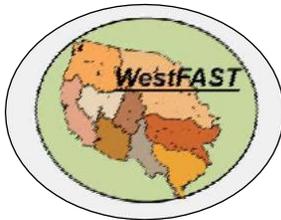


WestFAST 2016-2017

Accomplishments

(July 1, 2016 to December 31, 2017)

WESTFAST AGENCIES & REPRESENTATIVES



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Note the Reporting Period changed for the WestFAST annual Report. Previous reports ran from July of the previous year through June. This no longer matches with the Western States Water Council reporting cycle and made the reporting process complicated with timing of the changeover of Federal Liaison's in the development of new WestFAST work plans and Annual Reports.

The new reporting period is based on the calendar year. To ensure coverage of 2016, July to December is included in the 2017 report.

1.0 INTRODUCTION

The Western States Federal Agency Support Team (WestFAST) promotes collaboration between the Western States Water Council (WSWC) and 12 federal agencies with water resource management responsibilities in the West.

WestFAST was established to support the WSWC, and the Western Governors' Association (WGA) in coordinating Federal efforts regarding water resources. WestFAST was formed in 2008 in response to recommendations made in the WGA report titled [Water Needs and Strategies for a Sustainable Future: Next Steps Report](#) (*Next Steps Report*). **Specifically, WestFAST was formed to promote collaboration among federal agencies, and between states and federal agencies.** WestFAST was intended to help the WSWC implement collaborative efforts outlined in its *Next Steps Report*.

In December 2013, the WGA adopted [Policy Resolution 2014-03](#) and [Policy Resolution 2014-4](#) in which the Western Governors re-asserted States' roles in water management and planning and the essential role of partnerships with federal agencies in western water management. These WGA policies listed the following as water management priorities: (1) state primacy; (2) new infrastructure; (3) innovative water management; and (4) reliable water data. Although these 2014 Policy Resolutions supersede policy resolutions of the *Next Steps Report*, the directions and recommendations given in that report, regarding federal-state interaction and information needs, remain relevant and continue to inform issues and goals defined in subsequent WGA resolutions.

In 2016-2017, WestFAST focused on a number of federal initiatives and promoted communication between federal agencies relevant to priority issues identified in the above-referenced WGA and WSWC reports and resolutions. WestFAST representatives reviewed WSWC committees' work plans and the WestFAST Federal Liaison conferenced with WSWC leadership to correlate WestFAST actions plans to WSWC priority objectives. The work plan, which can be reviewed at this [link](#), is presumed to be a living document that can be altered during the plan period to reflect changes in western states' and WestFAST agency programs and needs. WestFAST activities for this accomplishment report period are captured below including activities in WestFAST "Water Data" and "Drought and Water Availability" Workgroup categories supporting specific WSWC recommendations.

2016-2017 Highlights:

- **Jointly sponsored and participated in four WSWC water resource workshops**
- **Participated in 5 WSWC meetings**
- **Gave 64 presentations at 3 WSWC meetings**
- **Sponsored or facilitated, and participated in 2 focused WestFAST/WSWC water-resource issue workshops**
- **Sent 12 monthly WestFAST Newsletter to more than 163 federal and state recipients.**
- **Continued the WestFAST/WSWC Federal Non-Tribal Water Rights Workgroup and sponsored a workshop.**
- **Held combined WestFAST Principals/WSWC Leadership meeting in Washington DC**

2.0 Coordination and Collaboration

In 2016-2017, WestFAST continued to promote the over-arching goal of improved collaboration among federal agencies, and between state and federal agencies engaged in western water-resource issues. Specific WestFAST activities in this area are captured below.

2.1 Interagency

The federal agencies that make up WestFAST all have unique roles within western water management. WestFAST provides a means for those agencies to collaborate in a way that they may not otherwise be able. WestFAST has worked in 2016-2017 in three key areas of collaboration.

- Information sharing,
- Participation in cross-agency groups
- Outreach

2.1.1 Information Sharing

- In 2016-2017, WestFAST members met monthly through conference calls to discuss ongoing programs and coordinate interagency and federal-state collaboration and outreach opportunities. WestFAST members associated with Water Data Exchange (WaDE) program, The Southwest Oklahoma Water Action Plan team, the Water Quantity/Quality and Non-Tribal Federal Water Rights Workgroups met periodically to work on specific planned actions in these areas.
- In 2015, WestFAST began hosting regular “Special Topics” seminars – information meetings, held mainly via webinar, on topics of interest to WestFAST member agencies and other water-resource managers, scientists, and stakeholders. The webinar series was established to provide overviews of WestFAST agency water-resource related programs briefings on “hot topics” in water-resource science and policy. Webinars specific to WestFAST agency correlation and information sharing in June 2016-2017 included:
 - *(October 6, 2016, 9:30 am, MDT) – Federal water resource and resilience investment centers*
 - *(June 22, 2017, 10am, MDT) – NASA Satellite Data and Hydrology Tools*
 - *(August 24, 2017, 10am, MDT) – EPA’s Water Innovation Fund*
 - *(October 10, 2017, 10am MDT) – “Getting to know your Cooperative Ecosystem Studies Units”*
 - *(November 16, 2017) – Getting to know the DOI-USGS Climate Science Centers*

2.1.2 Participation in cross-agency groups

- A major project starting in late 2016 with many WestFAST agencies has been on a regional project that will become a template for replication to a

larger part of the country. The Southwest Oklahoma Water Acton Plan has involved many regional and local WestFAST agencies. Those with the largest roll have included the Environmental Protection Agency (EPA), Department of Defense (DOD), US Army Corps of Engineers (USACE) US Geological Survey (USGS), Bureau of Reclamation (BOR), National Oceanic and Atmospheric Administration (NOAA), and Department of Agriculture – Natural Resources Conservation Service (NRCS). This is a very strongly influenced organization by the State of Oklahoma Water Resources Board and a team of individuals linked with the community of Altus, Oklahoma. This project was driven first by a need to work on drought conditions in the are that lead to a longer term and lead time action plan that continues to have strong WestFAST agencies and Liaison involvement.

- In 2016, the WestFAST Federal Liaison and previous Liaison continued working with the [Western Regional Partnership](#) (WRP) on the water-resource components of their programs. The (WRP) is a Department of Defense-led collaboration between federal, state, and tribal interests in 6 western states - Arizona, California, Colorado, Nevada, New Mexico, and Utah. The WestFAST Liaison and previous Liaison are working with the WRP Natural Resources Committee assisting them in developing a coordinated water-resource action plan.
- WestFAST agencies have continued support for the [Open Water Data Initiative](#) (OWDI) activities and to provide linkage from western states to initiatives and working groups forwarding the coordination of spatial water data among all levels of government. The OWDI will be collaborative, building on the work of the Integrated Water Resources Science and Service (IWRSS) consortium, and engaging the Subcommittee on Spatial Water Data (SSWD), which is a shared subcommittee of the Federal Geographic Data Committee (FGDC) and the Advisory Committee on Water Information (ACWI).

Bureau of Reclamation (BOR) has taken the lead in an OWDI Water Availability and Water Supply Use Case Project. Part of that activity includes assessing the interoperability of BOR data.

2.1.3 Outreach

- In 2016-2017 WestFAST published a monthly newsletter distributed to more 163 federal agency staff and state and local partners.
- WestFAST continued to maintain a [WestFAST web site](#) containing information about WestFAST's origins, goals and objective, and documentation of activities, reports, newsletters, and webinars.
- As noted previously in this report, in 2015, WestFAST began a monthly series of

“Special Topic Seminars” held via webinar. One purpose of this webinar series is to disseminate information on federal interagency water resource programs to state and local partners. Webinar topics for 2015 are listed in the “Information Sharing” and “Federal/State” sections of this report.

2.2 Federal/State

From July 2014 to December 2016, WestFAST sponsored and/or participated in 5 WSWC meetings and 4 WSWC/WestFAST jointly-sponsored seminars and workshops. WestFAST agencies gave a combined 64 presentations during these events. These efforts were very beneficial to both the WSWC and the federal agencies, in that they provided a forum for discussion on a number of priority issues. Below are Federal inputs to presentations and highlights from these events included:

WestFAST-WSWC Non-Tribal Federal Water Rights Workshop July 13, 2016

There was an introduction and overview of state and federal laws, policies and perspectives dealing with groundwater, and a brief comparison with the path tribal reserved water rights have taken, with states and tribes favoring settlements over litigation. This was followed by three presentations focused on Federal issues and impacts from three agencies and input from NGO’s:

- Preserving Unique Water Features on Federal Lands Yellowstone geothermal – Barbara Cosens - Arches National Park
- Norman Johnson - Great Sand Dunes National Park – Peter Fahmy
- Primary (and Secondary) Purposes of Federal Reservations and Water Needs Stock watering – Fred Price
- Instream Flows - Meg Estep Montana
- USFS Compact – Jody Miller

The workshop was wrapped up with a discussion about how we may be able to build more successful relationships and to better deal with finding solutions with compromises that the Federal, state, and local organizations can support.

The WSWC Summer (181st) Council Meetings were held in Bismarck, North Dakota on July 13-15, 2016. Below are WestFAST contributions:

- Sub-Seasonal to Seasonal Precipitation Forecasting – Kevin Werner, Director, Office of Organizational Excellence, National Weather Service, NOAA
- FCC Bandwidth and Current Uses – Pat Lambert (USGS) WestFAST Liaison
- USGS North Dakota Science Center – Joel Galloway, Acting Director USGS ND Water Science Center
- EPA Update-
 - EPA Fracking Study re: impacts on drinking water and recent Science Advisory Board Meeting – Jeff Frithsen, EPA Office of Research and Development
 - Tribal Treatment as States rules/guidance – Fred Leutner, EPA Office of Science and Technology
 - Tribal Water Quality Standards (WQS) – Advanced Notice of Proposed Rulemaking (ANPR) – Marylou Soscia, EPA Region X
 - WOTUS Rule – Karyn Wendelowski, EPA Office of General Counsel

- Decision on Forest Roads and 402(p)(6) – Allison Wiedeman, EPA Office Wastewater management / Rural Branch
- NPDES Application and Program Updates – Proposed Rule – Sharmin Syed and Erin Flannery-Keith, EPA Office of Wastewater Management / State and Regional Branch
- EPA-USGS Report on Protecting Aquatic Life & Hydrologic Flow Alteration – Diana M. Eignor and Betsy Behl, EPA Office of Science and Technology; and Jonathan Kennen and Sonya Jones, USGS Water Availability and Use Science Program (via phone)
- Fargo-Moorhead Flood risk Management – Aaron Snyder, ST. Paul District Office, U.S. Army Corps of Engineers
- WestFAST Report and Workplan – Roger Gorke, (EPA) and WestFAST Chair (Via Phone), and Pat Lambert, WestFAST Liaison

The Western States Water Council and the California Department of Water Resources cosponsored a workshop on irrigation management information systems and networks, held in San Diego, CA on August 25-26, 2016.

Agricultural and municipal weather station networks are used for providing irrigation scheduling information to growers and municipal landscape managers. Accurate estimates of reference evapotranspiration and crop-specific evapotranspiration allow growers and landscape managers to improve water use efficiency by precisely scheduling irrigation to provide only the amount of water needed by plantings. The WSWC has collected information from the workshop for use in preparing a report on the status of existing networks, challenges in maintaining data coverage, data gaps, and opportunities for strengthening collection of this important data. The report was published in late 2016.

Welcome and Opening Remarks, Workshop Background & Desired Outcomes was presented by Tony Willardson, Western States Water Council (WSWC) and Jeanine Jones, California Department of Water Resources (CDWR).

Here are some topics that were covered in the meeting by WestFAST agencies and partners:

- Applications of CIMIS Reference ET and Satellite Data to Support Irrigation Scheduling and Management – Forrest Melton, NASA
- Pacific Northwest/ Great Plains Agrimet Systems – Jama Hamel, U.S. Bureau of Reclamation (USBR)
- Upper Colorado River Basin Agrimet Systems – Jim Prairie, USBR
- NICE Net and Reference ET in Nevada – Daniel McEvoy, Desert Research Institute

The wrap up of the workshop included next steps and how the organizations could better collaborate to improve data collections and build on the longevity of these networks. In addition, a report from the findings of this workshop was planned.

The WSWC Fall 2016 (182nd) Council Meetings was held in St. George, Utah on September 28-30, 2016.

September 28, 2016, the WSWC and CDWR sponsored a Sub-Seasonal and Seasonal Precipitation Forecasting and Forecast Informed Reservoir Reoperations Workshop. There were general introductions provided along with overview of the expected outcomes of the workshop and history of some of the work CDWR has been engaged with including several WestFAST agencies. Here is a summary of Federal and direct partner agencies/organizations presentation topics and basic information:

- This was an overview of the NOAA support for the Seasonal Precipitation Forecast Improvement Project and associated White Paper. This documented the basic history, current projects, and the future direction that Climate Prediction Center along with partner input plans on moving forward in the future. - David DeWitt, Director, Climate Prediction Center, NOAA (via phone)
- Research was the focus of this broad review of S2S and particularly focused on future research plans for S2S at Research at NOAA's Climate Prediction Office (CPO). - Dan Barrie, program Manager, CPO, Office of Atmospheric Research, NOAA (via phone)
- Opportunities for Improving S2S Forecasting in the West and this included partnerships with NOAA and other WestFAST Agencies focusing on the forecasting of extreme precipitation and Atmospheric Rivers. - Marty Ralph, Director, Center for Western Weather and Water Extremes, Scripps Institution of Oceanography
- Building on Improved Precipitation Forecasting – Forecast-Informed Reservoir Operations (FIRO) Pilot Project at Lake Mendocino, and Regional Advanced Quantitative Precipitation Information (AQPI) Project which is closely partnered with the USACE and NOAA-- Jay Jasperse, Chief Engineer, Sonoma County Water Agency
- USACE FIRO Research to Inform Water Management Policy – Cary Talbot, Program Manager, USACE Engineer Research & Development Center

The WSWC meetings in St. George featured many WestFAST Agencies and close partner presentations:

- SECURE Water Act: Reclamation, Climate Change and Water Report to Congress – Katherine Dahm, Water Resource and Planning Division, U.S. Bureau of Reclamation
- Significance of Groundwater to Colorado River Basin Streamflow – David Susong, USGS Utah Water Science Center Director
- Water Resources in the Applied Science Program of the Earth Science Division and NASA's New Western Water Applications Office (WWAO) – Brad Doorn, Program Manager, Water Resources Program, NASA / Dr. Christopher White, Jet Propulsion Lab
- Upper Rio Grande Basin Snowfall Measurement & Streamflow Forecasting Improvement Project – David Gochis, Scientist, Research Applications Laboratory, National Center for Atmospheric Research (NCAR)
- National Integrated Drought Information System (NIDIS) Update – Veva Deheza, NIDIS Executive Director, National Oceanic and Atmospheric Administration (NOAA) and Kevin Werner, Director, Office of Organizational Excellence, National Weather Service, NOAA
- Water-Related Activities at the Department of the Interior – Tom Iseman, Deputy Assistant Secretary for Water and Science

- WestFAST Report and Workplan – Roger Gorke, Environmental Protection Agency, WestFAST Chair, and Pat Lambert, WestFAST Liaison

The WSWC Spring (183rd) Council Meetings were held in Nebraska City, Nebraska on April 12-14, 2017.

4/12/17 – (prior to the field trip) There was an update on the National Drought Resilience Partnership (NDRP) and its expected continuation into the Trump Administration. The basis for the NDRP formal designation was an Executive Order and there were some concerns early in the administration change, that NDRP may not continue as an entity. However, the general mission of what takes place in the NDRP is clearly something that should be continued, with or without a formal designation and formal group.

There was very good representation of the WestFAST agencies at this meeting in Nebraska City and below are descriptions of the presentations and discussions:

- A quick review of the USGS Nebraska Water Science Center Activities over the past couple years and some future plans were provided – Bob Swanson, Director
- Since we were on the Missouri River, some runoff projections for the spring snow melt were provided and some information on how the National Integrated Drought Information System (NIDIS) is being used in the Central Region (Including Nebraska) – Doug Kluck, NOAA Regional Climate Services Director, Central Region
- This was the first briefing to the Council on the Oklahoma National Drought Resiliency Partnership Pilot in Oklahoma that is linked to the ongoing activities associated with the Southwest Oklahoma Water Action Plan – Duane Smith, Consultant (former WSWC Chairman)
- A presentation from the NASA Applied Sciences Program on use of satellite data for hydrologic and soil moisture assessment – Danielle Wood, Applied Sciences Manager
- EPA Update on a. Office of Water Leadership Changes b. Budget Outlook c. Future Priorities d. EPA Infrastructure Finance Center was provided. – Roger Gorke and other EPA staff in Headquarters
- WestFAST Report of ongoing actions since the last WSWC meeting and update on the status of the WestFAST Workplan update – Roger Gorke, Environmental Protection Agency, WestFAST Chair, and Roger Pierce, WestFAST Liaison

The Western States Water Council and the California Department of Water Resources cosponsored a recurring workshop May 17-19, 2017

This is part of the ongoing series of recurring workshops on improving the skill of long-range weather forecasts (sub-seasonal to seasonal (S2S) precipitation forecasting), to support water management decision-making. The agenda will include lessons learned from recent years' seasonal outlooks, updates on scientific research on sources of skill and predictability, and programmatic efforts to improve forecasting. Increasing forecast skill will require a sustained investment over time, prioritizing the federal resources necessary to make progress, and a specific focus on the West. Below are some WestFAST and closely linked partner contributions to the workshop:

- National Weather Service (NWS) Climate Prediction Center (CPC) Perspective, Challenges and Opportunities with WY 2016 & 2017 Outlooks – Dave DeWitt, NWS Climate Prediction Center
- Weather Research & Forecasting Innovation Act of 2017 (P.L. 115-25) was now becoming law and how do we incorporate this into NOAA operations and research effectively – Group Discussion
- The NOAA Hurricane Forecast Improvement Project (HFIP) was an example of how NOAA had engaged in a major research to operations opportunity and some lessons learned were shared with the group from NOAA leadership. – Fred Toepfer, NWS Office of Science & Technology Integration (by phone)
- Impacts of S2S Forecast Improvements on NOAA National Water Model Capabilities – Tom Graziano, NWS Office of Water Prediction (by phone)
- Updates on Research Related to Predictability on some specific topics that will blend well into the S2S opportunities from WestFAST and key partners included:
 - Southwest Monsoon Forecasts – Chris Castro, University of Arizona
 - West-WRF Model Forecasts & Atmospheric River (AR) Outlooks – Marty Ralph, UC San Diego
 - Sub-Seasonal Prediction of ARs – Duane Waliser, NASA Jet Propulsion Lab
 - Seasonal Prediction of ARs and El Nino – Hyemi Kim, Stony Brook University
 - S2S Forecasting: Life Beyond ENSO – Rob Gillies, Utah State University
 - USBR’s Sub-Seasonal Forecasting Competition – Levi Brekke, U.S. Bureau of Reclamation Research & Development
 - Weather Retrospective – Jon Rutz, NWS Western Region and Meredith Fish, UC San Diego Impacts – Damon Grabow, North Dakota State Water Commission

Summer 2017 (184th) Council Meetings, Rohnert Park, California (Sonoma County)

The Summer Meeting started off with an excellent field trip that took the team through a number of key locations in the Sonoma Valley area linked with the Forecast Improved Reservoir Operations Project. In addition, the field trip included many key water use/recharge facilities, modern agricultural irrigation projects and great partnered programs making huge improvements to the riparian environment along the Russian River.

The WSWC meeting was kicked off with presentations by Jeanine Jones, CDWR and Jay Jasperse, Chief Engineer and Director of Groundwater Management, Sonoma County Water Agency. This set of presentations set the tone for the Council Meeting with a strong influence of looking at water all the way from the inception, with precipitation, to runoff, forecasting, flow management practices, and making smarter use of technology. WestFAST agency members and close partners were well represented at this meeting and provide the following presentation:

- InSAR Land Subsidence Monitoring Project – Tom Farr and Cathleen Jones, NASA JPL
- U.S. Geological Survey Water Availability and Use Science Program – Sonya Jones, Coordinator and Melinda Dalton, Deputy Program Coordinator

- NOAA-West Activities that are linked to a broader NOAA perspective from all of NOAA's components on S2S – Roger Pierce, WestFAST Liaison and member of the NOAA West Team.
- CWA WOTUS 2.0 – What's Next?
- EPA Webinar and Outreach to ACWA and WSWC – Jennifer Wigal
- EPA Update – Roger Gorke a. Harmful Algal Blooms (HAB) Rulemaking update b. NPDES Rule update c. Tribal Baseline WQS d. WOTUS 2.0

The two briefings on WOTUS 2.0 was the first formal briefings the Council had received on the EPA move forward to develop an update ruling. This set the stage for planned conference calls that will go on through 2017 and planned on into 2018 with the ruling being rolled out.

- State Certification Authority: CWA §401 and Hydropower Licensing was presented by Tony Willardson and several WestFAST agencies reported their concerns that in the next 5 years there are going to be several of these licenses up for renewal and it may become a major workload issue for the Agencies with some impact to the states.
- WSWC/WestFAST Federal Non-Tribal Water Claims Workshop report and follow up conference calls update – Roger Pierce -WestFAST Liaison
- WestFAST Report on the actions taking place in the WestFAST with a key topic being the upcoming Water Summit in Oklahoma linked to the SW Oklahoma Water Action Plan and the formal presentation of the finalized workplan (2017-2019) – Roger Gorke, Environmental Protection Agency, WestFAST Chair, and Roger Pierce, WestFAST Liaison

The Western States Water Council and the Native American Rights Fund held their fifteenth biennial Symposium on the Settlement of Indian Reserved Water Rights Claims on August 8-10, 2017, at the Best Western Plus Heritage Inn in Great Falls, Montana. A number of topics were addressed by experts and participants regarding completed and ongoing negotiated settlements. Although full WestFAST participation did not occur with this symposium, representatives from the Department of Interior, Bureau of Indian Affairs were in attendance and the WestFAST Liaison provided some Council support.

The WSWC Fall (185th) Council Meetings were held in Albuquerque, New Mexico on October 18-20, 2017.

A Non-Tribal Federal Water Rights Workshop was held on October 18, 2017 in the morning. This was a continuing State-Federal Relationships through the Implementation Phase of Decreed and Adjudicated Water Rights. There were some great examples shared and discussed with Federal Agencies and Partners:

- Drought Shortages, Curtailments, and Calls on the River Case Study: Oregon-NPS – Crater Lake Paula Cutillo, Hydrologist, National Park Service
- Group Discussion was led by Tom Byler, Director, Oregon Water Resources Department
- Change Applications and Routine Administration of Water Rights Case Study: FWS-Kansas – Quivira National Wildlife Refuge Brian Caruso, Division 6 Water Resources Chief, Fish and Wildlife Service

- Group Discussion was led by Kenneth Titus, Chief Legal Counsel, Kansas Department of Agriculture Group Discussion
- Protecting Reserved Water Rights Absent Decrees or Adjudications Case Study: Nevada-NPS – Devil’s Hole Monument Jason King, Nevada State Engineer and by Peter Fahmy, Acting Water Rights Branch Chief, National Park Service
- Group Discussion was led by Peter and Jason
- Wrap-Up and Next Steps were summarized - Roger Pierce, WestFAST Liaison

The Field Trip was to selected areas along the Rio Grande looking at the ecological challenges of the river system and the water needs of the community, including a major recharge facility.

The WSWC meetings begin at 9:15 am on 10/19/17 with many WestFAST agencies present and providing information:

- Southwest Oklahoma Water Plan – Duane Smith, Julie Cunningham, and Roger Gorke
- DOE Studies of Energy and Water in the Western United States – Vince Tidwell, Technical Staff, Sandia National Laboratory
- Upper Colorado River Basin S2S Pilot Proposal -- Jeanine Jones (CDWR) and Roger Pierce (WestFAST Liaison)
- EPA Update – Roger Gorke a. WOTUS 2.0 b. Other EPA Updates 6. Discussion: SRFs and WIFIA Projects I
- Discussion: BLM Hydraulic Fracturing Rule and State Authorities (BLM and other Agencies)
- Discussion: Tribal Water Codes
- WSWC/WestFAST Federal Non-Tribal Water Claims Workshop summary – Roger Pierce – WestFAST Liaison
- Discussion: State General Stream Adjudications – Multiple WestFAST agencies participating.
- EPA Water Transfers Rule presentation and discussion – Peter Nichols
- WestFAST Report – Kevin Werner, WestFAST Chair, and Roger Pierce, WestFAST Liaison

WestFAST Webinar Series: WestFAST also used selected topics from their new webinar series Webinar topics for 2016-2017 are listed in the “Information Sharing” and “Federal/State” sections of this report.

2.2.1 Proactive Collaboration in Policy and Rule Making

WestFAST has continued to work to foster federal-state communication on general water issues in the west. One of the larger emerging issue in the west is the Waters of the United States (WOTUS) Ruling 2.0. Discussions that the Environmental Protection Agency was going to resend the initial rule and come up with a replacement has been made since the start of the Trump Administration. The WSWC with input from the WestFAST has continued preparing the states for the upcoming ruling and deciding. The idea was to get everyone together and start discussion how improvements can be made to the ruling.

2.2.2 Federal Non-Tribal Water Rights Workgroup

A Non-Tribal Federal Water Rights Workshop was held in July 2016 in the morning. This was a continuing State-Federal Relationships through the Implementation Phase of Decreed and Adjudicated Water Rights. Pat Lambert, WestFAST Liaison, gave an update on the Federal Non-Tribal Water Rights Workgroup. In 2014, this group was convened to improve our understanding of the potential tools and mechanisms for coming to agreement on federal water rights while avoiding litigation. Since that time, the WSWC has collected materials for a library online. In November 2015 we held a webinar to better understand state and federal perspectives of the McCarran Amendment. The workgroup identified additional action items following the webinar, including the Groundwater workshop held earlier this week. Federal agencies felt somewhat unfettered by their authorizing statutes to seek alternative methods of resolving water rights claims. The workgroup wants to look at the possibility of holding a regular symposium similar to the tribal water right claims, to educate state and federal agencies about the possibilities to work together. We want to look in more detail at the case studies that were presented during the workshop. The workshop was very successful. We will continue on. Those involved in the workshops and webinars have found them very useful and were continues through 2016 and 2017.

The WestFAST and WSWC continued its work on Non-Tribal Federal Water Rights by conducting a workshop on October 18, 2017 in the morning. This was a continuing State-Federal Relationships through the Implementation Phase of Decreed and Adjudicated Water Rights. There were some great examples shared and discussed with Federal Agencies and Partners.

Drought shortages and curtailments discussions were led by Paula Cutillo hydrologist with the National Park Service (NPS) and Tom Byler of the Oregon Water Resources Department. This discussion surrounded the Crater Lake water use by the NPS and during drought conditions the taking of water from the lake being replaced by groundwater. The second case study was from Kansas associated with the Quivira National Wildlife Refuge, with representative, Brian Caruso of Fish and Wildlife and Kenneth Titus, Legal Counsel for Kansas Department of Agriculture. The issue was the water needs for Quivera, to stay at critical levels, was being impacted by draw down of the aquifers that feeds the rivers flowing into Quivera. There were a number of meetings held and coordination efforts made within the groups to reduce the aquifer drawdowns through improved efficiencies in irrigation techniques to help provide some relief to the Refuge.

The third case study was Nevada and the NPS on the Devil's Hole Monument (DHM), with Jason King, Nevada State Engineer and by Peter Fahmy, Acting Water Rights Branch Chief, National Park Service. The issue was the use of nearby wells pumping water from near DHM was impacting the water levels in the Monument and impacting the endangered pupfish. The agreement was to improve permitting in the area on water well development and slow the drawdown of the water in the monument.

2.2.3 Water Data

“Basic information on the status, trends and projections of water resource availability is essential to sound water management.” (*WGA Policy Resolution 2014-03 § 4*)

“Western Governors support federal efforts to coordinate water data gathering and information programs across multiple agencies.” (*WGA Policy Resolution 2014-03 § 4a*).

“The Western Governors’ Association and the Western States Water Council have worked together to create the Water Data Exchange, an online portal that will enable states to share their water data with each other, federal agencies, and the public via a common platform. The Governors encourage the use of state water data in planning for both the public and private sectors.” (*WGA Policy Resolution 2014-03 § 4d*)

“State and federal water resource agencies should work together to provide universal access to the water-related data collected by all state, local, and federal agencies, as well as tools and models that better enable the synthesis, visualization and evaluation of water-related data, including that to be shared with local governments.” (*Next Steps Report, #7*)

July 2016-2017 Activities:

- The Open Water Data Initiative - WestFAST and its Water Data Workgroup supported the efforts of agencies working in the Open Water Data Initiative (OWDI) established through the [Advisory Committee on Water Information](#) (ACWI) and the [Federal Geographic Data Committee](#) (FGDC). This initiative will seek to provide seamless access to water data using services-based approaches. It is following upon the principles of data sharing developed in the Water Quality Portal (a USGS/EPA/USDA water quality data sharing portal), the National Groundwater Monitoring Network (a USGS/EPA/State groundwater sharing network) and the Water Data Exchange (a project led by the Western States Water Council).
- The WSWC Water Data Exchange (WaDE) – In 2016-2017, WestFAST continued to support the WSWC in the implementation of the [Water Data Exchange](#) (WaDE). WaDE is a cooperative effort between the WSWC, the WGA, DOE, and WestFAST. WaDE is a data framework (not a data repository) which provides a central catalog of state water data (specifically water use and supply data) which allows data to be discovered and the accessed via web services.

WestFAST sees WaDE as a potential tool to support federal water resource programs such as the National Water Census and sub-programs that include assessing national water use and availability. The WSWC is also interested in promoting and incorporating shared federal water-resource datasets (streamgage data, snowpack and streamflow forecasts, reservoir storage and gage elevations, etc.) into WaDE to assist the states and make their water planning efforts easier. The WestFAST Water Data Workgroup developed a pilot study plan to test WaDE’s current utility in accessing water use and supply data, and to identify

federal data sets that might be cataloged in WaDE.

- National Water Census and the USGS Water Use Data and Research Program – The WestFAST continues to assisted in the coordination of the water-use component of the [USGS National Water Census](#) with the WSWC and with the development and implementation of WaDE. The National Water Census and the USGS Water Use Data and Research Program (WUDR) are implemented through the Department of the Interior’s WaterSMART initiative. The programs develop new water accounting tools and assess water availability at regional and national scales. WestFAST has facilitated coordination between WUDR and WSWC WaDE developers and briefed the WSWC on the program. The WUDR program is providing financial assistance through cooperative agreements with State water resource agencies to improve the availability, quality, compatibility, and delivery of water-use data that is collected or estimated by States. WestFAST has assisted informing states, through the WSWC of the scope of these funding opportunities.

2.2.4 The National Groundwater Monitoring Network – WestFAST continues to provide support to states and federal agencies in engaging in the National Groundwater Monitoring Network (NGWMN). The NGWMN Data Portal provides access to groundwater data from multiple, dispersed databases in a web- based mapping application. The NGWMN is a product of the [Subcommittee on Ground Water](#) (SOGW) of the Federal Advisory Committee on Water Information ([ACWI](#)).

2.2.5 Water Availability and Drought

“Basic information on the status, trends and projections of water-resource availability is essential to sound water management.” (*WGA Policy Resolution 2014-03, Water Resource Management in the West*)

[Federal agencies should] “Ensure there is an accurate assessment of the Nation’s water availability and water demands, with the goal of integrating the information into state water resources planning, recognizing that a truly national assessment must begin at the state and local level with appropriate technical and financial support from the federal government.” (*Next Steps Report*)

“The Council will continue working with member states, USGS and various federal agencies to gather and disseminate water resources data using WaDE and other resources. The Council will continue to participate with USGS efforts to advance a National Water Assessment.” (*Draft Water Resources Committee Work Plan 2014-2015*)

In 2016-2017 wet season gave a reprieve to short term drought conditions in the west. This reduced the number of drought related meetings. However, WestFAST members and the WestFAST Federal Liaison participated in many drought calls and information exchange meetings throughout this period. The NIDIS program continued efforts in providing drought services to those areas still impacted by the

very dry conditions.

The Southwest Oklahoma Water Action Plan (SWAP) which was kicked off by the Chamber of Commerce of Altus, Oklahoma in cooperation with the Oklahoma Water Resources Board (OWRB) and many WestFAST regional entities to respond to droughts in 2011-12 and into 2014-15 in that region. In 2016, in response to meetings linked with the National Drought Resilience Partnership (NDRP) and also the plan being brought to the attention of the full WestFAST, it was decided, in order to try and use this activity as a template to help other areas of the West, that a WestFAST and The Oklahoma interested parties should start a review of the initial plan and look toward an update.

Starting in December of 2016 and continuing into 2018, monthly Southwest Oklahoma Action Plan calls were held and coordinated by WestFAST. The WestFAST lead on this action was Roger Gorke, EPA, former WestFAST chair and current member, and also NDRP member from EPA. Roger and the Liaison worked to make sure consistent calls were held with agendas and follow up notes and actions. Through this work and reviewing what had been accomplished and that which needed to be reviewed it was determined a formal update of the plan was needed.

The Chamber of Commerce, Altus, OK, OWRB, Duane Smith and Associates with support from the WestFAST, convened a Water Summit to kick off the rewrite of The Plan on August 21, 2017. Several WestFAST members were there at this meeting and coordinated efforts to discuss and give credit where due for a lot of work that had been taken on short term goals in the original plan. Items such as major rehabilitation of Lake Altus, water treatment plan upgrades, and even evaluations of added reservoirs to the regions water plan were considered as part of a mid-term to long term plan for the region. All of these items and others were collected and a total of 8 actions were highlighted that have the need for WestFAST support:

The Summit's Primary Categories/Issues of Interest:

- Altus City Lake... stormwater capture, recycled water supply, financing (public/private partnerships), recreational and community development opportunities
- Reuse and Recycling... Altus WWTP, aquifer storage/recovery, brackish groundwater development, rules, studies
- New Groundwater Wells... securing land and water rights, partnerships
- Administrative Reliability... upstream diversions/impacts, surface and ground water interactions, Upper Red River Basin Study results
- Irrigation Efficiencies (LAID)... loss of water via laterals, NRCS assistance, irrigator input

- Reservoir Development/Enhancement (Lugert-Altus, Tom Steed)... Cable Mountain project feasibility, multiple program involvement (dredging options, sedimentation reduction, watershed soil health issues)
- Municipal Conservation... utility management and efficiency, water loss control (smart meters/water audits), internal billing
- NIDIS... Continue the improvements on the Drought Early Warning System (DEWS) in the Southern Plains

There are many projects going on right now in Federal, state and local organizations to support these 8 topics. The Bureau of Reclamation (BOR) continues their Basin Studies on the Upper Red River. These are leveraging work by the U.S. Geological Survey and are being completed while partnering with the OWRB and the local irrigation districts. The DOD continues to work with Altus Airforce Base on the securing additional ground water rights. The U.S. Army Corps of Engineers (USACE) and BOR are looking at possible ways of adjusting existing reservoir operations and configurations for possible improvements. The Natural Resources Conservations Service (NRCS) is working with existing funds to maximize the potential improvements to the irrigation districts efforts in modernizing irrigation across the district. The Environmental Protection Agency (EPA) is supporting looking at using existing funds along with OWRB to work with the irrigation district. All of these efforts are up for discussion and advancements in monthly calls and coordination efforts with WestFAST and the SWAP Team.

Seasonal to Sub-Seasonal (S2S) Forecasting has been another area of work the WestFAST has undertaken in cooperation with the WSWC during this period. The WSWC has developed formal positions on supporting S2S as has the State of California made monetary investments into S2S research and project development.

In 2017 the Weather Research and Innovation Act was passed into law, charging the National Oceanic and Atmospheric Administration (NOAA) with changes in their operational plans to embrace this law. No new appropriations were provided with this law. A Congressional charge to do analysis and generate a report as to the history, ongoing activities, and future plans to support this act was included in the language. The WestFAST Liaison, Tony Willardson (WSWC) and Jeanine Jones, California Department of Water Resources (CDWR) have continued to stay in contact with NOAA as they begin development of this report.

The WSWC and WestFAST continue support for S2S included a workshop in May 2017, ongoing discussions within WSWC meetings, Support for the WestFAST Liaison to do work on S2S activities/research meetings throughout the 2017 period. The idea behind doing this was to keep momentum going within the States and Federal agencies to continue support and provide their requirements on S2S needs for now and into the future. There are multiple meeting venues and reporting writing activities on S2S scheduled for 2018.