which is transmitted to stakeholders through the 24-Month Study Report. The report is limited because it is deterministic and only has one possible hydrologic inflow and operational scenario.

The Upper and Lower Colorado Regions of Reclamation have been working with the Colorado Basin RFC and the contractor Precision Water Resources Engineers, with experience developing tools for the Carson-Truckee Basin in the Pacific Northwest Region, to develop a probabilistic model and toolset that will provide stakeholders with a range of possible hydrologic and operational scenarios. The Mid-Term Operations Model (MTOM) uses multiple hydrologic "traces" developed by the Colorado Basin RFC to provide just such a range of operations. Parallel runs of the 24-month study model and the MTOM began in January 2012.

There has been continued development of the rule set in the MTOM in order to match the 24-month study operations as closely as possible. Figure 3 below show how successful this process has been. Lake Powell's unregulated inflow for the minimum, most probable and maximum 24-month study output is compared against the MTOM minimum, most probable and maximum unregulated inflow calculations using the RFC traces. The information aligns closely, particularly in the upcoming year (2013). Figure 4 shows Lake Powell reservoir elevation projections based on the minimum, most probable and maximum hydrology inputs. Again, the results appear promising and development continues.



Reclamation is excited about the progress of the development and results from the MTOM. We anticipate sharing the model and results early next year. Reclamation anticipates that our stakeholders will be able to use this tool for better management and planning of other agencies' respective water needs, along with enhanced communication among and between agencies as water management continues into the future.



**Figure 3. Lake Powell Unregulated Inflow from the Colorado Basin RFC and calculated using the MTOM (left). Minimum, Most Probable, and Maximum Lake Powell Reservoir Elevation calculated using the 24-Month Study Model and MTOM (right).**

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## Electronic Records are here!!!!!!!



Finally, after 20 plus years of waiting and talking about the paperless office we have everything in place to make this happen!

The National Archives and Records Administration (NARA) approved electronic records as the official record in December 2005, but the UC Region is the only Region in Reclamation that has the tools available to fully implement electronic records.

The links below provides access to the Office of Management and Budget and NARA's August 24, 2012, memo announcing the Government Records Directive. This Executive Order states: "This Directive requires that to the fullest extent possible, agencies eliminate paper and use electronic recordkeeping." Those are the words we have wanted to hear for years!

Since the 2006 edition of the Information Management Handbook (IMH), Reclamation has had the authority to consider the electronic copy as the "official record," as long as the electronic record meets NARA's standards. The only problem has been RDC-07-01.

The issue with RCD-07-01 stating that we have to "Print and File" emails, has been resolved. They can now be kept in the Upper Colorado Electronic Document Management System (UCEDMS). After lengthy discussions with James Judd (Reclamations Records Manager) regarding our process of printing the email to PDF (meeting NARA's standards) and filing it in UCEDMS, we are in agreement that this requirement has been met.

UCEDMS will provide the tool to improve our business process for incoming and outgoing correspondence within the UC Region. Outgoing documents can be entered into the Library and emailed to the designated field or area office. This will eliminate the need for a hard copy being sent. The outgoing document will only need to be indexed into the UCEDMS Library once, but can be accessed and used by all offices.



The UCEDMS P8 document management system is in place and has been made available to a number of offices for the storage and retrieval of both pre-record and record material.

Offices currently using UCEDMS:

- UC Regional Office: Records Staff, Lands, Acquisition Management, Information Resources
- Provo Area Office: Lands, and Water Rights
- Four Corners Construction Office: entire office
- Western Colorado Area Office, Grand Junction and Durango: Records Staff

Provo Area Office and the Western Colorado Area Office in Grand Junction will start using the Library by the end of 2012.

[M-12-18, Managing Government Records Directive](#) (August 24, 2012) (7 pages, 2.62 mb)

[RCD 07-01](#) Electronic Mail (Email) as Official Records

[Information Management Handbook](#)

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## Fiscal Year 2012 in Review

**Acquisitions 2012:** Fiscal Year 2012 was without question a very interesting year for the Acquisition Management Division (AMD), in March the Acquisition and Assistance Management Division (AAMD) from Denver performed a tri-annual review of the Division. The review identified many positives as well as many areas of concern. As a result of the review, additional internal control and review requirements were implemented along with reduced thresholds for both contractual and financial assistance actions. Despite the additional review procedures and time impacts, the AMD awarded a substantial number of contracts, financial assistance, and PL 93-638 actions in FY12. Shown below are the number of awards made during the fiscal year. In addition to the number of awards made, shown below are the projected number of awards from the Advanced Acquisition Plan for FY12. As detailed below, the UC Region continues to have large variances between its projected number of actions and actual awards, exceeding it by over 100% for the fiscal year. In the coming fiscal year, it will be a top priority of the Region and the AMD to reduce this high variance.

	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	TOTALS	
	<b>TOTALS</b>					<b>Variance</b>
<b>Projected Actions</b>	141	179	107	138	565	
<b>Actual Actions</b>	252	298	258	422	1,230	117.7%
<b>Projected Dollars (100K)</b>	22,681	41,814	47,581	61,225	173,301	
<b>Actual Dollars (100K)</b>	13,324	18,853	23,229	58,788	114,194	-34.1%

It's also important to note that the UC Region also hit five out of six of its socio-economic goals, exceeding many of them significantly. Shown below are the region's final socio-economic accomplishments for the fiscal year, along with a comparison to the Bureau accomplishments for the same period.



Region	Type	Total Actions	Goaling Actions	% of Actions	Total Dollars Obligated	Goaling Dollars Obligated	% of Dollars Obligated	Goals
BOR	Small Business	7,366	4,921	66.81%	\$ 319,886,545	\$ 167,093,974	52.24%	51.50%
	SDB	7,366	1,404	19.06%	\$ 319,886,545	\$ 62,877,448	19.66%	5.00%
	HUBZone SB	7,366	341	4.63%	\$ 319,886,545	\$ 27,712,560	8.66%	3.00%
	Woman Owned SB	7,366	1,515	20.57%	\$ 319,886,545	\$ 46,080,981	14.41%	5.00%
	SDVOSB	7,366	191	2.59%	\$ 319,886,545	\$ 9,362,330	2.93%	3.00%
	8(a)	7,366	470	6.38%	\$ 319,886,545	\$ 28,898,653	9.03%	n/a
UC	Small Business	998	700	70.14%	\$ 55,340,636	\$ 41,743,271	75.43%	51.50%
	SDB	998	117	11.72%	\$ 55,340,636	\$ 14,798,102	26.74%	5.00%
	HUBZone SB	998	62	6.21%	\$ 55,340,636	\$ 10,336,411	18.68%	3.00%
	Woman Owned SB	998	106	10.62%	\$ 55,340,636	\$ 13,645,372	24.66%	5.00%
	SDVOSB	998	33	3.31%	\$ 55,340,636	\$ 647,186	1.17%	3.00%
	8(a)	998	28	2.81%	\$ 55,340,636	\$ 1,378,298	2.49%	n/a

**WMS:** In the coming fiscal year we will be implementing a new Workload Management System (WMS) to facilitate better, timelier project management within the Region. The first phase of WMS will start in AMD, enabling the Region to more accurately track the progress and timeliness of its procurements. This will also allow us an opportunity to gain more insight into what is causing the variances between projected and actual awards. In addition, AMD will utilize the WMS to track our procurement actions to ensure more timely awards.

In the coming weeks, more information and procedures for utilizing WMS will be coming, in the mean time, please keep your FY12 actions moving to ensure timely award. In addition, please be aware that to facilitate the implementation of WMS and to gather accurate reporting information, once implemented, all procurements within the Region will need to be entered into and processed within WMS.

**Fiscal Year 2013:** This coming fiscal year will be a challenge for Reclamation and the UC Region, with the implementation of FBMS, it is very likely that the fiscal year will be cut short by up to 30 days, ending August 31<sup>st</sup>. Therefore, we need to ensure all acquisition related actions are in process **well before April 2013 to ensure award by the fiscal year end.** In addition, once FBMS is implemented, only critical actions will be authorized during the FBMS “black-out” period. So it’s important to **note that Fiscal Year 2014 actions that need to be obligated between October and December 2013 may need to be executed prior to August 31<sup>st</sup> or extended beyond the blackout period. In order to ensure we have continuous coverage and contracts and agreements in place, be sure all of your office’s actions requiring award between October and December 2013 are on you acquisition plan and being discussed during the monthly Acquisition Calls. This will help us ensure we have a plan in place to ensure timely award.**

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# RECLAMATION

*Managing Water in the West*

## **FY 2013 Science and Technology Research Portfolio Summary**

**Research and Development Office**



**Installation of a Hydraulically Operated Turnout**





## ***FY 2013 Science and Technology Research Portfolio***

### ***Background***

The Science and Technology (S&T) Program is managed by the Research and Development (R&D) Office within the Technical Resources Directorate of the Bureau of Reclamation. The program is focused on providing innovative solutions for Reclamation water and facility managers, and our western stakeholders. The core of the program is an internal, competitive, merit-based, R&D program. Reclamation technical specialists submitted 185 research proposals this year. The proposals are reviewed by a Reclamation team which includes representatives from all five regional offices, the Technical Services Center, Dam Safety, Policy and Administration, and Power Resources Offices.

### ***R&D Office Initiatives***

The R&D Office is leading several initiatives to strengthen our research program. Below are some that we are starting in FY 2013.

- Using challenges to accomplish difficult research objectives and minimize the risk to the Government,
- Developing roadmaps to identify research needs in the following areas:
  - River restoration
  - Renewable energy generation (including hydropower)
  - Aging infrastructure (this roadmap is being developed in partnership with the Corps of Engineers)
- Evaluating canal lining technology



**Figure 1** Program Review Team.

Back row - left to right: Levi Brekke (R&D), Gary Davis (GP), Darrel Krause (Policy), Chuck Hennig (R&D), Jake Akervik (R&D), Jobaid Kabir (MP), Mark McKinstry (UC), Curt Brown (R&D)

Middle row – left to right: Jennifer Johnson (PN), Rod Wittler (MP), Travis Bauer (TSC), Erin Foraker (R&D), Miguel Rocha (R&D)

Front row –left to right: Lisa Krosley (DSO), Amy Porter (LC)

### ***Partnerships***

The development of partnerships is a key factor in selecting research proposals. Partnerships help us to:

- Increase cost sharing, which historically has been close to 1 to 1
- Recruit external subject matter experts to serve as team members and advisors
- demonstrate the value of the research to partners through their contributions

Table 1 provides a partial list of partners for research projects funded through the S&T Program.

**Table 1 Sample List of S&T Program Partners**

<b>Federal Agencies</b>
USACE, USGS, USDA FS, NOAA, NASA, BLM, EPA, USDA ARS, FEMA, Federal Interagency Sedimentation Project
<b>Non-Federal Agencies</b>
Texas Water Development Board, Metropolitan Water District, California Fish and Game, Singapore Water Utilities Board, Eastern and Western Metropolitan Water Districts, City of Waco, TX, City of Oxnard, CA
<b>Research Centers</b>
National Renewable Energy Lab, National Center for Atmospheric Research, DOI Climate Science Centers, NOAA RISA Centers,
<b>Universities</b>
Colorado, Colorado State, Arizona, Denver, Idaho, Utah State, North Dakota State, New Mexico State, Cooperative Ecosystem Study Unit network.
<b>Companies</b>
DOW Chemical, Separation Systems Inc., Marrone Bio Innovations, Streamside Systems, Instream Energy Systems

***Directed Research and Priority Areas***

Although Reclamation faces many challenges, particular emphasis is given to addressing challenges associated with three research priority areas:

- Advanced Water Treatment
- Climate Change and Variability
- Invasive Zebra and Quagga Mussels

These areas have been the focus of intensive work both within Reclamation and with other agencies. Critical gaps in knowledge have been identified, and studies have been initiated to address those gaps.

***FY13 Program Funding***

The FY 2013 Presidential budget request is \$10,050,000. Table 2 shows the complete spending plan for the S&T Program. This table includes staff time, directed activities, and DOI assessments. The total funding plan slightly exceeds the Presidential budget request because history has shown that 5 – 10% of funds will not be expended as scheduled.

**Table 2. FY 2013 Science and Technology Program Research Portfolio Summary**

Activity	Budget
Advanced Water Treatment	\$ 1,129,501
Climate Change and Variability	\$ 1,750,000
Invasive Zebra and Quagga Mussels	\$ 1,600,000
Renewable Energy	\$ 984,688
Water Operations and Decision Support	\$ 635,001
Environmental Issues in Water Delivery and Management	\$ 1,191,499
Water and Power Infrastructure Reliability	\$ 680,631
Conserving or Expanding Water Supplies	\$ 309,500
Accelerating Technology Transfer and Commercialization	\$ 576,000
Knowledge Transfer, Outreach, Collaboration and Implementation	\$ 645,000
Science and Technology Program Coordination	\$ 650,000
Unsolicited Proposals	\$ 150,000
<b>Grand Total</b>	<b>\$ 10,301,820</b>

***Intramural Competitive Process***

Table 3 shows the scale of the requests for funding and the awards. This table only includes the proposals submitted through the competitive process; directed research activities are not included in this table.

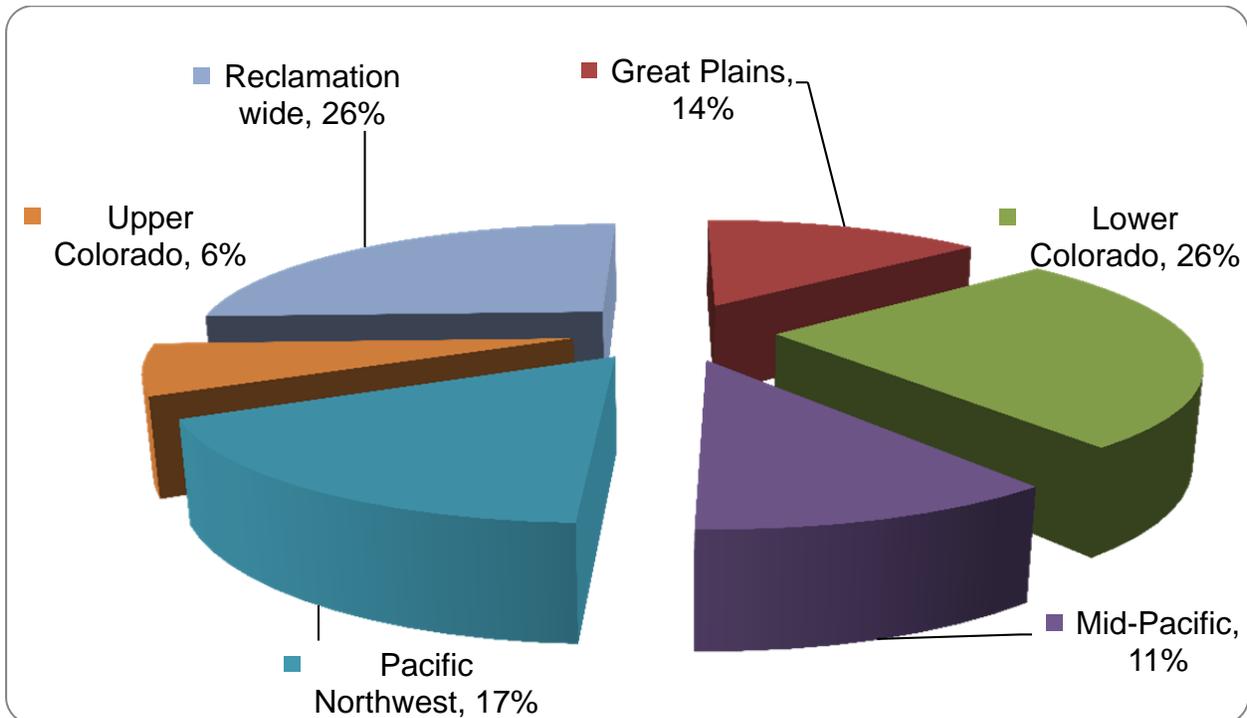
**This year was a banner year for the S&T Program, with over \$13.5 million requested from the program.** Because of this, 32% of proposals (comprising \$5.2M) could not be funded.

Research Area	Number of Requests	Sum of Requests	Number of Awards	Sum of Awards
Priority Areas (Advanced Water Treatment, Climate Change and Variability, and Invasive Zebra and Quagga Mussels)	53	\$4,961,551	40	\$2,675,395
Remaining Portfolio	132	\$8,583,853	85	\$3,351,319
<b>Grand Total</b>	<b>185</b>	<b>\$13,545,404</b>	<b>125</b>	<b>\$6,026,714</b>

### ***Distribution of Research Benefits***

Although the majority of researchers funded are employees in the TSC, the focus and benefits of the research are spread throughout the regions or Reclamation wide. In many cases, the principal investigator may be located in the TSC but is working in the field with area and regional offices on issues directly related to those offices.

Figure 2 shows the distribution of the initial benefits of the research projects across Reclamation. While the initial benefits of a project may be in one Region, the principal criterion for selection is that a project will ultimately produce benefits widely across Reclamation.



**Figure 2.** FY 2013 Science and Technology Program Primary Beneficiary of Results

### ***Project and Activity Listing***

The following pages provide the line by line project listing for all FY13 S&T funded research.

FY 2013 Science and Technology Program

Advanced Water Treatment Research Projects

Project ID	Title	Researcher	Award
792	Developing a deterministic model for predicting cleaning frequency due to inorganic scaling on reverse osmosis membranes	Katharine Dahm	\$ 30,000
1526	Cellulose Acetate Membrane	Saied Delagah	\$ 50,000
1617	Produced Water Treatment Primer for Oil and Gas Operations	Katharine Dahm	\$ 84,000
2444	Concentrate Minimization via Pellet Softening - Process Evaluation and Pilot Study	Saied Delagah	\$ 60,000
4311	Projected Impacts of Climate Change Induced Water Quality Trends on Reclamation Operations	Katharine Dahm	\$ 15,000
4674	Cost of desalinated water - Current Costs, Trends, and Methodologies	Yuliana Porras Mendoza	\$ 20,000
4850	Solar Photovoltaic Desalination	Mitchell Haws	\$ 170,000
5349	Evaluating Thin-film Nanocomposite Membranes to Treat Brackish Waters through Reverse Osmosis	Angela Adams	\$ 21,501
6871	Effect of Chlorine vs. Chloramine Treatment Techniques on Materials Degradation in Reclamation Infrastructure	Jessica Torrey	\$ 25,000
7399	Renewable Energy Evaluation for Zero Liquid Discharge Processes	Michelle Chapman	\$ 40,000
8380	Developing the Next Generation Chlorine-resistant, High Flux, and High-salt Rejection Polyamide Desalting Membrane to Increase Water Supply	Yuliana Porras Mendoza	\$ 130,000
8673	Investigation of benefit and application of desalination fuel cells to meet Reclamation's rural water needs	Katherine Guerra	\$ 15,000
8944	Forward Osmosis Water Purification	Chuck Moody	\$ 25,000
9316	Strategies for Treating Variable Source Water	Michelle Chapman	\$ 40,000
9424	Oxnard Saline Treatment Wetlands	Katharine Dahm	\$ 104,000
9589	Investigating an Innovative Constructed Wetland Design for Removing Endocrine Disrupting Compounds from Reclaimed Wastewater	Michelle Chapman	\$ 170,000
9740	Demonstration Forward Osmosis Treatment System	Steve Dundorf	\$ 30,000
Directed	Desal Challenge Prize Support	K. Price	\$ 100,000
<b>TOTAL AWARD</b>			<b>\$ 1,129,501</b>

FY 2013 Science and Technology Program

Climate Change and Variability Research Projects

Project ID	Title	Researcher	Award
1385	Methodology and Data for Quantifying Extreme Precipitation Events in a Changing Climate	John England	\$ 80,000
1646	Sensitivity of Hydrologic Impacts Assessment to Downscaling Methodology and Spatial Resolution	Tom Pruitt	\$ 89,000
1916	Flood Frequency Variability on Seasonal to Multidecadal Time Scales in the Western US and Implications for Infrastructure Planning	Subhrendu Gangopadhyay	\$ 64,786
1967	Back to the Future Part 2	Fred Liljegren	\$ 82,861
2024	A Comparison of Methods for Simulating Watershed Evapotranspiration and Runoff under Changing Climatic Conditions	Michael Tansey	\$ 100,000
6507	Evaluating Climate-induced Runoff and Temperature Change on Stream Habitat Metrics for Endangered or Threatened Fish	Jennifer Bountry	\$ 90,000
6917	Ingredients-based Climatology and Future Projections of Extreme Precipitation Events Using a Numerical Weather Prediction (NWP) Framework	Raymond Caldwell	\$ 100,000
7430	Adaptation of Western US Agriculture to Climate Change Induced Water Scarcity	Todd Gaston	\$ 33,000
8765	Evaluate the impacts of Climate Change on Effectiveness of Habitat Restoration Structures and Restoration Activities	Toni Turner	\$ 27,000
9449	Design and Development of a Prototype Tool for Integrated Climate Downscaling and Streamflow Prediction using Open Source GIS Software	Lanie Paquin	\$ 54,000
Directed	Directed: Diagnosing the moisture sources for extreme precipitation events in the intermountain west (M. Alexander)	L. Brekke	\$ -
Directed	Directed: CC Reserve	L. Brekke	\$ 142,353
Directed	Directed: Airborne Snow Observatory - Value of Information	L. Brekke	\$ 100,000
Directed	TSC Climate Coordination	L. Brekke	\$ 72,000
Directed	Directed: Vulnerability Analysis of Western Water Resources to Climate Variability and Change (J. Ramirez)	L. Brekke	\$ -
Directed	Directed: Improving extreme precipitation estimation and climate change projections using regional and high-resolution model simulations (K. Mahoney)	L. Brekke	\$ -

FY 2013 Science and Technology Program

Climate Change and Variability Research Projects

Project ID	Title	Researcher	Award
Directed	Directed: Evaluating the Relevance, Trustworthiness, and Applicability of CMIP5 Climate Projections for Water Resources and Environmental Planning	L. Brekke	\$ 252,000
Directed	Directed: Sensitivity of Hydrologic Impacts Assessment to Downscaling Methodology and Spatial Resolution (NCAR)	L. Brekke	\$ -
Directed	Directed: Climate Change Downscaling	L. Brekke	\$ 30,000
Directed	Directed: Literature Synthesis on Climate Change Implications for Reclamation's Water Resources	L. Brekke	\$ -
Directed	Directed: CEATI project support (Risk-Informed Decision-Making Framework for Hydropower Generation Planning)	L. Brekke	\$ -
Directed	Directed: The Predictability of Streamflow across the Contiguous United States (Reclamation)	L. Brekke	\$ 35,000
Directed	Directed: The Predictability of Streamflow across the Contiguous United States (NCAR)	L. Brekke	\$ 108,000
Directed	Directed: Climate science and water resources distance learning efforts and customized workshops (COMET)	L. Brekke	\$ 100,000
Directed	Directed: Climate science and water resources distance learning efforts and customized workshops (Reclamation Staff)	L. Brekke	\$ 40,000
Directed	Climate and Water Resource Research Coordination	L. Brekke	\$ 150,000
<b>TOTAL AWARD</b>			<b>\$ 1,750,000</b>

FY 2013 Science and Technology Program

**Invasive Zebra and Quagga Mussel Research Projects**

Project ID	Title	Researcher	Award
1367	Alternate Control Strategy for Dreissinids Using Carbon Dioxide	Kevin Kelly	\$ 28,250
2427	SEM Characterization of Drain Biofouling for Dreissenid Mussels	Douglas Hurcomb	\$ 20,000
2675	Modernization of Trashrack Raking Systems to Manage Quagga Mussel Settlement	Bryan Heiner	\$ 75,000
4923	Testing ability of widely used fish screens to resist quagga mussel fouling	Cathy Karp	\$ 80,000
5042	Dreissenid Mussel Monitoring and Detection Laboratory	Denise Hosler	\$ 1
5270	Field Scale-up testing of Foul Release Coatings	David Tordonato	\$ 23,700
6003	Ecological Impacts and Possible Environmental Controls of Zebra/Quagga Mussels on Reclamation Reservoirs	Chris Holdren	\$ 79,680
6714	Habitat Suitability Parameters for Invasive Mussels at Reclamation Managed Facilities and Waters	Scott OMeara	\$ 170,000
7095	Antifouling Coatings for Invasive Mussel Control	Allen Skaja	\$ 110,316
7169	Creating Turbulence to Prevent Mussel Colonization in Pipelines - Continued	Joshua Mortensen	\$ 100,000
8305	Research and Development of Durable Foul Release Coatings	Allen Skaja	\$ 95,800
9508	Zebra and Quagga Mussels: Fish Predation on Quagga Mussels	Cathy Karp	\$ 50,000
9640	Production and Testing of Antibodies for Dreissena Mussels	Kevin Kelly	\$ 92,500
Directed	Pulse Pressure Technology	J. Kubitschek	\$ 150,000
Directed	UV Treatment for Mussels	J. Kubitschek	\$ 150,000
Directed	ZQ Reserve	J. Kubitschek	\$ 374,753
<b>TOTAL AWARD</b>			<b>\$ 1,600,000</b>

FY 2013 Science and Technology Program  
**Renewable Energy Research Projects**

Project ID	Title	Researcher	Award
548	Power System Diagnostics	Eric Eastment	\$ 180,000
3107	Affordable Self-Cleaning Trash Rack	Tom Gill	\$ 45,000
3863	Guidelines for legal and policy considerations associated with solar development on Reclamation land	Mike Norris	\$ 30,000
3906	Phase 2- Advanced Optimization Algorithms for Hydropower Dispatch	David Harpman	\$ 60,000
5021	Reduced Cost Hydropower Maintenance	Nathan Myers	\$ 180,000
6144	Renewable Integration and Small Hydro	Nathan Myers	\$ 65,000
6673	Design Standardized Control System Platform	Jeffrey Stenberg	\$ 15,000
7973	Feasibility of Integrating Low-Head Hydropower with Effective Canal Management	Joshua Mortensen	\$ 98,000
9629	Power System Safety	Eric Eastment	\$ 80,000
9650	Increased Hydrogeneration while Improving Environmental Conditions (2)	Merlynn Bender	\$ 13,208
9933	Effective Cavitation Detection Techniques for Hydraulic Turbines	John Germann	\$ 68,480
Directed	Renewable Energy Coordination	E. Foraker	\$ 150,000
<b>TOTAL AWARD</b>			<b>\$ 984,688</b>

FY 2013 Science and Technology Program

Water Operations and Decision Support Research Projects

Project ID	Title	Researcher	Award
2264	Application of a Physically-Based Distributed Snowmelt Model in Support of Reservoir Operations and Water Management	Patrick McGrane	\$ 43,000
2754	Large Wood Design Guidelines - National Manual	David DJ Bandrowski	\$ 1
2834	Optimizing surface model techniques for digital representation of river channels	Kurt Wille	\$ 65,000
2846	Geographic Information System-based Decision Support for Wetland Drainage Salinity Management	Nigel Quinn	\$ 5,000
2892	Investigating the Impact of River Regulation on Groundwater Supplies in the Western US	Jennifer Johnson	\$ 43,000
3484	Continued Field Measurement of Riparian ET, Lower Colorado River Basin	Ian Ferguson	\$ 45,000
3734	Exploring Potential Uses of Near Remote Sensing and Unmanned Aerial Vehicle (UAV) Technologies in Bureau of Reclamation (Reclamation) Science, Engineering, and Operations to Reduce Costs and Add Capabilities	Douglas Clark	\$ 25,000
3760	Pilot Testing Data Stewardship Processes on River Restoration and Hydrologic Data Sets	Douglas Clark	\$ 70,000
3937	Development of Software Tools for Efficient Processing of Bathymetry and Discharge Data	Daniel Dombroski	\$ 31,000
4926	Examining the Utility of Unmanned Vehicle Technology to Map Topography	Douglas Clark	\$ 55,000
6641	Case Studies of Disputes over Science in the Bureau of Reclamation	Douglas Clark	\$ 20,000
7172	Near-Real-Time Visualization of Salt Loading to Meet Water Quality Objectives	Michael Fitzmaurice	\$ 10,000
7662	Improved Estimation of Reservoir Evaporation	Mark Spears	\$ 132,000
8168	Inform Reclamation Programs about Unmanned Aerial Vehicles (UAVs) and Identity Opportunities for Future Applied Research	Kristin Swoboda	\$ 25,000
8937	Hydro-Economic Model Completion and Technology Transfer	Jennifer Johnson	\$ 66,000
<b>TOTAL AWARD</b>			<b>\$ 635,001</b>

FY 2013 Science and Technology Program

Environmental Issues in Water Delivery and Management Research Projects

Project ID	Title	Researcher	Award
15	Streamflow and Nutrient Constraints on the Productivity and Habitat Quality of Desert Riparian Ecosystems in the West	Mark Nelson	\$ 30,945
115	Calibration of Bed Load Impact Sensors for Surrogate Sediment Measurement	Robert Hilldale	\$ 20,000
450	Bathymetric Data Collection Techniques around Large Wood	Sean Kimbrel	\$ 1
589	Modeling Changes in Water Quality Resulting from Sediment Delta Interactions	Nick Williams	\$ 40,000
689	Improving Public Safety of Large Wood Installations	Connie Svoboda	\$ 1
1368	Predicting the Interactions between Flow, Sediment, and Riparian Vegetation	Blair Greimann	\$ 80,000
2180	Ephemeral Tributary Sediment Loads in the Arid West	David Varyu	\$ 15,000
2237	Evaluation of salmonid smolt survival at Roza Diversion Dam and the downstream 11-mile Reach	Cathy Karp	\$ 5,000
2559	Federal Interagency Sedimentation Project	Robert Hilldale	\$ 24,000
3054	Bedload Adaptation Length for Modeling Bed Evolution in Gravel-bed Rivers	David Gaeuman	\$ 40,000
3670	Cone Screen Riverine Baffle Design	Leslie Hanna	\$ 34,848
3842	Mobility and Stability of Large Woody Material	Christopher Cuhacian	\$ 1
4290	Fish Predator Reduction Using Fish Traps with Bait Attraction	Joshua Mortensen	\$ 5,000
4638	Investigation of transient TDS/EC conversion ratios in the San Joaquin River Basin	Michael Eacock	\$ 15,000
4864	Passive Acoustic (Hydrophone) Measurement of Coarse Bed Load	Robert Hilldale	\$ 55,000
5163	Application of an ecological health assessment for Reclamation managed reservoirs	Dmitri Vidergar	\$ 15,000
5772	Quantitative Modeling Tools of Scour and Morphological Impact due to Large Wood Debris and Other In-Stream Structures	Yong Lai	\$ 1
5907	Assessment of Habitat Complexity and Ecological Functions Provided by Gravel Bars Resulting from Gravel Augmentation and Channel Rehabilitation	David Gaeuman	\$ 85,000
6080	Developing Guidelines for Formulating Reservoir Sustainability Plans	Kent Collins	\$ 45,000

FY 2013 Science and Technology Program

Environmental Issues in Water Delivery and Management Research Projects

Project ID	Title	Researcher	Award
6501	Representation of Large Wood Structures in a Two-Dimensional Static Bed Numerical Model	Mike Sixta	\$ 1
6623	Understanding Effects of Recharge and Dissolved Nitrate on Selenium and Salinity Mobilization Using Geochemical Modeling and Laboratory Testing	Terry Stroh	\$ 109,800
6949	Scour Depth Relations for Large Wood Structures	Kendra Russell	\$ 1
7253	A Business Intelligence and Knowledge Stewardship Methodology Focused on Data and Information within the River Restoration Community.	James Nagode	\$ 15,000
7356	Predicting Vertical and Lateral Sediment Erosion in River and Reservoir Settings	Jennifer Bountry	\$ 77,500
8112	Fish Tags - The Old/New Tool for Assessing Impacts of Reservoir Operations on Migratory Fish and Critical Habitat	Dmitri Vidergar	\$ 50,000
8351	The Efficiency of SandWand Technology as a Habitat Restoration Tool for Native Salmonids in Small Tributaries	Zak Sutphin	\$ 90,400
8721	Ecological Costs of Streamflow Regulation	Mark Nelson	\$ 36,000
8737	Valuing Flow and Water Dependent Ecological Resiliency under the Secure Water Act	James Gjerde	\$ 25,000
9320	Assessing and Reducing the Uncertainty of Predictions from Hydraulic and Hydrologic Models	Blair Greimann	\$ 50,000
9353	Sediment Accumulation in Reservoirs: Comparison of Watershed Sediment Yield Models with Measured Sedimentation Volumes	John Carlson	\$ 20,000
9548	Researching a Concept for a Self Regulating Articulated Fishway	Dale Lentz	\$ 58,000
Directed	EcoHydraulics Roadmap	J. Pierko	\$ 150,000
<b>TOTAL AWARD</b>			<b>\$ 1,191,499</b>

FY 2013 Science and Technology Program

Water and Power Infrastructure Reliability Research Projects

Project ID	Title	Researcher	Award
189	Incident Command System Doctrine for Dam Owners	Grant Sorensen	\$ 15,000
406	Evaluation of Intelligent Compaction at the Echo Dam Seismic Modification Project	Robert Rinehart	\$ 34,944
786	Use of Aqualastic to encapsulate degraded RCC Lining in Canals	Kathy Kihara	\$ 29,000
2840	Verification that Type V Cement is required for CLSM with high sulfate native soils	Janet White	\$ 1
4022	Evaluation of Structural Health Monitoring (SHM) Techniques for Reclamation Infrastructures	Bobbi Jo Merten	\$ 20,000
4104	Measuring Erodibility of Embankment Soils Containing Gravel	Tony Wahl	\$ 25,000
4378	Evaluating methods to manage alluvial material prior to its introduction into river systems	Alexander Belous	\$ 15,000
4861	Evaluation and Standardization of Seepage Repair Methodologies	Julia Pierko	\$ 9,500
4967	Chemical Shrinkage Analysis of Nano Silica Cementitious Binders	Katie Bartojay P.E.	\$ 39,000
5733	Pipeline Coatings	Allen Skaja	\$ 100,000
6390	Testing/Verification of Rope Access Anchors	Shaun Reed	\$ 20,000
6433	Identify Primary Noise Sources in the Powerplant and Implement Noise Engineering Controls to Reduce Exposures to Employees	Theresa Gallagher	\$ 100,000
6629	Moisture Content Requirements for Effective Concrete Repairs	Kurt Von Fay	\$ 75,000
7055	Native Soils for CLSM	Janet White	\$ 1
7408	Asbestos in epoxy coatings	Allen Skaja	\$ 10,560
7419	Mussel Adhesive as a Corrosion-Resistant Coating	Bobbi Jo Merten	\$ 15,000
7567	Shear Pin Failure Prediction Through the Use of Acoustic Emission Sensing and Analysis	John Germann	\$ 61,124
7673	Coating Service Lifetime Evaluation by Electrochemical Impedance Spectroscopy (EIS)	Bobbi Jo Merten	\$ 26,500
8232	Coatings and Sealers to Treat Concrete Deterioration	Kurt Von Fay	\$ 15,000
8920	Evaluation of Non-nuclear Moisture Meters and Moisture-Density Gages for Reclamation Construction QC/QA	Robert Rinehart	\$ 15,000
9541	The Application of Light Detection and Ranging (LiDar) Technology to Improve the Management and Protection of Heritage Assets in the American Falls Archaeological District, Idaho	Jennifer Huang	\$ 5,000

FY 2013 Science and Technology Program

Water and Power Infrastructure Reliability Research Projects

Project ID	Title	Researcher	Award
9595	Research, Develop, and Implement Sandblasting Noise Controls and Strategies to Reduce Reclamation High Noise Processes 2	Christopher Andrews	\$ 50,000
9695	Composition and Environmental Exposure Effects of Controlled Low-Strength Materials on Pipeline Degradation	Daryl Little	\$ 1
<b>TOTAL AWARD</b>			<b>\$ 680,631</b>

FY 2013 Science and Technology Program

Expanding or Conserving Water Supplies Research Projects

Project ID	Title	Researcher	Award
216	Database for Field Performance of Electronic Water Level Sensors	Tom Gill	\$ 47,000
414	Effectiveness of Conservation Pricing in Reducing Water Demand, Evidence from Increasing Block Rate Structures	Steven Piper	\$ 39,500
2319	Design Refinement and Construction Drawings for Overshot Gates that Irrigation Districts can Construct Themselves	Tom Gill	\$ 26,000
4292	Reinforced Concrete Pressure Pipe Stress Distribution	Steve Robertson	\$ 30,000
8969	Wireless Automated Control of Surface Irrigation Systems for Improved Irrigation Efficiency	Tom Gill	\$ 17,000
Directed	Canal Lining Alternatives Evaluation	C. Hennig	\$ 150,000
<b>TOTAL AWARD</b>			<b>\$ 309,500</b>



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## **WaterSMART Water and Energy Efficiency Grant Funding Available for Projects That Conserve Water or Address Water Sustainability**

WASHINGTON - The Bureau of Reclamation is seeking proposals for its WaterSMART Water and Energy Efficiency Grant funding opportunity. Projects that are eligible must conserve water or result in other improvements that address water supply sustainability in the West.

The funding opportunity announcement is available at [www.grants.gov](http://www.grants.gov) using funding opportunity number R13SF80003.

Applications may be submitted to one of two funding groups:

- Funding Group I: Up to \$300,000 will be available for smaller projects that may take up to two years to complete. It is expected that a majority of awards will be made in this funding group.
- Funding Group II: Up to \$1,500,000 will be available for larger, phased projects that will take up to three years to complete. Applicants may not request more than \$750,000 in federal funds within a given year to complete each phase. This will provide an opportunity for larger, multiple-year projects to receive some funding in the first year without having to compete for funding in the second and third years. The second and third year of funding is dependent upon future appropriations.

Projects submitted for funding should seek to conserve and use water more efficiently, increase the use of renewable energy and improve energy efficiency, protect endangered and threatened species, facilitate water markets or carry out other activities to address climate-related impacts on water or prevent any water-related crisis or conflict.

This funding opportunity is also available for water management improvements that complement other ongoing efforts to address water supply sustainability. Through the WaterSMART Basin Study Program, for example, Reclamation is working with State and local partners, as well as other stakeholders, to comprehensively evaluate the ability to meet future water demands within a river basin. Partners who have completed a basin study may apply for cost-shared funding to implement adaptation strategies that meet the eligibility and other requirements of this funding opportunity.

In addition, funding is available for water delivery system improvements that will enable farmers to make additional on-farm improvements in the future, including improvements that may be eligible for Natural Resources Conservation Service funding.



Entities that are eligible for funding include states, Indian tribes, irrigation districts, water districts or other organizations with water or power delivery authority in the 17 western states, American Samoa, Guam, the Northern Mariana Islands and the Virgin Islands.

Reclamation awarded \$11 million to 32 projects in 2012. These projects expect to save more than 58,000 acre-feet of water annually, which is enough water for more than 227,000 people. Combined with the non-federal cost-share, the projects selected will complete \$32.4 million in improvements.

The WaterSMART Program focuses on improving water conservation and sustainability and helping water resource managers make sound decisions about water use. It identifies strategies to ensure that this and future generations will have sufficient supplies of clean water for drinking, economic activities, recreation and ecosystem health. The program also identifies adaptive measures to address climate change and its impact on future water demands. Through WaterSMART and other conservation programs funded over the last three years, more than 580,000 acre-feet of water per year is estimated to have been saved.

Proposals must be submitted as indicated on [www.grants.gov](http://www.grants.gov) by Jan. 17, 2013, 4 p.m. MST. It is anticipated that awards will be made this spring.

Click links to learn more about [WaterSMART](#) and [Water and Energy Efficiency Grants](#)

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U.S. Department of the Interior  
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## DIVERSITY ACTION TEAM AMATEUR PHOTOGRAPHY CONTEST 2012 OFFICIAL RULES

- Photos submitted must be from UC Region employees who are non-professional photographers; this is an amateur contest. All photos must be the original work of the contestant.
- Photos must be from the following categories:  
**People & Diversity, Countries & Diversity, Food & Diversity,  
Sports & Diversity, and Nature & Diversity**
- All entries must be e-mailed to [James Durrant](#) in color or black and white. Please do not reduce the size of your photo for emailing. They will need to be high resolution when we print them. If you are sending more than one entry, you may need to send them separately. The following information must be included with each entry: name, address, phone number, e-mail address, Office, categories entered, title of the photo, date photo taken, and location where it was taken.
- **No more than five photos will be accepted from any participant.** Photos must be from five different categories. **A winner will be chosen from each category.** A participant can win in one category *only*. **Previous winners of the UC DAT Amateur Photography Contest can still submit photos that will be considered for display but will not be eligible for competition.**
- All entries must be received by **January 31, 2013**. Winners will be notified via e-mail and acknowledged in UC Today. Winning photographs will be printed as large pictures (around 14" by 20") and displayed in the Regional Office.
- **Sorry but photos cannot be returned.** For further information, please contact James Durrant @ 801-524-3854

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## Title XVI Water Reclamation and Reuse Program Construction Funding Opportunities Now Available Through WaterSMART

Released On: October 17, 2012

**WASHINGTON** - A Title XVI Water Reclamation and Reuse Program funding opportunity is now available through WaterSMART. The Bureau of Reclamation is inviting sponsors of congressionally authorized Title XVI projects to request cost-shared funding for the planning, design or construction of those projects.

The funding opportunity is available by searching funding opportunity number R13SF80002 on [www.grants.gov](http://www.grants.gov).

Reclamation anticipates providing no more than \$4,000,000 per applicant. This is subject to WaterSMART's final Fiscal Year 2013 appropriations, project funding capability and the amount remaining under the appropriations ceiling for each authorized project. Approximately 5-10 awards are expected to be made this year.

Through the Title XVI Water Reclamation and Reuse Program, Reclamation provides funding for projects that reclaim and reuse municipal, industrial, domestic or agricultural wastewater and naturally impaired ground or surface waters. Reclaimed water can be used for a variety of purposes, such as environmental restoration, fish and wildlife, groundwater recharge, municipal, domestic, industrial, agricultural, power generation or recreation. Water reuse is an essential tool in stretching the limited water supplies.

The WaterSMART Program focuses on improving water conservation and sustainability and helping water resource managers make sound decisions about water use. It identifies strategies to ensure that this and future generations will have sufficient supplies of clean water for drinking, economic activities, recreation and ecosystem health. The program also identifies adaptive measures to address climate change and its impact on future water demands. Through WaterSMART and other conservation programs funded over the last three years, more than 580,000 acre-feet of water per year is estimated to have been saved.

Proposals must be submitted as indicated on [www.grants.gov](http://www.grants.gov) by Dec. 12, 2012 at 4 p.m. MST. It is anticipated that awards will be made this spring.

Click links to learn more about [WaterSMART](#) and [Title XVI](#)

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U.S. Department of the Interior  
Bureau of Reclamation

### Sharing Our Diversity by Sharing Your Recipes

From the kitchen of Susan Kendrick – **Green Chili Stew**



In northern New Mexico, green chili stew is legendary. Everybody makes it, everybody eats it and everybody loves it, even if everybody makes a different version: with or without potatoes or tomatoes or tomatillos or cilantro, but never without a healthy amount of green chili peppers (see NOTES), and chicos.

If you don't know what [chicos are](#), [here's a little background](#), and [instructions](#) how to make them yourself:

#### Ingredients:

- 2 1/2 pounds well-marbled boneless pork butt (shoulder) or pork tenderloin, cut into 2-inch cubes.
- Salt
- Freshly ground black pepper
- 1 tablespoon vegetable oil or lard
- 1 large onion, cut into small dice (about 2 cups)
- 2 to 3 medium cloves garlic, coarsely chopped
- 3 chopped tomatillos



- 1 cup chicos
- 3 large carrots, peeled, trimmed and cut crosswise into chunks
- 1/2 cup chopped, roasted green chili peppers, or more to taste (see NOTES)
- 1 tablespoon flour
- 4 cups water or low-sodium chicken broth
- 1 1/2 pounds russet potatoes, peeled and cut into large dice (about 2 large potatoes)
- Chopped cilantro leaves, for garnish
- Serve with warm flour tortillas

### Directions:

Season the meat liberally with salt and pepper. Line a platter with paper towels.

Heat the oil or lard in a large Dutch oven or other heavy-bottomed pot over medium heat until the oil shimmers. Working in batches, brown the meat lightly on all sides (it will not be cooked through), then transfer to the lined platter.

Add the onion to the pot, still over medium heat. Cook, stirring occasionally, for 4 or 5 minutes, until they are lightly browned. Add the garlic, cumin, tomatoes, carrots and green chili peppers, then sprinkle the flour over the mixture and stir to coat evenly. Season lightly with salt, return the browned meat to the pot and stir to mix well. Cover the mixture with the water or broth; increase the heat to medium-high and bring to a boil, then reduce the heat to low. Cover and cook for 1 hour, stirring occasionally.

Taste and adjust the salt or amount of green chili peppers as necessary. The broth should be well seasoned and fairly spicy. Add the potatoes; cook uncovered for 30 minutes or until the potatoes are soft and the meat is tender. Skim any fat from the surface of the broth.

Let the stew rest for 1 hour or more before serving. Or transfer to an airtight container, cover and refrigerate overnight.

**NOTES:** Fresh green chili peppers, such as New Mexico or Anaheim, should be roasted over an open flame on a barbecue grill or gas burner or under the broiler. Once they are blackened and cooled, don food-safe gloves to rub off the skins, remove the stems and seeds, and coarsely chop the peppers. Six large fresh chili peppers will yield about 1/2 cup chopped.

A pretty fair approximation can be made with a combination of roasted fresh poblano chili peppers (sometimes called pasillas) and roasted jalapenos. Frozen green chili peppers are an acceptable substitute for fresh; use commercially canned chili peppers only as a last resort.

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U.S. Department of the Interior  
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## In Transition

### Former Regional Office Employee Gilbert Davies dies

1932-2012

Our beloved Gilbert W. (Gib) Davies passed away October 29, 2012 in Salt Lake City. Born March 23, 1932 to Brigham Dewey and Thelma Hammond Davies. His mother died when he was three years old. His father married Doris Evelyn Olson the following year. She became a wonderful mother to Gib. Born and raised in Lake Point, Utah, it became his lifelong home. He attended schools in Tooele, graduating from Tooele High in 1951.

Gib married his sweetheart, Jean Curtis on June 25, 1951 in the Manti LDS Temple. Part of the first four years of their marriage were spent apart while Gib served in the United States Air Force; stationed in Missouri, New York and France. In 1960 Gib hired with the Bureau of Reclamation. He completed 30 years of dedicated service and retired in 1990 serving as Chief of Land Acquisition for the Upper Colorado Region.



Gilbert was a faithful member of The Church of Jesus Christ of Latter-day Saints and had a devoted love for his Heavenly Father and Savior. That same love was evident in his service to the members of the Lake Point Ward and Grantsville Stake. He was known for the many hugs he freely gave. He also loved the years that he and his wife served as workers in the Jordan River Temple.

Gib loved his children, adored his grandchildren and great grandchildren and was continually concerned about their wellbeing and happiness. He loved family vacations and going camping in American Fork Canyon, especially with the grandchildren and their friends in tow.

Gilbert is survived by his wife Jean, sons Brent (Barbara) and Bruce (John Durr), son-in-law Stephen Randle, grandchildren Nathan (Allyson) Randle, Sarah (Travis) Burke, Spencer (Stephanie) Randle and Joseph (Carli) Davies. He will be missed by great grandchildren Garrett, Tyler, Ella, Julia, Zachary, Teagan, Charlotte, Austin and Tenley. He is also survived by his brothers and sisters: Farrell (Gloria), Keith (Patricia), Thelma (Kenneth) Gollaher, Darlene Welcker, Janet (Walter) Parker, Jerry (Linda) and many other extended family members. Preceded in death by his parents, 2nd mom Dori, daughter Rosan, great granddaughter Kate, brothers Burton, Howard and other loved family members.



Our family expresses appreciation to the staff, nurses, aids and LDS Branch at Utah State Veterans Nursing Home and Bristol Hospice for the compassionate care they gave our father. Funeral service will be held Noon, Saturday, Nov. 10th at the Lake Point Ward, 1366 E Canyon Rd., Lake Point. Viewings will be held Friday Nov. 9th, Jenkins-Soffe Mortuary, 1007 W South Jordan Pkwy. (10600 S), South Jordan from 6-8 pm and Saturday 10:30 am prior to the service. Interment at the Lake Point Cemetery. In lieu of flowers or other remembrances, please contribute to the LDS Church Missionary Fund.

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U.S. Department of the Interior  
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## Reclamation Trivia

### Here's this week's set of questions:

1. What year was the last high-flow test in Glen Canyon Dam?  
a. 2008      b. 2004      c. 2000      d. 1996
2. Which President approved a joint resolution designating November as "National American Indian Heritage Month?"
3. Between 1960 and 2010, the amount of waste each person created was increased from 2.7 pounds to 4.4 pounds per day. What was the resulting weight by 2010?

### Last week, We asked,

- (1) DOI is rolling out a new unified e-mail and collaboration system over the next couple of months. The new unified e-mail system is called **BisonConnect**
- (2) Between 1960 and 2010 the amount of waste each person creates increased from 2.7 to 4.4 pounds per day. This results in about 250 million tons of waste generated in the US in 2010. November 15<sup>th</sup> is a day to celebrate **America Recycle Day**.
- (3) For more than 35 years, Lemon Dam has been a premier example of the highest standards for the operation and maintenance of a transferred public work. **True** or False

Last winner was – **Suzanne Devergie – Albuquerque Area Office**

Please use this [link to send your answers](#). To be fair we will draw names from the winners and one person will receive a prize. We will reach into the prize bin for something suitable for the winner...as long as supplies last.

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## What Is the Media Saying About Reclamation This Week?

[BC-UT--Utah News Digest, UT](#)

[Water flow experiment to begin at Grand Canyon](#)

[Pipeline payment doesn't add up](#)

[Snow covers more than 30% of lower 48 states for early season record](#)

[Water officials to improve channel](#)

[The Bureau of Reclamation is in the process of redesigning our website - <http://t.co/A2OyLNcD>. Offer suggestions at: <http://t.co/60r3Cb1H> Twitter](#)

[Dry winter worries officials](#)

[Eddy County may bring water fight to New Mexico statehouse](#)

[Water 2012: Challenges facing the Rio Grande Basin](#)

[Water conference this week in Grand Junction](#)

[Proposed dam on Gooseberry Creek clears hurdle](#)

[The Rockies Today, Nov. 9](#)

[Joint Biological Assessment. Bureau of Reclamation and Non-Federal Water Management and Maintenance Activities on the Middle Rio Grande, New Mexico. Part I. Water Management Appendices.](#)

[Bureau of Reclamation releases Narrows Project FEIS](#)

[Maven's Minutes: Reclamation's Terry Fulp and a new agreement with Mexico that has environmental benefits for the Colorado Delta discussed at Metropolitan's Water Planning and Stewardship Committee meeting](#)

[What Obama's Re-Election Could Mean for the Hydropower Industry](#)

[High Water Release Slated for Glen Canyon Dam](#)

[Invasive mussel coatings research](#)

[Threatened fish returned to Southwest wilderness](#)

[Magnitude 2.9 earthquake rattles Colorado - New Mexico border](#)

[Endangered razorback sucker discovered in Grand Canyon](#)

[Utah counties renew objections to Snake Valley water plan](#)

[Tests show signs of quagga mussels at Lake Powell](#)

[Lake Powell Mussel Update – NPS News Release Identifies Quagga Larvae at the Lake](#)

[State Engineer Can Allot Water](#)

[Managers Discuss Water Tools for the Middle Rio Grande](#)

[State to restore fishery at Paonia Reservoir](#)

[The battle against invasive species](#)

[\\*US Senator Bennet\\* Bureau of Reclamation Makes Competitive Resources Available for Water Conservation Twitter](#)

[Water in judge's hands](#)

[Report: Utah water managers unprepared for climate change](#)

[WATER LINES: What can we do to prepare for future drought?](#)

[Colorado--The Disappearing River](#)

[Farmers say Eddy County water wells drying up](#)

[Denver cuts water use in drive to convert wasters to savers](#)

[Mile Marker: The dam that wasn't built at Elephant Butte](#)

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