

**Colorado River Citizens Forum**  
**Yuma, AZ**  
**September 9, 2015**

Board Members in attendance:

Kevin Eatherly, Co-Chair  
Roberta McDermott, US Natural Resources Conservation Service, Retired  
Norma Galindo, Imperial Irrigation District  
Cary Meister, Conservation Chair  
Tomas Sanchez, James Davey & Associates  
Yazmin Arrellano Torres, City of Brawley  
John Hernandez, Our Roots Multi-Cultural Center  
Alex Steenstra, NAU, Yuma

Board Members Absent:

Chuck Cullom, Central Arizona Project  
Glenna Barrett, So. Low Desert Resource Conservation & Development Council  
Tom Davis, Yuma County Water User's Association  
Orson Bevins, Quechan Indian Tribe

USIBWC Staff in attendance:

Mario Montes, El Paso Office  
Anna Morales, Yuma Office

18 Members of the public in attendance:

**Welcome and Introductions**

Anna Morales opened meeting and welcomed attendees.

**Status of Salton Sea Restoration: Bruce Wilcox, Manager Environmental and Salton Sea Programs, Imperial Irrigation District (IID), will give updates on the status of various restoration efforts.**

Mr. Wilcox presented a PowerPoint presentation.

A video was displayed of changes in the size of Salton Sea. The Sea is not going to disappear. It will be smaller body water but sustainable.

Under the 2003 Quantification Settlement Agreement (QSA), there was movement to restore the Salton Sea to have water transfers. Imperial Irrigation District (IID) will deliver conserved water through 2017 under the QSA. We will look at other alternatives to restore Salton Sea. The States preferred plan is estimated to cost about \$9 billion though no funding is available.

Because of the rapid evaporation and the completion of IID's delivery to the Sea in 2017, it is estimated 7,184 acres of exposed shoreline to occur in 2017 and increase as much as 61,465 acres of exposed shoreline in 2047.

The Salton Sea Restoration Plan includes a State Park, saline habitat, fishing and hunting opportunities. Cost is approximately \$5 billion or more.

When salinity reaches 60 ppm, the fish will begin to disappear.

Two alternatives proposed:

- ✓ Will need \$12 billion dollars to build habitat restoration.
- ✓ Based on hydrology models, develop a restoration program with small increments of money.

Fugitive dust issues:

- ✓ With the exposure of the shoreline, wind storms significantly worsens visibility, wind borne dust and bring heavy sand in the area.
- ✓ Photo's were shown of 2001 dust storm on Davis Road and Red Hill Bay that had salt particles that would burn human eyes.
- ✓ Stations have been installed to collect data in assisting with the air quality model.
- ✓ In the process of completing air mitigation project and find other uses for land. Looking at solar gradient pond which generates heat to run instruments.

Wildlife:

Photo shown of recovered or encountered birds banded at the Salton Sea.

- ✓ In 1930 the Salton Sea Refuge was established for the protection of wildlife in the region.
- ✓ Supports habitat for over 400 species of birds
- ✓ Critical link on the 5,000 mile international Pacific Flyway and important foraging habitat for fish eating birds such as pelican and cormorants.
- ✓ Home to Federally endangered desert pupfish

Probably one of the most critical spots in the fly way. It is an incredibly important habitat stop, and critical that we save it.

Elevation and Salinity:

A graph was shown of the future of the sea with no restoration project.

It was noted a rapid change in salinity after 2017 when IID water transfers have stopped.

Salinity constraints and thresholds:

A graph was shown of the salinity tolerances of Tilapia, emergent vegetation, selenium loading and mosquito control under typical operations of 20-40 ppt

- ✓ Tilapia optimal survival and reproduction is from 10-55ppt
- ✓ Emergent vegetation suppress most vegetation between 10-35 ppt
- ✓ Selenium loading is more of a risk 0-20 ppt and at less risk 20-45ppt
- ✓ Mosquitos survive at 0-10ppt; mosquito suppression at 10-35 ppt

Habitat creation:

Colorado River water cannot be used as source of flow into the Sea, so looking at creating the habitat.

We are all in accord that we need to build something and right know.

Looking to construct shallow water habitat at Red Hill Bay. Project would feed water into ponds that will create habitat.

Plan is to build a temporary drainage channel to dry out project area prior to construction. Cell berms to be 50ft wide. Conveyance channels to be 50 ft plus the width of the channel. Minimum 300 ft buffer zone will be left undeveloped for geothermal access on the east and south of project. Upgraded electrical lines.

Reclamation has named Valerie Simon as the Salton Sea coordinator for the Bureau

Questions and Answers (Q&A):

Q: How does the work of Dr. Bradley fit into the planning of the Salton Sea?

A: Has initiative but need treatment of wetlands for selenium. We are looking at product to put on a hydro seeding mulch. Keeping it wet is one of the technologies we are looking into.

Q: What kind of techniques are you looking to remove the salinity?

A: Desalinization and treatment of wetlands. We are looking at algae for treatment. Looking to relax (lessen) the salinity standards a little bit.

Q: After 2017, where is the better quality water coming from?

A: It would be agricultural return water, no Colorado River water.

Q: What is the purpose of the 20 ft berm?

A: Restore the shoreline and creation of habitat deep enough for fish as well as to bring water for estuary.

Q: Will it be lined?

A: No

Q: How many acres are you looking for dust control?

A: Enhancing vegetation between 60-70 acres. We are still counting on inflow water. There is no plan to take away water. They don't deliver a lot but they do deliver some.

Q: What water sources is this dependent on?

A: All depends on New River, Alamo River and Whitewater wetlands.

Q: Is the salinity averaging 60 parts in the Sea?

A: Sea water is about 33 parts. Salinity at Salton Sea is 53-55 parts.

**Moving Forward Project Update: Pamela Adams, Hydrologist, Boulder Canyon Operations Office, Bureau of Reclamation, will give an update on the Moving Forward project to address water supply and demand imbalances in the Colorado River basin.**

Mrs. Adams presented a PowerPoint presentation. She discussed the current hydrology of water, and Phase I of the *Moving Forward* effort.

Colorado River Basin Hydrology:

The Colorado River water is over allocated. About 70 percent of total Colorado River water is used to support agriculture. 13-14 maf is consumptively used annually. Approximately 60 maf of storage. Lakes Mead and Powell are the two largest reservoirs in the system.

Colorado River Drought:

2000-2015 is the driest 16 year period in over 100 years of historical record. Tree ring reconstruction show more severe droughts that have occurred over the past 1200 years.

As of September 8, 2015, the precipitation in the 2015 Water Year is 93% of average.

Current storage as of September 7, 2015 shows Lake Powell at 52% full and Lake Mead at 38% which is a little higher than last year. Total system storage at 52% or 30.73 maf. At this same time last year storage was at 51% or 30.15 maf.

Colorado River Basin Study Summary:

The Colorado River Basin Water Supply and Demand Study (Study) was released on December 2012.

Available on-line at <http://www.usbr.gov/lc/region/programs/crbstudy.html>

The study was not a decision making document but it did identify findings and next steps.

Study Highlights include the following:

- ✓ The system is vulnerable if nothing is done.
- ✓ Doing something greatly reduces that vulnerability and makes the system more resilient but does not eliminate vulnerability.
- ✓ In the near term, conservation, transfers, and reuse are cost-effective ways to reduce vulnerability.
- ✓ In the longer term, more tradeoffs emerge to achieve an acceptable level of risk in terms of options, cost, resources, and other implications.

The Study recommended 10 areas for potential future action. Some of these actions are being led by States, some by Reclamation and some as part of the *Moving Forward* effort.

Moving Forward Effort:

The *Moving Forward* effort was initiated by Basin stakeholders in May 2013. The ultimate goal of the effort is to identify actionable steps to address projected water supply and demand imbalances that have broad-based support and provide a wide range of benefits.

The report for Phase 1 of the *Moving Forward* effort was published in May 2015 and is available at <http://www.usbr.gov/lc/region/programs/crbstudy/MovingForward/>. Submitting comments on the report is encouraged.

M&I Water Conservation and Reuse Workgroup:

The M&I Water Conservation and Reuse Workgroup documented trends in conservation/reuse in areas that receive Colorado River water and identified opportunities and challenges for expanding M&I conservation/reuse programs. Chapter 3 of the Phase I report documents workgroup activities.

Highlights from the M&I Workgroup:

- ✓ Per capita use decreased by 11 percent to 38 percent since 1990 due in part to water conservation.
- ✓ Opportunities exist to increase water conservation and reuse

Agricultural Water Conservation, Productivity and Transfers Workgroup:

The Agricultural Water Conservation, Productivity, and Transfers Workgroup documented trends in agricultural conservation and transfer of Colorado River water and identified opportunities and challenges for expanding M&I conservation/reuse programs. Chapter 4 of the Phase I report documents workgroup activities.

Highlights from the Agricultural Workgroup:

- ✓ Water use per acre has remained relatively constant while productivity increased basin wide by 25% since 1980.
- ✓ Data reporting and availability reflect the varying nature and evolution of agriculture across the Basin. Accordingly, consistent water use analysis may not be feasible.
- ✓ Many advances in agricultural conservation achieved
- ✓ Efficiency of water use

#### Environmental and Recreational Flows Workgroup:

The Environmental and Recreational Flows Workgroup was tasked with identifying ideas for potential future voluntary, non-regulatory solutions that protect or improve ecological and recreational resources while supporting other management goals to achieve integrated solutions that benefit multiple uses.

#### Highlights from the Env/Rec Workgroup:

- ✓ Basin study modeling resources are increasingly vulnerable through time.
- ✓ Many programs use a range of effective mechanisms to address ecological and recreational resources.
- ✓ Cooperative, multi-interest/multi-party voluntary mechanisms have proven to be successful
- ✓ Opportunities exist to expand

#### Summary:

In summary, the workgroups identified 25 opportunities to address projected imbalances and enhance system resiliency. The Workgroups also identified potential actions associated with each opportunity.

Similar opportunities between the Workgroups were grouped into the following categories

- ✓ Funding and incentives
- ✓ Data and tools
- ✓ Outreach and partnerships
- ✓ Coordination and integration
- ✓ Infrastructure improvements
- ✓ Flexible water management

#### Phase 2:

Phase 2 of the *Moving Forward* effort will begin in 2015 and it will signal the transition from study to action. During Phase 2, several pilot projects will be identified and implemented.

#### Questions and Answers (Q&A):

Q: Where will the ideas for this pilot projects come from; who is orchestrating the projects; Will stakeholders be involved?

A: We are just beginning to discuss the process for selecting and implementing the pilot projects, but the process will build on the Workgroup efforts in Phase 1.

Board comment: suggested keeping the public included especially the farmers. Mrs. Adams commented that the Workgroups will continue in Phase II, and that the Agricultural Workgroup contains members that are farmers, represent irrigation districts, and represent farming organizations.

Q: Have you given any consideration to removing Salt Cedar trees to conserve water? Seems that it's a good place to start.

A: Yes, in the Colorado River Basin Study, we evaluated control of Salt Cedar as a way to increase streamflow in the Colorado River. In addition, states in the Lower Basin are funding removal projects as a way to augment water supplies.

Q: Is BLM using the tamarisk beetle removal program?

A: The BLM and other federal agencies are evaluating issues related to endangered species and the invasive spread of tamarisk beetles along the Virgin and Colorado Rivers.

For more information:

Lower Colorado River Operations: <http://www.usbr.gov/lc/riverops.html>

Basin Study: <http://www.usbr.gov/lc/region/programs/crbstudy.html>

Moving Forward: <http://www.usbr.gov/lc/region/programs/crbstudy/MovingForward/index.html>

**Remote Sensing and Evapotranspiration Estimates in the Lower Colorado River Basin: Jeremy Dodds, Natural Resource Specialist, Lower Colorado Region, Boulder Canyon Operations Office, Bureau of Reclamation, will provide an overview of remote sensing activities to estimate agricultural and riparian vegetation water use**

Mr. Dodds provided a brief introduction of himself and proceeding with his PowerPoint presentation.

History of Remote Sensing and Evaporation in Lower Basin:

Remote sensing efforts were started in early 1980's to look at unmeasured return flow. The Task Force on Unmeasured Return Flows, which included Reclamation, USGS, BIA and the Lower Basin States, studied agricultural consumptive water use to calculate how much water returns through ground water flow to the main stream of the Colorado River.

Reclamation first published a remote sensing agricultural consumptive use report in 1995 and this report continues to be produced today.

Reports are available on Reclamation website at: <http://www.usbr.gov/lc/region/g4000/wtracct.html>

The 2009 Report was completely revamped to be more user friendly and provide additional data that's easier for the end user to access.

Evapotranspiration Program Area:

The remote sensing program area represents approximately 870,000 acres of irrigated lands and 500,000 acres of riparian area spread out between Hoover Dam to the Southern International Boundary.

Program Data:

Data is collected and reported for crops, riparian and open water areas.

Mapping, monitoring and calculations are conducted on an annual basis.

Data is summarized by diverter and reach.

Geo-Database Design:

Data is maintained in a Geographic Information System (GIS) database in which over 30,000 fields have been digitized. Each field has a unique field ID and field borders are updated routinely.

GIS database locates, identifies and quantifies: Crop types, Riparian Types Open Water Surface.

GIS database provides for analysis at multiple resolutions. Crop data can be summarized by individual field, irrigation diverter, river reach, state boundaries, or customized geographic area.

Ground Referenced Data – Crops:

Reclamation staff performs ground reference data collection in the fields 4 times a year. It takes 4 individuals about 2 weeks to complete. Approximately 12% of all fields in the region are visited each time.

Multispectral satellite imagery is used to collect data beyond that which can be observed with naked eye. Specialized computer software is used to identify thousands of statistically unique examples of what each crop looks like. This data is used to identify all crops in unvisited fields along the Colorado River.

We maintain a minimum accuracy of at least 90 percent in the crop classification.

Water use is calculated for the crops identified through the classification process.

Agricultural acreage and water use data generated from the program are used to provide supplemental data in support of Reclamation's water management activities.

New technologies are being evaluated that are capable of directly calculating water usage from multispectral and thermal satellite data.

Reclamation is developing a web site where people can look at this data.

Questions and Answers (Q&A):

Q: How do you account for different soils?

A: Our methods do not account for local variation in soil type. We calculate water usage using the Standardize Penman-Monteith method which is an internationally accepted method to calculate crop water use. Calculations of crop evapotranspiration are not reliant upon soil type, as crop water use demand does not vary significantly with soil types. Soil variations affect the amount of water that must be applied to a field in order to meet that crops water demand and ensure crop viability.

Board Comment: It seems unfair to the user that the more they save the more they take away.

A: We only calculating one piece of a complete water budget; the amount of water consumed by the crop.

Board Comment: Expressed that agriculture user wants the data on the field. Scary to use satellite data used to determine water usage.

Growers are compelled to save but whatever is saved is going somewhere else or they are not given credit. These studies are being done by people who have very little with handling the earth.

A: Remote Sensing is not being used for Decree Accounting in the Lower Colorado River Basin. This data is not used to calculate agricultural diversions.

Much work has been put into increasing the crop classification accuracy at the individual field scale. However, the data is most accurate when summarized at the diverter scale.

Reclamation encourages the public to review and provide comment on our new report format.

Board Comment: We need to understand that this is a model and not reality.

#### Suggested Future Agenda Items

1. Update on Minute 319.
2. Arizona water policy “Closing the Gap” – Tom Davis, ADWR, CAP
3. Look at report or case study of water issues on Colorado River – Wade Noble

If there are other issues/projects you would like to hear, please email the Yuma IBWC office at [anna.morales@ibwc.gov](mailto:anna.morales@ibwc.gov) or [mario.montes@ibwc.gov](mailto:mario.montes@ibwc.gov)

Next meeting tentatively scheduled for December 9, 2015 from 4-6pm in Imperial County, location TBD.

\*Meeting notes are tentative and summarize in draft the contents and discussion of Citizens’ Forum Meetings. While these notes are intended to provide a general overview of Citizens’ Forum Meetings, they may not necessarily be accurate or complete, and may not be representative of USIBWC policy or positions.