

“Of Maps and Men - 17th Century Mapmaking and 21st Century Sustainability”

Mark Gorman, Policy Analyst, Northeast-Midwest Institute
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Thank you. I want to begin by putting my humble musings into perspective. What I've drawn upon for today's talk are personal experiences working in the Gulf of Mexico and Great Lakes and the Upper Ohio and Susquehanna River basins, and upon the conclusions contained in a [2005 report prepared by my organization](#) on emergent lessons from large-scale ecosystem restoration efforts nationwide. And while it's true that I'm sharing with you a “view from Washington,” and that view *is* from a national perspective, I've spent most of my life in Pennsylvania, and only moved to Washington, DC a little less than two years ago, a time during which I've felt somewhat like Mark Twain's “Connecticut Yankee in King Author's Court;” more than a little bit out of place and time. So these opinions are shaped much more by life outside rather than inside the Beltway.

I want to first share a story that a friend of mine back in Northwestern Pennsylvania often relates and that motivated today's thoughts: a story of 17th and 18th century mapmaking. You may recall from your grade school history lessons that in the mid-1600s, Spanish explorers sailed up the west coast of the Americas for the first time to a place now called the Baja Peninsula: a bit of land that juts southward from what, today, is called California. There is, as we all know, water between the Baja Peninsula and the mainland of Mexico – it's called the Gulf of California. But what the mapmakers of the 1630s did was extend that body of water in a straight line north from the Baja Peninsula to Strait of Juan de Fuca, which lies between Vancouver Island and Washington State. So as a result, the maps that were published in 1635 showed California very distinctly as an island.



Now, that would be only a delightful story if it were not for the fact that the missionaries of that time back in Spain were using those maps to plan their travels inland when they got to the New World. And given the information on the early maps, they developed the world's first, great, pre-fabricated boat building project. They manufactured flatboats in Spain, cut them apart, sailed them to North America in pieces and, on the ocean shores of California, put them all back together again to be transported by mules 12,000 feet up the Sierra Nevada Mountains to the other side of California, where they expected to find the sea that the mapmakers told them was there. But as we *now* know, on the other side of the mountains the missionaries discovered that there was no seashore at all. Much to their surprise they found, instead, what is now the state of Nevada and the beginning of the great American desert. *California* was the mainland!

Now, this is a rather amusing story. But one additional fact makes it somewhat amazing: when the missionaries wrote back to tell the mapmakers and the Spanish King that California was not an island, no one believed them. In fact, the people back home insisted that the map was obviously correct and that it was the missionaries who were in the wrong place!

Even more astonishing, in 1701 - almost 70 years after their first map - the cartographers reissued an updated version of the *same* map. Those maps went unchanged year after year because someone in

Spain continued to work with partial information, assumed that data from the past had the infallibility of tradition and then used their authority to prove it.

Finally, after years of new reports coming in from the Americas, a few mapmakers with vision and the courage to buck the crown began to issue a new version. And in 1721, the last cartographer holdout finally attached California to the mainland.

But this is the really unbelievable part: it took almost 30 *more* years for the new maps to be declared official. It wasn't until the mid-century, in 1747, that King Ferdinand VII of Spain decreed that California was no longer an island. And all of this occurred despite the fact that the people who were there all the time knew differently over 100 years earlier . . . from the very first day.

The point of the story is this: Truth is *always* larger than the partial present, the infallibility of tradition and the declarations of authority. And *vision* is the ability to realize that. And if we hope to come out of these two days with any semblance of a vision about how to conserve and restore the Mississippi River system, we had better realize where the truth really lies . . . and it's not in Washington, DC, where we tend to work on the basis of partial information, endow ways of the past with an aura of infallibility and then used our authority to crown our assumptions as "true."

The people living and working in the Mississippi River basin are extremely fortunate to be able to call the watershed their home. It's one of the great iconic environmental, cultural and economic features on the Nation's landscape; in the *world*. The mighty River and its tributaries in so many ways tie the region together into a diverse natural, historic and cultural quilt that is the region's heritage. They are streams that have *literally* sustained the quality of life and the natural world upon which it depends. You know the facts, I'm sure, but it pays to often repeat them: in Saint Louis today we're sitting near the banks of a River that drains the largest watershed in North America; not only a key navigational waterway but a globally significant flyway for 326 bird species. Its waters support 260 kinds of fish. Some 18 million people rely on it for their drinking water and millions more recreate on the River and in its communities. Taken together, the Jefferson, Missouri and Mississippi rivers form the longest river system in North America and the fourth longest in the world. And the Mississippi River system is the world's tenth most powerful on the basis of flow. With all due deference to the Great Lakes, this system is really the "great" iconic water system of the nation. It has 60% greater outflow and almost three times the drainage area of the Great Lakes. In fact, the River's flow is so significant at its mouth that it remains largely intact and NASA satellites can detect it as a unique body of water as it courses through the Gulf of Mexico, passes through the Straits of Florida, enters the Gulf Stream, and flows up the southeastern U.S. coast to Georgia, before finally blending in with the Atlantic.

Now, the Native peoples who lived along these waters and the first Europeans to explore and settle in these valleys didn't have all of these facts underlying their appreciation of the rivers and streams and the land around them; yet they certainly valued the importance of those waterways and connected lands. They understood the relationship and the connection of their lives to the land and the water and each other . . . the connection of economy to ecology. While they may not have expressed it in today's terminology, our ancestors knew very well that everything was connected.

But over time, we've *forgotten* those connections and *severed* human life from the natural that sustains it, to the peril of both. And as a result of our collective amnesia, for all of its greatness, the region's waters now flow through a fragmented bureaucratic and social reality, whose functions and structures are equally fragmented. Just looking at the Mississippi River, alone, we find that it flows

through, past or over three USDA farm resource regions, four EPA regions, four USDA farm production regions, five USDA Land Resource regions, six Army Corps of Engineer districts, 10 states, 14.8 miles of floodwall, 31 U.S. congressional districts, 43 dams, dozens of Soil and Water Conservation districts, 123 counties and parishes, 150 cities and towns, over 1,500 miles of levees, thousands of farms (with 38.7 million acres of drained fields, managed by upwards of 5,000 drainage districts, boards or other authorities), and tens of thousands of businesses. Nearly 30 U.S. House and Senate committees and subcommittees have some jurisdiction over the Basin's water issues.

And the fragmentation not only occurs spatially and institutionally, but temporally, as well. Federal budgets are developed in one-year increments. Congress turns over every two years; and the Administration and its agencies' key leaders every four years or so.

These cadres of disconnected organizations and institutions that have evolved here in the region and in Washington have ended up devising and implementing disjointed solutions based on incongruent and often contrasting missions and objectives. "Silo" bureaucratic cultures have become entrenched at the state and federal levels. Fragmented mindsets and politically driven schedules, exacerbated by limited resources, have lead to myopia when it comes to identifying issues of concern, planning solutions, seeking funds and applying them toward holistic solutions.

As a result of this fragmented disarray, our NGOs, agencies, private stakeholders, states and other entities largely act as separate disembodied appendages, exhibiting little sense of direction, an insular set of priorities, and at best an incomplete investment from the communities they serve. Our public and private initiatives are not really driven by an overarching, all-inclusive vision. Our projects are not truly integrated. Our corrective and protective measures are narrowly applied and suffer from mission shortsightedness, even when occasionally couched in terms of systemic solutions. Very striking is the fact that most efforts rarely involve members from the private sector to any significant extent – an element that is especially ominous, given that the overwhelming majority of land in the River Basin lies in private hands, and since *all* of the Basin's issues relate to and solutions will impact private interests. This lack of involvement is especially evident when it comes to the agricultural sector.

You don't have to take my word for it. Bill Roderick, the EPA's acting Inspector General earlier this month [released a report](#) concluding that the agency's authority is too fragmented to adequately address the nation's environmental issues; that the EPA is in dire need of a new, comprehensive, national environmental protection policy and that the EPA needs to improve coordination with other Federal, and with state and local officials. I would contend that Mr. Roderick's findings could be equally applied to each of the more than 20 Federal agencies who share a piece of the legal authority over and involvement in the Mississippi River system's water resources.

Some individuals, offices and organizations working within the basin are trying to break free of this stifling inertia, and there are emerging indications of change within state and Federal government, as well. Time doesn't permit naming all of the examples, but the list includes many of you here. But even these hopeful initiatives are limited in scope and vision; partial in their own ways and constrained by the fragmented, event-driven and non-systemic traditions in which we work and live.

This is the wrong map, folks. No matter how well-intentioned or how fully-funded they may be, this segregated approach to issue identification and problem-solving in the end will simply not work, and will only end in disappointment, mistrust and finger-pointing. We know this from past experience

within the Mississippi River system, and we can see this in the poor track record of other fragmented watershed scale efforts. The well-meant but poorly designed and patchwork, linear, event-driven and non-systemic restoration attempts within the Columbia River watershed serve to prove that point. Those efforts resulted in the establishment of multiple and often-conflicting restoration goals and objectives, the filing of numerous court actions and appeals, significant and chronic delays, ambiguous and conflicting timelines, continuous implementation problems, distrust and frustration.

The Mississippi system issues we face are multi-jurisdictional, multifaceted, intergenerational and interconnected, and none will be adequately solved, let alone understood, if our way of thinking, planning and *doing* does not also become multi-jurisdictional, multifaceted, intergenerational and interconnected. In fact, the basin's problems will only be made worse by any isolated attempts at mitigation. Albert Einstein said it best when he wisely observed that "The significant problems we have cannot be solved at the same level of thinking with which we created them."

In other words, if we continue with the status quo as a conservation approach or adopt an artfully massaged version of the status quo, we might as well go home right now. We're simply wasting each other's time while paying lip-service to integration, progress and sustainability.

Put more pragmatically, perhaps, in a time of extremely limited Federal resources and an even more limited Federal attention-span, how in the world can we expect the country to pay attention, make Mississippi River Basin sustainability a national priority, and invest its limited resources here, when the watershed community, itself, can't get its act together?

Clearly, *clearly*, the timing is right for this Summit; it's time to come up with a new model of conservation – a new vision – to restore and save the economic and environmental vitality of the region. And if we want that model to mirror other successful efforts around the nation, I would suggest that our work be driven by a vision built upon integration and inclusion; a philosophy that has worked very well in other landscapes. It will work here, as well, when we, like others have elsewhere, envision a revitalized, healthy river system at the very *center* of a community and economic renaissance where *all* activities occur in such a fashion as to protect and restore the environmental richness and enhance the quality of life of all who live and work here. It's a vision that values, conserves and revitalizes *both* the economy and nature; a vision built upon a philosophy of "Conservation through Cooperation."

We've seen this cooperative model achieve real, significant conservation successes in large and small watersheds nationwide: in the Great Lakes, in particular. And we've seen this model generate the beginnings of success in other large scale systems, such as Coastal Louisiana, the Chesapeake Bay watershed and Florida Everglades. The Pennsylvania Environmental Council, where I previously worked, successfully managed watershed scale conservation using this model within the Upper Allegheny River system. Cooperating with one another is what people in the Great Lakes region had to do beginning in the early 1900s as they developed nascent networks, advancing the cause of restoration, and more intentionally and recently, as they drafted the Great Lakes Regional Collaboration restoration strategy. Cooperation is how the Florida Everglades Comprehensive Ecosystem Restoration Plan came to involve the breadth of the region's stakeholders, including local, state and federal agencies. Cooperation is how Louisiana's "Coast 2050 Plan" came to be locally driven and so very well-organized. And cooperation is the reason that Chesapeake Bay restoration has become solidly-founded upon stakeholder involvement and collaboration, and the participation of all of the basin states.

If the successes of these and other system scale efforts have taught us anything, it is that purposeful and meaningful integration across boundaries, and among people and organizations is *central* to emerging from the trap of pursuing partial and incomplete solutions. Intentional integration is vital to generating creative, new ideas that actually work and breaking free of the traditional ways that don't. Integration is essential to creating a *new* basis for authority, grounded not so much in Washington, DC, as much as in the river system community, itself, where the real authority lies.

A friend who is a social psychologist tells me that under the right circumstances, such community-based collaboratives can be remarkably intelligent; often smarter than the smartest individuals and small clusters of experts within the group. She tells me that group collective wisdom prevails even if some members of the community don't know all the facts or choose, individually, to act irrationally. She advises (and other successful watershed endeavors demonstrate) that leadership cannot come solely or principally from the good people in Washington, DC. Rather, that leaders of this effort will need to emerge from within the community, **borne out of a collective wisdom founded upon mutually agreed-upon interests and value-driven goals**. Because social scientists have learned what we must now embrace: **it is *only* the values that the group holds in common that will bind and drive people toward a goal**.

We all will need to collectively bring our hard work, knowledge and skills to bear onto this existing, fragmented tapestry to help break down barriers, build bridges, and catalyze change; to bring people with varying backgrounds together to understand each other's interests within an atmosphere of mutual respect; and to forge a common path forward.

That hard, nose-to-the-grindstone kind of effort will be necessary, because lasting collaboration never happens on its own. No matter how well-meaning the parties may be, when left to flounder within a fragmented status quo, either people never get together; or when they do, they speak but never really hear each other. Or if they hear, they sift what they *think* they are hearing through the filters of their own institutions, histories and traditions, and hear only positions - never getting *close* to understanding the other's core interests and agreeing upon the values that the members of the group **inevitably *do* hold in common**; if only they would stop to listen.

Social science instructs us that to effectively do this – to span the private and public sectors in a basinwide integrative and collaborative manner - four principles will need to underlie our work. Those are **openness, collegiality, sharing and inclusion**. Let me briefly look at each.

We are usually reluctant to consider new ideas, out of fear of taking risks or losing control or losing influence that comes from being an expert. Openness demands that we loosen our hold over information, opinions and ideas. It requires that we *not* filter everything through the lens of the way we traditionally have done things; rather that we be willing to bend or completely *change* those ways, and explore new and creative ways to accomplish goals. Openness to new ideas means that policy, procedure, rules and regulation be viewed not as rigid reasons for *avoiding* action or as rationales for constraining change, but as adaptable tools to help *achieve* commonly held objectives.

An atmosphere of collegiality is one in which trust and information exchange flourish; something greatly lacking in the current social and political atmosphere here in the region and in DC. Collegiality demands horizontal rather than the traditional top-down, hierarchy. Collegiality requires appreciation for and respect of the other, genuine attention to their concerns and interests, and setting aside biases and preconceptions.

Openness and collegiality unlock the door to increased information sharing. The principle of sharing recognizes that lasting progress comes only when people have access to enough information to enable collective wisdom to develop and thrive. Sharing demands transparency, and requires that reasons for decisions not be held tight but be made clear. Without information sharing, any possible chance at success will be severely limited.

Lastly, inclusion; this may be the most problematic of these principles to make real, because it goes against the insidious culture of individualism that characterizes western society in general and middle-America in particular. There is a lot of distrust and anger and partisanship and polarization out there. And all of that gets in the way of inclusion. Inclusion requires that *everyone* sit at the table, and that we start viewing other people and groups, even those with whom we seriously disagree, as part of the solution, and *not* part of the problem. So, we had all better become very adept and comfortable spanning and working within the public and private sectors and including everyone in a collective effort. Those involved in the successful landscape-scale conservation initiatives I mentioned before found repeatedly that the *real* capacity – the human resources and capital – to accomplish sustainable restoration and conservation does not lie in Washington, DC, but in the promise of an inclusive, regionally based, private-public partnership. And five or ten or more years from now, if we haven't *fully* engaged that capacity, we won't have done our job.

This is *extremely* hard work. How can we *possibly* embark upon and complete such a daunting task? If you look into the history of other watershed scale conservation success stories, you'll find that what they ultimately ended up doing when all was said and done was sit down and *listen* to each other. They moved out of their comfort zones - their usual network of friends and peers, their usual way of doing things - to meet and greet and connect with and pay attention to and listen, because they finally understood that *everyone* was a member of the economic and ecological system that made up their community, and that *all* had a critical voice to share and a vital part to play in its conservation.

And in the end that's how we will become effective stewards of the Mississippi River system. Put simply, to create that new conservation map in the region we will need to begin listening. *Keep* listening. Always listen. Before we even take another step, we need to reconnect with and listen to the land and the water and the people – stop to listen re-imagine the possibilities laid out on a new map and, then together, make those possibilities real, because the old maps just aren't working; they never have.

And how are you to listen? Once upon a time, the story goes; a youngster asked an elder that question. And the elder advised, "Become an ear that pays attention to every single thing the universe is saying. The moment **you hear something you yourself are saying**, stop."

Listening – *real* listening – is *very* possible. It *has* been done. And I can promise you this: it is also very hard. This will be *extremely* difficult work. This could very well be the most challenging work you've undertaken in your professional careers. But as essayist Leon Rosten wrote, the purpose of life is not to take the easy route, but to matter; to have made a difference that you lived at all.

So, may we leave this summit intent on making a difference.

And if along the way toward making that difference you get frustrated and worn down by authority and bureaucracy, keep going. Why? Because the truth is *always* larger than the partial present, the infallibility of tradition and the declarations of authority.

And if others tell you that this just isn't the way we do things around here, keep going. Why? Because as Albert Einstein once said, "Insanity is doing the same thing over and over again and expecting different results."

And if the good folks in Washington, DC won't listen, tell you that they are obviously correct and that you are all in the wrong place, keep going. Tell them that the old maps are mistaken. Follow a new vision to sustainability. Why? Because history is clear: if the people lead, eventually the leaders will follow.

Thank you.