

2023 Missouri Wetlands Summit
Wetland Conservation Partnerships into the Future



Participant Input Summary Report

Missouri Department of Conservation

February 1-3, 2023

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Executive Summary

- The **Objective** for the 2023 Missouri Wetlands Summit was to increase participants' knowledge of wetlands, build relationships, and strengthen partnerships to advance wetland conservation for a diverse fish and wildlife resource.
- The 2023 Missouri Wetlands Summit was held February 1-3, 2023, at the Lodge of the Four Seasons, at Lake Ozark and was co-hosted by the Conservation Federation of Missouri (CFM) and the Missouri Department of Conservation (MDC).
- Over 330 people from 15 states attended the Summit to hear presentations and discussions from a wide variety of experts, professionals, and other interested parties on the state of wetland conservation in Missouri and the challenges that lie ahead.
- Participants were able to provide their thoughts, ideas, and opinions for the future of wetlands in Missouri at different periods of time. Many of the participants, over 250, provided ideas and opinions in a pre-Summit survey ([Appendix B](#) and [C](#)). During the Summit, over 100 participants provided comments and questions for speakers through the use of a QR code and/or written notes placed in a box ([Appendix D](#) and [E](#)). The morning of the third day was dedicated to panel discussion as an opportunity for some of the collected questions to be answered from a variety of perspectives. This was also a time for participants to provide feedback and ask additional questions to the panelists. A post-Summit evaluation was sent to all participants, with 170 people providing their thoughts at this time ([Appendix F](#)).
- There was an array of input from the participants during this Wetlands Summit. Part of this report is to ensure that these different perspectives were captured and synthesized as a means to guide the next steps in Missouri's path of wetland conservation. Key themes included prioritizing wetlands spatially, important features of a wetland program, areas of opportunity for coordination and further research among partners, increasing the capacity to do wetland conservation, and increasing the capacity for public support and action.
- All in all, this event was well received by the participants demonstrating a key interest in advancing wetland conservation (see [Post-Summit Evaluation Summary](#)). This event will serve as a new launching point for MDC's collaboration with its partners and integration of MDC's Wetland Planning Initiative and Design for the Future. Already several action items have moved forward because of discussions that were initiated during the Summit.
 - Discussions about updating MDC's Comprehensive Conservation Strategy (CCS) Tiered Approach in southeast Missouri has included partners and regional staff to identify wetland habitats that may be flood prone and/or used for rice, but have fallen outside of existing tiers.
 - Discussions about planning an annual Bird Bash event focused on birding hotspots, which includes many of Missouri's wetlands have also taken place.
 - Establishment of an internal MDC Wetland Program Working Group to guide agency objectives and actions for wetland conservation and management given lessons learned from the Summit.

- Regional discussions among partnering agencies about wetland management and identifying opportunities to help each other out with staffing and equipment.
 - Interagency discussions on how and where to mobilize strike teams to target invasive species on WRE.
 - Several speakers have been contacted by participants in the months preceding to share information and present at other meetings, thus continuing wetland conservation awareness to a broader range of stakeholders.
 - The August issue of the CFM Magazine continues the focus on wetland conservation. Some of the articles overlap with messages that were shared at the Summit. There are other features and highlights within this issue that provide additional perspectives and areas of wetland work that weren't touched on by the Summit's agenda. We hope you view these articles as a continuation of the conversation that began with the Summit earlier this year.
 - Other ideas and discussions have likely taken place and are influencing action but fall outside of this report. We would like for this Summit synopsis to provide further traction for ideas that were stimulated at the Summit to be shared and put into action. Thank you for playing a part and advancing wetland conservation in Missouri. We look forward to continuing the dialogue on how to better put wetland conservation on the ground.
- The agenda, pdf's of all of presentations given, and this report can be found on CFM at: (<https://confedmo.org/wetlands/>)



Introduction and Input Synthesis

The 2023 Missouri Wetlands Summit, hosted by the Conservation Federation of Missouri and the Missouri Department of Conservation, provided review and report on wetland management status and trajectory in Missouri. Contemporary and forward-looking perspectives are needed to ensure that the gains made in recent decades are perpetuated. New challenges are apparent as public expectations change, ecological and climate influences emerge, and agency budgets continue to face necessary tradeoffs. The Summit provided historical context, highlighted the breadth of private and public wetland restoration and management, underscored large scale and longer-term wetland benefits and challenges, and invited attendees to engage in exploring solutions.

This Summit was designed for state and federal agency staff, public and private wetland researchers, engineers, managers, not-for-profit and nongovernmental organizations, hunters, wildlife viewers, and any conservationist interested in helping shape the future of wetland conservation in Missouri. Over 330 people from 15 states attended the Summit to hear presentations and discussions from a wide variety of experts, professionals, and other interested parties on the state of wetland conservation in Missouri.

Agenda Outline and Summit Progression: The Summit began the first afternoon by highlighting the past success of wetland conservation in Missouri, referring to the “Missouri Model”, which was underscored by the participation of leaders from key organizations in wetland conservation, including MDC, NRCS, USFWS, and Ducks Unlimited. Missouri’s wetland conservation efforts have incorporated approaches set forth by the North American Waterfowl Management Plan with an emphasis on the connections between habitat management, species populations, and public use. Over time there has been a growing awareness about the importance of scale and landscape setting, which reflects our understanding of wetland dynamics. Similarly, our understanding about the necessity to acknowledge and incorporate social sciences into natural resources management has also grown. Changes are occurring across both sociological and ecological landscapes that must be addressed moving forward. This provided the participants with a historical backdrop of where we’ve been that has led to today.

The second morning began with a series of case studies and examples of successful partnerships in different parts of the state. These involved projects like the L-536 levee setback that uses wetland restoration as a component of river and floodplain management. In Missouri’s largely agricultural setting, how conservation easement programs like Wetland Reserve Program/Wetland Reserve Easement and the Missouri Agricultural Initiative (WRP/WRE and MAWI) were originally developed and expanded over time were described. Wetland conservation may look different in various corners of the state, as seen by the examples from the Mississippi/Missouri River Confluence versus the Mingo Basin, however, building off existing partnerships is key no matter where you are. Finally, wetland plants and wetland function can also be integrated into urban landscapes as part of stormwater management solutions and green spaces.

The following afternoon session then addressed the multiple areas of overlapping change which influences how wetland conservation is put on the ground. This included paired presentations focusing on trends at a national or regional level, followed by a more localized Missouri

perspective. The audience heard about changes to climate, hydrology, and ecological services, which focused on ecological considerations. However, there were also presentations on social topics, like how to tap into multiple public uses, utilize data, and weigh trade-offs to help shape wetland management programs. The value of existing plans to find areas of overlap and why partnerships and community engagement are necessary for public policy were also discussed.

Participants were able to provide their thoughts, ideas, and opinions for the future of wetlands in Missouri at different periods of time. Many of the participants (> 250) provided ideas and opinions in a pre-Summit survey ([Appendix B](#) and [C](#)). During the Summit, over 100 participants provided comments and questions for speakers using a QR code and/or written notes ([Appendix D](#) and [E](#)). The morning of the third day was dedicated as panel discussion as an opportunity for some of the collected questions to be answered from a variety of perspectives. This was also a time for participants to provide feedback and ask additional questions to the panelists. A post-Summit evaluation was sent to all participants, with 170 people providing their thoughts at this time ([Appendix F](#)).

Overall, the Summit attracted a big crowd of engaged participants who were able to learn more during this event on why wetland conservation is important ([Post-Summit Evaluation Summary](#)). Having breaks scattered throughout, along with the evening social hour, were well received and provided participants opportunities to interact and have discussions. As with any experience, there were areas that could be improved upon in the future. The agenda left little time for the audience to ask direct questions to the speakers. Admittedly, there were topics that some participants wanted to hear about that were not covered. Others felt there was too much emphasis criticizing the roll of crops in wetland management without acknowledging the trade-offs. Although there were individuals from a wide range of states and agencies, there were groups and demographics that were not in attendance or underrepresented. Those working on soil and water, disaster preparedness (SEMA/FEMA), drainage/levee districts, or municipalities were largely absent. Although there were a considerable number of both male and female participants, most attendees appeared white, indicating that there is opportunity to greatly expand the diversity of included wetland conservation practitioners and partners. At the end of this event, there was interest in whether the Summit was a “one-off” or if there were going to be subsequent events on a regular basis. If so, figuring out ways to have more audience interaction, greater number of topics, and choice would be appreciated.

Key Themes from Received Input: There was an array of inputs from the participants during this Summit, with over 100 participants providing comments and questions for speakers during the summit through a QR code and/or written note on a post card. These can be reviewed verbatim in the appendices. Part of role of this report is to ensure that these different perspectives are captured and communicated back to the larger group. The following is a synthesis of participant feedback and takeaways from the planning team and should be helpful in guiding the next steps in Missouri’s wetland conservation journey. Key themes included prioritizing wetlands spatially, important features of a wetland program, areas of opportunity for coordination and further research among partners, increasing the capacity to do wetland conservation, and increasing the capacity for public support and action. We now expound on these emergent themes, which reveal a participant-led path forward for wetland conservation in Missouri.

Voiced Considerations for Next Steps in Wetland Conservation and Management

The Summit brought people face-to-face and a lot of discussions were had between participants. Many comments were also shared outside of the presentations with the organizers verbally, electronically, and on paper. A number of these ideas centered around potential next steps for wetland conservation in Missouri. As agencies, organizations, and individuals move forward and continue to discuss how and where to target wetland conservation in Missouri, these ideas and consideration should be in the forefront.

- **Need to prioritize wetland conservation spatially.** This includes identifying key locations for protection and restoration, as well as developing policies and programs that support wetland conservation.
- **Consider Climate Change impacts to various wetland habitats and wetland-dependent species and possible strategies:** Wetlands play a crucial role in Earth's climate. Climate Change has different impacts on various wetland communities, wetland-dependent species, and the quality of various ecological services. On one hand weather extremes can increase the impact of disease outbreaks on wetland-dependent species, negatively influence wetland types, and the decrease the capacity to provide certain ecological services, like carbon sequestration and biodiversity. On the other hand, wetland conservation can be a tangible way to help mitigate and adapt to the current and future stresses of climate change. As the impacts of Climate Change is better understood, the role Missouri wetlands play may change over time.
- **Importance of landscape suitability:** Acknowledging opportunities and constraints dictated by the alterations, soils, hydrology, and landscape setting is important in guiding acquisition, management, and renovation. Being mindful of how infrastructure and potentially adjusting our boundaries and assets to better interact with the land and water accounts for this consideration.
- **Importance of protecting headwater streams and isolated wetlands.** These wetlands are not currently covered by the Clean Water Act and are at risk of being destroyed or degraded.
- **Importance of protecting and managing wetland habitat.** Wetlands are dynamic and therefore span a gradient of aquatic to terrestrial habitat conditions, which benefit and equally broad array of wetland-dependent species. The current fragmentation of wetland habitats threatens the life-history needs of many species, especially those that are less mobile. Existing wetlands should be protected and have restoration prioritized adjacent to them to help expand the footprint/continuity among habitats and buffer degradation from adjacent land use. Due to the widespread hydrological alterations, wetland management is crucial for a range of species. Mimicking ecological processes, habitat complexity and diversity are foundational aspects of successful wetland management.
- **Need to strengthen collaborations between conservation organizations.** This includes working together to identify and address threats to wetlands, as well as to build off past successes in the implementation of conservation programs.

The following are some specific actions that can be, or have been, taken to address Summit feedback:

- **Update the CCS Framework.** The CCS Framework is a tool that is used to prioritize wetland conservation. Periodically updating this framework to identify and prioritize tracts of habitat based upon their restoration potential, existing habitat, proximity to municipalities, and potential for public use or ecological services should be considered.
 - Following the Summit, discussions among partners and MDC regional staff have begun evaluating options in southeast Missouri to update the CCS Tiered Approach.
- **Encourage strengthening of watershed and wetland policies.** Revising water protection, mitigation methods, and allocating funding could help better define impacts to habitat and water quality and measures needed to provide greater ecological lift.
- **Continue to identify key locations/habitats for protection and restoration.** MDC regional teams, statewide program leads, members of MDC's Realty Committee, along with partners should continue to identify key locations/habitats for protection and restoration.
- **Elevate the importance of headwater streams and isolated wetlands.** Wetland and water quality protections have been threatened by a recent decision of the Supreme Court of the United States. This could have a significant impact on headwater streams and isolated wetlands. MDC and partnering agencies should consider programs that protect these vulnerable habitats if they are not covered by federal protection.
- **Promote existing wetland complexes.** Work with partners to consider ways to elevate the importance of existing wetlands. RAMSAR designation and the Society of Wetland Scientists (SWS). Wetlands of Distinction are two established frameworks that do have minimal if any Missouri Wetland representation.
- **Consider the interactions of adjacent land and water.** When removing or modifying infrastructure, it is important to consider the interactions of engineering influencing flooding or drainage on adjacent lands and waters. Partnering agencies should quantify and monitor the impacts and trade-offs to help inform infrastructure and land-use decisions so we can quantify and proactively address threats and opportunities.
- **Provide a variety of habitat conditions to integrate species diversity in landscape planning.** Aquatic habitat needs to be available as steppingstones between populations and for redundancy to mitigate variable environmental conditions. Equally, terrestrial habitat needs to be adjacent to and connect aquatic sites to enable survival and dispersal in many species. Two references, [NatureServe's "Biodiversity in Focus: United States edition"](#) and the paper "[Increasing taxonomic diversity and spatial resolution clarifies opportunities for protecting US imperiled species](#)", provide some guidance for considering species diversity into landscape planning. It is important to ensure that we are providing required habitat for the full life cycles of target taxa at the local and landscape scales.

- A research team of University of Missouri and MDC staff are developing an adaptive management tool to identify the availability of habitat for the broad diversity of wetland-dependent species across Missouri based on the timing of life history events.
- **Strengthen collaborations between individuals and conservation organizations.** It would be beneficial to strengthen our collaborations among individual managers and the range of conservation organizations that are doing overlapping work.
 - MDC staff have held the first meeting of a new internal Wetlands Program Working Group to collectively implement the MDC's goals and address future challenges to wetlands conservation.
 - MoDNR is setting up interagency working groups as part of the Missouri Hydrologic Information Center (MoHIC). They are also looking for additional interagency collaboration related to the Missouri Nutrient Trading Program. Participation and input from other agencies would shape these efforts as they begin to take shape.
 - Other interagency/organization coordination, both regionally and statewide, would help facilitate communications and cooperation on important wetland issues.
- **Look for complimentary opportunities to link municipal-agricultural watersheds together.** There are examples of states where municipal-agricultural watersheds have been linked together successfully. Setting up programs to provide funding for conservation easements, management, and protection are ways to apply linkages across scales.
- **Develop and implement new wetland conservation programs.** This could include programs that provide financial assistance to landowners, municipalities, and collaborative efforts to restore and manage wetlands, as well as programs that educate the public about the importance of wetlands. Several ideas include the following:
 - Increasing the payments for vegetative and other best management practices within priority watersheds to reduce impacts of nutrients and sediment.
 - Dedicate funding for private landowners of WRP wetlands for landowner training and assistance with management.
 - Common asset trusts are one way in which funds from multiple sources could be pooled and strategically invested in wetland conservation.
 - Establishing a Farmable Floodplain Easement Program that restores a percentage of an area that is open to rivers, yet still allows farming, but not crop insurance.
 - Raise awareness and ecological literacy about wetlands throughout the year on social media with various messaging by taking advantage of the various national days of celebration/recognition (i.e., World Wetlands Day, World Water Day, Amphibian Week, World Shorebird Day, etc).

- Establishing an annual “Birding Bash” at eBird hotspots, which includes all of our intensively managed wetlands, was an example of the latter.
 - Following the Summit, discussions among ornithologists, wetland staff, and MDC Regional Recreational Use Specialists have begun to consider options.

Key Aspects for a Wetland Program:

- **Integrate planning where there overlaps exist:** Both internally and externally, identifying areas of overlap and existing plans and actions that are already underway, should be a means to move wetland conservation forward. An example of this this is to integrate the Species Recovery Plans of wetland dependent species into MDC's Design for the Future as part of the Wetland Program. Other examples include incorporating North American Waterfowl Management goals and other national bird plans, UN Sustainable Development goals, and the Mississippi River Basin Nutrient Task Force plan.
- **Acknowledge the differences and trade-offs of management strategies and goals of various wetland conditions:** Management of all wetland types are necessary but may vary by degree in the intensity of actions or periodicity. Infrastructure paired with soils, hydrology, landform, target species biology, and adjacent habitat will also play a role in setting appropriate expectations for the desired future state. Being upfront about the trade-offs between management actions and public use is warranted because of the diversity of values and expectations put on these habitats.
- **Highlight why wetland management is necessary:** Ecological processes have been drastically altered at multiple scales. Global processes linking to climate, carbon, and nutrient cycling are overriding factors. At the local scale, the disproportionate degree of wetland loss and degradation of quality influence how natural disturbance, such as floods, fires, and storms, influence today’s wetland communities. Wetlands vary in size, shape, and composition, and they are constantly changing in response to natural and human-driven conditions. Ensuring variability occurs over time is essential for the health of wetland ecosystems and is important when trying to manage and mimic natural processes over time.
- **Wetland management and communication should focus the diversity of species for a range of different stakeholders:** The importance of meeting the needs of a diversity of wetland-dependent species and providing for various ecological functions was elevated. Based upon the history of wetland conservation, it can be easy to fall into the trap of focusing our management and communication on a particular game species, a specific taxa like birds, or certain public uses. Making a conscious effort to include other perspectives and disciplines, considering the full suite of wetland-dependent species, and the range of ecological functions into our management strategies and communication messages will be critical for conserving resilient wetlands under changing conditions.

Coordination of Management Activities and Research Among Partners

- **Including multiple stakeholders to employ nature-based solutions on big rivers.** Big river issues are complex and involve trade-offs between flood protection and risk focused on human lives, property, and commerce. On the wildlife side, there are species recovery plans and habitat assessments. Weighing the social and ecological benefits of nature-based solutions is a necessary path forward.
- **Integrate knowledge and training opportunities in high school and college programs.** There are opportunities both within agencies and our education systems to share evolving ideas and approaches regarding conservation, including our wetland resources and wetland dependent species.
- **Measuring the extent and degree of ecological services.** Quantifying the extent of ecological services and their economic values is a means for agencies to provide useful metrics for the various programs and to track the impact of wetland conservation at various scales. Increased coordination among agencies would help attain these shared goals quicker.
- **Evaluation of possible barriers and improving coordination:** Understanding multiple stakeholders, constraints, opportunities, overlapping interests, and staying in two-way communication is necessary to improve coordination and remove possible barriers.
- **Taking care of infrastructure is important.** Since many of Missouri's managed wetlands have some component of engineering to help manage these habitats in an altered landscape, there is an aspect of infrastructure maintenance that requires funding and planning to sustain these areas. Wetland designs have evolved since many areas were first established, and these designs incorporate lessons learned about management and flood resiliency. At the same time, costs to repair and maintain infrastructure are increasing. Allowing enough time to adequately plan and fund improvements, while also keeping the areas operational is important.
- **Being mindful that economics has a big impact.** Incentivizing the business sector, municipalities, or private lands to do something for conservation often comes down to economics. Whether it is bundling ecological services like carbon or nutrient credits and/or the use of conservation easements, many times there has to be a big enough payoff for individuals to choose to consider different alternatives. Understanding the motivations and how ecological benefits can be bundled/packaged is something new programs must consider.
- **There are many research needs that require multiple disciplines.** There are boundless opportunities for research across disciplines exploring ecologic functions and tangible impacts of decision-making based upon hydrology, carbon sequestration, water quality, urban development, and agricultural practices.
- **Exchanging information across disciplines is an extra, but necessary, step.** It is easy to communicate with others in your own field or community. However, wetlands are

diverse enough that it requires actively seeking other perspectives so that you don't create your own information silo or echo chamber. Efforts should be made to create and attend webinars, archive and share these presentations, provide and seek out opportunities like this Summit or other wetland conferences to exchange information, and establish novel partnerships. Making personal connections and maintaining those working relationships over time through informal exchanges and participation in events is important.

Increasing Agency Capacity

Increasing agency capacity is a complex process that requires a variety of strategies and interventions. Some common strategies to keep in mind include the following:

- **Building staff skills and knowledge:** This can be done through training, professional development, and mentoring. This is essential for ensuring that staff have the skills and knowledge they need to deliver effective services. Statewide and regional workshops in combination with one-on-one information exchanges between new, more experienced, and even potential future staff are needed.
- **Creating supportive organizational structures:** This includes developing an overarching vision for wetland conservation to ensure staff are working collectively towards the same goals. Provide resources, such as training, technology, and funding, so staff can do their jobs effectively. Creating a culture of inclusion, learning, and innovation to encourage staff to share ideas, experiment with new approaches, and continuously improve.
- **Fostering collaboration and partnerships:** When individuals and organizations share common goals, resources, expertise, and best practices, they can achieve more than they could on their own. This was a common theme shared through the Summit and a desired path for the future.
- **Engaging stakeholders:** By engaging stakeholders, agencies can ensure that their services are responsive to the needs of local communities and the public at large. Building relationships with stakeholders helps to maintain trust and support for agency work. Seeking out under-represented groups and perspectives contributes to our understanding of wetland services and community conservation needs and provides new lenses through which we can view and manage Missouri's wetland resources.

Increasing Capacity of Public Support and Action

There were ideas shared on increasing public support and action for wetland conservation, which centered around increasing awareness, incorporating diversity, and implementing programs:

- **Knowledge:** There is a need to increase awareness and education about wetlands, both within the agency and general public. This could be done through regional workshops and trainings, internal or external mentorship programs, wetland days for students, and partnerships with local organizations.
- **Diversity:** There is a need to increase disciplinary and worldview diversity within the wetland conservation community because of the wide range of flora, fauna, ecological

services, and public uses associated with wetlands. Multi-disciplinary approaches, including an array of professional expertise, will help reduce blind-spots and find the best option given various trade-offs. Intentionally reaching out to diverse communities can also help increase diversity among wetland users and professionals by better engaging underserved race and ethnic groups. This can be done by seeking out partners within communities that are not predominantly white, seeking out and uplifting minoritized students and professionals, and being open to new ideas and values.

- **Support:** There is a need for increased support for wetland conservation efforts, both from the public and within conservation agencies. Efforts could include, but should not be limited to, the following:
 - Partner with local school districts to organize wetland days for elementary, junior high, and high school students.
 - Continue coordination with R3 efforts and engagement with traditional groups.
 - Form relationships with under-represented communities to identify and address their wetland conservation needs.
 - Organize birding events that highlight the importance of wetlands for birds and other wildlife.
 - Expanding communication efforts to better contact audiences on social media.
 - Produce a collectable Missouri bird stamp (like a duck stamp).
 - Engage with the new aquatics institute at the University of Missouri at Columbia (MU) to foster a wetlands conservation ethic in college students and increase the pool of trained professional for wetlands management.
 - Develop partnerships with other universities and colleges that have a stake in Missouri wetlands and the multiple disciplines the overlap with environmental and social issues that influence policy, protection, research, and management.



Lifetime Achievement Award to Dr. Leigh Fredrickson

During this year's Missouri Wetland Summit, Leigh Fredrickson was recognized and presented with a Lifetime Achievement Award. Leigh influenced and impacted many of those attending this year's Summit and many others across the nation. His career, which has spanned over 50 years, has contributed greatly to our knowledge about wetland management and conservation. For the bulk of his career (1967–2002), he was as the Director of the Gaylord Laboratory, a cooperative agreement between the University of Missouri and the Missouri Department of Conservation. During this time, he mentored 79 graduate students in wildlife sciences. Teaching waterfowl ecology and wetlands, Leigh took his students across the country to expose them to diverse landscapes, meet passionate professionals, and wrestle with wetland management issues that span regions. Throughout his tenure, he worked with wetland professionals at over 300 national wildlife refuges, as well as state and private wetlands in all 50 states. Leigh's tutelage still occurs through wetland workshops, which enable him to mentor other segments of the natural resource workforce and influence wetland management of countless more acres. In reflection on his career, Leigh has said that he has learned that every person matters. During this year's Missouri Wetland Summit, his colleagues, collaborators, and co-conspirators were able to return the favor and share their respect and admiration for him. In classic "Fredrickson" style, Leigh accepted the award and treated Wetland Summit banquet attendees to a 45-minute "lecture" about his personal career path, the history of wetland and waterfowl research in Missouri, and thoughts for the future. It was a great evening honoring a great career, and a wonderful human being.



Leigh Fredrickson with just a few of the many individuals he has influenced.

Pre-Summit Survey Questions/Summary

• Pre-Summit Questions

A key purpose of the Missouri Wetlands Summit is to highlight the breadth of private and public wetland restoration and management, address large-scale and longer-term challenges, and invite attendees to explore solutions. Please answer a few questions to help us have a successful event.

Imagine that you are getting ready for a discussion about public and private wetland management and wetland wildlife.

What topics might you be interested in **hearing/learning** about?

What topics are you interested in discussing with others who are interested in wetland management and conservation?

What would make this event a success in your mind?

What do you see as your top three challenges that you feel should be discussed at this Wetlands Summit?

Please let us know any other comments or questions you may have about this event.

Name

Organization

Email Address

• Pre-Summit Survey Summary

- Over 250 participants provided ideas and opinions in a **pre-Summit survey**. Listed below are the survey questions and the top three responses for each.
- What topics might you be interested in hearing/learning about?
 - Wetland management (ranging from general to specific).
 - Wetland restoration
 - Sustainability of wetland communities
- What topics are you interested in discussing with others who are interested in wetland management and conservation?
 - Techniques for managing and protecting wetlands
 - Partnerships
 - Social scale
- What would make this event a success in your mind?
 - Open-minded discussions
 - Learning something new and practical
 - Collaboration and networking
- What do you see as your top three challenges that you feel should be discussed at this Wetlands Summit (each topic had a similar number of comments)?
 - Climate change and how it affects wetlands
 - Making ecosystem services relevant to a broad audience/helping the public understand wetlands
 - Funding sources for wetlands
 - Improve/increase wetland habitat

- Please let us know any other comments or questions you may have about this event (please see [Appendix B](#) for complete comments and questions)
 - Strong support for the wetlands summit
 - Several additional comments and questions

QR Code Questions

To get the most out of your meeting, we encourage you to share your thoughts, ideas and comments, which is paramount to how we move forward as a natural resource community to conserve the diverse values of wetlands.

Please enter your question(s), ideas or comments for the speakers/panel in this session.

Post-Summit Evaluation Survey Questions

• Post-Summit Evaluation Questions

Thank you so much for attending the 2023 Missouri Wetlands Summit that was co-hosted by the Conservation Federation of Missouri (CFM) and the Missouri Department of Conservation (MDC), and also for taking time to leave your feedback. This survey will take about 5 minutes.

- Please indicate the degree to which you agree or disagree with the following: (Strongly agree to Strongly disagree)
 - The Missouri Wetlands Summit met my expectations.
 - I gained new perspectives on Missouri wetlands and wetland management.
 - I had opportunities to provide input and offer my insights about wetland conservation and management
- Please indicate the degree to which the summit presentation increased your knowledge and awareness of wetlands management and conservation challenges
 - Wetland conservation history in Missouri
 - Wetlands restoration in management
 - Social elements in conservation
 - Wetland conservation partnerships
 - Changes in climate
 - Public wetlands policy
- Please indicate the degree to which the panel discussion on the final day increased your knowledge and awareness of wetlands management and conservation challenges
 - Increased considerably
 - Increased somewhat
 - Did not increase
 - No opinion
 - Did not attend
- Area of management and conservation emphasis. Please indicate the degree to which you believe wetlands management and conservation emphasis needs to increase or decrease in the future
 - Opportunities for waterfowl hunting on MDC areas
 - Opportunities for bird watching on MDC areas
 - Increased refuge on MDC areas
 - Wetland management for private wetland owners
 - Influence wetlands policy

- Your name (optional)
- Your organization (optional)
- Wetland role
 - Administrator
 - Biologist/research
 - Private consultant
 - Public wetland manager
 - Private wetland owner/manager
 - Academic/University
 - Wetland-related NGO
 - Student
 - Other

Post-Summit Evaluation Survey Summary

On February 6, 2023, a **Post-Summit Evaluation** was sent to all participants, with 170 people providing their thoughts. This involved 5 questions with a list of answers to choose from. The last question was open ended for additional thoughts and/or questions. Please see [Appendix F](#) for detailed results.

- When asked to indicate the degree to which they **agree or disagree** with the following statements:
 - Over three-fourths of the respondents agreed the Wetlands Summit met or exceeded their expectations
 - More than 80% of respondents felt they gained new perspectives on Missouri wetlands and wetland management
 - 75% of respondents agreed they had opportunities to provide input and offer their insights about wetland conservation and management
- When asked to indicate the degree to which the summit presentations **increased their knowledge and awareness** of wetlands management and conservation challenges:
 - Almost 90% of respondents indicated their knowledge of wetlands conservation history in Missouri increased
 - Over 80% of respondents' knowledge of wetlands restoration management increased
 - 87% of respondents indicated their knowledge of social elements in conservation increased
 - 82% of respondents increased their knowledge of wetlands conservation partnerships
 - Three-fourths of the respondents indicated their knowledge in changes in climate had increased
 - 68% of respondents felt their knowledge of public wetlands policy increased
- When asked to indicate the degree to which the **panel discussions on the final day** increased their knowledge and awareness of wetlands management and conservation challenges:

- 69% of respondents indicated the panel discussions increased their knowledge and awareness of wetlands management and conservation challenges
- When asked about the degree to which they believe wetlands management and conservation emphasis needs to **increase or decrease** in areas of management and conservation:
 - 52% of respondents felt the opportunities for waterfowl hunting on MDC areas needs to increase
 - 74% of the respondents felt that opportunities for bird watching on MDC areas needed to increase
 - More than half of the respondents felt there needed to be increased refuges on MDC areas
 - Overwhelmingly, respondents (92%) felt wetland management workshops for private landowners needs to increase
 - 90% of respondents felt the emphasis on wetlands policy needed to increase
- What should be the **next steps** after the Missouri Wetlands Summit? (Top three ideas)
 - Future wetlands summits
 - Develop working groups
 - Share more information about wetlands management (emphasis on regional workshops)
- Please share any additional questions, thoughts and/or suggestions you may have on the Missouri Wetlands Summit (Top three themes)
 - Things they liked about the Summit
 - Ideas to improve the Summit
 - Where to go after this (next steps)



Conclusion

Overall, the Summit attracted a big crowd of engaged participants who were able to learn more during this event on why wetland conservation is important. The planning committee appreciates the interest, participation, and feedback of all who attended and have contributed in one way or another. This event provided a great opportunity to rally around wetland conservation in Missouri, encourage agencies to collaborate, and re-connect personal relationships that may have waned during the pandemic. There is always an opportunity to improve, and we appreciate the input provided on how we can do better in the future. Allowing more time for interaction with speakers and ensuring representation from other agencies and under-represented groups were identified as particularly important considerations for future meetings. Finding additional ways for participants to mingle and have more in-depth dialogue is another added value opportunity. As this report highlights, there have been some great ideas and insights indicating the fundamental aspects of a successful wetland program, areas where we need to do a better job in coordinating, and how can we increase agency capacity, public support, and action for wetland conservation.

Thank you for taking the time to share these concepts and ideas. We hope that you see your thoughts reflected in the synthesis of this report. Additional discussions and actions have taken place as a result of our meeting in February that will continue into the future. The August 2023 issue of the CFM Magazine is one example of this, as it expands the dialogue on wetland conservation. Although some of the articles overlap with messages that were shared at the Summit, other stories touch on emerging issues related to the Clean Water Act, provide additional perspectives, and highlight areas of wetland work that weren't touched on by the Summit's agenda. We hope that you can use the presentations, this report, and the August 2023 CFM magazine as flashpoints for further dialogue, collaboration, and action as we all take a part in advancing Missouri wetland conservation (<https://confedmo.org/wetlands/>).



Appendix A
Names and Organizations of Registrants

First Name	Last Name	Organization/Company/State Agency/Private Land Owner
John	Holmes	Allstate Consultants, LLC
Greg	Pitchford	Allstate Consultants, LLC
Janine	Antalffy	American Bird Conservancy
Richard	Stanton	American Bird Conservancy
Jeff	Powelson	American Bird Conservancy, Central Hardwoods Joint Venture
Brett	Leach	Arkansas Game & Fish Commission

Jeffery	Cothorn	Arkansas Game & Fish Commission
Jason	Jackson	Arkansas Game & Fish Commission
Harvey	Groves	Arkansas Game & Fish Commission
Craig	Davis	Arkansas Game & Fish Commission
Garrick	Dugger	Arkansas Game and Fish commission
Irene	Unger	Baker University Wetlands
Jason	Wilson	Big Muddy National Wildlife Refuge
Timothy	Barksdale	Birdman Productions

Jodie Murray	Burns	Cattails Environmental, LLC
Tommy	Goodwin	Civil and Environmental Consultants, Inc
George	Seek	Conservation Federation of Missouri
Joe	Engeln	Conservation Federation of Missouri/Ozark Land Trust
Daniel	Zekor	Conservation Federation of Missouri
Micaela	Haymaker	Conservation Federation of Missouri
Tyler	Schwartz	Conservation Federation of Missouri
Garrett	Trentham	Delta Waterfowl Foundation
Brian	Bernskoetter	Downwind Duck Club

Steven	Romo	Ducks Unlimited
Derek	Ballard	Ducks Unlimited
Sara	Burns	Ducks Unlimited
David	Wissehr	Ducks Unlimited
Mark	Flaspohler	Ducks Unlimited
Jason	Hill	Ducks Unlimited
Chris	McLeland	Ducks Unlimited
Kyle	Rorah	Ducks Unlimited
Dylan	Horton	Ducks Unlimited

Michael	Brasher	Ducks Unlimited
Dane	Cramer	Ducks Unlimited
James	Rader	Ducks Unlimited
Michael	Sertle	Ducks Unlimited
Ellen	Herbert	Ducks Unlimited
Mike	Shannon	Ducks Unlimited
Casey	Bergthold	Ducks Unlimited
Dale	Humburg	Ducks Unlimited

Tony	Jaco	Ducks Unlimited
Nick	Wiley	Ducks Unlimited
Diane	Eggeman	Ducks Unlimited
Renee	Hahne	Ducks Unlimited/Conservation Federation of Missouri
Kimberley	Hainsfurther	Forrest Keeling Nursery
Jody	Graff	Graff Habitat
Mike	Checkett	Great Rivers Habitat Alliance
Mickey	Heitmeyer	Greenbrier Wetland Services

Jennifer	Eggemeyer	Heartland Seed of Missouri, LLC
Jacob	Coulter	Kansas Department of Wildlife and Parks
Katie	Wiesehan	Land Learning Foundation
Larry	Pollard	Land Learning Foundation
Scott	Martin	Land Learning Foundation
Owen	Best	Louisiana Department of Wildlife and Fisheries
Samantha	Schwenk	Lake of the Ozarks Watershed Alliance
Donna	Swall	Lake of the Ozarks Watershed Alliance

Keith	McKnight	Lower Mississippi Valley Joint Venture
Anne	Mini	Lower Mississippi Valley Joint Venture
Eric	Merritt	Malinmor Hunt Club
Barbara	Avers	Michigan Department of Natural Resources
Robert	Stout	Midwest Waters-Conservation Policy, Watershed Protection
Steve	Mowry	Missouri Conservation Heritage Foundation
Tricia	Burkhardt	Missouri Conservation Heritage Foundation
Bram	Verheijen	Missouri Cooperative Fish and Wildlife Research Unit, University of Missouri

Steven	Buback	Missouri Department of Conservation
Jeff	Miller	Missouri Department of Conservation
Mark	Johanson	Missouri Department of Conservation
David	Doyle	Missouri Department of Conservation
Shawn	Duckworth	Missouri Department of Conservation
Tory	Mason	Missouri Department of Conservation
Barbara	Denny	Missouri Department of Conservation
David	Hoover	Missouri Department of Conservation

Lisa	Potter	Missouri Department of Conservation
Ryan	Kelly	Missouri Department of Conservation
Andrew	Mothershead	Missouri Department of Conservation
Andy	Raedeke	Missouri Department of Conservation
Tyler	Shirley	Missouri Department of Conservation
Jennifer	Campbell	Missouri Department of Conservation
Kaley	Cain	Missouri Department of Conservation
Lisa	San Diego	Missouri Department of Conservation

Steve	Harrison	Missouri Department of Conservation
Lin	KuhnRackers	Missouri Department of Conservation
Trevor	Lindsay	Missouri Department of Conservation
Madelyn	Ward	Missouri Department of Conservation
Tim	Bixler	Missouri Department of Conservation
Margy	Eckelkamp	Missouri Department of Conservation
Barry	Orscheln	Missouri Department of Conservation
Mark	McHenry	Missouri Department of Conservation
Sara	Pauley	Missouri Department of Conservation

Connor	Wilson	Missouri Department of Conservation
Kelsey	Adams	Missouri Department of Conservation
Rachel	Settle	Missouri Department of Conservation
Kristie	Hilgedick	Missouri Department of Conservation
Brian	Canaday	Missouri Department of Conservation
Mark	Hudson	Missouri Department of Conservation
Caleb	Stewart	Missouri Department of Conservation
Reese	Worthington	Missouri Department of Conservation

Craig	Putnam	Missouri Department of Conservation
Kayla	Alexander	Missouri Department of Conservation
Cade	Lyon	Missouri Department of Conservation
Rick	Bredesen	Missouri Department of Conservation
Jim	Pierson	Missouri Department of Conservation
Preston	Mabry	Missouri Department of Conservation
Sarah	Medlock	Missouri Department of Conservation
Jeff	Briggler	Missouri Department of Conservation

Danny	Naber	Missouri Department of Conservation
Brian	Todd	Missouri Department of Conservation
Ryan	Dirnberger	Missouri Department of Conservation
Brice	Kelso	Missouri Department of Conservation
Lori	Gale	Missouri Department of Conservation
Mark	Duncan	Missouri Department of Conservation
John	Marshall	Missouri Department of Conservation
Steve	Schell	Missouri Department of Conservation

Kevin	Brunke	Missouri Department of Conservation
Jason	Sumners	Missouri Department of Conservation
Kristen	Heath-Acre	Missouri Department of Conservation
Krista	Noel	Missouri Department of Conservation
Tom	Thompson	Missouri Department of Conservation
Tom	Mini	Missouri Department of Conservation
Eric	Rahm	Missouri Department of Conservation
Joe	Coy	Missouri Department of Conservation

Doug	Novinger	Missouri Department of Conservation
Phillip	Boyer	Missouri Department of Conservation
Chris	Freeman	Missouri Department of Conservation
Cliff	Wilson	Missouri Department of Conservation
Austin	Worth	Missouri Department of Conservation
Jake	Willard	Missouri Department of Conservation
Mike	Anderson	Missouri Department of Conservation
John	Tuttle	Missouri Department of Conservation

John	Henry	Missouri Department of Conservation
Shane	Strommer	Missouri Department of Conservation
Jeff	Bakameyer	Missouri Department of Conservation
Joshua	Aspen	Missouri Department of Conservation
Timothy	Brown	Missouri Department of Conservation
Trenton	Jones	Missouri Department of Conservation
Alexander	Bross	Missouri Department of Conservation
Craig	Crisler	Missouri Department of Conservation

Joseph	Rasco	Missouri Department of Conservation
Neal	Young	Missouri Department of Conservation
Arianne	Messerman	Missouri Department of Conservation
Benjamin	Davis	Missouri Department of Conservation
Mike	Caby	Missouri Department of Conservation
Blaine	Adams	Missouri Department of Conservation
Phillip	Brinkley	Missouri Department of Conservation
Denise	Otto	Missouri Department of Conservation

Sarah	Peper	Missouri Department of Conservation
Madeline	Est	Missouri Department of Conservation
Raenhard	Wesselschmidt	Missouri Department of Conservation
John	Vogel	Missouri Department of Conservation
Tim	Kavan	Missouri Department of Conservation
Travis	Moore	Missouri Department of Conservation
Frank	Loncarich	Missouri Department of Conservation
Nathan	Hubbard	Missouri Department of Conservation

Julie	Love	Missouri Department of Conservation
Brent	Vandeloecht	Missouri Department of Conservation
Chad	Smith	Missouri Department of Conservation
Shawna	Bligh	Missouri Department of Conservation
Matt	Bowyer	Missouri Department of Conservation
Alexander	Bross	Missouri Department of Conservation
Craig	Crisler	Missouri Department of Conservation
Michele	Baumer	Missouri Department of Conservation
Joel	Porath	Missouri Department of Conservation

Brandon	Hodges	Missouri Department of Conservation
Mark	Nelson	Missouri Department of Conservation
Taylor	MacDonald	Missouri Department of Conservation
Holly	Dentner	Missouri Department of Conservation
Chance	Ewing	Missouri Department of Conservation
Nick	LeMaster	Missouri Department of Conservation
Donald T	Thompson	Missouri Department of Conservation
AJ	Pratt	Missouri Department of Conservation
Emily	Porter	Missouri Department of Conservation

Paul	Burns	Missouri Department of Conservation
Tommy	Marshall	Missouri Department of Conservation
Jeremy	Capps	Missouri Department of Conservation
Joe	Zoellner	Missouri Department of Conservation
Mike	McClure	Missouri Department of Conservation
Frank	Nelson	Missouri Department of Conservation
Annie	Hentschke	Missouri Department of Conservation
Laura	Conlee	Missouri Department of Conservation
Leah	Berkman	Missouri Department of Conservation
Randall	Roy	Missouri Department of Conservation

Jade	Wright	Missouri Department of Conservation
Scott	Roy	Missouri Department of Conservation
Chris	Daniel	Missouri Department of Conservation
Anthony	Maupin	Missouri Department of Conservation
Nick	Burrell	Missouri Department of Conservation
Troy	Tallman	Missouri Department of Conservation
Mason	Hurley	Missouri Department of Conservation
Jeffrey	Goin	Missouri Department of Conservation
Jennifer	Battson Warren	Missouri Department of Conservation
Aaron	Jeffries	Missouri Department of Conservation
Rick	Dozier	Missouri Department of Conservation
Bob	Ewigman	Missouri Department of Conservation
Nima	Zamanzadeh	Missouri Department of Conservation

Julianne	Stone	Missouri Department of Conservation
Jamie	Barton	Missouri Department of Conservation
Kristen	E Goodrich	Missouri Department of Conservation
Nathan	O'Neil	Missouri Department of Conservation
John	Pinkowski	Missouri Department of Conservation
Jen	Girondo	Missouri Department of Conservation
Mike	Keeley	Missouri Department of Conservation
Stephanie	Marshall	Missouri Department of Conservation
Ryan	Jones	Missouri Department of Conservation
Jason	Jensen	Missouri Department of Conservation
Lindsey	Latham	Missouri Department of Conservation
Heather	Garrison	Missouri Department of Conservation
Glenn	Coleman	Missouri Department of Conservation

Angela	Sokolowski	Missouri Department of Conservation
Nicole	Walker	Missouri Department of Conservation
Sean	Cleary	Missouri Department of Conservation
Ange	Corson	Missouri Department of Conservation
Craig	Williamson	Missouri Department of Conservation
Chris	Newbold	Missouri Department of Conservation
Michael	Bill	Missouri Department of Conservation
Robert	Henry	Missouri Department of Conservation
Rich	Crowe	Missouri Department of Conservation
Andi	Rittel	Missouri Department of Conservation
Nathan	Mechlin	Missouri Department of Conservation
Lee	Metcalf	Missouri Department of Conservation
Josh	Cussimanio	Missouri Department of Conservation

Bridget	Jackson	Missouri Department of Conservation
Jeff	Esely	Missouri Department of Conservation
Shane	Allen	Missouri Department of Conservation
Thomas	Huffmon	Missouri Department of Conservation
David	Herzog	Missouri Department of Conservation
Nathan	Cannon	Missouri Department of Conservation
Fred	Craig	Missouri Department of Conservation
Nate	Muenks	Missouri Department of Conservation
Bryan	Gragg	Missouri Department of Conservation
Gary	Calvert	Missouri Department of Conservation
Chris	Riggert	Missouri Department of Conservation
Ashlea	Neill	Missouri Department of Conservation
Mike	Leahy	Missouri Department of Conservation

Alexa	Stuck	Missouri Department of Conservation
Ronda	Burnett	Missouri Department of Conservation
Clinton	Owenby	Missouri Department of Conservation
Susan	Farrington	Missouri Department of Conservation
Rick	Falconer	Missouri Department of Conservation
Dillon	Freiburger	Missouri Department of Conservation
Holly	Harris-Schott	Missouri Department of Natural Resources
Heather	Johnson	Missouri Department of Natural Resources
Hannah	Humphrey	Missouri Department of Natural Resources
Mike	Sutherland	Missouri Department of Natural Resources
Dru	Buntin	Missouri Department of Natural Resources
Allison	Vaughn	Missouri State Parks-Natural Resource Management Program
Stephanie	McLerran	Missouri Department of Transportation

Georganne	Bowman	Missouri Department of Transportation
Christopher	Shulse	Missouri Department of Transportation
Carol	Davit	Missouri Prairie Foundation
David	Young	Missouri Prairie Foundation
Ethan	Duke	Missouri River Bird Observatory
Dana	Ripper	Missouri River Bird Observatory
Carla	Campbell	Missouri University of Science and Technology
Eric	Ludwig	Missouri University of Science and Technology
Wally	Iman	Mitico

Nick	Cuchetti	Mitico
Zach	Morris	Mitico
Clinton	Roby	Natural Resources Conservation Service
Scott	Siegfried	Natural Resources Conservation Service
Tracey	Wiggins	Natural Resources Conservation Service
Rex	McAliley	Natural Resources Conservation Service
Chris	Hamilton	Natural Resources Conservation Service
Robyn	Sitzes	Natural Resources Conservation Service

Tommy	Halford	Natural Resources Conservation Service
Brian	LeGrand	Natural Resources Conservation Service
Deborah	Burgess	Natural Resources Conservation Service
Matthew	Hendrickson	Natural Resources Conservation Service
Harley	Hawkins	Natural Resources Conservation Service
Mike	Holcer	Natural Resources Conservation Service
Jason	Sykes	Natural Resources Conservation Service
Nate	Goodrich	Natural Resources Conservation Service

Andrew	Rackers	Natural Resources Conservation Service
Carlos	CalderonDones	Natural Resources Conservation Service
Scott	Edwards	Natural Resources Conservation Service
Steven	Bender	National Wildlife Federation
Geralyn	Hoey	National Wildlife Federation
Matthew	Roth	On-Site Soils
Haley	Smith	Ozark Land Trust
Paul	Blanchard	Private Citizen

Len	Berkel	Private Landowner
Jim	Belcher	Private Landowner
Dave	Epema	Private Landowner
Adam	Rau	Private Landowner
Jim	Stewart	Private Landowner
Marty	Comstock	Private Landowner
Rose Ann	Stanard	Private Landowner
John	Stanard	Private Landowner
Joseph	Heller	Private Landowner
Jarrett	Whistance	Private Landowner
Davis	Minton	Private Landowner (Minton Environmental Consultants)
Mark	Williams	Private Landowner

Kelly	Srigley Werner	Private Landowner
Jeff	Folkerts	Quail Forever
Kelsey	DeZalia-Jenkins	Quail Forever
Colby	Mohler	Quail Forever
Brandon	Butler	Roeslein Alternative Energy
Amanda	Wolfgeher	State of Missouri Department of Natural Resources
Jacob	Mitchell	Stone Environmental, Inc.
Michael	Schummer	State University of New York College of Environmental Science and Forestry (SUNY ESF)

Jamie	Fedderson	Tennessee Wildlife Resources Agency
Larry	Armstrong	Tennessee Wildlife Resources Agency
Joe	Benedict	Tennessee Wildlife Resources Agency
Patrick	Lemons	Tennessee Wildlife Resources Agency
Jeff	Raasch	Texas Parks & Wildlife Department
Rachel	Fern	Texas Parks and Wildlife Department
Wes	Hauser	The Nature Conservancy
Godspower	Omunu	United States

Frank	Dugan	United States
Paul	Nelson	United States
Robert	Hunt	United States
William	Eddleman	United States
Elyssa	McCulloch	United States
Ginny	Wallace	United States
Thomas	Bell	United States
Doug	Helmers	United States

Charles	Burwick	United States
David	Graber	United States
Kenneth	Babcock	United States
Chad	LaMontagne	U.S. Army Corps of Engineers
Robert	Gramke	U.S. Army Corps of Engineers
Dave	Crane	U.S. Army Corps of Engineers, Omaha District
William	Moody	U.S. Fish and Wildlife Service
Sabrina	Chandler	U.S. Fish and Wildlife Service

Christopher	Woodson	U.S. Fish and Wildlife Service
Neil	Baalman	U.S. Fish and Wildlife Service
Cole	Hoover	U.S. Fish and Wildlife Service
Brad	Pendley	U.S. Fish and Wildlife Service
Byron	Mitchell	U.S. Fish and Wildlife Service
Sarah	Kendrick	U. S. Fish and Wildlife Service
Josh	Eash	U.S. Fish and Wildlife Service
Sajoelis	Abdallah-Colon	U.S. Fish and Wildlife Service

Mary Grace	Lemon	U.S. Fish and Wildlife Service
Erin	Holmes	U.S. Fish and Wildlife Service
Corey	Lee	U.S. Fish and Wildlife Service / Big Muddy National Fish & Wildlife Refuge
Amanda	McColpin	U.S. Fish and Wildlife Service - Contractor & Private Land Owner
Joseph	Ely	University of Central Missouri
Lisa	Webb	University of Missouri
Josh	Williams	University of Missouri
Corinne	Sweeney	University of Missouri

Maryam	Salehi	University of Missouri
Jeff	Case	University of Missouri
Gabrielle	Ruso	University of Missouri
Jon	Podoliak	University of Missouri
Jeffrey	Edwards	University of Missouri
Reid	Viegut	University of Missouri
Joshua	Blodgett	Washington University in St. Louis
Brian	Gallagher	Washington University in St Louis
Arpita	Bose	Washington University in St. Louis

Abigail	Aderonmu-Omunu	Washington University in St. Louis Midwest Climate Collaborative
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Appendix B

Pre-Summit Survey Comments by Question

The comments listed below came directly from those offered. The only changes made were to correct any spelling errors.

What topics might you be interested in hearing/learning about?

Wetland management for duck hunting. Where are all the ducks? How much corn should I plant? Is MDC going to repair and renovate their wetlands?
The social benefits of wetlands
Status of wetlands in Missouri Management of diverse wetland systems Future of MDC's intensive managed wetlands - -are they managed primarily for migration habitat for waterfowl or for the entire suite of wetland dependent wildlife? How to develop collaborative partnerships to advance wetland conservation in Missouri.
Sackett v. Environmental Protection Agency is pending before the Supreme Court. A decision is expected this term. This decision will impact what waters do and do not fall under the jurisdiction of the Clean Water Act. Assuming a narrower interpretation of "waters of the United States," post-Sackett, how will we protect waters, including isolated wetlands that may no longer fall under the protection of the federal Clean Water Act? Will this decision present an opportunity to expand any existing programs or to create new programs aimed at protecting such waters, including wetlands? I'd be happy to present on the Sackett decision and cases prior to Sackett that have defined "waters of the United States.
Management philosophy and guidance. What drives the decisions on what a wetland is managed for, what is/if anything planted. What steps are being made to ensure wetlands are built in the right places and have resilient infrastructure. Benefitting from a drought or Flood how do managers/planners utilize these extreme weather events to manage our wetlands? Are funds available to capitalize on these opportunities in a timely fashion?
New tools for managing wetlands for diverse communities, improving public access to Missouri wetlands, important data gaps that hinder management of wetlands
any wetland research as it relates to managing a successful wetland
1. Advances in habitat restoration, enhancement, and management. 2. Changes in Federal and State policies in wetland protection, restoration, enhancement, and management. Emphasis on the nexus of public-private wetlands.
-The future of wetland science -Collective action for wetlands across and within priority geographies -Quantifying wetland contributions to watersheds -Wetland management throughout the seasons
Invasive species management, public vs private land management techniques, management technical assistance on private land, biological design and considerations on private wetlands, changing waterfowl migration
wetland management (greentree, moist-soil), permanent emergent march, secretive marsh birds
Food sources. Both for waterfowl and another wildlife.
MDC long-term plans for wetland conservation
Exploring future options to promote "working" wetlands options for landowners to provide wetland habitat while generating multiple streams of income

Proper wetland design and management techniques. Moist soil management BMP's
MDC's commitment to the future of wetlands management compared to its past priorities, especially related to restoring and managing natural wetlands
the importance of bottomland hardwoods in wetland systems.
Just about everything as I have no background in wetland management or wildlife.
MDC's plan for wetland management in the future, including desired future conditions of existing public wetlands, plans for expansion of public wetland resources, commitment to infrastructure repair, plan for engagement of waterfowl hunting conservationists, and desire for expanded wetland education and uses.
Advances in technology that could help wetland managers better manage the resource.
Water Control Treatment of Invasive Species Management during dry periods
private land wetland management, available cost share, and regulations
History of wetlands, wetland restorations, current management of wetlands, enhancement of older wetland to make them function better.
Long-term management/development plans
Best draw down times for moist soil to get the most waterfowl food. Talk on all the different invertebrate's waterfowl eat in moist soil vs corn/soybeans.
Restoration and management techniques. Opportunities for expanded wetland conservation. Partnership opportunities.
Change in migrations of wintering waterfowl in Missouri. Impacts of increased flooding and drought on Missouri's wetlands.
Opportunities for public/private partnerships in wetlands restoration.
designing of a wetland for private landowners
1) MDC priorities regarding development of wetlands on private land. Landowners frequently request help developing green tree reservoirs in north MO. When, if ever, can green tree reservoirs be considered beneficial enough to the resource to offer cost share for their development?
Wetland monitoring and Assessment Botanical Considerations and related plant, lichen species of concern.
- Public-use related topics: birding, hunting; what are barriers to MO citizens using wetlands
- Wetland loss. Historical wetland acres vs. what is still partially intact; plus describe landscape-scale alterations affecting the wetlands that remain.
- Explain the HMG approach to wetland restoration, reconstruction and management. Understanding ecological drivers of wetlands is the foundation for designing, building, and managing wetlands effectively.
Private land wetland development programs, new wetland design ideas/specs, waterfowl/shorebird/wetland research that is new and relevant
how to offset the rising costs of maintenance and management to meet area objectives
aging infrastructure and the constant battle to "compete" internally for replacements/improvements.
dealing with the high demand and constant change of public demand on these ecosystems.

finding the balance between management and maintenance.
New management techniques
Recreational uses
Funding mechanisms and leadership to purchase/restore historic wetland areas.
Future projected state of the wetlands and wildlife and how we can operate and implement things now to maintain sustainable ecosystems.
The overall health and sustainability of Missouri wetlands and their future for carbon sequestration and flood water retention throughout the state.
How wetlands/wetland wildlife in Missouri are faring, things to look out for (e.g. avian influenza, "new" invasives, etc.).
The latest in terms of management practices for private landowners, or "best practice" lessons that private landowners can learn from publicly-owned wetland.
<ul style="list-style-type: none"> - does active management for waterfowl also benefit other wetland dependent species (e.g., secretive marsh birds, reptiles, aquatic invertebrates, etc.) - what is the public's perspective on wetland management in Missouri and how supportive are private landowners in enrolling in conservation programs to support wetland restorations - are most wetlands, both private and public, managed via a dike/pump system? If so, when are these properties inundating their wetlands if they performed a drawdown?
Refuges on a landscape level
Moist soil vs. corn
Stream and wetland connectivity and interfaces, land management opportunities for private landowners that allow for ecological and sustainable agriculture benefits.
Outreach efforts to instill knowledge of and respect for wetlands among the general public.
Existing state and federal programs supporting wetland conservation/restoration.
Management techniques. Timing of management techniques. Moist soil management.
<ul style="list-style-type: none"> - Available programs and funding sources to support wetland conservation work. - Wetland design elements to maximize the various ecosystem services provided by a project. - Examples of wetland conservation partnerships, both traditional and non-traditional.
Climate change, impacts of landscape conversion, intersection/with other habitat types (i.e., prairie), restoration
How Missouri can achieve its wetland goals without increasing built infrastructure.
I don't have a lot of background education in wetland management so just rudimentary knowledge would be good for me.
wetland restoration efforts, wetland research
Topics on wetlands that aren't intensively managed such as fens, springs, marshes, seeps, swales, and sinkhole ponds and their associated flora and fauna. Restoration methodologies for degraded wetlands and treatment/control of invasive species topics. Best methods for surveying for species of conservation concern wetland wildlife and flora. Monitoring methodology to ensure wetland management is still effective for all objectives and goals.
cost/share
new trends
collaborative efforts to restore and reclaim wetlands
Ecosystem services, community outreach and education, funding allocation and conservation, current policy that presents conflicts or issues
Private land partnerships

The general specifics of manipulating water levels in man-made/manipulated wetlands, how woody debris and forests are managed in wetlands.
how private landowners view/feel about different programs to help conserve/restore wetlands on private property.
Items related to infrastructure.
The interface of agriculture and wetland restoration and conservation
Private lands wetland conservation in Missouri Regional differences in wetland construction and design across the state.
Changes in wetland wildlife populations, ecological integrity of existing wetlands, management for more than waterfowl.
management in dry years. Promoting diversity in pools that are currently monocultures.
managing water levels. managing for moist soil plants rotating food sources in wetlands
Specific information about invasive species management Habitat alternatives to food plots for private and public wetland managers Habitat management for a suite of species including more than waterfowl
Solutions to create and connect more natural wetlands to their big rivers. We need more wetlands in the floodplains that are NOT intensively managed. How do we get that? What programs are available to buy, lease, or secure through easements, and develop land for wetland purposes. Missouri is a poor wetland state.
Floodplain reconnection. Ecological Flow.
Moist Soil Management, Wetland Development/Enhancement, feasibility of using wells to pump wetland pools.
I'm always interested in hearing about case studies for large scale and local level projects and the lessons learned from them.
-Connectivity in a fractured environment; organism dispersal, hydrology, nutrients -Management goals for wetland quality -Measurements of wetland quality
Wet prairies, fens, and the other various types of wetlands in Mo.
levee construction, plant species, management techniques
Coordination on management and research within and across agencies and public/private partners, collaborative identification of priorities at multiple levels of geographic and administrative/political structure, conservation of native species community diversity and watershed/ecosystem function and services
Adaptive management with a focus on adapting to the changing climate.
Effectively engaging volunteers / establish volunteer stewards to aid in restoration efforts.
Effectively communicating about management activities to the public.
Any changes to migration patterns; purpose of conservation order if it's not affective; proposed regulations;
Restoration of small-scale wetland complexes Monitoring/surveying diversity in wetlands
What partners are doing to help improve, protect, and acquire wetlands in Missouri
Overall wetland management including passive and active wetland management

Fens and seeps are the wetlands I manage and those are what I'd like to learn more about.
404 Permitting on state land. What is and isn't covered on general permit. When will CI projects be allowed to improve wetlands?
I would like to learn about the long-term vision for maintenance and improvement of wetlands on public lands as it relates to recreational use and partnerships. How this intersects with private wetland management efforts and targeting key geographies. I would like to explore the intersection of traditional conservation work with the economic and social benefits of Flood mitigation efforts and how levee setbacks play into the plans for sustainable wetlands and wetland habitats.
climate resiliency, restoration funding opportunities, landscape level activities
How to increase wildlife and plant diversity within wetland ecosystems.
Enhancing/ restoring wetlands and riparian zones in urban environments.
wetland management in the time of climate change, and big river wetland conservation
Design and management of wetlands and information about the critters who use them.
Programs with state, federal and NGO's that will encourage landowners of existing wetlands to protect those remnant wetlands in perpetuity. When acquiring existing wetland by fee title or easement for either public or private ownership consideration should be given to the potential for ingress/egress of adjacent water courses. Funding sources available for wetland easement purchases. Partnerships among state and federal agencies, NGO's and the private/corporate community that existing or that may be developed that can become administrative/technical/funding sources for wetland purchases or easement procurement.
Impacts of large amounts of grain on to wetland function MDC areas and also the impact it has on shaping private wetland owners mgmt. strategy.
wetland management
Management challenges and solutions for opportunistic wetlands.
Current management strategies at large managed wetlands, private land strategies being implemented, avian flu research
Aligning the MDC strategic plan with landowner needs.
How to manage wetland forests for wildlife
Secretive marsh birds - rails, bitterns Shorebirds Bottomland forest birds Herptiles
Wetland associated natural communities
Hands on tactics Best use of equipment Invasive species management Partnerships to get habitat projects on public land done Duck use connection to refuge size, location Habitat management Electronic data use. Apps for draws

Private Land Programs and opportunities for partners to combine resources. How can we focus on methods and programs to expand the benefits of public land ownership with surrounding private properties and conservation efforts.
Cost share/technical advice sources for private land work.
What is the public/landowner perception on wetland health in the state? Do we have a working collection of data to track the effects drought is having on the state? Are we seeing a decrease in groundwater levels as droughts persist or are they recharging at the same rate? Are there critical areas of concern in terms of wetland/water quality degradation?
Collaborative landscape level restoration and management opportunities
Techniques that are working well for other managers, new management techniques, managing the balance of consumptive and non-consumptive users vs. habitat management priorities.
Importance of wintering habitat for "puddle ducks." Field etiquette for waterfowl hunters. Changes in mallard migration patterns over last 10 years.
Importance of "rice culture" to wintering ducks and need for landowners to cooperate.
Adaptation to hydrologic, land use, and climate change. Adaptation to social change including willingness to pay for certain management actions, knowledge of management activities, desire for MDC lands to provide certain functions/amenities. Understanding how MDC might strategize with this information.
I'm interested in anything pertaining to the Missouri River.
Future RAWA funding opportunities.
Wetland design ideas to increase habitat for shorebirds and amphibians, engineering needs from across the state, non-conventional wetland restoration ideas, i.e. sedge meadow restoration, sub & emergent marsh restoration, monitoring techniques.
Secretive marsh bird habitat use/evaluation Remotely sensed emergent wetland assessment Emergent wetland bird community dynamics & management
biological components of wetlands; biological processes to maintain; benefits - both ecological and economic
What sort of recreation can I expect year-round? How much area or acreage do I need to establish a wetland?
Wetland program development and statewide cooperation
Restoration techniques, both physical and vegetative. Hydrology and soil characteristics influences on management decisions. Long term management strategies and economics of operation and management (budget). Human use of wetland areas vs needs of natural ecosystem, what's compatible and what's not.
1) Balancing management for different taxa that have different habitat needs throughout the year 2) How public and private wetlands can complement each other 3) The different constraints or challenges public and private wetlands may have in terms of water management, mechanical vegetation management, etc. 4) How management has been similar or different between public and private wetlands in the past 5) Success stories! Whether in management, restoration/rehabilitation, or species recovery

6) Hydrological challenges posed by management/disruption of upland habitats in the watershed (and strategies for dealing with them!)
natural function of wetlands in Missouri.
Design and function
What's being done to increase useable/intensively managed wetland acres in Missouri and what work is being done to increase the useable space within the wetlands we currently have.
Wetland construction
How natural factors (hydrology, geology, ecology) affect the management decisions made for a given wetland Different management strategies and their pros/cons, and how an ultimate strategy decision is made for a given case study Managing to maximize ecosystem services
Wetland restoration Wetland manipulation especially benefitting both waterfowl and human dimensions Future of funding opportunities for wetland management Multi-species management on small scale wetlands How to design them better.
Intact, remnant wetland natural communities like shrub swamps, fens, wet prairies, marshes, and swamps, and a commitment from the agencies who own them to not only protect them, but also place higher priority on them (over created moist soil units, etc.) as they are irreplaceable.
1 Rice field/Ag field management for waterfowl
2 Overall waterfowl needs; nutritional deficits
Priorities for wetland restoration and management in the State of Missouri.
Nutrient mitigation, nonpoint source pollution, riparian buffers, constructed wetlands technologies, including floating treatment wetlands, eutrophication, invasive species
Management of wetland timber areas. Habitat/food management for waterfowl
Consideration of non-hunted wildlife in wetland management Recent advances in using natural processes in wetland management Wetland management for native plant conservation Climate change considerations
Wetland mapping, characterization, preservation. Plans for future multi-use and value for carbon credits, hunting, wildlife support etc.
1. Any changes to the WRP programs coming up? 2. Controlled burning best practices and resources for doing so. 3. Changes in migration patterns for our flyway.
research projects, moist soil/duck body mass relationships, wood duck banding efforts and box success, moist soil growth/water levels and timing.
restoration methods: cost and design support, implementation processes, timelines, maintenance impacts of wetlands on nearby water quality wetland vegetation: target species, undesirable species to watch for, overall veg management
Wetland development topics
Management of public hunting lands
Moist soil management, wildlife monitoring, site prioritization, shorebirds, rails, LeConte's Sparrows
migratory bird success stories and species habitat challenges for the future
Landscape scale planning

Are they a dynamic environments or the same all the time? Do they need to be intensively managed or left alone. What drives the management? What is moist soil management versus habitat restoration? Is perennial vegetation bad?
Moist soil vs corn in wetlands. Refuges and their effect on private hunting club success.
The general condition of wetlands and duck populations across the nation.
Compensatory mitigation, wetland banks, protections on wetland species, public lands improvement/protections.
Wetland management
Missouri Wetland Mitigation Method discussion & thoughts of a statewide wetland database.
moist soil management practices, species use connect with plant species, and current research projects involving waterfowl.
Missouri Duck Management Areas
pending SCOTUS ruling implications in MO (if SCOTUS negates EPA decision)
use of regulatory required mitigation activity and how the state of Missouri is recognizing and using that potential to improve and increase the amount of wetlands in Missouri
I'd like to hear about which management efforts have been successful versus those that have not
biodiversity, flora and faunal changes over time, threats to wetlands
Natural foods vs food plots. Long term management of wrp sites
Wetland management
What wetland location data is available for Missouri and how accurate is the data? Current number of wetland acres? Change in wetland acreage over time.
Flooding/drawdown schedules moist soil plant response to flooding wildlife response to flooding
wetland restoration, tribal consultations, NEPA considerations
Recognizing and managing "nontraditional" wetlands such as fens and springs and the importance of such habitats.
Hunter harvest success rate, What current management practices are working well (and why), What current management practices are not working (and why), What challenges are we facing in wetland management (internationally, nationally, locally)
Strategies to engage private landowners to allow controlled public access to their wetlands

Appendix C

Emailed Comments

Several ideas were emailed to the planning committee prior to the Summit as possibilities to consider pursuing in Missouri.

He has 3 ideas that he'd like to have considered as a means to advance wetland conservation.

His first idea of standing up a Missouri chapter of the Corporate Wetlands Restoration Partnership during this administration or the next isn't new. I guess Dave Erickson and Jane Epperson floated this past the Governor's office 2000 originally. I didn't know if this rang any bells for any of you. The emphasis here is that it would be another way to leverage funds and provide match where local funds often missing. This public-private partnership would focus on public land with the potential for MDC or MoDNR properties, but also municipalities.

The second idea is focused on extending selected protections provided by the Farm Bill beyond ten years through partnerships, perhaps with land trusts, as a way to helping to reach the administrations 30 by 30 goal. This idea would relate to the next farm bill and be an opportunity for a 1 time payment to set properties aside in perennial easements.

The third idea, relates to MoDNR's use of Supplement Environmental programs funds. When there are fines associated with wetland degradation this is a way to benefit local projects. Joe mentioned he had reached out to Tim Reilly at DNR to make him aware of these pitches.

He's open for further discussion or questions on the ideas as we prepare and consider how to move input forward. I thought I'd pass these ideas along for your consideration.



Appendix D QR Code Comments/Questions

To get the most out of your meeting, we encourage you to share your thoughts, ideas and comments which is paramount to how we move forward as a natural resource community to conserve the diverse values of wetlands.

Please enter your ideas or comments for the speakers/panel in this session

I would like to see more discussion on other species besides game species for the next wetland conference. There are many other species that use wetlands :)
The summit was well organized and all the speakers shared valuable information. Having breaks in between was a great idea and the social hour
From conversation among folks, there was a recommendation to consider, in the future, concurrent sessions that allows for participants to choose where they wanted to go.
It will be nice to have email addresses of the summit participants for further engagement and possible collaboration.
This is Frank. Leigh provided some quick thoughts about the Summit.
Many positive aspects including. Number of women involved in presentations: 10 of 27 Number of women registered 76 of 320 Number of women on panel 3 of 6 Inclusion of different agencies in presentations Inclusion of different interest groups and individuals Success stories of different user groups
Negative or omissions of importance Diversity of professionals improving but far from any level of success. Lack of information on what a wetland is, wetland processes, wetland variability, and linkages to global processes related to geology, climate, or carrying capacity for all biodiversity including man. Nothing on the importance of energy all of which comes from the sun and how it is stored and used by all living things whether plant or animal. The importance of photosynthesis to capture that energy and to store that energy so there is a great biodiversity across a globe and the storage of carbon for a moderate climate. Nearly all speakers had some comment about dollar costs but a focus on thinking based on fact based evidence was lacking. In my experience the implementation of information based on evidence based information has always produced benefits far greater than spending money without regard to natural processes whether in planning, implementation, or management. Focus on floodplain wetlands for nearly all talks but not a single mention of how modern society desires historic functions but river locations and flows now dictated by arrogance of human desires without considering the continuation of global driven factors that no individual, agency, or constituency can control successfully. Most wetland management occurs in floodplains but wetlands that tend to be fixed at a specific location are typically overlooked but are exceptionally valuable for biodiversity. No presentation called attention to the gradual acceptance of less area and quality of wetlands and how each generation finds lesser conditions as acceptable.
There should be an emphasis on appreciating variability and the importance of thinking about what

should be considered a reasonable carrying capacity across a temporal scale from deluge to drought. Maintaining those disturbances in random ways within and among short and long term cycles is the route to sustainable systems with benefits across economic and ecologic outputs.

This is Frank. I had some additional ideas that I wanted to include as options to be considered from the Summit.

*Our Tiered approach the two CCS Framework needs to be updated to identify the tracts of bottomland forest and agriculture that are frequently flooded. Our current COA's weight the proximity of Conservation Areas and therefore we have blind spots currently existing that have floodplain restoration potential. However, these locations are missing from our focus or our partners because the prioritization of the landscape is working. This is an actionable item that would benefit the future money coming down the pipe from NRCS, USACE, and other partners.

*Continuing the work being done by the Feral Hog Task Force both on the ground and economic modeling.

*We need biologists, Realty Committee, and partners to continue to ID key locations/habitats for protection and restoration.

*Management of all wetland types are likely necessary, but may degree in the intensity of actions on the ground or periodicity. For example, disking isn't necessary for certain natural communities, but may be helpful setting back succession or controlling an invasive. Likewise, fire may be a useful tool periodically, but should be used with a lighter touch than how it is implemented on an upland prairie.

*Renovate Aging Infrastructure is necessary. This should be a multi-faceted process weighing landscape suitability (soils, landform, etc.), public use, and desired future conditions. This might require shifting boundaries and therefore tying acquisition into renovation planning.

*Removing or modifying infrastructure and deployment of programs like WRE and MAWI should consider interactions of adjacent land & water. Partnering agencies should hardwire monitoring the impacts of land use changes/programs so we can quantify the impact of these actions.

* Utilize the existing results of the Missouri Bottomland Functional Assessment and upcoming results of the Life History project to guide multiple objectives at a regional and statewide scale.

*Find ways to partner with agencies and universities to evaluate floodplain expansion and reduction of damages to private land and municipalities.

*As the stream and wetlands GIS layers are updated, use this new information to assess opportunities for beaver restoration in upland drainageways and work to develop it as an conservation option for landowners.

*Continue to work with DU and others on carbon sequestration banking and how the various carbon stocks may be valued. Continued work with soil scientists and microbiologists need to occur to have a better understanding of how this ties into soil health and the soil microbiome.

*Ensure MDC and other partnering agencies putting wetland conservation on the ground are tied into MoDNR's Nutrient Reduction Strategy and the larger Gulf Hypoxic Task Force

*Work with our Community Conservation Staff to integrate wetlands, riparian, and aquatic systems into urban areas and be a resource for municipalities to merge our natural world with the built environment

*Explore opportunities of Climate Smart agricultural practices as a means to find a middle ground for working wetlands as a way to provide income for private landowners yet still maintain or restore wetland habitat.

* Integrate the Species Recovery Plans into MDC's Design for the Future as a means to add detail to the Wetland Planning Initiatives objectives under Thriving Flora and Fauna.

*Identify areas of overlap of existing partner plans and larger continental or world-wide initiatives. For example, the UN's Sustainable Development Goal 6.6 is to protect and restore water-related ecosystems, including mountains, forests, wetlands, rivers, aquifers and lakes and includes the priority of doing a better job of quantifying these systems. This is in line with our effort to update EDH and NWI in coming years. Underscoring this global goal helps underscore the overlapping objectives and importance of wetland conservation in Missouri. Linking wetland programs into the Missouri Nutrient Reduction Strategy and Gulf Hypoxic Task Force is another example where plans exist. What is a reasonable goal to work towards the president's 30x30 plan? An additional plan doesn't need to be

created, linkages and communication via partners and agencies just have to be made or strengthened.

- *Internally identify where additional capacity is needed to help guide where inter-agency man-power could fill-in short comings. For example, area technician positions have been reduced over time. This could be focused on management of public land or it could also look at upcoming opportunities/lack of capacity to deliver on private land as well.
- *Sharing of knowledge is another aspect that has overlap both within the agency and there is a need outside the agency on private land as well. What is the schedule and focus of future Wetland Reviews.
- *Work to expand wetland communication and mentoring not only among the intensively managed areas, but also other MDC acres that wetlands exist and are being managed.
- *How do we protect the vulnerable isolated wetlands that are not covered by WOTUS and are not eligible for WRP because they are prior converted wetland?
- *What are opportunities for linking municipal-agricultural watersheds together that have worked in other states?
- *How do we build eco-literacy among the general public and at the same time ensure we have a segment of the population moving up through our education system that is interested and accumulating experience so that we have an adequate workforce in the pipeline.
- *What are means to better connect our programmatic and management sectors with academia and research? Is it through the formalization of webinars and presentation archive? Is it a periodic conference?
- *Working with partners and SWS to designate "Wetlands of Distinction". Look into potential constraints or limitations that may come with RAMSAR designation. For example, nominating part of Mingo as a Wilderness Area actually limited much needed management.
- *Look into ways in which multiple ecological services could be bundled together so that wetland management is an economically viable option for landowners.
- *Look into ways in which conservation programs are complimentary to each other. For example sedimentation reduction actions like riparian corridors or pollinator plots should be ranked higher adjacent to existing WRE or CA's. Rather than neighbors looking to us to reduce impacts to them, it'd be nice if we could incentive neighbors to reduce negative impacts on conservation lands as well.
- *Continue to coordinate and look for wetland tie-ins to R3 efforts
- *Also pursue opportunities to form relationships and serve under represented communities and urban populations.

In the future, whether is a separate section or a different working group that meets periodically, it'd be nice of engineers and those dealing with infrastructure to meet and discuss what works, what doesn't, and how they deal with different situations to help transfer knowledge and lessons learned.

In the future, it'd be good to highlight the various processes that contribute to wetland function. Yes, Mickey talked about HGM, Mike Schummer talked about the Polar Vortex, and Paul talked about variability in streams...however, the direct linkages to how wetlands work and how these processes interact and influence wetland function wasn't directly addressed. I realize there was limited time, but hope that future steps can help staff better understand the nuances rather than take a cookie cutter approach to management emphasizing public use rather than ecological processes.

At the Wetlands Summit last week, questions about what would the objectives of biodiversity surveys of intensively managed wetlands (IMW) are/would be. There wasn't any time for me to answer so here's an email instead. I agree with limited resources we don't need to just go about making species lists of areas like a stamp collector would making stamp collections. I see the objectives of biodiversity surveys of IMW (like the mini-fyke net surveys that have occurred as one example) as at least being three-fold:

First " knowing what you have and adapting management based on that. How can we manage for those key taxa groups if we don't know what we have? SOCCs can and do show up on our IMWs and we need to know this so that we can address their life history needs. There are certainly trade-offs in management regimes and no one IMW or unit should attempt to maximize for all species. But we need to survey for focal non-waterfowl species and use these data to inform management.

Second " developing criteria and metrics for the ecological health of an IMW or unit. We have the need to develop at least indices to gauge how IMW units are performing not just for waterfowl but for other key wetland species. Having baseline biodiversity data can assist with this.

Third " telling the story to a broader audience. How can we state that IMWs are not just about the very few folks who duck hunt unless we have data on other focal wetland taxa that utilize these habitats? Having these data allows wetland managers to relate to broader audiences and have data to show to auditors that we are not just spending X dollars per duck on an IMW but benefitting a wider array of species.

I found the summit to still be more of a waterfowl rather than a wetland summit. Content was focused with a strong bias towards ducks and geese. I get the whole DU and waterfowl conservation success story. And it's important. But, I would have liked to hear about other wetland taxa groups from experts: herptiles, insects (esp. pollinators), plants, fish, mussels, and small mammals. Having a broader panel of wetland taxa experts would have made this more of a wetland summit.

There is a case that is pending in the United States Supreme Court that will likely redefine Clean Water Act jurisdiction, specifically, and very likely, narrowing the scope of waters that are afforded federal protection. I suspect that isolated wetlands, intermittently wet areas, prairie potholes, etc., will lose what little, if any, protections they currently have under the CWA. As such, I was wondering what conservation can do to fill the gaps to protect such waters. More so, I wondered what programs does MDC have in place to protect these waters, including any funding, reconstruction, federal/state partnerships, or could be put in place to protect, restore, or manage these vulnerable habitats in the future?

I think one thing that needs to happen is a change in communication about our intensively managed areas. Currently, it seems that most communication about our areas is based on waterfowl use. Even when we say things along the line of "if you manage a wetland for ducks it will benefit many other wetland species I think it is still sending the wrong message. We all know that waterfowl use of wetlands is just one aspect. I think our communications need to be focused on all wetland-dependent species AND wetland functions. Unfortunately over the past we have trained many of our wetland users (hunters) that our wetlands are just for them. We still get this message thrown back in our faces on any given day at a morning draw when a hunter is griping about the lack of planted corn to shoot ducks over. We need to focus communication on all the benefits of wetlands when we talk to each other and the public and the private wetland owners

As far as potential changes that could benefit these primary contributors, changes in priorities and policies should be high on the list. The Stream and Watershed Unit has been pushing for revisions on the latest MO Stream Mitigation revision to increase the amount of points that these systems are worth both in their credits and debits so potentially we can not only encourage more restoration/protection/connection activities in these areas, but also discourage their destruction/degradation.

<p>I think that headwater stream systems were barely touched upon at the summit, and I understand given the huge scope and depth of things that were covered. Given that they make up ~80% of the stream networks these are huge contributors to the quality and perhaps quantity, or lack thereof, of streams and wetlands and should be considered going forward</p>
<p>I would suggest that relevant statewide taxa leads for non-game species (insects, herps, fish, mussels, crayfish, etc.) have an opportunity to conduct technical/management trainings on occasion at a Wetland Meeting that incorporates many of the managers within MDC and other agency partners.</p>
<p>Please reference NatureServe's "Biodiversity in Focus: United States edition" and the paper "Increasing taxonomic diversity and spatial resolution clarifies opportunities for protecting US imperiled species" for insight like this, "Freshwater animals occur in places with poorer landscape condition but with less exposure to climate change than other groups, suggesting that habitat restoration is an important conservation strategy for these species. The results provide fine-scale, taxonomically diverse inputs for local and regional priority-setting and show that although protection efforts are still widely needed on private lands, notable gains can be achieved by increasing protection status on selected federal lands.", and "Although this study and others (Dickson et al., 2014; Scott et al., 1993; Stein et al., 2008) demonstrate the importance and potential of federal lands for biodiversity conservation, most imperiled vertebrates and freshwater invertebrates occur primarily on private lands. Imperiled freshwater fishes and invertebrates in the United States are concentrated in the Southeast, whereas federally managed protected areas are most extensive in the West. Conservation of freshwater biodiversity often involves many other strategies besides land protection, including restoration of flow dynamics, protection of riparian ecosystems, dam management and removal, and reduction of contaminants. This study identifies the freshwater systems where such actions would have a high impact on imperiled species having particularly narrow ranges. Their wetlands map", and other nuggets useful to the Team.</p>
<p>Part of Missouri's past is having a "farm-club" in place. Purposefully recruiting and retaining staff is necessary, but hard to do with current pay at entry level or higher. Cross-pollinating skills among disciplines and expertise is something also necessary to continue to expand horizons and not get caught within the confines of old dogmas. Cultivating staff purposefully is needed to ensure the appropriate interactions exist amidst a steady churn of staff turnover.</p>
<p>Rather than just focus on the management of the "intensively" managed wetlands because there is a waterfowl draw, shouldn't we try to include and cultivate the management capability of staff and quality of habitat on other wetland areas. This would be a way to broaden the number of staff and acres to have a positive impact.</p>
<p>A possible action item will be to work with Lisa Webb and other university faculty, DU, DNR to evaluate the contributions that WRE and MAWI make towards our Nutrient Reduction Strategy.</p>
<p>I think one of the benefits of the meeting was that it was a big gathering for a range of folks. The personal connections made between breaks and during the evening shouldn't be overlooked. We talked a lot about partnerships hinging on relationships. If you don't have space outside of our regular 9-5 to cultivate these interpersonal interactions, this kind of stuff doesn't happen. Don't undersell the importance of getting together.</p>
<p>I felt like the last question on the post-Summit survey put a finger on the scale for the participants to answer. It only provided a couple of options, which emphasized where we've been rather than any creativity of where we need to go in the future</p>
<p>Please keep in mind that landscape-scale biotic and abiotic processes are still critical for the persistence of Missouri's year-long resident species. Providing a single site of aquatic habitat that meets the needs of these residents is not adequate for long-term viability! This mindset could easily contribute to population declines and extirpations among species that are understudied. Aquatic habitat needs to be available as steppingstones between populations and for redundancy to mitigate variable environmental conditions. Equally, terrestrial habitat needs to be adjacent to and connect aquatic sites to enable survival and dispersal in many species.</p>

It was amazing to hear about the history of wetland management in Missouri straight from the mouths of the experts. Their wisdom is invaluable. Still, I couldn't help but think of the people that were not able to contribute their wisdom in our history. I have also been considering how values and challenges continue to rapidly change. One of the messages of the summit seemed to be a passing of the torch to the next generation of wetland professionals, but the torch was never actually passed. Moving forward, how do we both harness the wisdom of those who led us to this point, while also making ample room for new ideas, values, and contributions? We will certainly need to do both to successfully address today's large-scale challenges.

This year's summit felt more like a presentation than a dialogue, which produced some mixed messages. I appreciate the need to convey the information needed to ensure that everyone is on the same page. Despite constant statements to the audience that our input was desired, even the Q&A session felt like a message of "you should" (from a panel on high) rather than "what do you think?" There was also an innate challenge for all voices to be heard, particularly for those who didn't want to grab a mic in front of hundreds of colleagues. Quiet voices can have a lot to offer. In the future, I encourage the planners to design the meeting with their objectives in mind from the first step. If you want feedback from our professional community, then there needs to be time and structure for true dialogue mediated by trained moderators. There are many tools that have been developed to foster such dialogues, including small groups and elicitation methods that prevent single loud voices from dominating the conversation. Facilitators that have expertise in these communication tools could provide you far better recommendations than I, and should be included early and often.

Diversity and connectivity of terrestrial habitat between wetlands and wetland complexes is necessary for various life stages of many wetland-dependent taxa. We should strive to provide both variable wetland and terrestrial habitat conditions that support these species. It would be beneficial to strengthen our collaborations with terrestrial ecosystem managers to ensure that we are providing required habitat for the full life cycles of target taxa at the local and landscape scales.

I felt we danced around the issue of human diversity during the summit. Science has repeatedly demonstrated that more diverse professional communities (in terms of demography and world view, not career expertise) provide greater innovation, which is critical for addressing today's challenges. Moreover, opening the door and welcoming colleagues of diverse backgrounds is simply the right thing to do. It was striking that this year's summit, with 300-400 attendees, was over 99% white. How can we possibly know and address the needs of all of Missouri's human communities if minoritized groups are so fundamentally underrepresented among wetland professionals. How can we increase the number of wetland professionals of diverse backgrounds when we fail to face the issue head-on, and offer an environment where non-white attendees and presenters are tokenized? We simply have to do better. Seeking out partners within non-white communities is key, and finding and uplifting minoritized professionals such that they feel welcome in our community is hard but not impossible work. It will also be necessary that our professional community become more open to new ideas and new values in general, as such things are implicitly associated with innovation. Many life experiences have been excluded from our field for a long time, but that systematic exclusion does not make the ideas and values of underserved and minoritized people less than. I encourage us all to seriously reflect on how we as individuals and conservation representatives can take targeted action to bring excluded voices safely into the fold.

The conversation at this year's summit typically focused on waterfowl, other birds, and "other wildlife." But the "other" category is incredibly abundant, variable, and foundational to ecosystem health. My main take away is that, in order to move wetland conservation forward in Missouri, we need to be paying a GREAT deal more attention to plants, invertebrates, amphibians, reptiles, and mammals in these systems.

A formalized, annual, birding event organized/recognized by MDC and the USFWS would be a way to highlight the need for certain habitat types to be available somewhere on public land, realizing it could vary among years. Managers could then plan and prepare where they and Reg. Rec Use Planners could direct people

<p>There might be a way to build off overlapping synergies. Creating a Missouri bird classic, so that it is within May, N. American Wetlands month to underscore these popular birding spots that are on the Missouri birding trail. If there was a way to encourage mentoring during this time and/or reaching out to other communities/demographics during this time, multiple groups could meet a variety of goals. If we made it "official" and endorsed it by several agencies, it would be good to notify the governor's office or get a couple legislature reps to participate</p>
<p>I wonder if there would be some benefit in laying out the trade-offs of the food plots through a SDM framework to have a facilitated discussion and decision.</p> <p>The positives: income generated through permittee farming, setting back succession, controlling invasives, providing hunter cover, carbs for ducks, etc.</p> <p>The negatives. Disruption if microorganisms, water regime not conducive to wetland plants, lack of water for birds, fish, etc., mix messaging to public, etc.</p> <p>We heard one side of the argument, but didn't get into the nuance of soils...planting crops on high sandy areas and wetland plants in lower elevations and tighter soils....The model for MAWI at Grand Pass that Mike McClure illustrated.</p> <p>Is there a set of recommendations that could be established to clarify and not be as polarizing that could be clarified via a SDM framework?</p>
<p>Could Mizzou and DU (Dr Herbert) team up to evaluate the efficiency and benefits of putting MAWI on landscape for neonics, N and P? Will there be a finer scale targeting for MAWI to "carpet bomb" nutrients within a drainage rather than focused on individual landowners managing their personal runoff</p>
<p>Could some of the money that will be coming to NRCS be used for equipment? Essentially providing capacity for strike teams or landowner cooperatives to use for management</p>
<p>In terms of who was missing from this conference there were a series of groups.</p> <p>Cities, watershed planners, soil and water employees, SEMA, levee districts, drainage districts.</p> <p>Although rural Missouri is mostly white, and older... reflecting many of the speakers...other pockets of demographics exist in Missouri and were absent</p> <p>There didn't seem to be a lot of research professionals or other taxonomic experts. Granted the Midwest and MNRC may have prevented their attendance due to limited time</p>
<p>A thought just came to me as my brain has slowly recovered from information overload. Frank highlighted the abundance of plans that exist that could and should be used for leverage. In stark contrast Kyle started with saying plans aren't good for anything without action. So upon initial hearing the 2 messages were in some degree of conflict. This is where discussion with others at the Summit and time has provided a little more clarity. The benefit of an additional plan could be debated. Identifying areas of overlap among existing plans could highlight action items to move forward after the Summit</p>
<p>While I think the QR code was encouraged throughout, based upon the questions asked during the panel session and personal conversations, I don't think a lot of people took advantage of this outlet</p>

<p>I think Mo DNR needs to be involved next summit because several wetland efforts live within that agency such as</p> <p>401 certification 319 watershed management funding g Soil and water conservation program State parks land management Water resources center Mo hydrologic information center</p>
<p>Quote from Leigh Fredrickson on Friday morning "Monitoring is important but don't monitor things that let you pat yourself on the back."</p>
<p>Will there be a next one of these? If so could there be more audience interaction throughout. There's been a lot of great info, but I have forgot several questions just from the sheer volume that we have heard</p>
<p>Would be nice to have some forced social engagement outside of the groups people arrived with. Breakout sessions are dreaded by most, but it's useful and gets people out of their shell.</p>
<p>Does Sarah feel like The Great Missouri Birding Trail concept is utilized, underutilized, successful, unsuccessful, thriving or should go away? It has been a few years since the concept was implemented and I am not sure I have heard any follow ups since.</p>
<p>Partner with local school districts for wetland days for elementary, junior high, and / or high school students. Maybe include local birding group. :)</p>
<p>When designing a wetland with flood protection levees. Would structures for back flooding be important to incorporate?</p>
<p>Can Barb Avers' presentation be shared?</p>
<p>More opportunities for mentorship outside of graduate programs. So many young people interested in conservation, but more and more people are opting out of college due to cost. How can we recruit/engage those smart, talented individuals when the norms around education change.</p>
<p>Is the spatial data of wrp/are projects captured and managed? How does this program leverage GIS.</p>
<p>I heard that Joel is pretty awesome!</p>
<p>1. As we move forward into the future, is MDC willing to purchase new lands or expand on current MDC lands to expand our acres of wetland in the state?</p> <p>2. MDC as well as all state need to make sure we stay dedicated to the waterfowl hunting program on currently establishing and future established wetland acres. Public lands open to waterfowl hunting is the only option for a large portion of waterfowl hunters. We can't afford to lose this large and important user group.</p>
<p>Is MDC willing to budget accordingly so when favorable conditions occur (dry), infrastructure or other important work on a wetland area can take place, like what we have experienced these past two years? "Strike while the iron is hot". Current budget structure doesn't allow us to complete important work when conditions are favorable.</p>
<p>Re: levee setback presentation. Dave Crane is the coauthor on an article in the 2022 Missouri Natural Areas Newsletter to be published by MDC next week. His article includes live links to everything mentioned in his talk and more. The issue focuses on Missouri's Big Rivers systems and highlights a lot of topics covered here including species recovery and flood risk assessment.</p>
<p>Are the evolving ideas and approaches regarding wetlands conservation taught at the University level to future graduates in the conservation field.</p>
<p>I would have liked a couple of talks covering Missouri's natural wetlands natural communities and the plants and animals that use them. There was no discussion other than a brief mention of fens, sinkhole</p>

<p>ponds, etc. Other wildlife besides birds and ducks use wetlands. For example, rare, crayfish, amphibians, fish, invertebrates, etc.</p>
<p>What does it look like when we overlay our wetland PGs with community conservation tiers? What is the organization potential for collective action within those geographies?</p> <p>Could we focus E&O on key habitats in the places the audiences are in?</p> <p>Could we have more summits in wetland priority geographies at a smaller, local scale with community orgs and citizen leaders?</p> <p>Is there some way to communicate with local communities about the positive impact of wetlands on their local watersheds?</p> <p>We need a common lexicon and metrics for wetland ecosystem services in both rural and urban communities.</p> <p>Where are community conservation wetland initiatives / stormwater taking place or possible/needed? What conservation NGOs could help with these efforts?</p> <p>Could community conservation projects be used as a stepping stone to connecting people to nature in other public lands with wetland biologists / partners giving occasional programs to communities in those venues?</p> <p>What are the disease risks when you have an huge increase of waterfowl spending time in Missouri due to climate change and there is a lot more confined poultry factory farms?</p>
<p>Comment: could there be signs on the food next time for people with allergies and food restrictions? Thank you :)</p>
<p>Also thanks for the food it was wonderful :)</p>
<p>As a way to engage birders, can wetland managers make an eBird list to post rare birds to help spread the word to birders?</p>
<p>Kudos to the agenda brochure designer!</p>
<p>For Kyle: what will it take to develop a national wetland protection/conservation policy?</p>
<p>In the future, small group discussions may aid with brainstorming and problem solving.</p>
<p>How can we increase diversity of experiences and world views represented in our professional community to increase our ability to innovate?</p>
<p>How do we educate and engage private landowners to the benefits of wetlands?</p>
<p>What is the best way to promote or advertise the birding opportunities on our public lands? For example, when we are at peak spring or fall migration how do we let novice birders know that bird numbers are abundant right now?</p>
<p>Dr Herbert made a very good point in her presentation about waterfowl being the avenue for people caring and paying for wetland ecosystems restoration, management, and research. Other wetland benefits and species matter but using the keystone species may be the avenue to saving them.</p>
<p>Mike Schummer talk - we sometimes focus on mallards - what do we think will happen with a species like blue-winged teal, e.g.? Will they quit going all the way to northern South America? Do we need to think about providing wintering habitat for them in areas they don't overwinter now? How do their distinct habitat needs differ from mallards? Do we need to reconsider bag limits for the species that may have more hunting pressure as climate changes - or are we going to assume that the change in pressure is compensatory?</p>

<p>I have concerns with how we impact the landscape on drought years. As we manage these postage stamp areas across the flyway, both private and public, what other impacts will we start seeing if we continue to congregate waterfowl on our wetlands where we are able to manipulate water (pumping)? The “shooting fish in a barrel” effect seems to be taking place on drought years on areas that are pumpable on an otherwise drought ridden landscape. Good and bad things can come from the ability to manipulate water on drought years. Will still should strive to provide valuable habitat for an array of species but what about other problems like HPAI? Congregation is not helpful there. What can we do to better manage the “flyway” big scale on years when the natural surrounding landscape can’t hold water? -Shane Allen (Wildlife Management Biologist)(MDC Four Rivers)</p>
<p>Is climate change being fully integrated into the conservation discussion at the agency level in a serious, meaningful way?</p>
<p>We’ve heard about practices that are mutually beneficial to both ag and wetlands and programs available to assist private landowners with this. Are there any conversations or success stories about larger ag production companies converting land to wetlands vs smaller independent landowners?</p>
<p>I know y’all only have partial control of this, but many of the presentations on Day 2 have had slides with too much info, making it unreadable in the middle/ back. Perhaps in future mtgs, include a note to presenters for simple and large font in their presentations.</p>
<p>Otherwise super agenda, speakers and topics!</p>
<p>Will PDFs of the presentations be available to the attendees?</p>
<p>How are the renovations coming on Schell Osage?</p>
<p>Please bring energy to these conversations! New ideas. Call to actions. Solutions to test when we leave.</p>
<p>As a whole so far the presentations have been great at describing the wetland work accomplished so far and the work that still needs to be done. However, almost all the speakers have had a bird/waterfowl focus with their examples and only passing mentions of other wetland dependent species. If there are future wetland summits, it would be great to hear about examples of other species such as plants, herps, fish, plants, insects, etc. Diverse examples for a diverse audience!</p>
<p>Common thread in many of these talks is the mobius paradox - red tape inherent in each agency & organization. Figuring out how to eliminate that barrier would be huge. Is it possible to create a multi-agency/NGO long term MOA for a process to suspend those barriers in multi-agency projects.</p>
<p>Has NRCS measured the Water quality benefits of MAWI and WRE in Missouri?</p>
<p>I was aware of MAWI, but didn't know the details. If there is now dedicated agency funding, will there be greater utilization of this program? It seems like this is an underutilized program compared to WRE</p>
<p>Are there any coordinators between the groups represented at the MO Wetland Summit and MoDOT’s environmental office? It would be good to know who coordinates projects that involve MoDOT ROW.</p>
<p>How can we integrate more conversations about fisheries and forestry into the next wetland summit?</p>
<p>How do we unapologetically promote the benefits of diverse wetland systems to the public and stakeholders? How do we move beyond systems that prioritize a single species (mallard ducks)?</p>
<p>Dave Crane talk - So far, we have not mentioned legislators as one of the stakeholders. My US Rep is Sam Graves (his district is about the northern third of the state) - and he is adamant about focusing MO River on flood control only - from a recent newsletter of his to constituents: “I’ve pushed the Corps of Engineers to prioritize flood control and navigation over fish and birds.” My question is - aside from me individually contacting him, which I do regularly - what can we do to engage federal and state legislators and get them excited about and committed to the mutual benefits of projects like the leave setback project highlighted in this talk?</p>
<p>McClure talk - Are landowners required to have a farm management plan and if so do they get points</p>

<p>for including these kinds of projects? Does the state estimate the total benefits in terms of water quality improvements or erosion reduction?</p>
<p>Are there any wetland stakeholder interest mapping efforts available to facilitate partnership development in this field?</p>
<p>Explain how the MAWI areas are maintained and how that is paid for. I would imagine the wetlands fill up with sediment eventually, being surrounded by row crops - even with the vegetated buffer.</p>
<p>On Mike's MAWI presentation - do we know how ag chemicals affect adjacent wetlands, including direct (physiological) and indirect (insect food supply, e.g.) on waterfowl or other critters?</p>
<p>What role can land trusts (e.g. Ozark, Greenbelt) play? Have they been engaged to their full potential?</p>
<p>What happens when the 30 year is up with regards to WRP? Is there a renewal process? Does the landowner</p>
<p>For Doug or Mike, are all of the 386 easements in the Golden Triangle permanent easements?</p>
<p>Along with people and waterfowl, what about managing wetlands for the ecosystem functions of the wetlands themselves? Including water retention, infiltration, nutrient cycling etc. please address how we can manage our wetlands for these functions while still managing for people and waterfowl.</p>
<p>How is progression with the Golden Anniversary renovation project at Schell Osage coming along?</p>
<p>Interdisciplinary, multi-agency/NGO teams at multiple scales all networked vertically and horizontally, data connected and shared, from NAWMP scale to local wetland site managers.</p>
<p>The complexities of wetlands/wildlife/people over space and time and scale remind me of complex medical issues. No one specialist can begin to see/understand, much less address, the complete situation. Mayo Clinic, Brigham and Women's Hospital, and other institutions have successfully deployed multi-disciplinary teams. Partnerships are a big factor in current wetlands management and restoration. It's time</p>
<p>The window for wetland construction is often narrow compared to other construction projects, yet we don't acknowledge this in our work processes leading up. This can lead to construction seasons being missed, projects being delayed... contributing to a backlog of uncompleted projects. Having targets/processes to ensure windows are hit would be a way to deliver public services in a more timely manner</p>
<p>Not all frequently flooded land which historically were wetlands are identified by our tiered priority approach. This is because there may not be public land in these areas. Since partners like DU and NRCS take the state's lead there are some holes in our priority lands that could be filled by updating these layers</p>
<p>How do we work with farmers to convert farmland back to wetlands in the areas that make the most sense?</p>
<p>Regarding the state soil cons remarks about how to spend the upcoming federal money to what extent could stream restoration in smaller tributaries be used to enhance wetlands? Would restoring stream hydrological function enhance smaller wetlands in those systems?</p> <p>Also - can anything be done to discourage landowners from putting drainage tile in their fields (or help landowners remove it if they no longer want it)? Tile systems only further disrupt the already compromised hydrology in our stream systems - exacerbating downstream flooding and erosion.</p>
<p>Mike McClure's comments about food plots were spot on! Also I agree with the point about the example we set on public areas influencing how private landowners think about their own</p>

<p>management.</p> <p>Wetland tours for private wetland owners / managers to showcase habitat management that has paid off for wetland flora and fauna and duck hunting – how could that be facilitated?</p>
<p>To NRCS I would like propose an idea of a Farmable Floodplain Easement Program. 1) restore wetlands 25-50% of areas, 2) area must be an open to the river. 3) No more crop insurance 4) allow to farm the remainder at their own risk of flooding. I would be happy to visit about my proposal.</p> <p>Thanks, Doug Helmers</p>
<p>Do we have public areas where we are trying to force something on the landscape? If so what are the consequences?</p>
<p>Many small critters also rely on landscape scale metapopulation dynamics for long-term persistence. Addressing habitat fragmentation will be critical for conserving these species.</p>
<p>Are the slides going to be available afterwards?</p>
<p>Mickey, should there be a 5th question: how do we take care of and maintain it?</p>
<p>It's true that we need to manage with landscape scale impacts in mind. It's also true that if we manage with a focus only on the needs of one taxon at any scale, we will continue to miss the boat for conserving the many other year-round residents of wetlands. There is a great deal of science that supports management of the diversity of wetland-dependent species. This science needs to be more intentionally integrated into temporally and spatially variable wetland management on the whole.</p>
<p>The time it takes to install pumps at our wetland areas is unacceptable and embarrassing. MDC's process is broken and should be improved in terms of time and also maintain opportunity for area use</p>
<p>If we have grown so much, why are we still just talking about just birds with the opening presentations</p>
<p>Scott Edwards: Can USDA NRCS put more money into paying farmers for putting in large vegetated buffers and other best management practices to keep nutrients and sediment from leaving their agricultural land. I work in water pollution control, and see firsthand how effective these practices can be if they are done correctly for permitted land disturbances. I understand why we don't regulate agricultural land, but would love if we could pay farmers to build sediment basins, put in more vegetated buffers to keep soil from getting into creeks and rivers. There would need to be money to pay farmers, professionals to help them create plans, and money to put in best management practices. I wonder if a partnership between Missouri Department of Natural Resources, Division of Environmental Quality, Water Protection Program and NRCS working on this would be possible. This was just a thought I had while listening to you speak about the money you are getting at NRCS.</p>
<p>Will some of these presentations be available upon request?</p>
<p>How will NRCS target landscape for wetland restoration? Will they target different wetland types in different parts of the State? Will they contact landowners directly that are grouped together?</p>
<p>This is so exciting, LETS GO TEAM!!!</p> <p>JoelP</p>

Appendix E

Written Comments/Questions

These were the comments that were written and left in boxes around the room and the registration desk

Written comments from day 1

Dale et al- I think one idea moving forward is to think of this as double looping the MO Model-start back with citizens support-(from your slide). What are their desires/and go from there. Best Joe Benedict
Do Missouri Wetland Manager Survey wetland birds besides owl?
Scott Edwards-NRCS-?-More Wet Teams for NRCS to deliver \$. Will be there dollars for management of existing contracts or \$ for the restoration of existing contracts? We have Federal \$ coming from WRP. Let's get ready.
Why not increase (I think that is the word) food plots or WRP tracks through the new NRCS policy?
Nick Wiley-Can DU ramp up to help NRCS deliver WRP with the \$\$ coming to Missouri?
The most recent waterfowl season in MO saw a significant reduction in hunting positions available to allocate to hunters. Seemingly due to things other than climate change. The 2022/2023 waterfowl season, reduced opportunities does not do justice to MDC's great history or the Department's abilities. What's the departments (MDC) doing to avoid a repeat of the (a word I cannot read) of last season? What can I as a waterfowl hunter do to help? Thank you. Jim Belcher. potluckets@gmail.com
Who's Minding the Marsh-Does Missouri have a collaborative R3 program? And if so who does it? Is there a difference between "(cannot read this word) training programs for future water or wetland manager. There should be

Verbal comments from day 1

Have a United States flag up front and say the Pledge of Allegiance at the start of each day. His name tag said private citizen

Written comments from day 2

Morning Session 1: 8-9:30 am
Helmers and McClure-Need more \$ and partnerships for management of WRP lands
To what extent is USDA interested in promoting permanent protections of wetlands for the agricultural producers (a small #) who are interested?
To what extent is USDA interested in promoting permanent protections of wetlands for the agricultural producers (a small #) who are interested?
Grand Pass CA-Doesn't having row crop fields adjacent to wetlands risk sedimentation and pollution from herbicides, fertilizers and pesticides? What are the negative effects on wetland wildlife?
Morning Session 2: 9:50-noon
One of the biggest challenges I face as I promote the Mississippi River connectivity to its flood plain is that so many of the best sites have major infrastructure in them. They are crossed with railroad tracks and major powerlines. So we can't remove levees unless we can figure out how to get that infrastructure moved. Are there programs or an avenue to help these businesses move that infrastructure so we can make wetland recover progress?
MDC-Can more MDC intensively managed wetlands be made more accessible to birders during the waterfowl season?

DNR-Soil and Water Conservation-The title and terrace practices needs to require a small wetland at the outlet to be eligible for cost share for nutrient management

Written comments from day 3

Panel Session
How can we get birders to contribute more \$ to wetland conservation?
Why not have Birdy Days on intensively managed wetlands for a small portion of the season?
Why is Fountain Grove not even on the E-bird List! They don't welcome them.
I'm fired up for wetlands again!
Greatest Summit I've ever been to in my life. Thank you CFM and MDC. Amazing people and outstanding organizations.



Appendix F

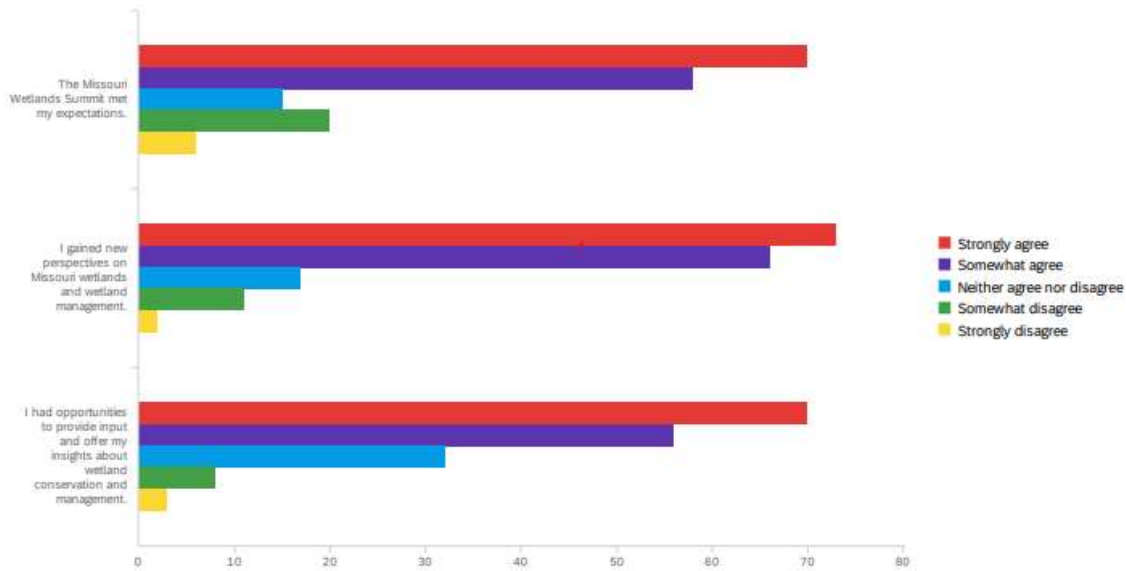
Post-Summit Evaluation Survey

Thank you so much for attending the 2023 Missouri Wetlands Summit that was co-hosted by the Conservation Federation of Missouri (CFM) and the Missouri Department of Conservation (MDC), and also for taking time to leave your feedback. This survey will take about 5 minutes.

Please indicate the degree to which you agree or disagree with the following: (Strongly agree to Strongly disagree). The results along the x axis represent the number of responses received through the Post-Summit Evaluation Survey.

- The Missouri Wetlands Summit met my expectations.
- I gained new perspectives on Missouri wetlands and wetland management.
- I had opportunities to provide input and offer my insights about wetland conservation and management

**Please indicate the degree to which you agree or disagree with the following
(Strongly agree to Strongly disagree)**

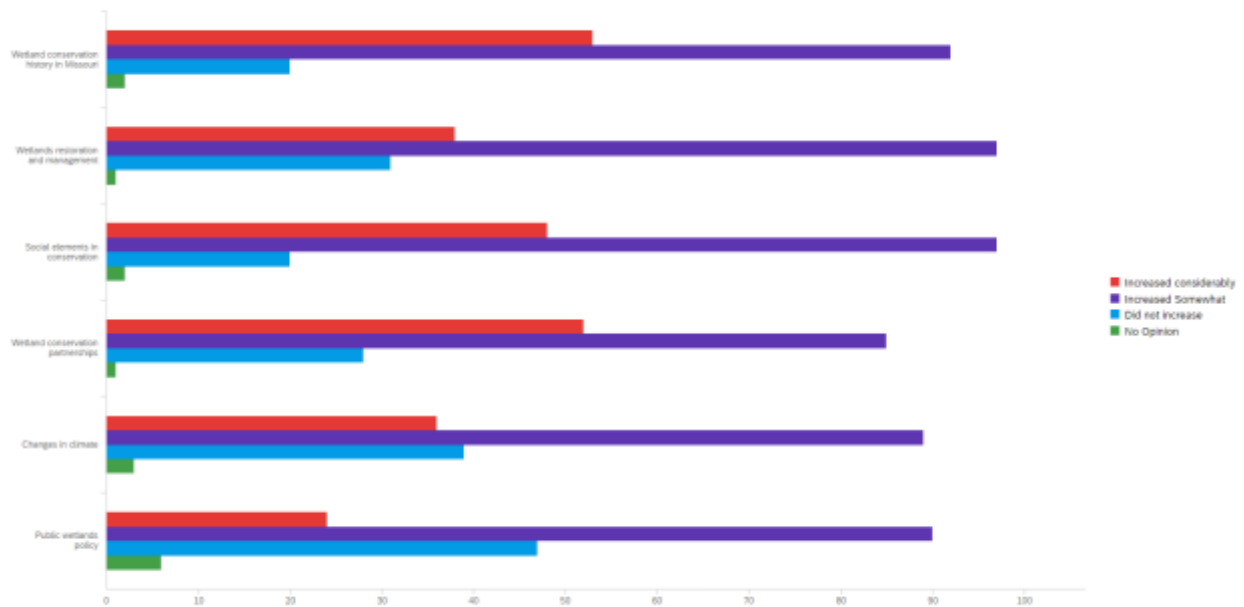


#	Field	Strongly agree	Somewhat agree	Neither agree nor disagree	Somewhat disagree	Strongly disagree	Total
1	The Missouri Wetlands Summit met my expectations.	41.42% 70	34.32% 58	8.88% 15	11.83% 20	3.55% 6	169
2	I gained new perspectives on Missouri wetlands and wetland management.	43.20% 73	39.05% 66	10.06% 17	6.51% 11	1.18% 2	169
3	I had opportunities to provide input and offer my insights about wetland conservation and management.	41.42% 70	33.14% 56	18.93% 32	4.73% 8	1.78% 3	169

Please indicate the degree to which the summit presentation increased your knowledge and awareness of wetlands management and conservation challenges

- Wetland conservation history in Missouri
- Wetlands restoration in management
- Social elements in conservation
- Wetland conservation partnerships
- Changes in climate
- Public wetlands policy

Please indicate the degree to which the summit presentations increased your knowledge and awareness of wetlands management and conservation challenges

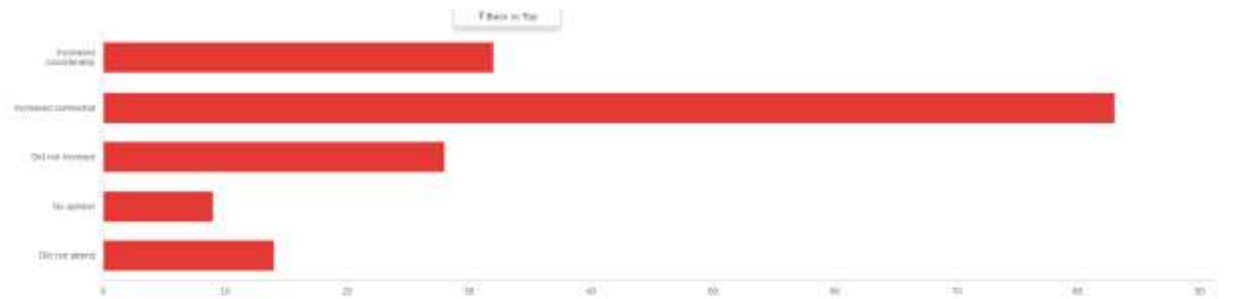


#	Topic	Increased considerably	Increased Somewhat	Did not increase	No Opinion	Total
1	Wetland conservation history in Missouri	31.70% 53	55.00% 85	11.30% 20	1.20% 2	167
2	Wetlands restoration and management	22.75% 38	58.00% 87	18.75% 31	0.50% 1	167
3	Social elements in conservation	28.74% 48	58.00% 87	11.26% 20	1.20% 2	167
4	Wetland conservation partnerships	31.13% 52	51.00% 85	16.82% 28	0.40% 1	166
5	Changes in climate	21.56% 36	53.20% 89	23.20% 39	1.80% 3	167
6	Public wetlands policy	14.37% 24	51.00% 90	31.10% 47	3.50% 6	167

Please indicate the degree to which the panel discussion on the final day increased your knowledge and awareness of wetlands management and conservation challenges

- Increased considerably
- Increased somewhat
- Did not increase
- No opinion
- Did not attend

Please indicate the degree to which the panel discussion on the final day increased your knowledge and awareness of wetlands management and conservation challenges



Field	Choice	Count
2	Increased considerably	19.20% 32
3	Increased somewhat	50.00% 82
4	Did not increase	18.87% 28
5	No opinion	3.42% 5
6	Did not attend	8.47% 14
		166

Area of management and conservation emphasis. Please indicate the degree to which you believe wetlands management and conservation emphasis needs to increase or decrease in the future

- Opportunities for waterfowl hunting on MDC areas
- Opportunities for bird watching on MDC areas
- Increased refuge on MDC areas
- Wetland management for private wetland owners
- Influence wetlands policy

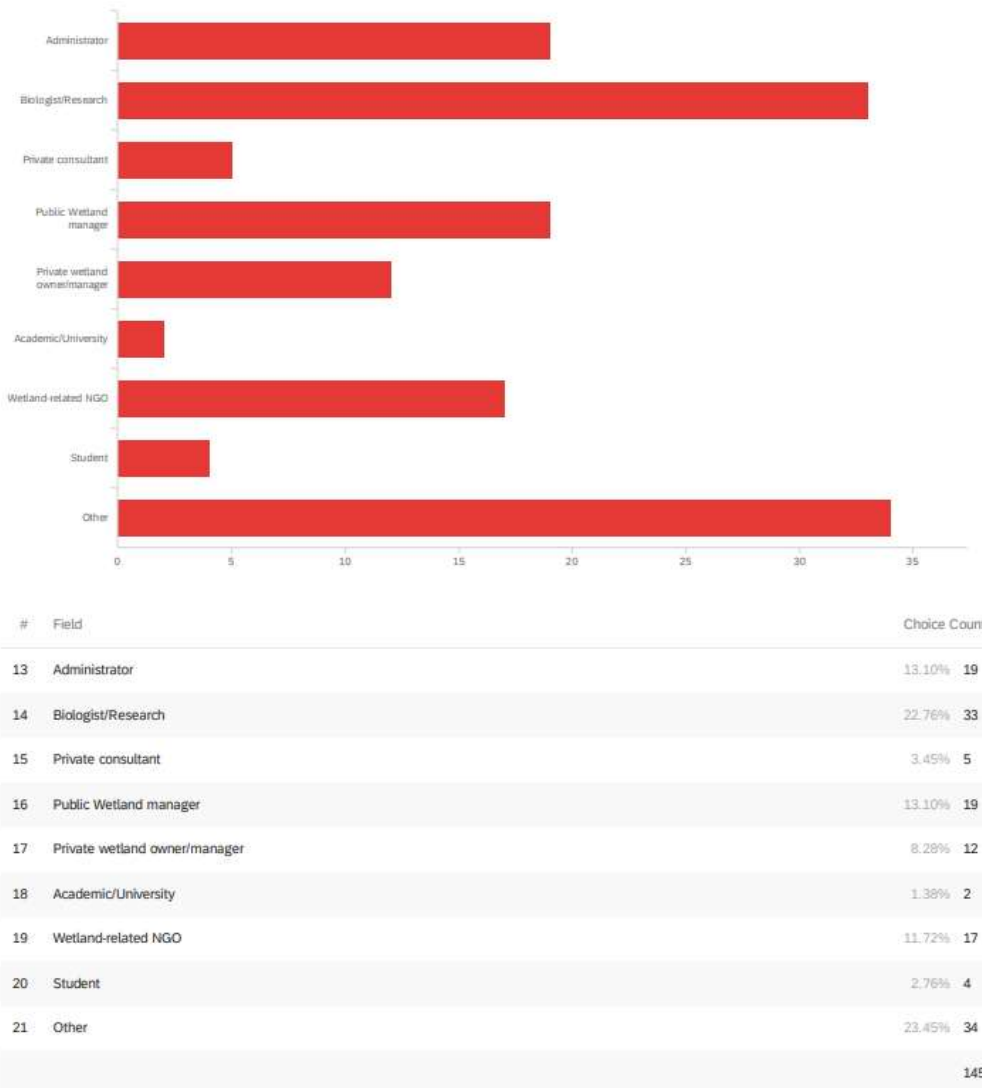
Area of management and conservation emphasis. Please indicate the degree to which you believe wetlands management and conservation emphasis needs to increase or decrease in the future



#	Field	Increase considerably	Increase somewhat	No change is needed	Decrease somewhat	Decrease considerably	Total
1	Opportunities for waterfowl hunting on MDC areas	25.39% 34	38.96% 50	40.12% 85	6.79% 11	1.22% 2	162
2	Opportunities for bird watching on MDC areas	25.37% 42	67.32% 77	33.54% 43	0.00% 0	0.00% 0	162
3	Increased refuge on MDC areas	17.79% 29	39.26% 64	43.32% 88	0.01% 1	0.00% 0	163
4	Wetland management workshops for private wetland owners	60.00% 99	31.52% 52	6.48% 14	0.00% 0	0.00% 0	165
5	Influence wetlands policy	50.00% 82	41.29% 66	9.12% 15	0.01% 1	0.00% 0	164

Respondents shared their role in wetlands

Wetland Role



Other roles include:

- Wetland technician
- Training coordinator
- State agency employee
- Retired administrator
- Regional planner
- Public involvement coordinator
- Program manager/engineer
- Private lands biologist
- Private citizen
- PhD Candidate, wetlands research
- NRCS
- Landowner
- I just like wetlands
- Hydrologist
- Have worked in all of the above except Academic/university
- Governmental agency
- Forester
- Environmental specialist

