

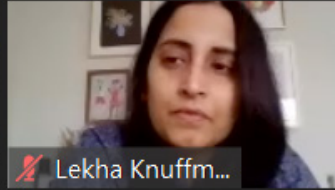
An aerial photograph of the Mississippi River and surrounding landscape, overlaid with artistic, painterly textures in shades of brown, gold, and blue. The river is highlighted in a vibrant blue, winding through the terrain. The background shows a mix of agricultural fields and natural land, with the artistic overlays creating a sense of movement and life.

THE MISSISSIPPI AS A LIVING RIVER

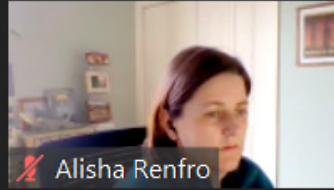
Workshop Report | April 01, 2021



🔇 Pipa Elias, Wal...



🔇 Lekha Knuffm...



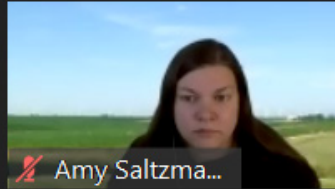
🔇 Alisha Renfro



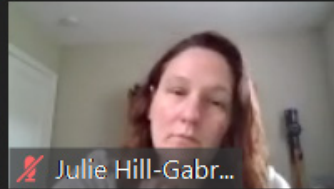
🔇 Grga Basic (he...



🔇 Kris Johnson



🔇 Amy Saltzma...



🔇 Julie Hill-Gabr...



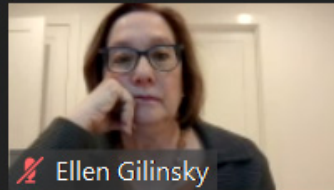
🔇 Brian Moore /...



🔇 Don Boesch



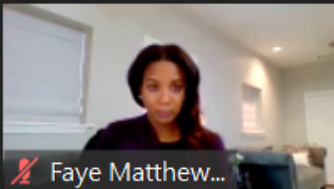
🔇 Kelly, she/her



🔇 Ellen Gilinsky



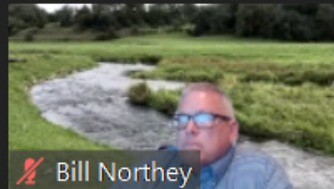
🔇 Christy Plumer



🔇 Faye Matthew...



🔇 Kimberly Jens...



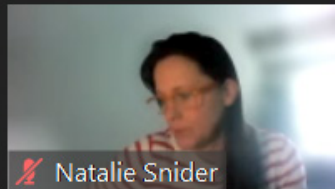
🔇 Bill Northey



🔇 steve cochran ...



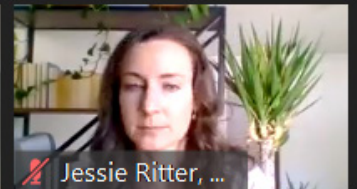
🔇 Ryan Grosso -...



🔇 Natalie Snider



🔇 Sam Carter



🔇 Jessie Ritter, ...

THE MISSISSIPPI AS A LIVING RIVER

WORKSHOP REPORT

April 1, 2021

Prepared by the **Center for Resilient Cities and Landscapes**
at Columbia University for **National Wildlife Federation** with
the generous support of the **Walton Family Foundation**



CONTENTS

INTRODUCTION 5

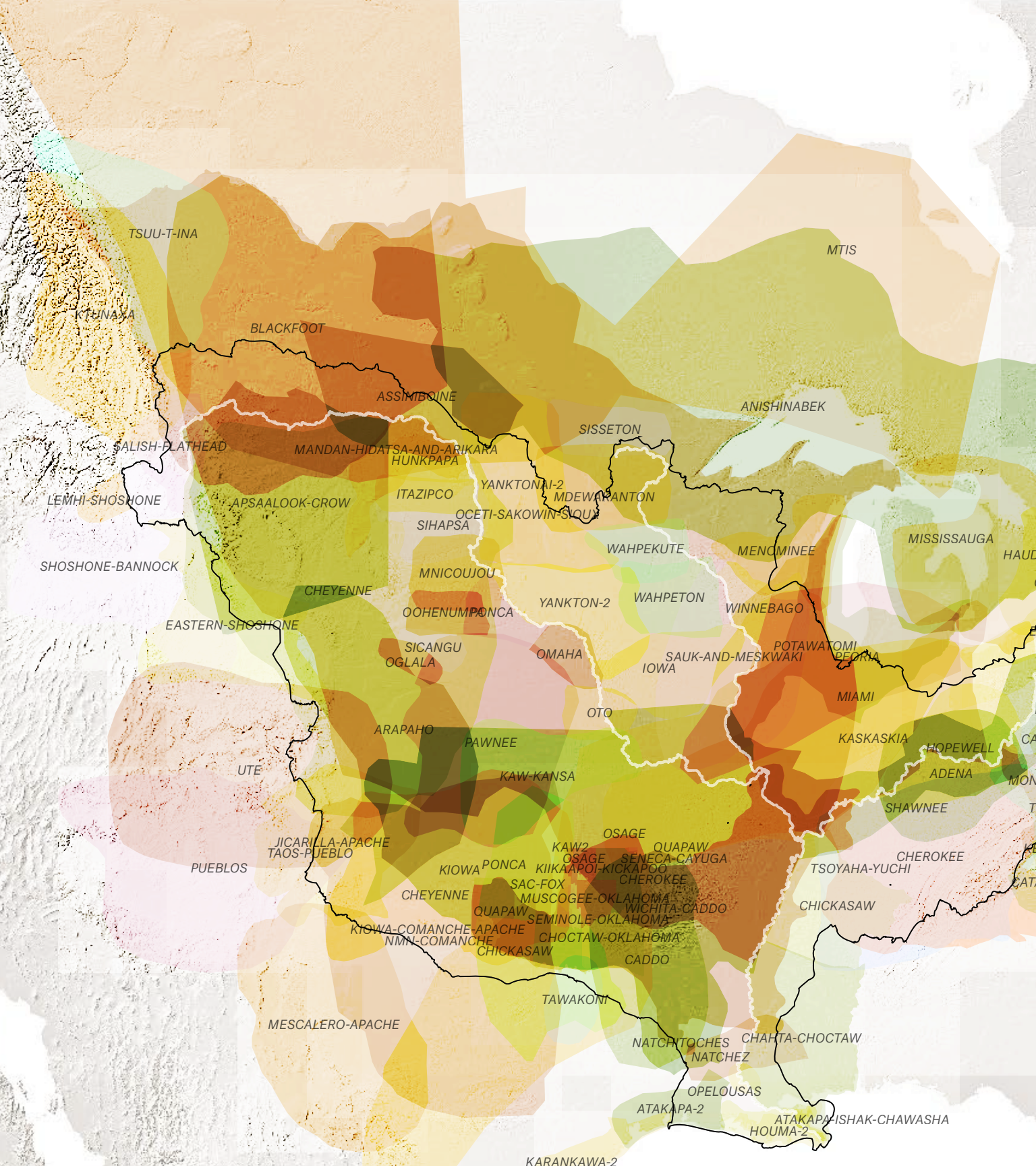
THE URGENCY AND THE VISION 6

SYSTEMS AND CONNECTIONS 10

A DEEPER DIVE INTO EQUITY 16

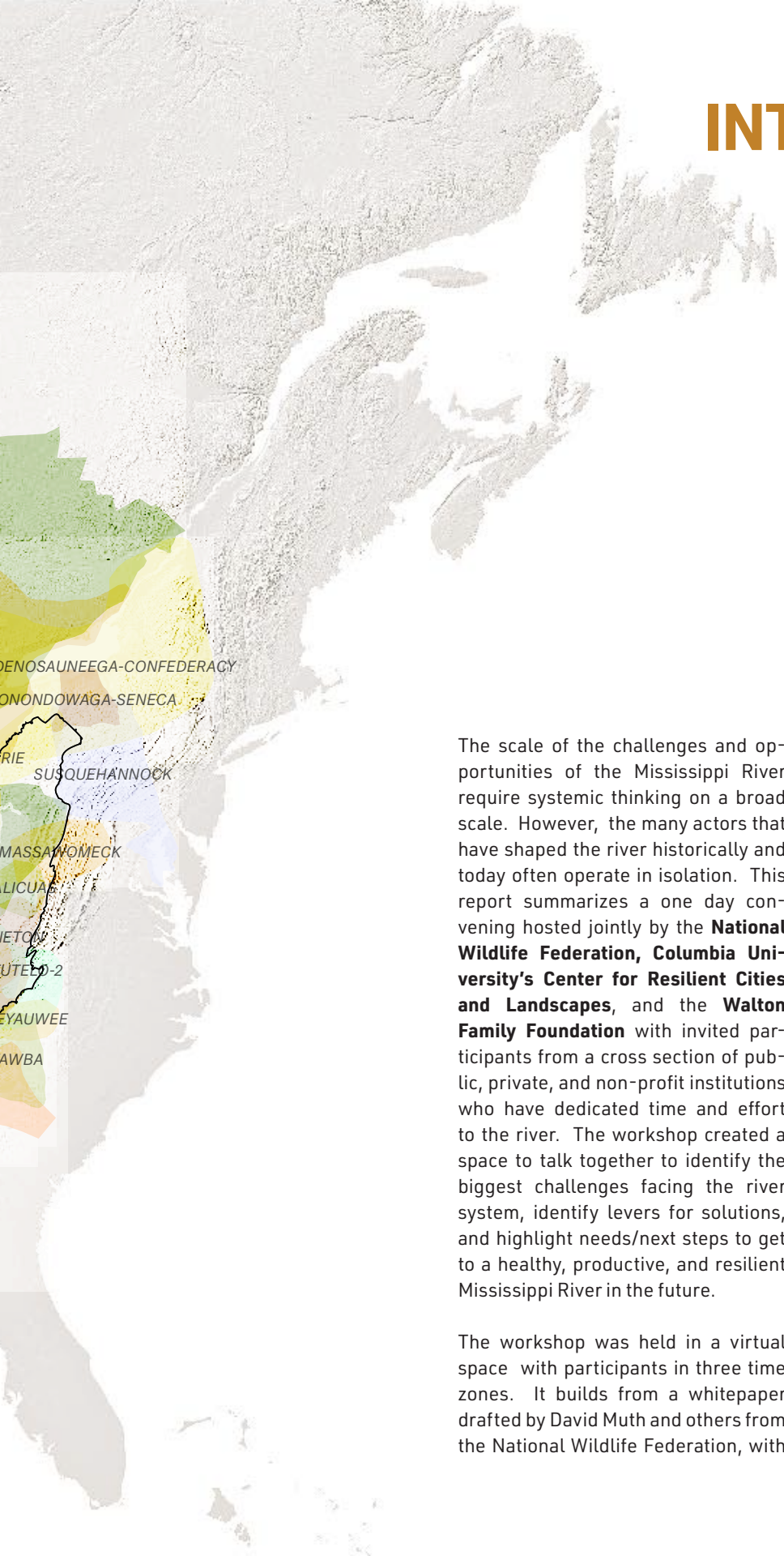
ADVANCING THE VISION 18

SUMMARY OF NEXT STEPS 20



THERE ARE 110 NATIVE TERRITORIES THAT ARE WITHIN OR PARTIALLY WITHIN THE MISSISSIPPI RIVER WATERSHED.

INTRODUCTION



The scale of the challenges and opportunities of the Mississippi River require systemic thinking on a broad scale. However, the many actors that have shaped the river historically and today often operate in isolation. This report summarizes a one day convening hosted jointly by the **National Wildlife Federation, Columbia University's Center for Resilient Cities and Landscapes**, and the **Walton Family Foundation** with invited participants from a cross section of public, private, and non-profit institutions who have dedicated time and effort to the river. The workshop created a space to talk together to identify the biggest challenges facing the river system, identify levers for solutions, and highlight needs/next steps to get to a healthy, productive, and resilient Mississippi River in the future.

The workshop was held in a virtual space with participants in three time zones. It builds from a whitepaper drafted by David Muth and others from the National Wildlife Federation, with

breakout room discussions setup and facilitated by the Center for Resilient Cities and Landscapes.

Intended Outcomes:

- Workshop and brainstorm the issues around defining a Living Mississippi River Vision
- Descriptions of systemic challenges and relationships of risk
- Strategies and solutions that reflect complexity and relationships
- Identify the levers to achieve a broadfront vision and set of initiatives
- Define the parameters of a future roadmap to mobilize a vision for the River around which many organizations can work and a work plan to deliver that roadmap

THE URGENCY AND THE VISION

Kate Orff



It's time to think big and expansively about infrastructure. In light of climate change and decarbonization, social justice and biodiversity, it's time to act. There are already a range of actors (non-profits, agencies, etc.) in this space, but how can we work differently and better together? What does it mean to be a living river? What

does a future with action look like and how do we get there?

How do we create a virtuous cycle of social justice, ecological regeneration and risk reduction? How do we go from a focus on a narrow definition of river to one that encompasses a basin? How do we move from engineering nature to embarrass-

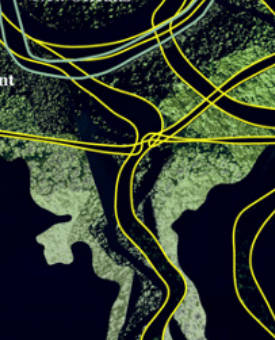
ing landscape solutions? How do we go from a conception of the river as a static boundary to a dynamic and vital system? Can we move from singular agency control to clusters of projects and initiatives that add up and that rebuild local economies?

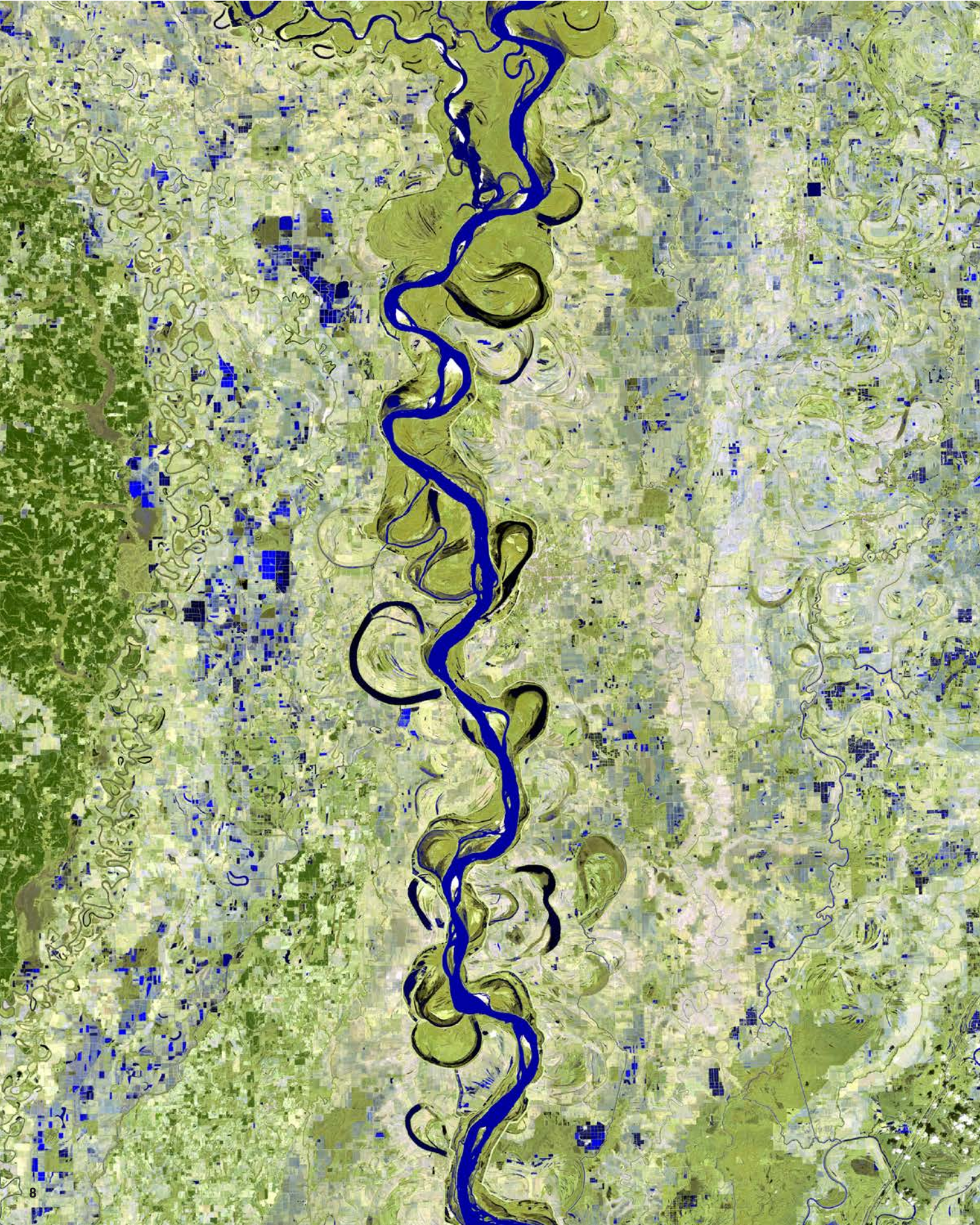
We can start by acknowledging the flashiness of climate change and



the terrible floods of recent history. And acknowledging racialized topography and committing to advancing a movement for justice and an ethos of care. What does empowerment of vulnerable communities look like and how do we get there? We also must acknowledge that we have a diminishing window to address a critical biodiversity crisis.

A Mississippi River Vision may take years to realize, but we don't have that much time. We need to build from successful projects that incorporate science, design and policy. We need projects that cut through sols and connect our common values: a living river that supports resilient communities.







MENTIMETER WORD CLOUD: PARTICIPANTS WERE ASKED TO DESCRIBE THE MISSISSIPPI RIVER IN 2070

SYSTEMS AND CONNECTIONS

Exercise 1

- What are the **underlying stresses** facing the Mississippi River and Environment, Economy, or Society (depending on your group). - 15 min
 - Write these on grey sticky and place in the center of the board.

climate change racism loss of biodiversity inequality

- Review **strategy categories** (Laws and Funding, Agriculture, Disaster Prevention and Recovery, River and Floodplain Management, Habitat Restoration) - 15 min
 - Are these the categories (or topics) in which to classify strategies? If not, add more with a yellow sticky.

public health

- Which categories are the highest priority for your group's focus?
- Reviews **strategies** most relevant to your focus groups - 15 min
 - Write on a red sticky other strategies should be represented?

EJ Advisory Group

- How are the strategies **connected** to each other and underlying stresses?
 - Draw lines connecting the strategies that should align and how they connect to underlying stresses. You may also add underlying stresses at this point.
- Please invite two volunteers to report back after lunch





SYSTEMS AND CONNECTION

SOCIETY

Agriculture, flooding, navigation and the choice we make around how to manage all three together are dramatic stressors on the system. Funding overall and rating to management is a part of that, it's almost always too little and too late. The level of basic racism that affects decision making and systems over the years carries its own weight and we found as we looked at the strategies that it needs to be addressed across all of the strategies. The overall level of access to information because of the distributed nature of the system and the distributed nature of the management system is limited and causes its own stress on the system of processes related to it.

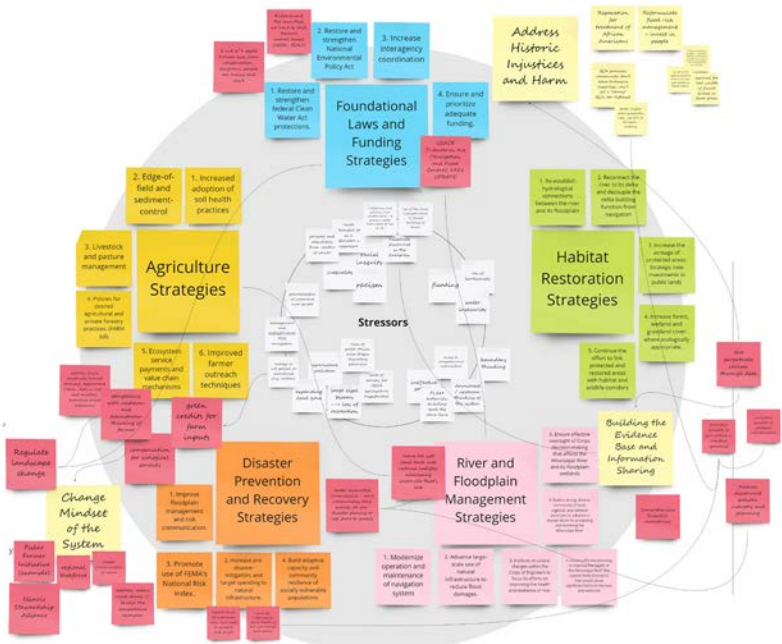
With regard to stressors, Agriculture continues to be an especially challenging domain in Mississippi. Potential strategies could be green credits for farm inputs, connecting upstream and downstream, developing fisher and farmer partnership models, ecological services information, addressing social constructs around farms and appearances, and regulating landscape change to have broad impact despite anticipated unpopularity of that approach. Without it, many feel we are aren't progressing enough. Mindset around the system is also key, and we need to be talking about regional partnerships, and alliances building off of models like the Illinois Stewardship Alliance. We need to center communities of color and indigenous and ecological knowledge in all the work and ways of managing the

land.

With regard to River and Floodplain Management Strategie it's really important to center disinvested communities. There is a huge disconnect between industry and planning, and we need to ask "for whom is river management?" We need to quantify the benefits of being proactive in terms of flooding and management around river strategies, instead of reactive spends and monetize the benefits of natural infrastructure. Another idea is to move more wetland habitat into the river and address incentive issues, such as the historic legacy of redlining where there are communities of colors moved to flooded areas. There is no opportunity to build wealth in these areas, and lots of incentive for industries to capitalize on the low cost of

land. We need to flip this paradigm. We need to spend a lot more time thinking about racism and the river and the notion of the "River as a Liberator and an Oppressor."

Finally, science needs to be built into this process at all levels and build the evidence for the changes in governance that are necessary and to be able to attract the resources that exist by way of information sharing. Agreed upon metrics and goals and the opportunity for science to help motivate all of the action that's needed. There is a need for additional monitoring with the highest possible quality of data. We are too often behind the curve of disasters and need to be able to take advantage, especially at the federal level that there are economic benefits to proactive spending.



ECONOMY

Climate change impacts are cross cutting across all strategies and siloes, affecting agriculture, navigation, infrastructure, and cities. The cost of pollution--producing it and cleaning it up--is expensive for farmers and for the rest of us. Sediment dynamics--moving sediment around to where it is needed for marsh restoration or removing it for navigation--is also a major environmental cost. Built infrastructure is failing leading to flooding, salt water intrusion, resulting in more costs to society. Land use changes and altered hydrology

affect all economies, exacerbated by demographic shifts, unemployment, failing cities, impoverished rural communities. The rural -urban divide creates conflict. Food security is also stressed by climate change and geopolitics--the United States has lost its dominance and the Mississippi Basin may lose its status as breadbasket. As climate change grows seasons, we have an opportunity to reinvest in soil, addressing decades of soil degradation. Soil is infrastructure.

There may be greater opportunities in the future for corporations to

be pro-active toward net-zero emissions--particularly around the nexus renewable energy, food security, and water quality. But there can be effective change until economic externalities--like the loss of forests and wetlands--are proceed by society. Lack of governance doesn't help tension between stakeholders. There is also a need for a unified constituency and coherent unifying message. Nebraska offers a model of how groups can band together around watersheds.



ECOLOGY

Stresses to the ecology of the river are not just about sediment or water quality but are deeply interconnected to the economy and society, particularly to agriculture. A central challenge is "lock in." Not only is the river "locked in" by concrete structures which constrain its ability to change, but many of the communities and stakeholders in the basin such as the farmers, are locked in by an existing system which neither has a view of the basin as a whole nor sees any connection between environment, economy and social outcomes. Reshaping the economy is critical to changing decision making. Farmers, flooded communities, and others don't at the moment have the ability to choose different futures because that would threaten their economic well being, a fact which must be addressed. Science could be an organizing framework for connecting up and down the river and across communities. The current system has winners and losers and the winners are highly motivated not to let the system change. Political tension and fragmentation between stakeholders and different levels of government makes a common vision exceptionally challenging. Some in this group believed science could help to structure common vision, but others disagreed.





A DEEPER DIVE INTO EQUITY

Panel Discussion moderated by Susan Kanedra

How do we come to share a shared understanding and commitment to meaningfully and authentically engage marginalized communities in this work. NWF is committed to centering this work early on in any

planning processes and recognize that many of the partners in this workshop are in a similar place. This Mississippi River has 142 cities and towns lining its banks, including many small towns. And together, they represent millions of

people and the EPA estimates 18 million people rely on the river for drinking water.

Rebecca Villegas, NWF's Senior Program Manager for Environmental Justice.

She is working to build capacity at NWF to develop an environmental and climate justice agenda. She also helps our Federal and State policy teams advance policies that ensure fair and equitable treatment of communities of color and low income communities. Among her on the ground experience, Rebecca has worked to help air quality in Detroit managing a diesel emissions reduction program and other activities to improve the air that people breathe in the great city of Detroit. She is a recent graduate of University of Michigan where she earned a master of science of environmental justice of policy and planning and a master of urban and regional planning and land use development.

"Racialized discriminatory practices have played a huge role in the issues at hand today. Government

policies and tools like red lining, segregation, and racial covenants have been enforced to make sure lower wealth and communities of color were placed in flood prone areas."

"We think land and about the concentration of lower wealth folks, it's enticing for industry, and often polluting industries to come in. A lot of folks are working three jobs to be able to make ends meet and don't have the time to go to community meetings to oppose development. Then we have governments that are in a race to the bottom because they're trying to entice industry to create jobs, but often don't materialize into jobs for the local community as well."

"We have a lot of ground to make up and a lot of public trust to continue to develop and forge. We need a broad range of stakeholders

as a part of every step - from planning and design to implementation through evaluation - of this process to prevent any bias or blind sides."

"Bottom up organizing is key. As we engage, we need to listen to community needs as practitioners. It's our job to connect the dots."

"You can do all the research behind a computer, but it's not the same as being there and talking to people. That is a first step to commit to."

"Traditional ecological knowledge can inform science-based approaches. We can have different hypotheses, but if we aren't asking the right questions then what's the point?"

Dr. Margot Brown, EDF, Associate Vice President of Environmental Justice and Equity Initiatives.

She came to EDF from the EPA where she worked, among other things, on children's health protection. Margot received a Masters of Public Health and a PhD and Doctor of Environmental Health Science from

Tulane University in New Orleans. She is very familiar with the Lower Mississippi River and its communities, one of which she will be talking about today, Isle de Jean Charles. Margot has over 20 years of experience developing environmental health initiatives, doing

community outreach and education programs, and advancing environmental health and equity in communities.

"EPAs approach has been a helicopter model, in Isle de Jean Charles

that was completely inadequate... For the 9 months leading up to their workshop, we made trips to meet with the community and tribal members. Through that pre-engagement, we developed an authentic relationship with one another and began to learn how one another thought and how we thought together. That step set the stage for the technical assistance delivery."

"If you can listen and be an equal partner the outcomes will far exceed what anyone can imagine."

"A lot of times, people don't want to talk about the mental health aspects of climate change. The deep sadness that I saw in their eyes when

they talked about the loss of culture and place was profound. The technical assistance program remained about health, but in a different way of thinking about health"

"Initially, my colleagues at EPA were skeptical about what I had done. But as I began to educate them on the social determinant of health and mental health and wellbeing and how they are all connected, they tell the story with pride and enthusiasm."

"You cannot create room if you are not going in as equals to co-create and let the community lead."

"If you are going to work in these communities, do not make as-

sumptions. The loudest voice does not represent everyone. You have to ask 'who is the trusted source of information' and 'how do they receive that information.' Without that, it doesn't matter how good the communication materials are."

"If communities can work with Academic institutions that can go beyond, say the EPA. Things like cumulative impact assessments and hyper-local monitoring are realms that technocrats are reluctant to step into, but where Academia are leading. We can't continue to do the same things."

Dr. Geeta Mehta, Founder of Asia Initiatives

Asia Initiatives works with underserved communities to improve livelihoods, education, and the environment. She has worked on projects all over the world across the Americas, Asia, and Africa, and Europe. A true innovator, she has pioneered the use of Social Capital Credits, a virtual currency for social good that is empowering communities in the US, India, and Kenya. She is the author of six books and is recognized by Women's E-News as one of the 21 Leaders of the 21st Century.

"Every project has an Environmental Impact Statement. Why should there not be a Social Impact Statement? And why is that not written into policy that every project has to describe how many people will be impacted and in what way? Why are we not requiring large corporations and petro-chemical companies to do triple bottom line accounting of the social, economic, and ecological bottom lines. We are on the edge of all sorts

of disasters and we need to push up to policy level, document in a robust way, and practice on the ground."

"Social capital credits is a concept that can be used in the hyperlocals. And we always start with Socratic dialogue. We listen for days, and don't reply with an answer but with another question. For example, 'can you clarify this concept?', 'can you tell me about the assumptions you're making?', 'can you tell me more about the rationale and your reasons?', 'from which point of view are you looking - the village or the region?', or 'what would be the implications?' Don't be afraid to question the question. That immediately changes the conversation. It has to be long, it cannot be short and make sure everyone has a chance to talk."

"Nothing for us without us."

"Don't arrive with the solution. If the people have come up with the answer, the project will be sustainable

because they have their skin in the game."

"Begin with connecting with local leaders and ask 'who has the agency to speak' and begin to distribute that agency. Practice ways to easily let people give their input. You don't have to write a letter, you can use technology and social media for good to collect a broader set of voices so everyone can participate."

"Communities have been in place for a very long time and have seen science in action. The people who are closest to the problems are also closest to the solutions. We can listen to their science. People are not that far away from science because they are on the ground."

"Land to lab and lab to land. It has to go both ways because local knowledge is extremely valuable."

ADVANCING THE VISION

Exercise 2

Collaboration

Who is collaborating and at what scale. Are we talking about the governance of ecological restoration? How would a coalition form and be government. What are the foundations of understanding between those involved? We need to use existing science, and keep getting more.

How do we start? There are many opinions, but maybe start among this group for collaboration. Can we learn from other examples of forming partnerships between business, scientists, conservationists, and centering affected communities? How do we get ready for money, have a plan in place, for future political changes. "The next disaster is coming and so is the money"....

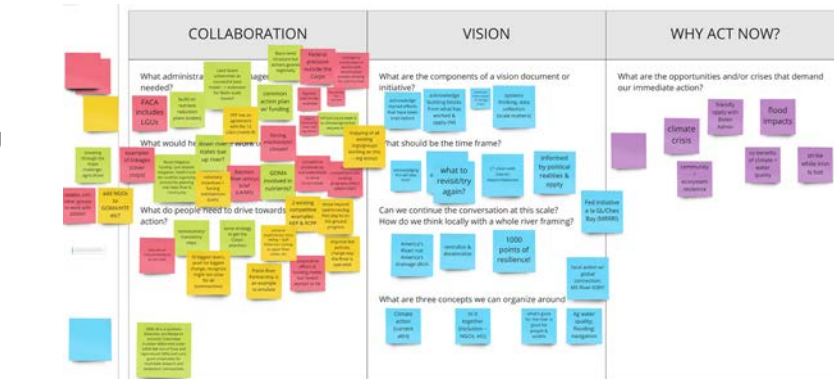
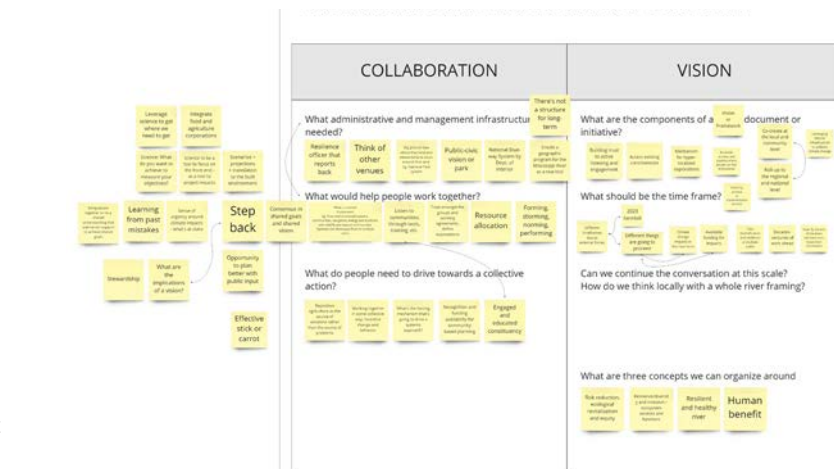
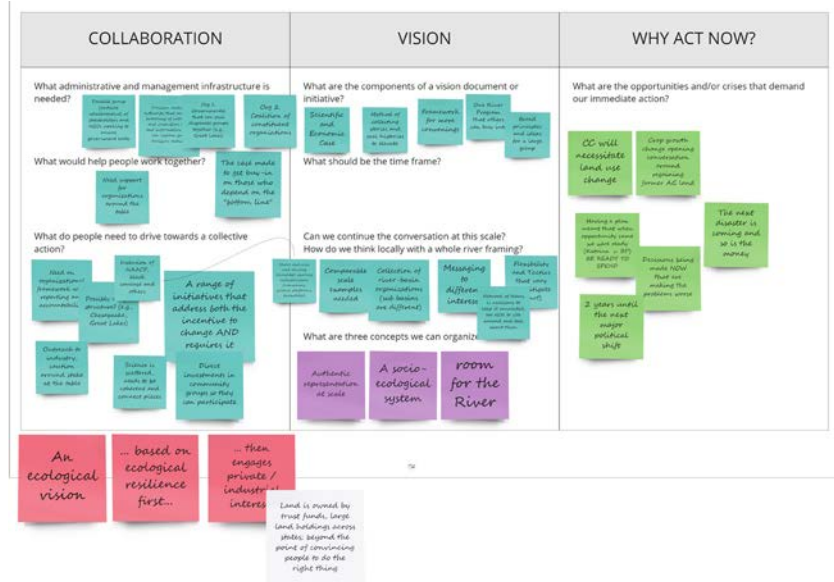
How do we build on what is working now? Commitments aren't enough, there may need to be a forcing mechanism. Coordination among many visions is essential. Specific past challenges can help map the way forward.

Vision

How do we develop the trust needed for a shared vision? Science can help to provide a shared understanding and a shared scientific framework for measuring success and feeding back lessons learned. There is a need for resources beyond volunteering? We need clear ideas of what we want out of the land and the river? Stick or carrot? A more geographic approach could offer more carrots, with clear immediate benefits?

Why Act Now?

The irreversible impact of climate change is landing in our communities and ecosystems now? How do we bring an urgency to this moment, and capitalize on this moment to packaging many pieces together, and seeing action on the ground.



Straw Poll: What is one next action item from this meeting? (In a tweet!)

It takes a village	Listen to local communities for a comprehensive vision	Bring in EJ groups. They need a seat at the table.
Synthesize and summarize the results of the conversations we had in the break outs.	Provide comments on the NWF magnum opus and get that out in the world!	Get a solid understanding of what is already underway, and what the barriers to progress are at those projects and places.
workable solutions must include all stakeholders	Update the white paper to reflect some of the strategies that were discussed today	Complete survey of other groupings working in this space - their products, successes, and shortcomings.
Continued collaboration	Collaboration and incentives are essential, and forcing is, too.	compile NGO capabilities and focus and identify gaps, overlaps
map all the organizations working on the river (from very small to very large)	get to know each other better	Identify communities that need to be part of the conversation.
Deeveloping an action plan across sectors, scales, and time frames.	Developing a whole-river model and science framework can guide investments and actions to achieve measurable results.	Summary of each organization MRB strategy/activities
Prioritize actions. make a time line.Do not let what you cannot do stop you from doing what you can	smaller steps can lead to bigger results if there is a plan to guide action	Come to consensus on shared goals that can form the base of a scientific framework
Agree on how to address short-term opportunities that build long-term support for the river.	identify clear, science-based goals for what a "living, clean, resilient" river looks like	break out committees to look at each of the major areas we agreed needed addressing. These committees do outreach to ensure full representation and then work on shared goals.
Leverage science to achieve our objectives	Map out partners in different parts of the River	Explore adding a social impact statement as part of projects/permitting
Match the groups involved to areas of expertise/interest in order to identify gaps	CONVENE. CONNECT. REVIVE. We need a vision for a healthy river system and a connective landscape that become an economic engine.	On the science side: Synthesize the known, available solutions and their potential impact
Focus on floodplains and flooding to build the relationships and constituencies to go on to other things.	Local definition of success is critical for support.	Give your feedback.
Develop a spatial vision and a set of funding and financial tools to achieve it	Summary of past actions. What has worked? What hasn't? What can be tried again?	Comprehensive efforts are important. But also need to keep moving on actions that are making positive progress now!
Build on successes but don't be limited by them	How do we bring more diverse voices to this table?	Build all work with a community advisory board who is compensated for their expertise
Develop conservation solutions that make economic sense	Develop a public space and economic vision to incentivize change	Convince Biden Admin to convene MRB listening sessions with goal of creating framework/vision in ~2 years
Look for a positive approach--what we can all be for rather than what we are against	Everyone doesn't have to agree on every thing. A spectrum approach can work.	Identify divergent objectives that could derail partnerships
Remember: 1) Triple Justice; "nothing for us without us"; learn the histories of the communities where you are working; and pay community experts as experts	science based goals are essential to progress and persuasion	Manage expectations around timing - be clear about the obstacles up front

SUMMARY OF NEXT STEPS

Participants were asked to recommend a next step from the meeting to develop a Vision for the Mississippi. Their responses broke into three main categories of action to guide the work moving forward:

ANALYSIS

Understanding the Universe of Partners, Strategies, and Projects	working on the river (from very small to very large)	Synthesizing Research
Get a solid understanding of what is already underway, and what the barriers to progress are at those projects and places	Summary of each organization MRB strategy/activities	On the science side: Synthesize the known, available solutions and their potential impact
Complete survey of other groupings working in this space - their products, successes, and shortcomings	identify clear, science-based goals for what a "living, clean, resilient" river looks like	Develop a spatial vision and a set of funding and financial tools to achieve it
Compile NGO capabilities and focus and identify gaps, overlaps	Map out partners in different parts of the River	Science-based goals are essential to progress and persuasion
Map all the organizations	Summarize past actions: What has worked? What hasn't? What can be tried again?	

ENGAGEMENT

Mindset and Learning Philosophy	Get to know each other better	Break out committees to look at each of the major areas we agreed needed addressing. These committees do outreach to ensure full representation and then work on shared goals.
It takes a village	Collaboration and incentives are essential, and forcing is, too.	Build all work with a community advisory board who is compensated for their expertise
Listen to local communities for a comprehensive vision	Continued collaboration	Identify divergent objectives that could derail partnerships
Remember: Triple Justice; "nothing for us without us"; learn the histories of the communities where you are working; and pay community experts as experts	How do we bring more diverse voices to this table?	Match the groups involved to areas of expertise/interest in order to identify gaps
Everyone doesn't have to agree on everything. A spectrum approach can work	Approaches and Structures	
Workable solutions must include all stakeholders	Bring in EJ groups. They need a seat at the table	
	Identify communities that need to be part of the conversation	
	Come to consensus on shared goals that can form the base of a scientific framework	

STRATEGY AND COMMUNICATIONS

Representation of this Workshop and NWF White Paper	Give your feedback across Scales and Timeframes	Focus on floodplains and flooding to build the relationships and constituencies to go on to other things
Synthesize and summarize the results of the conversations we had in the breakouts	Thinking Local definition of success is critical for support.	Comprehensive efforts are important but also need to keep moving on actions that are making positive progress now!
Provide comments on the NWF magnum opus and get that out in the world!	Developing an action plan across sectors, scales, and time frames	Formulating and Vision
Update the white paper to reflect some of the strategies that were discussed today	Do not let what you cannot do stop you from doing what you can, smaller steps can lead to bigger results if there is a plan to guide action	Look for a positive approach-- what we can all be for rather than what we are against

CONVENE. CONNECT. REVIVE.

We need a vision for a healthy river system and a connective landscape that become an economic engine	to convene MRB listening sessions with goal of creating framework/vision in ~2 years	our objectives
Agree on how to address short-term opportunities that build long-term support for the river	Developing Strategies	Explore adding a social impact statement as part of projects/permitting
Manage expectations around timing - be clear about the obstacles up front	Developing a whole-river model and science framework can guide investments and actions to achieve measurable results	Build on successes but don't be limited by them
Convince Biden Administration	Prioritize actions and make a timeline	Develop conservation solutions that make economic sense
	Leverage science to achieve	Develop a public space and economic vision to incentivize change

