It's more than a Meadow: Sociological Analysis of Participation in "Evaluating Conserved Consumptive Use"

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Introduction

"Evaluating Conserved Consumptive Use in the Upper Colorado" (the Study) was a multi-year field study designed to help better understand potential water conservation outcomes and impacts from water conservation on high-altitude, irrigated pastures in the Upper Colorado River Basin that support livestock. This Study began in 2020 and continued through 2023. Field work involved *treatment* parcels where irrigation was changed compared to historical practices (either withdrawn for the full or part of the irrigation season) and *reference* parcels where irrigation patterns were left unchanged. Nine producers participated in the Study, enrolling approximately 1,116 acres in treatment and 398 acres as reference fields. Results of this research are intended to help policy makers and water managers make more informed decisions about how to design agricultural water conservation programs and support producers in deciding whether to participate in them.

The two main research questions for the social science component were:

(1) What is involved for ranchers in deciding about participation in this Study?
(2) Does participants' thinking about participation change over time? If so, how?

This report reflects interviews and participant observation conducted over the life of the Study, including initial interviews with participants and non-participants, as well as follow-up calls and exit interviews with participants. All nine sets of producers and two sets of neighboring producers who chose not to participate in the Study agreed to interviews and, in many cases, engaged family members took part in interviews for a total of 18 interviewees.

This report is organized into three sections. The first focuses on the factors in participation and seeks to answer the first research question as to why people chose to participate or not and how they chose to explain their choices. The second section looks at the second research question exploring two themes that emerged from asking how participants' thinking may or may not have changed over time and why. The last section concludes with recommendations for future conserved consumptive use projects or studies based on lessons learned and articulated by participants over the course of the Study.

Methods

The sociological component of the Study was delayed due to COVID-19 and research commenced in early 2021, after the first year of the Study and the initial period of fallowing. Interviews with each of the Study team members were conducted in February through March of 2021. Initial interviews with participants and neighboring non-participants were conducted in March through May of 2021. Interviews were based on a semi-structured interview schedule, which follows the same line of

questioning for each interviewee but allows for the researcher to pursue interesting avenues as they arise.

Interviews ranged from 30 minutes to two hours. In order to develop a background understanding of the Study, interviews began with six Study team members. These interviews were conducted by Zoom, while most interviews with Study participants and non-participants were conducted in person in May, near Kremmling, CO with two over the phone and one over Zoom. In several cases, in person interviews involved tours of fallowed and treatment fields. In total 18 people participated in interviews. Over the following two years check-in conversations and follow-up interviews were conducted with highly involved participants and participants who sold their properties. Exit interviews were conducted with participants in Spring of 2024 at the conclusion of the Study. In addition to taking notes during each interview, afterwards, the researcher (Kelsea) wrote a "memo" detailing her overall perceptions of the interviews, key takeaways, and any other relevant information. All but one interview was recorded for later analysis. Kelsea took detailed notes and wrote an extensive memo detailing the unrecorded interview for later analysis. All interviews were then transcribed, coded, and analyzed, allowing for major themes to emerge.

The Why of Participation

Maybe this isn't the country to fallow fields in. Maybe it's too high, the growing season's too short. It doesn't do any good. We don't know. And that's what we're trying to figure out. (Barbara[1], participant)

Everybody's worked so hard for years and then you drive by and it's a brown meadow and you're wondering, 'What the hell are we doing?' (Sam, participant)

In choosing to participate in the Study, producers were opting to give up the benefits and profits of a productive field (also referred to as "meadows" by some interviewees, the terms here are used interchangeably) for one season. Additionally, participants would take on risk. While some interviewees thought future years for those fields may improve due to the rest, others were concerned they might not be as productive as they had prior to the Study for a period. In exchange, they received financial compensation (documented HERE in this report).

A key thing that mattered for people's choice about participation was relationships. In general, there were three different types of relationships that mattered to people in their decision making and they mattered in different ways for interviewees. These were, 1) their relationship with two different types of trusted, local leaders; 2) Their location and relationship within their shared ditch system, and neighbors; 3) their relationship with their fields/meadows. Though everyone was *deciding about whether to fallow a field*, they were *not considering the same factors or fields* in making their decision *because the set of relationships each interviewee had with their field was different*. These differences, whether it was in their operational needs or timing of the Study, helped shape the choice they made.

[1] Names changed unless otherwise noted.

As stated previously, due to the disruption of COVID, interviews were completed after the first year of fallowing. Therefore, interviewees' thoughts and statements are reflections, not only of what they were considering when deciding to participate in the Study, but also directly reflective of participants' reactions to their fields in the first year of the Study. For example, 2020 was a particularly dry year, and fields that were fallowed received far less natural moisture than they would have in an average year. This is important because looking out over a field that is not normally brown can make what seemed like a rational decision a year ago into a significant concern and 2020 was drier than most years. It also provides the gloss of hindsight in interviews where people are being asked to think back to where they were a year prior and why they chose to do something that, today, may or may not feel like it was a good idea.

Local, Trusted Leadership

"Paul[2] Called Me"

One participant joked that this Study should be called "Paul Called Me," as that is how almost everyone answered the question "how did you hear about the project?" Paul Bruchez is a member of a ranching family in the Kremmling area and later, in the course of the Study, a governor-appointed member of the state-level Colorado Water Conservation Board (CWCB) representing the main stem of the Colorado River Basin. Publicly vocal, Paul expressed many times that rather than just guessing at what the impacts of high elevation fallowing might be, he wanted to find out. Uncertainty and concern about future water supplies in the Kremmling area, larger basin-wide water supply challenges, and water rights influenced Paul's desire to find – and test – solutions. This extended to a desire to shore up agriculture in the face of perceived threats with data-backed information. Much of the forward momentum that got the Study going and kept it moving through obstacles can be attributed to Paul. Sam, a rancher who participated in the Study, summed up many interviewees' reactions to Paul,

> *We all trust Paul a lot and believe in Paul. He didn't twist our arm. Paul told us, "This is a way we can all try to figure out how to help. Do you guys want to get involved?" And we rely on Paul a lot, we all do for a lot of stuff. If he would have been skeptical, I don't think anybody would have ever done it. He was a pusher, but he didn't have to push.*

The second factor that created space for Paul to become an advocate and organizer for the Study was that he and his family prioritized and made the time for him to devote to advancing it. Their family structure allowed him to be available to participants when issues arose, patient with questions and concerns, and proactive in reaching out to check in. During that first year, when participants were fallowing fields, Paul was described by all participants as available, reliable, and trustworthy as Cindy, a participating rancher describes,

> *Paul is a wonderful liaison for the project and easily accessible, and he spends all the time in the world with you. So having Paul in the middle of it has been great, selfishly.*

Not everyone felt the same way about Paul, however. One interviewee did not appreciate Paul's entreaties to participate, stating, "Don't come in here and schmooze me with Bud Light, I want it straight." This person chose not to participate. However, there were indicators – including good

[2] Name not changed.

relations during later years of the Study – that their choice was less about their relationship with Paul and more about their relationship with their land, animals, and other priorities. The other non-participants interviewed described a positive relationship with Paul built on trust and appreciated the time Paul spent discussing the Study with them. Nonetheless, Paul was able to mobilize many existing relationships to build support for the Study.

Quiet Leadership

Multiple times throughout the Study, Paul stated clearly that though he played a key role, several others in the community were critical in making the Study work. This research bears that out. As part of the initial interviews, people were asked about their social networks – who they heard about the Study from, and who they turned to for advice on participation, and in how they managed their operations. Very quickly it became clear that there were key community members whose participation in the Study held weight for others considering their own participation and in the trustworthiness of the Study. Their leadership in the community is described here as "quiet" because they were not publicly visible figures in the same way Paul was. They did not show up to promote the Study at conferences or make requests for funding. Rather, their actions were seen and felt within the community in and around Kremmling.

While Paul was essential in galvanizing and launching the Study, one of the first people to agree to participate was instrumental in bringing along others to participate. Interviewees indicated that this person was a sought-after source for conferring, discussion, and advice. Additionally, this person and their family have strong ties with several other interviewees through leasing or business relationships. These ties meant that landowners who either leased to or worked closely with them were immediately and repeatedly exposed to their commitment to the Study. Their participation and close ties with many community members led to increased trust in both Paul and the Study.

Rugged Neighborliness and Location

The term "rugged neighborliness" refers to the necessities of positive (or at least functional) social relationships with those nearby based on mutual need and an affinity for the broader agriculture and west slope community. "Rugged neighborliness" reflects an alternative or addition to the oft-heard phrase "rugged individualism" which emphasizes individual self-reliance, personal freedom, and autonomy. Interviewees invoked a frame of "rugged neighborliness" in which they explained their decision in reference to what was neighborly or helpful locally, regionally, or more broadly through its benefit for agriculture. Participants use this frame to communicate that while they are looking out for their own operations first, they also are aware that functional social relationships are necessary for things that benefit them, such as ditch operations, irrigation, and broader water management in agriculture. While interviewees largely valued the concepts espoused in "rugged individualism", there was a continual and pervasive awareness that their individual freedom and autonomy was incredibly dependent on cooperation with their neighbors.

This concept was invoked when people explained their choice about participation, as Sam explains,

> *Paul told us about it and we were all sitting there and [another interviewee] said, "Well, if we don't try to do something to help then who's going to do something and jump onboard?" So, we just said, "We'll jump onboard and help if it's going to help everybody and help ag in the*

> *long run." We're here for ag and we want it to last for generations. We don't want to see it go anywhere. And so, if it'll help and keep it going, we're here. And if not, then we're all in trouble. We're going to be hungry.*

Additionally, there was the recognition that sometimes the best decision for one's own operation was to consider the impact that other's decisions would have on them, as Joe describes,

> *Initially, [another participant] and myself were not going to do it, okay? My thinking on that was, there are typically several people that all in conjunction manage this ditch, keeping the beavers out of there, the brush and all of that. I just really didn't want to become the ditch-rider for the valley, to support this project. I said, "Well, I'm not going to do it, because I don't want to do that." But, then I signed up.*

These participants articulate the desire to make the best decision for their operation and families, but that making that decision sometimes involves considering outside impacts or influences. The role of management in shared ditch operations highlights the communal, and sometimes frustrating, interdependency irrigators can have.

However, being on a shared ditch and being aware of the role of neighborliness did not lead everyone to participate. Another interviewee, Avery, also on a shared ditch with several people who decided to participate, ended up not participating. They were immediately concerned that this may have created some animosity with their neighbors saying, "I think we're all trying really hard to be good neighbors". They went on to explain that regardless of their choice, they were still concerned about maintaining positive relationships with the others on the shared ditch in spite of the challenge their lack of participation posed to others.

It's More Than a Meadow: Roles and Timing

Interviewees differ in their relationships with their irrigated meadows, which shaped how they thought about their participation and whether the timing was right for them to participate. For some, the fallowed meadow was a prime stream of income, for others it was a hobby. For some the meadow symbolized self-sufficiency, beauty, or reflected an investment, while for others it was a field for experimentation or a way to demonstrate commitment to certain beliefs and contribute to healthy riparian areas. Because of these different roles that irrigated meadows played for each interviewee, the timing of the Study was a good fit for some and not for others.

Irrigated meadows are a key part of most interviewees' livelihood. The term *livelihood* is used to describe income and the monetary value of owning an irrigated (versus non-irrigated) field. It also describes an affinity to a particular "way of life" or the idea that even though the same things can be accomplished in a different manner, a particular way of doing it contributes to their well-being. To participate, people were asked to part with a piece of their daily life and routine. For some, this was less of a sacrifice or problem because they have the capacity to shift things around, or they were not dependent on the income and they could just buy hay (which they anticipated would save them some time/make them some money), as Joe, a participant, describes, *Most of the people aren't in [ranching] for fun. They're trying to make a living, so, and without water it's just dirt.... I think the difference is their dependency on what that property does for them. See, for me, it's more of a hobby*. Sherry, a non-participant, explained how she weighed these factors in her choice saying, *I*

personally thought the chunk of money was so enticing that I was willing to bypass my worries about our land and about the future years and everything. Though Sherry did not ultimately participate in the Study, it was not because she did not support the purpose of the Study, it came down to the timing for her and her ranch property. When she came to a decision to participate, it was too late to sign up and with hindsight, she felt that it was not the right move for her property anyway.

All participants valued their ability to produce their own hay, but non-participants highlighted this aspect when discussing risk. Continuing to produce hay made non-participants feel more secure in their operations (the hay was already here and didn't need to be purchased), they liked the feeling of being more "complete" (not needing purchased hay at all or only minimally), and they believed their hay to be superior quality to purchased hay. The belief that they were producing higher quality hay is deeply intertwined with their choice of this specific location (i.e., high-altitude headwaters of the Colorado River) to grow it as Avery, a non-participant describes,

> W*hat helped us decide is we know that we put a lot of pressure on our meadows because we are so small… it's hard to decide – carrying capacity-wise – at what point you can still pay your bills. We talked about that quite a bit… Like our ground might get more hurt than other people's ground because of how small it is and how we manage things…. Our hay is beautiful, even though there's not that much of it. We have this really palatable, wonderful hay that the cows love to eat.*

Irrigated meadows do not just happen, they are visible manifestations of someone's time, effort and investment. For some, the amount of time and resources recently invested in managing an irrigated meadow shaped their response to participation negatively because they wanted to see the benefit of their recent work and monetary investments, as this non-participant described,

> *Excerpt from memo: They said "it's not hard to figure out how much less hay we'd have" if they participated and fallowed all their land – "none of it." They stated, "we've worked hard at developing this" referring to their fields and their hay meadows and the fact that they are able to grow all the hay for their animals. They explained that no amount of money would entice them to fallow because "they don't have a vision for what we do and what it takes," implying that the monetary value of producing all their hay was far outweighed by the sense of pride they had in their operation and the amount of effort they had put into to the fields.*

For this non-participant not only did they feel their efforts were not appreciated, but their recent investment of time, energy, and money through an NRCS program meant the timing of the Study did not line up with their vision for putting the land back to work after these recent improvements upgrading irrigation infrastructure. Another participant described how they were undecided about whether to participate or not and when they finally made up their mind, it was too late, and the Study had reached capacity. Thus, their decision was made for them based on timing.

In conclusion, people's relationships with local, trusted leaders, their neighbors and location, and the role of their irrigated meadows and what they wanted and needed from them for their operation came together to influence their decisions as to whether they should participate or not. This indicates that choices about participation in research projects on water conservation benefit from a strong network of trusted, local leadership who see the value in a Study along with recognition

that projects need to take into account the shared ditch structure present in many irrigation operations in Colorado and landowner/lessee relationships, as well as how much people have invested in developing their meadows into their current state. This can influence participation and help with project management. Prime reasons for people choosing not to participate came down to the timing not working with their operation or needs from the field and a higher level of risk aversion at the time of the Study.

Reflections on Participation

One of the main reasons for engaging in a longitudinal study is to see where people start out at and how their thoughts, opinions, and actions change over time. How has the context in which these participants are acting changed? How has that change impacted their thinking and response to the Study and whether or not they would do it again?

Water Policy Does Not Stand Alone

"Everything that's bad in this world starts with a W. Women, wildfires, wildlife, too many elk sometimes in your haystacks, water issues. Think about all the Ws." (Blair, Participant)

Participants expressed significant concerns about how water policy is shaped within the larger social and political context, highlighting several key issues. They emphasized the critical importance of water rights and the potential negative impacts of water conservation policies on their livelihoods. Many participants felt that water policies often favor urban areas and wealthy landowners, leaving working ranches and agricultural communities at a disadvantage. They were particularly worried about policies that might lead to mandatory fallowing without adequate compensation, which could disproportionately affect their ability to sustain their operations. Additionally, participants were frustrated by the broader political dynamics that influence water policy decisions. They felt that the agricultural community is often unfairly blamed for disproportionate water use and environmental issues, while urban areas continue to expand and consume – what interviewees perceived as – large amounts of water for non-essential uses like landscaping and golf courses. This perceived imbalance in policy priorities led to a sense of being undervalued and misunderstood by policymakers.

When asked to reflect at the end of the Study, participants generally were proud of their participation in this effort. As one participant stated, "meaningful projects start in places like this." He went on to explain that it's projects like this, and the people in rural communities like this one that make policy reality. Without their participation enacting policy, policy does not become reality. Another participant described the value they saw in the Study, but how reflecting on it brought up key concerns they had about policymaking and a lack of trust,

> *I think it's good to get involved in [water conservation research projects like this] just for the sake of finding out what the difference could be for the better later on. But I don't know that if it makes much difference anymore, all they want is us gone. So between the wolves and the water and all the other things, they don't want agriculture in this state. They don't want cattle... I don't want to take this to a wolf conversation, but....*

A prime example that several participants drew attention to was the issue of wolf reintroduction, the impact it was having on their community, and their sense of injustice from how wolves came

back to Western Colorado. Coincidentally, at the time of final interviews, the first cases of wolf predation on calves occurred in the area with two of the families participating in the study. This had a significant impact on all participants in this study and became, for several of them, an example of their vulnerability to policy that, they felt, did not reflect their interest, knowledge, or concern, as this participant demonstrated, "it'll be really easy to just talk water right now and that is not possible." When reflecting on the Study, the simultaneous impacts of wolf reintroduction along with this water conservation research Study shaped concerns participants had about the future of water conservation and policy.

In the case of wolf reintroduction, residents of Colorado's urban Front Range, particularly in Denver and Boulder, voted overwhelmingly for wolf reintroduction, whereas residents closer to where wolves would be released did not (Ditmer et al. 2022). Interviews and observation for this fallowing Study reveal that the ongoing experience with wolf reintroduction shaped concerns about the ability of a community to participate in the process of creating their future and their vulnerability to decisions made by "outsiders". Participants described a sense that not only was something forced upon them against their will, but that their thoughts, opinions, and knowledge was not respected even though they would be the ones dealing with the repercussions.

This experience was easily transferred to their thoughts on water conservation projects and potential future policy implications. If this could happen with wolves, why couldn't it happen with water too? Several participants described an imagined future scenario in which policy governing water conservation, management, or use went to the ballot in a process that – though democratic – would unfairly target their access to water in their perspective, as this participant described, saying "Western Colorado always takes the hit… We don't have the political vote here." Their experience with wolf reintroduction now tells them that it is possible to force significant changes that impact their operations against their interests. It was clear to participants that wolf reintroduction highlights need for a community to participate in self-determination, where their knowledge and experience was part of the solution from the beginning of the process.

At the core, participants' concerns and fears are about a potential failure in process, what they perceive as a fair procedure and process, as well as a recognition of the impact these decisions have on their livelihoods. Experiences in one area bleed into perceptions about other facets of policy and shape producers' willingness to engage in other areas. When it comes to water, participants called for more equitable and transparent decision-making processes that consider the unique challenges faced by agricultural communities and involve them in meaningful ways. They stressed the need for policies that support sustainable water management while also protecting the economic viability of ranching and farming operations. Engaging with producers and incorporating local knowledge is essential for successful water policy or legislation, because producers interviewed in this Study were largely skeptical and inclined to distrust efforts in water conservation policy or legislation because of their experience with wolf reintroduction. Water conservation policy or legislation, no matter how well written or beneficial to participants, can struggle or even fail if the people who must participate in conversation efforts do not do so.

Doing it Again

Participants had mixed responses regarding whether they would participate in a water conservation study like this again. Some expressed a willingness to consider future participation but emphasized that it would depend on several factors. These included ensuring that the financial compensation was sufficient to cover not only the immediate loss of hay production but also the long-term impacts on field productivity and grazing opportunities. Outside of discussion around the financial incentives, participants, going back to the relational aspect of participation decisions, highlighted the fact that conditions had to be "right" or "make sense" for them to do it again. This often focused on timing and field conditions, as Todd, a participant, sums up:

> *Where I find the value in fallowing these fields is if producers can, and they have the financial opportunity to fallow and to replant and to redo a meadow, their return on that is going to be tenfold over time because what they are used to, getting a ton and a quarter an acre with some mediocre grasses, if they have that opportunity to go fix that field, they're going to be getting two and a half, two and three-quarter a ton per acre over 20 years. And when that field starts to lose production, if they could re-enroll and redo their field, and you're talking about exponential production, as long as producers recognize their ability to improve upon what's already there… Every once in a while, you're going to have to take a couple years and regroup. And that is the point, I hope, that comes of this.*

Others were more hesitant, citing the significant challenges and frustrations they experienced during the Study. These included the labor-intensive process of managing water, the slow recovery of fallowed fields, and the overall impact on their operations. Some participants noted that the Study required more resources and time than initially anticipated, leading to burnout and a reluctance to engage in similar projects in the future. One participant, Brian, summed up the resistance of several by saying, "nope" when asked if they'd participate in a project like this again. They went on to say,

> *Brian: That's an easy question. Well, I should qualify that it's not for the amount of money, it just wasn't worth it.*
> *Interviewer: Would you consider it if the payments were either structured differently, or more?*
> *Brian: I would probably consider it.*
> *Interviewer: When would it make sense?*
> *Brian: Well, it would only make sense on a once-in-a-while basis, because I want to protect the integrity of the land, and that is based … my property, it's a very scenic property, it's a unique location. Part of it is meadows, which requires some work, and it's like, I'm not a rancher, but it came with the property. So to keep the place looking nice, I have to let the hay grow, and as a result I have to put the hay up, and I can just contract it out and say, "[Neighbor], come take the hay." I enjoy it, but I think you got to protect the land, and putting it through that torture, I don't think does it any good, unless you want it to go back to wild, which I don't.*

Overall, while there was an openness to future participation under the right conditions, many participants felt that improvements in project management, communication, and compensation would be necessary as Tony, a participant, describes: "If the water community wants successful things to occur, they need people on the ground, paid… don't do it as cheap as possible."

Conclusion: Lessons for Future Water Conservation Projects from Interviewees

In both the initial interviews and exit interviews, interviewees shared a number of reflections and experiences that highlighted lessons or takeaways for water conservation projects. These lessons have been synthesized into a list of five key takeaways:

1) **Participation is relational.** When deciding whether to participate in this water conservation study or not, the interviewees in this Study not only took the payments into account, but they also considered the potential impacts of location in terms of their shared ditch system and neighbors, as well as what they need from, or value in, their meadows. For some, the timing was not right, for others, it was ideal. Participation happens when a project "makes sense" – whether that is timing, flexibility in production, location in relation to others on shared ditch, water access, valuing the purpose or contribution of participation, or their level of risk aversion. Not everyone will participate, and this is not always because they don't see value in the Study. It may not "make sense" due to some or all of the above reasons.

   Additionally, payments were an important consideration for interviewees. At the end, some felt that the price point was fair, while others lost money. A couple of participants articulated a concern about the unintended consequences of payments for water conservation, summed up by James:

   Well, but if we're going to use this study to maybe pay for fallowing to put water in the river, I don't think money ought to be the issue. I think you should say, "Okay, we'll buy the crop for you. We'll pay you for your fall grazing that you miss. But other than that, if you want we will pay for you to farm the land or whatever." Something like that instead. Because what's going to happen if they're just going to do payments, it's going to cut the cowboy out. Because your land will be more the second homeowners, the rich people owning the land. It's going produce more income by fallowing their hay fields.

2) **Consider "communities" of applicants, rather than individuals.** In Colorado there is a neighborly dimension to water conservation (aka, Third Party Impacts). Because of the interdependencies often present in irrigation in Colorado – such as mutual or shared ditches – the actions of one ditch member or upstream water user can impact those around them. Several interviewees suggested that future water conservation projects should be approached in this manner, looking for groups of participants who can cooperatively create conservation together to reduce unintended impacts to other water users.

   These participants shared their thoughts on this:

   If you're going to do it again, everyone would have to do it as one. I think it's more of a pain in the to do... Have one person irrigate and then the whole thing has to work together, I think. Every neighbor, every ranch has to do it. I think it'd make it a lot easier. (David)

   James: So you almost have to, at least under each ditch, have everyone-
   Barbara: Aboard.

James: … aboard or not do it.

3) **<u>Success relies on committed, engaged local leaders.</u>** In the case of this Study, there was a vocal, committed, local leader who was able to step in and support the Study and participants through challenges. For participants, this was a necessary and key component in their evaluation of the Study. Additionally, it is important to consider the less public, or quieter, but equally influential leaders in the community and look for them as well. Compensate these leaders for their time and support, if appropriate.

4) **<u>Have a process for facing unexpected or challenging conditions.</u>** Who is the point of contact locally? What is their role with the project? This participant clearly articulated why this was so important in this Study:
In the beginning I think there was a lot of uncertainty… The communication was fractured. Seemed like the plan and the concept was changing almost daily, but then once we got into the project and then started realizing the problems, Paul was very understanding. He'd just come out and say, "Hey, this is not your fault. If it runs across the meadow, it runs across the meadow. You can't stop it." (Louis, participant)

5) **<u>"Do it right" = Supported Process.</u>** What does "doing it right" mean? Participants discussed several components of this Study that they felt defined "doing it right." Primarily this came down to having adequate resources to support engagement of participants, conduct outreach, and a process for engagement. Specifically, this included:
    a. Resources, such as enough time for researchers/project managers to be present and listen to participants as well as financial support to adequately fund the project and compensate local individuals who provide support.
    b. Knowledgeable and accessible people on the ground, optimally they are local.
    c. Engagement with participants early and often
        i. Early and often engagement (without expectation of participation from participants) so that they can learn about the project and connect with project team members.
        ii. Clearly articulate the "why" of the project and reiterate it often. Interestingly, this was completely irrelevant for some participants, but for others who saw value in the research it mattered quite a bit.
        iii. Engaging with participants demonstrates the value of their experience as producers.
        iv. Contemporaneous evaluation of the project: Ask participants for their thoughts on what should be tracked or what they think is missing during and after the project.
        v. Offer the opportunity for participants to review and discuss findings.
    d. Triangulation: Involving participants in data evaluation, if possible. *Did people's perceptions match up with the results?* In this Study, regardless of their relationship *to* their irrigated meadows, several interviewees spoke about their relationship *with* or "knowing" their fields. This knowing developed over time through experience and observing the influence of soil composition, location, seed, and other inputs such

as fertilizer. This was articulated through comments like this one from Barbara, a participant, “the places that recovered the best were the ones that had cattle on winter feeding.” These things communicate information about the field that the irrigator uses to “know” and thus manage their field.

Involving participants through triangulation matters because these producers know their land and water better than anyone, so it can validate or provide additional information to a study or results. It can also help provide understanding for discrepancies or gaps in data. Finally, it demonstrates that producers’ knowledge and experience is valued and respected and shows that to others who may be considering participating in a similar project.

In short, participation is a function of location, timing, trust and adequate financial support.

By agreeing to participate in a multi-year field study, producers willingly fallowed a productive meadow for a season. They took on risk in the form of uncertainty about how long that field would take to recover back to full-strength. This decision was not made lightly by any interviewees. They considered many factors that were based primarily on their relationships with leadership in the community, their fields or meadows (how they fit into their operations, what they needed from those fields, what they viewed the purpose of those fields), their neighbors and shared ditch systems.

For some interviewees, the timing of the Study worked and for others, due to recent investments and improvements or concerns about long-term impacts meant the timing did not make sense to participate. In looking back, participants were ambivalent about participation. Some felt that if the money and the timing were right for their operations, they would participate again. Others felt the risk was not worth it. Some also expressed concerns about the long-term impacts of paying to fallow land, especially if it was to landowners who typically leased or paid others to ranch the land.

Finally, it was clear that the world of water conservation is not immune to the political conversations and pressures present in natural resources management and use. Recognition of the contributions and knowledge of producers, meaningful engagement that incorporates their experience, and attention to procedure that ensures livelihoods are protected will be essential in future water collaboration around conservation.