

New Mexico EPSCoR Interdisciplinary Innovation Working Group (I-IWG): Water Resilience in the Intermountain West through Coordinated Research and Innovation

April 23-26, 2018

UNM Sevilleta Field Station, New Mexico

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Summary

Inspired by collaborative regional efforts in other parts of the United States, NM WRRRI applied to New Mexico's Established Program to Stimulate Competitive Research (NM EPSCOR) proposing to form a working group of professional water researchers from universities across the West. The purpose of this group's work would be to find regional commonalities among Western states as the foundation of a regional modeling and data management project. NM WRRRI proposed hosting a three-day workshop in order for the participants to work together, partially through a New Mexico First facilitation, to adopt a collaborative plan addressing the question of how to better manage the bulk of a water budget to get more economic and ecological value from the water that falls to the ground.

NM WRRRI proposed this collaborative group consider using a systems approach to characterize key social and ecological relationships and trends occurring in the arid/semiarid landscapes of the Intermountain West region. NM WRRRI hoped that these conversations could eventually be used to facilitate science-based engagement with stakeholders and decision makers allowing broad exploration and assessment of alternative water management strategies, and ultimately create a foundation for better landscape management on a largescale throughout Western states.

Participants began their New Mexico First facilitation on Tuesday, April 24. The workshop participants began discussion well-acquainted considering they attended a welcome reception on the evening of April 23. The facilitation was geared to elicit research subject matter for the ongoing collaborative, as well as process guidelines. The facilitation session began with an introduction by Sam Fernald, concisely outlining the proposal to form an ongoing collaborative that would work to consider a number of scientific and sociological factors to improve water resource management across the state represented.

Heather Balas then initiated the first activity, asking participants "Imagine the year is 2023. Our collaborative is off the ground and has been working well for five years. What does it look like? What have we accomplished?" Participant responses centered on a few general themes. In particular, participants wanted a collaborative that had a flexible, adaptive framework – encouraging innovation, knowledge generation, passion and vitality. Participants desired a collaboration that encouraged strong interpersonal and professional relationships among the collaborative participants, and developed a clear, lasting brand recognized by stakeholders, other groups and professionals. The group also wanted to have the collaborative be stakeholder-driven -- integrating many different stakeholders, affected communities and disciplines, and responding to economic and environmental stakeholder needs.

After wrapping up responses to the first question, facilitators worked to summarize participant responses in the following consensus statement.

"We envision a resilient coalition that includes a broad mix of stakeholders throughout the "Intermountain West". The group has a clear brand, and we are recognized for our unique work bonded together by water. Our interdisciplinary group employs a systems approach that creates a flexible, adaptive framework encouraging innovation, transformational knowledge generation, passion and vitality. Our work responds to stakeholder needs and generates a set of completed resources that draw attention to shared human and biophysical issues related to the waters in west. Our group's work remains sustainable when funding or staffing fluctuates. We have strong working and interpersonal relationships – we have fun and learn from one another."

Modest improvements were made to the above-consensus statement. Facilitators then posed a new activity to participants: “What is your primary research interest/topic for this collaborative?” Participants were asked to write down their ideas and group them together according to thematic similarities in an activity called “storyboarding”. Following the identification of several subject areas, participants drafted several hypothetical research questions, finally landing on “What are the connections and feedbacks between human and natural systems, and how can they be leveraged to improve water supply, strengthen socio-ecological resilience and inform water policy in the American West?” The group also reviewed several grant requests for proposals to assess overlap with their ideas and the contents of the proposals.

Based on participant feedback, the second day of facilitation was adjusted to accommodate a deeper discussion on the specifics for the framework of the proposed projects, as well as the subject matter. Day two of facilitation began with a conference call with other university representatives (see participant list) to present the group’s findings and outcomes from the first day. Following the call, the group discussed specifics on factors and methods they could employ to best carry out their research goals. The facilitation concluded with recommendations from facilitators Heather and Kelsey for the group to determine process factors such as timelines, labor division and funding needs.

The second half of April 25 consisted of an educational hike near the Sevilleta Field Station to view a Pinyon Pine and Juniper ecosystem considering it was an important part of the workshop discussion.

The third and final morning of the workshop, April 26, was used to: a) review the background of previous NSF Coupled Natural and Human Systems (CNH) grant project research on the resiliency of acequias (small irrigation societies) in Northern New Mexico, b) identify sites, metrics, and relevant socio-ecological connections that would support the development of adaptive capacity in the face of drought for this region, and c) review the problem statement and summary diagram of the groups approach.

Outcomes

At the conclusion of the working group, participants determined they wished to continue working as a part of a collaborative group, meeting semi-regularly. The group decided they wanted to collectively develop and submit a grant proposal for the NSF CNH competition. In line with their consensus statement, the group decided they wished to continue working with one another in the collaborative – potentially meeting and discussing next steps in fall 2018.

Initial responsibilities are the following:

- Vince Tidwell and Connie Maxwell will translate the white board diagram into text.
- Mohammad Safeeq and Fabian Nippgen will create a Google Doc for the group.
- Jamie McEvoy and Ashley Hullinger will collect the ideas, share them on the Google Doc, and let people refine and/or vote.
- Sam Fernald will talk to other water institutes about collaboration opportunity.
- Vince Tidwell will speak with the Western States Water Council about collaborating.
- Mohammad Safeeq will investigate other funding sources.

The following list of tasks are specifically in regards to the CNH proposal:

- Sam Fernald and Connie Maxwell will monitor the CNH RFP release and create the milestones to the CNH deadline.
- Fabian Nippgen, Vince Tidwell, Connie Maxwell, and Steve Guldan will compose a draft problem statement.
- Sam Fernald and Connie Maxwell will schedule monthly group phone calls.
- Jamie McEvoy will compose a draft budget.

Workshop participants

1. Sam Fernald, Director, New Mexico Water Resources Research Institute
2. Steve Guldan, Professor, New Mexico State University Ag Science Center at Alcalde
3. Carlos Ochoa, Assistant Professor, Oregon State University
4. Ashley Hullinger, Research Analyst, University of Arizona
5. Jamie McEvoy, Assistant Professor, Montana State University
6. Connie Maxwell, PhD Candidate, New Mexico State University
7. Fabian Nippgen, Assistant Professor, University of Wyoming
8. Benjamin Turner, Assistant Professor, Texas A&M University-Kingsville
9. Saeed Langarudi, Post Doc, New Mexico State University
10. Mohammad Safeeq, Assistant Adjunct Professor, University of California-Merced
11. Vince Tidwell, Principal Member of the Technical Staff, Sandia National Laboratories
12. Kelsey Rader, Facilitator, New Mexico First
13. Heather Balas, Facilitator, New Mexico First

9:00 – 10:30 am on Wednesday, April 25, 2018 was designated for those who could not attend in-person to call in to the meeting. The following is the list of call-in participants.

14. Whitney Lonsdale, Interim Director, Montana Water Center
15. Mac McKee, Director, Utah Center for Water Resources Research
16. Jonathan Yoder, Director, State of Washington Water Research Center
17. Ginger Paige, Associate Professor, University of Wyoming
18. Sharon Megdal, Director, Arizona Water Resources Research Center

Appendices



From left to right: Fabian Nippgen, Carlos Ochoa, Jamie McEvoy, Mohammad Safeeq, Ashley Hullinger, Steve Guldán, Benjamin Turner, Connie Maxwell, Saeed Langarudi, and Kelsey Rader. Photo by Sam Fernald.



Heather Balas, New Mexico First facilitator, performed storyboarding to define a collaborative and prioritize key research topics. Photo by Sam Fernald.



Participants gathered on the conference room patio to discuss human and hydrologic connections. Photo by Saeed Langarudi.



From left to right: Connie Maxwell, Ashley Hullinger, Jamie McEvoy, Vince Tidwell, Mohammad Safeeq, and Fabian Nipgen participated in an educational hike to view the Pinyon Pine and Juniper ecosystem. Photo by Sam Fernald.



The edge between the dropped Rio Grande rift valley (to the west on the left) and the higher uplands to the east. This view north is from the Sevilleta Wilderness Pinos Mountains looking at the Manzano Mountains. Photo by Connie Maxwell.

Participant Agenda

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Key Facilitated Times

Tuesday, April 24, 2018

Time	Activity
8:00	Breakfast
9:00 – 9:20	Participant Check In
9:20 – 9:30	Welcome and Overview
9:30 – 10:30	Defining Our Collaborative <ul style="list-style-type: none"> • Question: <i>Imagine the year is 2023. Our collaborative is off the ground and has been working well for five years. What does it look like? What have we accomplished?</i> • All participants: Please share your name, occupation and one answer question above.
10:30 – 10:45	Break
10:45 – 12:00	Defining Our Collaborative Cont. <ul style="list-style-type: none"> • Approve and refine consensus statement <ul style="list-style-type: none"> ○ Question: <i>What improvements can we make to this statement? Does this statement reflect this group's vision for the collaborative's work?</i>
12:00 -- 1:00	Lunch
1:15 -- 2:45	Determining Topics <ul style="list-style-type: none"> • Question: <i>What is your primary research interest/topic for this collaborative?</i>
2:45 – 3:00	Break
2:45 – 4:00	Prioritizing Key Research Topics
4:00	Adjourn Group

Wednesday, April 25, 2018

Time	Item
8:00	Breakfast
9:00 – 10:30	Approval of Vision, Mission and Goals <ul style="list-style-type: none"> • Question: <i>What improvements can we make to these? Do they accurately reflect the goals for this group's future work?</i>
10:30 – 10:45	Break
10:45 – 12:00	Determining Future Steps
12:00	Adjourn for Lunch