

Cross-Watershed Network
2018 Annual Workshop Co-Hosted by Save Our Bosque Task Force
Socorro County, NM
April 4-5, 2018 at The Sevilleta Field Station

Tools and Techniques for Controlling Invasive and Undesirable Species

Small-Group Discussions

Monitoring and Mapping

Public Outreach and Education

Revegetation and Control of Secondary Invasives

Prioritizing Project Sites

Monitoring and Mapping

Issues

Keeping up with mapping and monitoring

- New species continuously come in over time – how to stay ahead?
- Policies are often the impetus for monitoring efforts.
- Management agencies often want “on the ground” projects rather than information from monitoring.

Different monitoring protocols

- Organizations use different monitoring protocols, so it’s hard to compare what is happening across sites.
- Difficult to get data in a shareable format, even if it is properly done.
- Examples of successful data sharing:
 - The BOR Collaborative Program in the Middle Rio Grande is under new management, and members of the program can put their monitoring programs online. The website is currently being moved to the USGS website – should be moved within the next year. This effort is funded by the Corps.
 - Program signatories will be required to upload data on the website; other partners will be invited to contribute.
 - Lower Rio Grande – already has an interactive map, etc.
 - New Mexico Highlands – Funneling different knowledge sources into one. Susan Rich has info – ask her to present to BOR.
 - A fisheries collaborative Pacific Northwest has a broader platform for monitoring protocols and providing data/metadata.
 - The Desert LCC is developing landscape-level tools for indicators and management actions.
- Deciding the variables/indicators that are measured are hard to agree on, and are prioritized differently depending on the project.

- o T&E species projects differ from invasive species.
- Different scales of projects make it hard to share indicators and monitoring protocols.
 - o Monitoring is often mapped at either at the landscape scale, or at the transect-size project scale.
- BOR work is often centered around habitat statements that require consistent monitoring.
 - o When vegetation is involved, the veg does not necessarily need to be measured every year.
- The BOR needs to define what level of monitoring is required by permits. Everyone agrees that it needs to be done, but do not get guidance on agency policies. It is difficult to determine the details of how the monitoring will happen. Only when an action is about to happen do people start wanting to define monitoring. It will require multiple people making decisions over multiple months.

Pre- and post- monitoring – Don't have time to implement projects and monitor the effects before jumping into the next project. It's difficult to get funding and incorporate into grant/funding cycles.

Money for monitoring – There are ways to make monitoring part of the project to track progress.

- AZGFD director has shown interest in pre- and post- monitoring being incorporated into projects. However, the interest needs to trickle down to individual staff. Staff are more focused on other metrics (acres treated, etc). rather than making monitoring happen. Some support missing in the middle tier of the organization – the non-technical people.
- Need to have metrics of success related to monitoring incorporated into agency-wide directives.
 - o Army Corps of Engineers projects have 50-year lifespans. They incorporate adaptive management into the metrics of success for the project.
 - o BOR has not determined metrics of success.

Institutionalizing monitoring programs – Passing on the practices of staff members so that future staff can continue.

More discussion/focus from funders – Need funders and permitters to require monitoring as part of projects.

- 404 permits require 3-5 years of monitoring. Can work that into many projects.
- Other agencies are starting to require monitoring.

Strategies

- Choose indicators common at multiple scales – Habitat, geomorphology, and other factors that show ecosystem functioning.
- Work into existing efforts – Multiple organizations are creating shared databases. Identify opportunities to work into their data system.
- Consider projects to have a longer life span – use Army Corps as an example of planning and monitoring around a 50-year lifespan.
- Tie monitoring into issues that may matter to the broader public – water quality/drinking water and other socially important resources.
- Organize your collective approach to monitoring – make protocols and goals for monitoring explicit within organizations at multiple levels.

Public Outreach and Education

- Engage local educational institutions
 - Community colleges, colleges, experts at NPS and other institutions
- Listen to community and see how we can support their needs
- To engage rural landowners
 - Come as team
 - Present package of offerings “carrots” (e.g.:creating personal legacy of conservation, creating habitat for wildlife..etc)
- Public outreach depends on relationship building
 - Personal relationships are very valuable
 - Need to sustain capacity to build these relationships
- Continual community engagement
 - Be physically present
 - Attend local meetings
 - Keep people up to date (e.g. phone calls, stopping to talk when you see them around town..etc)
- Coalition building around organization. Building surrounding partners and champions is necessary and will help with sustainability in the long run.
- “Borrowed-trust”-reaching out to local champions to get their trust, then others will follow. This is a good method when you are working with limited resources.
- Create a pilot project to test waters, gain trust
- Capacity for outreach
 - District conservationist and NRCS, varies by area
 - Bring on staff representing different agencies in a shared-funding position
 - Helpful to have staff with time dedicated to outreach
 - A few cost-shared opportunities exist, unsure how widespread
 - An example: fed gov loans staff to a non-profit for a period of time. IPA (Inter-personal act). Approach federal agency about that.
- Monitoring and finding volunteers
 - RGALT used to use volunteers. Now not so much, has funding. Now SOBTF interns do monitoring.
 - Strategically recruit volunteers with interest and expertise. Use committee structure to get work done. Include retired academics for monitoring efforts etc..
- Public interested in something that is connected to them
 - Fear factor of fire, keeps public more engaged
 - Personal connection can also keep people engaged
- Use variety of online platforms to engage different audiences
 - Leverage use of social media (FB, Twitter, SnapChat, Instagram) in general and to promote events
 - Very important to capture and repackage stories
 - Use different tools to target specific demographics and control/alter narrative
 - Other tools: constantcontact, everyaction
 - Accessibility to technology may limit specific groups of people you can interact with
 - Is there a “best practices” for collecting, creating, and producing stories?

- Beneficial for all staff to play large role in collecting content

Revegetation and Secondary Invasives

What goals do you consider in your revegetation efforts?

Resilient communities:

- Climate change resiliency
- To control secondary invasives
 - Saving money by creating self-sustaining ecosystems that do not require additional treatments
 - Creating self-sustaining ecosystems
 - Forcing historical succession
- Designing microclimates/resilient communities
- Restoring for the “New Normal”
 - Water availability decreases as heat and drought increase
 - Human water uses also rising – are there opportunities to have an impact on water availability here?

Restoring habitat:

- Healthy rangelands
- Restoring habitat: no net habitat loss
- To achieve “desired” community
 - The “most apt” species are not necessarily “desirable”
- Recreating the natural patchwork of ecosystems
- Restoring soil quality
- Restoring positive feedback loops for ecosystem functions
- Creating pollinator habitat (remembering secondary weeds can provide temporary habitat for pollinators)

Human:

Cultural values:

- Ethnobotany
- Respecting local communities/cultures (ex. Ute Mountain Ute are skeptical of herbicides)

Management objectives:

- Partners (and funder) priorities
- Adaptive management & learning
- To maintain long-term partner support
- Staging restoration (aligning funding, partners, timelines)
- To enlarge the seed bank for future work

Techniques:

- Weather/Precipitation will always be the number one factor in successful revegetation projects

Challenges discussed:

- Aligning multiple timelines for projects:
 - Funding:
 - Mapping out how removal and restoration timelines can match up with different funding sources ahead of time
 - Take advantage off diverse funders with slightly varying objectives
 - Set clear expectations with communities and partners
 - Desired conditions will likely take years to achieve
 - Use case studies and pilot projects to set expectations
 - Keep meticulous records to set expectations for pace of future projects on a given landscape
 - Use some deep-pot plants in your revegetation efforts (that hit groundwater table) to have some short-term evidence of success on your sites to appease short-sighted partners
 - Expect uncertainty
- A non-exhaustive list of regional resources for information on secondary weeds:
 - SW Vegetation Management Association
 - Cooperative Extension offices
 - Soil and Water Conservation Districts
 - NRCS
 - ***Action Item: Talk to Melanie Tluczek about creating a spreadsheet of secondary weeds post-TRO removal, seed viability, predictive notes, timing, treatment, treatment costs
- Attaining “success”
 - Prioritize revegetation in areas with a high likelihood of success (connectivity to the floodplain)
 - Fuels control can be success in other areas where conditions are less favorable to native species
 - Be sure to consider what direction a site is moving (e.g. more xeric, more mesic)
 - Set realistic goals for yourself, partners and funders (total eradication is to lofty)

Prioritizing Project Sites

Criteria

- Funders can dictate
 - Social Values
 - Jurisdiction
- Immediate environmental need
- Shovel ready/NEPA prospects
- Federal and State Mandates

- Fiscal Disconnect
- Motivated private land owner
 - Ability to mix pots of funding
- Opportunity Mapping
 - Tools:
 - University and research
 - Drones and other technology
 - GIS modeling
 - Current and relevant action plans

“3-Legged Stool”

Urgency	Opportunity	Science/Ecology
immediate environmental need	political will	data to support taking action
fire, species	collaborative group	likelihood of success
fiscal constraints and deadlines	money availability	Tools: research, action plans, GIS models, drone tech, opportunity mapping, risk assessments
high values at risk	shovel ready/NEPA	
	personality-willingness to take risk, motivation etc.	

Creating, Sustaining, and Scaling Up Collaborative Efforts

Small-Group Discussions

Collaborative Adaptive Management and Monitoring

Diversifying Engagement

Funding, Contracts, and Agreements

Initiating, Sustaining, and Expanding Partnerships

Collaborative Adaptive Management and Monitoring

Defining Elements of a CAM Process

- Distinction between CAM and trial and error

- Have and test a hypothesis, based on data
 - Projection of where you are going
- Building agreement on uncertainty
- Building a joint vision
- Shared understanding of the problem
- Clearly defined roles
- Ability and willingness to adjust
- Holistic representation of stakeholders → see the whole picture, get new ideas
- Highlighted Valle de Oro, and urban refuge characterized by a strong collaborative process.

Initiating Stage of the CAM process

- Identify stakeholders
- get the right people to a meeting
- always have action items and next steps at meetings
- Define what you need CAM for, and if it is needed at all
- Identify the problem and desired outcomes and outputs
- Need to empower people to have clearly identified roles and communication methods to maintain the collaborative. Every participant needs to have buy-in.
- Establish group communication methods
- Identify vision, goals, objectives, and metrics of success, with a timeline that has checkpoints
- Agree on a data system
- Identify data/information and data gaps; translate existing data to become compatible
 - Incorporate local knowledge
- Identify guidelines, limitations, and sideboards
- Identify resources available and needed
- Establish an agreed upon scientific methods and process for using it
 - Concept model for decision making
- Develop a collaborative model
 - Identify subcommittees → the right people will be in the right places
- Establish a decision making process - consensus?
- Implement the monitoring
- Adjust based on the data (this is often not done) - you do not have to “complete a cycle”

Planning Stage of the CAM process

- Develop a hypothesis
- List of data/info available and needed
- Process for testing the hypothesis
- Collaborative structure and standardized protocols for monitoring
 - Ex: USFWS endangered species monitoring
- Socio-political support - public/partners/decision makers understand the uncertainties and the value of CAM
 - Include metrics and efforts on human communities in addition to ecological
- Establish process and protocols that are clearly communicated to new members

- Flexibility to expand/adjust programs and protocols - “re-package” the vision and goals through new mechanisms that make sense
- Build in mechanisms to provide resilience to your program such that you can survive changes in staff, administrations, land ownership, and personal interests.
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Diversifying Engagement

- Diversifying Groups
 - Diversity in thought/philosophy
 - Need to present direct benefit to those who engage
 - Diversity of age
- Started by asking about the benefits we can offer to a diversity of people to join our cause; also discussed uses for social media.
- Youth - It is important to make conferences and other efforts marketable to younger people. We could get youth involved in careers and natural resource protection through “mentor mixers,” other events, and paid internships.
- Underserved communities – community gardens, connecting with community groups
 - Self-organizing – instead of bringing things to people, have them organize events around their own issues and interests.
 - Being explicit about who we are bringing into the fold is important.
 - Be cognizant of lesser known minority groups such as physically handicapped, African Americans, Vietnamese.
 - Youth corps have done a good job of engaging people with disabilities.
 - Sierra Club has started leading hikes with people in wheelchairs – tested ADA accessible trails, how far people want to travel, quality of their experiences, etc. This led to a disabled person acting as a representative on the trails committee.
 - Native peoples – Instead of pressing our mythologies or services to them, elicit their stories, knowledge, and needs. They have kept quiet for centuries of us not asking them.
 - Engagement with natives
 - Reaching out to BIA or Pueblo Coalition does not mean you do not have to reach out to more local group. Reach out to local tribe.
 - Latinos generally underrepresented at numerous levels/areas
 - CCAST in Spanish (an idea) to be more inclusive
- Diversifying ways we engage
- Examples of organizations/events doing a good job to engage under-represented groups
 - Outdoor Afro
 - Sierra Club in ABQ with outdoor trips
 - Carencia Group
 - Pueblo Action Alliance- organization focused on the power of natives telling own stories.
 - The Bureau of Indian Affairs WRTT (Water Resources Technician Training Program) designed to provide technical knowledge for students to gain opportunities to explore career goals in the water based sciences.

- Water Management Group (WVG) working with historically underprivileged groups on rain water in Tucson. Have secured funding to do that.
- SHIFT- millennial conservation leaders
- Borderlands Earth Care Youth Institute. Combines work , professional development included for youth. Alumni get hired back and help new members
- Conservation corps give professional development and insight into environmental ed, conservation etc.
- Cienega Watershed Partnership
 - Youth engagement with start to finish, including project planning, unique.
- City of Durham, NC - has a program that attempts to engage the African-American community. They have found that worrying about nature and the environment is a luxury, and is not always an immediate priority for those communities. Now, they are working on connecting environmental issues with everyday challenges to those communities – drawing the line between important problems and their environmental causes.
- Youth Outdoor Pathways - Tucson initiative focusing on youth self-organizing, and youth-adult partnering. SDR just held a facilitation training for high schoolers to get them to be more effective at organizing their own events.
- Green 2.0 - An organization responsible for holding others accountable for the diversity of people involved in their work.
- Audubon – Recently published a piece on Diversity in the Conservation Movement – what we need to do to restructure ourselves internally, growing cultural literacy, etc.
 - Desiree will send the report to the participants.
 - Audubon’s new CEO, David Yarnold, has catalyzed a culture change in Audubon for cultural inclusion. They have hired more diverse people and is in the process of writing a plan for increasing its diversity.
- Earth Justice has a good plan for diversifying
- Vegas Roots
 - urban community to plant some plots
- SNAP at Farmers markets. Can turn in for tokens, sometimes, at double value.
- WVG to partner with local gardens. There is a need to partner with watershed groups under communal cause, it is the next step

Methods

- Make room for others to have a seat at the table
- Need for visuals and storytelling
- Provide better opportunities for youth
 - Professional development
 - Mentorship
 - Paid internships
 - Presenting other less thought of careers in natural resources (e.g. accounting, graphic design etc)
- Use social media

- o Top down messaging
 - o Ground Up messaging perhaps more effective
- Accommodate people and preferences for the outdoors
 - o Connect outdoors with technology (audio tours, more info on signage etc)
- Looking for ways to engage with well-owners, no one has any advice.
- Diversity is not just about under-served groups, but also “other groups” represented in other processes but not in watershed conservation – off-road recreationists, etc.
- The entire discussion of diversity in natural resource conservation is a larger societal conversation.

Funding and Contract Agreements

Rio Grande Agricultural Land Trust:

- o Small group working in a large area
- o Hard to get people working on the ground and capacity to meet needs
- o Private donors are a challenge
- o With a limited capacity, it is very hard to commit the necessary time to fundraising
- o With a limited capacity, it is hard to find people with the varied skillsets and interests necessary to be effective fundraisers AND program implementers

The Verde River Restoration Coalition

- successfully incorporates government representatives/resources into a shared effort

Upper Gila Watershed Alliance:

- o Major funder (McCune) priorities are changing and need to ID new funding sources

Gila Watershed Partnership

- o Larger organization
- o Really challenging to fund administrative works
- o Donor development is incredibly time consuming and that time is hard to fund
- o Admin role burnout – it’s a lot of work that is less gratifying
- o 10-15% overhead needed to support admin functions of Executive Director and administrative staff
- o Donor networks are closer than they may seem – start with board and immediate friends of the organization

Save Our Bosque Task Force

- o Actively creating a community of restoration groups to lump together asks into “initiatives”.
 - o Share funding, fundraising capacity, and administrative roles
 - o Good approach for large foundations/landscape funders (such as TNC)
 - o National Forest Foundation has used a similar approach (4 Forests Initiative in AZ)

Audubon

- Audubon, The Nature Conservancy and Point Blue Conservation packaged approaches (advocacy, conservation and education) into California’s Migratory Bird Conservation Partnership

- Audubon California worked with TNC and Point Blue collaborated to join advocacy, policy work, scientists, and other strengths to create a foundation that received a grant for \$5 million per year on bird habitat. They successfully worked together to accomplish much more than they could have on their own.
- This partnership increases capacity and appeals to large scale funders seeking a complete package of conservation tactics.
- Audubon uses tiered bureaucratic structure to fill gaps in capacity and funding
- Challenge: dealing with turnover and relationship losses makes partnerships hard

State of New Mexico

- Agencies can't lobby and need to use non-profits to drive change and implement improvements

Cross-Watershed Network

- Try framing asks as contracts and/or "fee-for-service" with director time/overhead built in
- When working on a landscape scale, partner with local groups/organizations to

Resources:

- RiversEdge West fundraising workshops are great – want to bring a board development training to New Mexico
- Turner Foundation has small grant opportunities and have funded the Malpai Borderlands Group
- AZ Grants
- New Mexico Grant Directory
- New Mexico Delegation has capacity to identify grant opportunities for non-profits and gather letters of support

Other important take-aways

- Relationship building – relationships do not always get prioritized with staff turnover.
- Synergy building – Many very small non-profits in the Socorro area working on connected topics (from beautifying the area to ecotourism to habitat restoration).
 - Have one full-time staff member, and building opportunities to share positions, acquire funding, etc.
 - Looking for opportunities to group small local projects into initiatives.
- Large federal agencies and land managers need to set aside some funding for collaborative non-profit/NGO efforts. You get more for your money with other people doing it, and you get credit for supporting local successes.
- Have an Advisory Board and a Board of Directors to make sure a board of directors isn't dominated by programmatic interests

Initiating, Expanding, and Sustaining Collaboratives

- Discussed a variety of topics, including how to get started,
- Getting started – Identify common goals and need for collaboration.

- Talk to people you think need to be engaged, and see whether there is common ground to expand outwards.
- Look for the benefit each organization has for engagement.
- It can be helpful to have a third-party facilitator/process designer – the XWN is lucky to have a group who does this work.
- Valle de Oro is a case of aligning the stars of ground-level organizations and upper-level agency resources – capitalized on shared interests.
- Expanding - Addressing challenges that arise – stay together and continue drawing on benefits.
- Sustaining – Make sure you use your core documents to refer to shared vision/goals and rules of engagement.
- Working with challenging personalities can be a road block to collaboration.
 - There are many types of challenging personalities. One type are partners who are involved for a long time, and carry baggage from past events in their involvement in the organization.
 - Diversifying engagement through allowing multiple ways for people to get involved can help engage difficult personalities at the appropriate levels (putting people in a role they see as important that places them away from conflict, etc).
 - Make sure that each person involved abides by the goals/rules established by the collaborative.
 - Having a genuine, one-on-one conversation with the challenging personality can be beneficial.
 - SDR hosts a one-day Facilitation training and a 3-5 day Conflict and Collaboration training – contact Tahnee or Julia if interested.

New Mexico Collaborative - Opportunities and Next Steps

Current Efforts

- Forest and Watershed Health Office
 - Developing tools and resources
- Watershed coordinating group (state level). Issues can be brought to that group. Then those individuals can report back to their agencies.
- Forest and Watershed Restoration Institute. Funded part federal, part state.
 - Vegetationtreatments.org is an all lands resource. Geospatial database.
- Online portal. Allaboutwatersheds.org. Look up coordinating groups. No one managing site.
- Forest Service has increased efforts and focus in riparian ecosystems. Regional riparian strategy exists and is almost finished. Forest Service is moving to a shared stewardship mindset. Riparian areas are often mixed ownership.
 - Regional riparian strategy to be co-published with National Forest Foundation, in Fall 2018. Partners can read and use document. Discusses resources that FS can bring to the table in terms of riparian restoration. NFF money to be used around the region, based on the focus, brought forth by the plan.
- FS has NM focused collaborative restoration project for NM. Very successful.
- SER

- o Ser.rrc.org-searchable database of restoration projects across the globe. Could become resource in NM.
- Institute for Applied Ecology has the SW Seed partnership.
 - o Focused in NM moving into AZ. It an initiative from FS, BLM, NPSNM..etc.
 - o Seed bank to provide locally adapted seed in the future.
- BEMP-Bosque School, UNM. Uses HS and lower elementary school students to do Bosque monitoring. Online geodatabase.
- Audubon/ Valley de Oro restoration. Partners on location as well as volunteer and engagement.
- Wetland Roundtable annually. Southern and Northern Round table that are 1 day events and include all topics wetland and riparian habitat. NM Environment Department.
- NM Surface of Water Quality Bureau. Grants for watershed restoration projects and co-host meetings. Good website, and opportunity map. List of historical projects.
- AZ Dept Enviro Quality offers grants. Put out call for proposals recently. Water quality and data shared on website.
- NM Forest and Restoration Institute.
 - o Workshop series. Preparing for large wildfires.
 - o Staff person (Alan Barton) for watershed collaboratives.
- UNM Natural Heritage Program.
- Water Trust Board for State Trust-Watershed portion of grants sometimes does not have many applicants
- NPS-rivers, trails, conservation assistance programs. Can provide funding, and/or facilitation.
- Middle Rio Grande Endangered Species Collaboration Program. Will be putting middle rio grande projects geospatial information within the next year.
- Xeroscape Council Land and Water Summit(annual)
 - o Bring together water and land people
- Rio Grande Law of the River

Opportunities

- Allaboutwatersheds.org- operation, additional features
- Opportunities map from Restoration Institute
- Audubon/Valle de Oro restoration-get involved
- Coalition on Rio Grande (initiated by Audubon)
- AZ Deq Grants-Just called for proposals
- NM Deq Opportunity map
- Partner with NPS RTCA
- State trust land water trust grants
- Develop menu of opportunities provided by XWN, SER, and others that watershed groups across state could access
- EPA wetland Fund (through National Heritage program)
- Wetland Program Development Grant-gives money to National Heritage Program and others (Co and MO often receive)
- Exchange with MO Natural Heritage Program

- USDA APHIS for SWFL habitat:
 - Provide funding for bosque restoration projects. Reach out to Kai L. Caraher. USDA-APHIS_PPQ-PHP- Permitting and Compliance Coordination Environmental Compliance Team.
301-851-2345 office. Cell phone: 202-288-3086
Email: Kai.caraher@aphis.usda.gov

New Mexico Summit

- State-level watershed summit is useful for landscape level thinkers who operate locally.
- Historically, NM had statewide watershed summit. Capacity to fund and organize and run it dwindled. Not sure why.
 - 2 participants attended. The summit had agency and practitioners. Participant who attended found the convening very useful. Important to network and connect to other individuals in other parts of the state/river etc...
- Collaborative of collaboratives in each state.
- Sustaining CO Watershed Conference. Convened by CO Foundation for Water Education, Colorado Watershed Assembly. The go-to conference.
- Former NM summits convened by NMEQ, UNM, State Forestry, USDA
- Model from AZ Riparian Council-the movement has grown bigger-have these participants be part of a larger group
- Cross-watershed approach in each state. AZ developing this.
- Majority of practitioners in the room (3/4) support the idea of a convening of some sort/shape in NM.

How would we structure this convening?

- Pull together a couple of groups to convene. More sustainable to rely on multiple groups. Landowners, underrepresented communities, upstream managers, NM Riparian Council, Xeriscape Council
- Find information of what people want to get out of a convening.
- Put practitioners in the room with a much bigger peer group.
- Reach out to large group of people and see what topics people are interested in (survey).
- Secure funding-this is a major reason why historical convenings stopped.
- Get buy-in from core entities to support organizing and funding.
- Pull in gov and NGOS. Think through a core group.

What is the added value?

- Finding out who is doing what where. To know what work is going on in which areas. How people can work together
- Synergize projects-data collection, opportunity mapping
- State level policies and resources discussed that are not leveraged at other scales
- Take this convening as an opportunity to diversify engagement.
- Statewide conference would be a good way to access all the stakeholders. Break down barriers.
- Reinvigorate initiative for awarding awards for conservation projects from NM Riparian Council. Elevate people for doing good conservation work.
- Along with a summit, a group to facilitate more focused workshops. Very specific topics. Ex: Grassland restoration in xeric sites. Avenues for traveling state-wide to hear about certain topics.
- Follow up on research/literature being produced across states.
- Core group could apply for these opportunities for assistance/workshops at XWN or SER opportunities
- What problem(s) are we going to solve? Identifying this will make it more pressing.
- EPA convenes region wide wetland meeting and aquatic resources once every few years. May have money or opportunity to piggy-back.
- Ask potential participants what they would like to see, and design conference accordingly.
 - Figure out needs, bring in resources to support those interested.
 - Not just networking, not just conference style.
- Includes watersheds in NM with other states involved in NM rivers included
- Rio Grande is being addressed from a larger perspective. There are collaborative groups that are spanning state lines.
- Usefulness may be state based. However, watershed forum, under limitations of state lines, seems not perfect distinction.

Practitioners from XWN 2018 Annual Workshop Interested in Further Involvement in NM Convening:

- Shawn Stone
- Roy Jemison
- Gina Dello Russo
- Desiree Loggins
- Ondrea Hummel
- Susan Rich

Long-Term Planning for Disturbance and Threats

Small-Group Discussions

Climate-Induced Drought

Urbanization and Development

Riparian Wildfire

Dams and Diversions

Climate-Induced Drought

When Addressing Climate Change and Drought

- Identify problem
 - Sometimes there is not admittance of problem
- Identify solutions
- May be difficult to get people on same page
- Ask question of how climate is impacting things on the ground, this may be a way to get people on same page

Strategies to Mitigate Drought

- Identify areas of climate refugia
- Add future conditions into planning process
- Use current scientific literature to inform local planning process
- Use and seek out local knowledge
- Inclusion of water needs for urban and rural areas
- Use academic resources: e.g. U of A School of Sustainability
- Development of Drought Management Plans
- Plan to create patchwork habitat, specifically locally on Rio Grande
 - Survey appropriate areas, do more on the ground specific planning
 - In riparian areas, plant closer to water table. Use terracing to get closer to water table.
 - Gradually convert bosque from large cottonwood gallery to patch habitat that could be more fire resilient, and generally more sustainable.
- Financial Incentives for Conservation
 - E.g. carbon credit system
- Incentivize Rainwater Harvesting
 - Harvesting rain water on public and private property still illegal some states, depends on the state.
 - Legislation to change this in states where outlawed would help.
- Develop planting plans that take climate into consideration
- Finding/exploring climate adapted/resilient species for restoration
 - Perhaps lower elevation adapted species
 - Use genetically modified/artificially selected species in restoration process
- Think about desired future functions/processes for planning instead of desired species
- Regenerative Agriculture
- Incentivizing keeping water in the system
 - Purchasing water
 - Pilot System Conservation Program (Pilot Program)-testing a wide range of water conservation concepts that reduce water use

- When possible using “proof of beneficial use”
- Middle Rio Grande’s “Strategic Reserve” for both endangered species habitat and interstate compact deliveries
- Use social media campaign to spread awareness and solutions to climate change
 - Use different social media platforms to engage diverse audiences about water and conservation
 - Work with other organizations to create organized campaign
 - Tap into marketing information to do social good
 - Create messaging strategy document to share with other organizations

“Adaptive Communication”

- Important to use right words for conversation and context
- Adapt language to audience. Using words like drought, implies it will end. Oversimplified.
- “Natural conditions”- difficult term, people cannot agree on what it means
- “infrastructure resiliency” used instead of “building sustainability” example of changing terms to fit audience
- Need to weigh costs and benefits when talking about climate change using words “climate change”.
- Work with partners to diversify communication. If federal orgs cannot use some terms, other non-profit partners will be able to.
- Need better overall communication from scientists to public

Urbanization and Development

Small groups focused on different threats to watersheds, listed issues (underlined), and possible solutions and thoughts (bulleted) to address the issue.

Recreation demand

- Harness increased public interest in the Bosque and get people involved
- Elected officials that are supportive
- Good plan
- Valle de Oro as recreation amenity
- Trail planning (sustainable trails, more dispersed opportunities, etc.) drive recreation use to certain areas and trail heads

Bridges

Wastewater use

- Reclaimed water
- Effluent recharge into river (Groundwater recharge slow)

Development in the flood plain

- Conservation easements with farmers in floodplain (Socorro County)
- Address insurance issues that cover flooding in floodplain areas/liability – whose?

Levies

- Science-based solutions
- Levy set-backs (Gina)

Transfer of water rights. Sell water right and continuation of irrigation

- Water banking
- Figure out how counties can purchase water rights or other types of program to maintain some rights in fallow land, or go to the river.
 - This could be a problem, however – concern that if stay with the land fallowing land cause multi-year weed problem when farm again in the future.
 - Environmental groups purchasing water

Aging farmers and increasing price of water rights leading to a decrease in farming

- Build the market for local food, organic farming, etc.
- National work on loss of the small farm
 - Bernalillo County has 6-month program to support farmers and local food to support community.
 - Pima County (AZ) program for young farmers and ranchers.

Channels

- Policies/law to account for return flow (for water rights) – figure this out.
- Pitman Friends Wash in Henderson
 - Bio-soils (SW Valley project) to prevent concrete trapezoidal channels
- All native plant communities, volunteers
- Recharge zones
- Inventory opportunities for decommissioning
- Green infrastructure

Habitat loss – landowners mowing to rivers edge

- Address inheritance tax causing this problem

Groundwater Pumping

- Legal: greywater reuse, flow flow
- Education, river model
- Arizona groundwater-surface water law problem
- Rainwater and stormwater harvesting (e.g., Watershed Management Group)
- Incentives for conservation programs
- Dedicated person and program for support
- Accidental urban wetlands, also increase habitat

Nuclear Waste

- EPA NNSA contamination cleanup

Lost runoff

- Make use of it for habitat
- City of Tucson, e.g., stormwater to the Santa Cruz

Overall

- Encourage local government to do a review of their ordinances and zoning
- Landscape level analysis done by partners

Riparian Wildfire

Access, prioritization/planning, education.

Pre-fire Prevention and Preparation:

- Limit access to riparian areas during high risk seasons (Valle De Oro refuge)
- Use fire mitigation funding to do restoration work, building in breaks as restoration
 - “Selective clearing” and “Fuel reduction” serve as “fire breaks”
- Restoring natural patchwork dynamics:
 - Use floodplains
 - Be intentional about fire breaks
 - Consider climate-tolerance
- Restored lands can still be prone to fire (kochia, for example, burns low but moves quickly). Consider how fire might behave in restored ecosystems
 - Woodchips can stop/slow kochia re-growth
- Salts cedar is prone to hot crown fires (Russian Olive and Siberian Elm burn cooler)
- In Bosque Del Apache, they use overbank flooding to remove fuels from project sites
- Use burn-piles to remove fuels from the system or prescribed burning
- Incorporate bird habitat into fuels treatment – leave and replant with native shrubs (less fire-prone) where groundwater permits
- In Socorro County, the Rio Grande Agricultural Land Trust assists landowners with putting conservation easements on their properties. In a county with no zoning codes, this program incentivizes landowners to mitigate risks. Restoration projects on these properties served as a fire break and halted the spread of a large bosque fire.
- Use *continual* education to reach youth in schools and general public through billboards/signage
- Planning
 - Gila Watershed Partnership conducts landowner surveys to identify burn objectives/access points for emergency responders
 - Fire Management Plans - Prioritize most important areas to protect – let areas that are less well off burn
 - BLM/USFS FireScape plans include timelines
 - Rank severity danger

Building “fire breaks” into plans/proposals

Emergency Response:

- At the Valle De Oro refuge, managers built a bridge to the east side of the Rio Grande to give firefighters access in case of emergency
- Socorro County, which experienced 7 bosque fires in one year, monitors burns on private properties so they are prepared to respond quickly when a burn gets out of control and clearly document access points for emergency responders
- Managed wildfire – the Altar Valley Conservation Alliance in Arizona has a plan of action to use wildfire to complete the objectives of a prescribed burn for brush management
- Inter-agency cooperation is key
- Local fire departments in Socorro are wildfire trained, which is especially important when wildland firefighters are spread thin in the summer

Post-fire Rehabilitation:

- Be prepared for FEMA emergency funding after a fire event
 - Socorro and Gila Watershed Partnership working on this
 - FWS mandates having a plan in place on Refuges
- Restore in areas that mimic the natural hydrograph
- Use Bill Zeedyk structures to control silting and runoff, as in Waldo Canyon in CO
- Post fire funding can be used for weed control
- “Wildfire for beneficial use” - be prepared to use sediment deposits as an opportunity, such as to kill off non-native fish

Dams and Diversions

Action/Strategy	Where	Is it working?	Notes
Agency “Flow Management Team	Cochiti to Elephant Butte	Yes - ongoing for decades	Weekly phone calls for major dams - Army Corps, NRG, BOR, others
Flow modification study	Rio Chana to Chochiti	Not sure	Need to get reports - not sure of status
MRGCD finding out how much water is coming through ag systems	Throughout Middle Rio Grande	Yes	Helps understand ag effects on the valley - could partner to improve/get more info. Could lead to less consumptive crops. Alfalfa is the index crop.
BLM and GWP - Documenting old check dams - addressing sedimentation and e. coli	Upper Gila Watershed - New Mexico border to San Carlos/San Simon Valley	Yes	

Advocacy effort against Gila diversion - Audubon Society, others		Yes	Audubon is releasing a report around the NEPA scoping period to show that it is not needed. \$15 million has been spent on advocating for alternatives
Agricultural diversions → bird habitat and maintaining flows	Virgin River, NV	Yes	Involving landowners - win/win
Managing sediment at Isleta Diversion Dam			Sediment removal in action
Minute 319/CO River Delta resoration	CO River	Yes	
Glen Canyon pulse flows	CO River - Glen Canyon	Yes	Periodic pulse flows
Dolores River pulse flows	Dolores River, CO	Yes	
Dam decommissioning in the Northwest US	Pacific NW	No	Not much decommissioning around NM - conversation is not happening
Push for environmental flows that mimic natural flow patterns		Yes	
Adding fish passages into dams		Yes	
TNC using water rights to release, not keep, their water		Yes	
Migratory pathways/international flyway recognition and conservation		Yes	
OSC or State engineer in NM documenting how much water each crop			

uses			
Group working on Chama Collaborative project - rafters, fishers, MRGCD on using El Dovado dam more efficiently		Yes	3 years of work

Opportunities

- Restoring native habitat after water rights are removed
 - Safford Irrigation District bought water rights of many ag fields to fallow them
- Using MRGCD to encourage less water-intensive crops
- Evaluate watersheds to see which small dams could be removed
- Planning for maintenance along Little CO River - link to the Middle Rio Grande process
 - Ownership issues have been a challenge
 - Multiple managers is an issue
- Identify alternative uses for water diverted
- Cochiti lets water down river all winter - find a way to use this water
 - Use dams more efficiently to avoid water loss at Elephant Butte, etc.
 - Broaden management goals
 - Would still have to deliver water to Texas - would need to engage TX
- More accurate accounting of water (ag use, etc.)
- Enact pulse flows - this provides services to ecosystems, recreation, etc.
- Find common ground between rivers and agriculture - they are both endangered
 - Ag provides benefits to rivers, relative to developments, houses, etc.
 - Wildlife can benefit from ag

Q&A on Native Habitats Program – *Following presentation by Elizabeth Milford*

Q: The funding was provided by a grant by the Conservancy District. Was this a top-down or bottom-up process? Can you discuss the decision making?

A: We presented the concept of the Native Habitats Program to the district, and they apply it. Yasmeen is the planner for the district, and she is using our products to a certain extent. However, the program needs to be more partitioned into on-the-ground topics for other organizations to use it. As far as decision making, there was some resistance to the program by the board, but since it is a tool, not a requirement for the Board, the Board agreed to use it.

Q: What was the source of the resistance?

A: There has been some turnover since the program was created, and I'm not sure what the exact resistance was. We want to do more restoration, but the resistance was to specific items like the threats listed. Money is also an issue. However, since this is not a legal document like the Endangered Species Act, there wasn't contention that stopped it.

Comment: The Middle Rio Grande Conservancy District seldom leads their own projects. This plan is helpful to many of the partners that implement initiatives, and give the conservancy to use and work on their lands. This is why it's important to get the plan to a stage where it's useful for all the partners.

Comment: The next step is getting back together to create targets. There wasn't enough money to do this initially. There are three major geographic areas that all have their own issues, and specific area-type work could occur and should be learned from.

Q: There is an issue on Romero Road in the Harvey Jones channel regarding clearing on the west bank of the drainage. How does this plan apply to that issue?

A: In the targets for riparian wetland communities, you can see that the minimum relative abundance for each habitat types has numbers for current condition and the ideal target conditions. There are numbers for patch diversities – how we balance them so we don't take all the habitat out all at once. Sometimes you come into conflict with bird habitat and endangered species removal (e.g., Russian Olive can be habitat), and some project leaders are using the plan as a guideline for how to strike that balance by compensating for removed habitat with new habitat.

Another unrelated project we're working on is a rapid monitoring assessment with the Environment Department. There is a version available for montane uplands, and we are finishing the assessment for the lowlands. A playa version will be published any day now. These are fine-scale monitoring tools that do not replace long-term monitoring, but give a quick picture of condition.

Q: Are you comfortable with the Wikipedia article on the CAP?

A: I am not familiar with the Wikipedia article. The NRDC is okay with us releasing the CAP document, and Natureserv has publications on the planning process that we used to inform the planning process.

Q: One method you could use to protect housing is setting back houses from the floodplain.

A: One driving force to start floodplain encroachment was the fact that there is no zoning in Socorro County that requires setbacks from the river. When a flood comes, people call the Army Corps of Engineers about their flooding issues. SOBTF talks a lot to landowners about flooding and setting houses back.

Comment: The river in this area is largely privately owned. Saltcedar has actually prevented people from putting houses right next to the river – it's too thick. Also, the Us Forest Service Region 2 newsletter features the landowners we're going to be meeting on the field trip.

Q: Regarding human dimensions, what kind of opening do you have to go out and meet with landowners?

A: We had initial discussions with Bosquecito landowners, and they initially discouraged us from talking with other landowners, because it would be too controversial and unproductive. However, we have found that in Socorro County, people are very respectable, and don't get into arguments. We have had a series of open houses over the years at different venues in the county to tell people what's going on, and those meetings have successfully connected people so that they are prepared when FEMA comes in with funding for landowners.

Q: Has New Mexico Tech been involved?

A: Yes, they are a large landowner, owning 5 miles upstream of the Rhodes property that we'll see today. They are a partner in some research projects, and have monitored groundwater. The NM Department of Geology will help in the analysis of our planning efforts. We would love to do a comprehensive plan of their floodplain acreage, but they aren't ready yet.

Q: Do people generally to keep the river from migrating west?

A: No, we are in a grading reach (not degrading reach). The river has limited big channel movements, and river bars have been able to establish with vegetation (which narrows the river channel).

Invasive Species Q&A – Following presentation by Curt Deuser

Q: What are your suggestions for working with arundo?

A: Making a Z-line with spray is effective without using a lot of water. There is also an insect biocontrol being developed that could be good to use in the future.

Q: For the hack and squirt method, how deep should you hack, and how do you manage sites that have been actively squirted and may pose a risk of falling trees?

A: If trees are at risk of falling after a hack and spray treatment, then you have hacking too deep. On smaller-diameter trees, you can basically take the hatchet and lightly scrape the tree.

Q: The tree of heaven has been a problem in the Middle Rio Grande. Would you recommend hack and squirt? Maybe downward hacks into the cambium?

A: Glyphosate is probably the best treatment for tree of heaven. You can also hand-inject glyphosphate into huge trees (this stimulates suckering). If you initiate suckering, prepare for more

follow-up maintenance. Ailanthus is better with hacking, and there is a lot of literature on treating it (it is common in the Eastern US).

Q: We have problems with hack and spray with Ailanthus.

A: If the ailanthus is suckering, I would not use hack and spray. A better treatment would be low-volume basal spray with a basal oil (not methylene seed oil) to penetrate into cambium. Basal spray is the best treatment for all resprouts, with foliar treatments also being appropriate for high-density foliage plants.

Q: You had information in your presentation on woody treatment and secondary invasives – do you have experience with camelthorn?

A: I have done some camelthorn work. For any perennial weed, you will miss some individuals, but if you get them when bulbing (for more surface area), you will have success.

Q: For combining treatments when the tamarisk leaf beetle is present: we have control methods that were effective for tamarisk and Russian olive before the beetle arrived, but now we can change our methods to take advantage of tamarisk being weakened by the beetle. What can we do to supplement the beetle's work?

A: At the landscape level, let the beetle take care of the tamarisk. Trying to spray plants when they are weak will not help. The beetle is already reducing the amount of seed production and other aspects of the life cycle that we can't afford to manage. However, make sure to control other plants; if you don't control Russian olive when the beetle comes in, it will take over. And in general, focus on controlling tamarisk where they cause a fuel problem.

April 5, 2018 Field Day Notes

Participants visited 2 private properties, now both restored and protected by conservation easements, along the Rio Grande, north of San Antonio, NM.

Field Visit #1 Mitchell Property

Summary: This property is an example of success because of the dedication of the landowners and project partners and funding through Partners for Fish and Wildlife and Bosque Initiative Grants. The property once had dense, monotypic stands of tamarisk. The Mitchells began treatment of tamarisk and Russian olive in 2001, and in 2004, this property became one of the pilot project sites for the Save Our Bosque Task Force as a restoration model to be shared with other conservation-minded landowners. The Mitchells continue to follow up on tamarisk resprouts as they come across them. This property is now under conservation easements through Rio Grande Agricultural Land Trust. Today this property now hosts a healthy cottonwood-willow bosque. For more information: <https://www.sobtf.org/mitchell>

Background

- Mitchell acquired property in 1998.
- Property already had strong native species component
 - Young cottonwoods (15-20yrs) were there before treatment
- SOBTF pitched proposal to Mitchells about conservation easement.
- Project has been/is a large success.
- Treatments consisted of cut stump chemical treatment of tamarisk and Russian Olive, basal bark, mechanical-chainsaws and bobcat by different contractors
- Tamarisk leaf beetle eat small tamarisk resprouts that come up now and then.
- Conservation easement makes it easier to apply for funds for restoration, because your property is guaranteed to be conserved.
 - Conservation easements is contract based on terms all parties agree on.
 - Mitchell's house (½ acre) not included in conservation easement
- Annual monitoring is done to ensure quality
- 6-8ft below ground is ground water depth
 - When neighbors pump groundwater, Mitchell notices, his small pond on property will dry up
- Regenerative cottonwoods dried up when river drops
- Plenty of wildlife on property: javelina, deer, skunk, coyote, bobcats, mountain lion, badgers, fox, elk, raptors, Cooper's Hawk
- NEPA done by SOBTF. County contracts Tetra Tech to do work.
- Mitchell plans to maintain property as it, the conservation easement does a good deal to protect property.

- Some problems that still exist:
 - Invasives are a threat
 - Fire is a large threat
 - Mitchell spends about 4-6 hrs/season respraying tamarisk
- Conservation easements could be considered fire breaks because they are a break in the thick tamarisk along river.

Neighbor's property (The Gonzalez)

- The Gonzales family began hosting family work days in 2007 to cut a way to the river along their fence line through the tamarisk and later restoration work continued through federal funding sources.
- Their land also protected under conservation easement
- Treatment of koshia and knapweed. After years of treatment, less weeds.
- Projects in valley build on one another, success builds more success
- In the future, another adjacent 550 acres will have tamarisk removed because fire hazard, through Socorro County and FEMA
- Rio Grande Agricultural Land Trust has several sites in the area.
- Socorro county does not have zoning restrictions. Conservation easements are important in this "lawless" county

Field Visit #2 Rhodes Property

Summary: The Rhodes Ranch is over 560 acres of floodplain habitat, including a historic wetland. Restoration efforts on the Rhodes property have been completed through many different project partners and funding sources, beginning with aerial tamarisk treatment in 2003. Restoration began with a large FWS grant awarded to the Save Our Bosque Task Force 2006. A large part of the property burned in 2006 and a smaller section in 2016. More project components are in the planning and implementation stages. Initial and follow-up tamarisk control has been implemented on a majority of the property, however, maintenance on this invasive and other noxious weeds remains a necessity. With permission from the landowner, and with assistance from the New Mexico State Botanist, the Task Force established an experimental (2008) and now established population of Pecos sunflower (*Helianthus paradoxus*), a federally listed threatened species. When in bloom, this population can even be seen from the interstate. Both northern and southern tracts of this property are under a conservation easement with the NRCS. For more information: <https://www.sobtf.org/rhodes>

- Property purchased in 1980 by Doris Rhode's father. He backhoed/cleared tamarisk. Planted winter wheat.
- Property was going to be sold to NM Game and Fish when Doris' father died in 2005. Then Doris and siblings decided not to sell it and pursue another purpose for the land.
- Began working with RGALT and SOBTF
- Secured Management of Exotics for Endangered Species Recovery grant to clear tamarisk on property

- 2 Easements on Property:
 - WRP (NRCS Wetland Reserve Program) easement 303 acres
 - 4 wetland properties in the valley-2 in Bosque De Apache, 1 no longer wetland, and 1 on N property of Rhodes.
 - 2011- 2nd NRCS, 153 acres, South Easement- \$400,000 worth of restoration funding
- Gina planted a small pocketful of Pecos sunflower on Rhodes N easement
- Rhodes property acts as sponge. When there is flooding, Rhodes will flood and properties N and S will not.
- Worked closely with Audubon, Socorro County, and FEMA plan (78 acres will be burned)
- BOR currently developing lower bank project to increase habitat for silvery minnows and SWFL
- Doris gets the satisfaction of seeing a property restored.
- SOBTF's Conceptual restoration plan helps to prioritize site.
- Many years of success depends on patience, many years until work starts, continual relationship building and partnership between landowner and partners

FEMA project

SOBTF asking for advice as to how to move forward with one of the FEMA plan sites.

To treat tamarisk invaded area:

- It is suggested that low volume basal spray 25 gallons for 2-3 days.
- Roughness of site maybe good for cottonwood establishment
- Agar pole planting, maybe not because soil like dense clay
- Treatment of koshia
- Grasses could be seeded on floodplain
 - Seeding of sacatone
 - Create contour burning, to slow flood waters when they move across floodplain, then sacatone seeding.