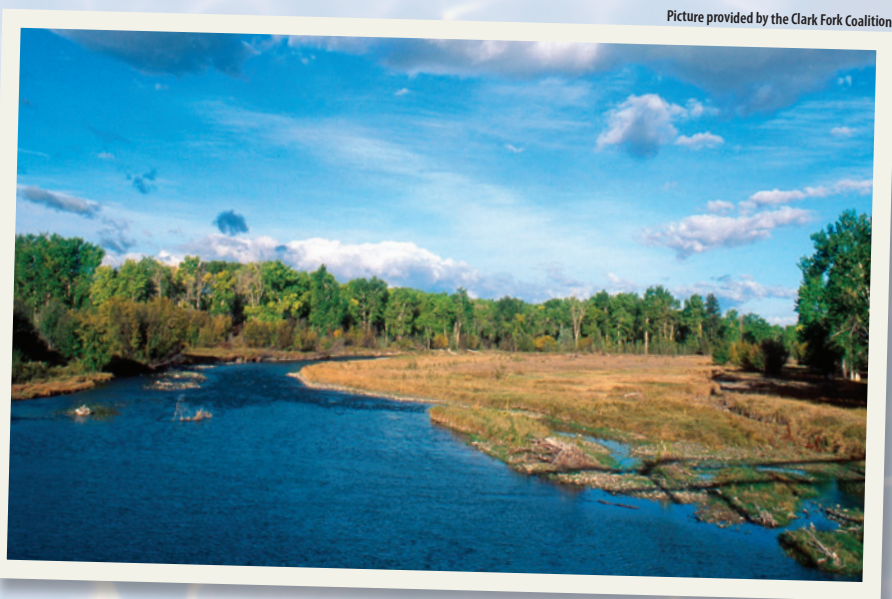




The Clark Fork watershed in western Montana and northern Idaho.

From the University of Montana Watershed Health Clinic (www.umt.edu/watershedclinic/links/watershed_conservation/EVST/Intro.htm).



Picture provided by the Clark Fork Coalition.

Middle Clark Fork River.

Lessons learned

- 1) *Focus on impacts, not causes.* The Clark Fork Coalition feels this strategy—focusing on adaptation rather than mitigation—was very successful, particularly in terms of engaging private landowners and others who may not believe in climate change. “We just said, this is what’s happening right now with water, fire, trees, all our resources, and here’s some ways we can adapt to... those impacts, but we didn’t talk about mitigating the sources,” says Randall.
- 2) *Make the science accessible and community-based.* Predicted climate changes were put into a local context, allowing community members to clearly see the link between warming temperatures and the implications for the basin. Similarly, including interviews with community members made the impacts of climate change more real. This strategy makes climate change more accessible and helps garner support for implementing adaptation strategies.



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The Success Stories are intended to provide a forum for the free exchange of ideas among citizens and organizations working to protect aquatic habitats in the Great Lakes Basin. The interpretations and conclusions presented in this publication represent the opinions of the individuals interviewed. They in no way represent the views of Freshwater Future, funders of the project, subscribers, donors, or any organization mentioned in this publication.

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ECONOMIC IMPACTS & OPPORTUNITIES

CLIMATE ADAPTATION STORY:

Protecting the Local Economy from Climate Impacts



Fall colors on the Clark Fork River. Picture provided by the Clark Fork Coalition.

Reverend Maclean explains trout fly fishing to his sons, Norman and Paul, in *A River Runs Through It* as “an art that is performed on a four-count rhythm between ten and two o’clock.” This art is big business in Montana—the Department of Fish, Wildlife, and Parks estimated that Missoula County alone generated \$30.2 million in fishing revenue in 2005. As temperatures warm and habitat conditions change, trout populations are predicted

to decline precipitously over the next century. The Clark Fork Coalition, a non-profit organization dedicated to protecting and restoring the Clark Fork River basin, is taking action to help this iconic Montana species persevere under changing climate conditions.



Brianna Randall, Clark Fork Coalition

With over \$600 million of Superfund cleanup and restoration monies flowing into the Upper Clark Fork, the Clark Fork Coalition saw a great chance to implement restoration strategies that plan for and adapt to the likely impacts of climate change so that the Clark Fork River is not only put back together but sustainable for the long haul.

ADAPTATION STRATEGY

- **System:** Trout streams/ivers
- **Challenge:** Lower water flows, higher water temperatures, increased polluted runoff
- **Creative Solution:** Gather concerns and ideas for solutions from community members. Integrate science with local ideas for a realistic action plan
- **Outcome:** Informed and engaged business community, tangible solutions at the local and policy level

In 1908, the Milltown Dam—intended to supply hydroelectricity to nearby sawmills—was built on the Clark Fork River in Montana. But with the dam just months old, a record flood changed everything. Prior to 1908, the Clark Fork watershed was extensively mined for minerals such as copper, zinc, lead, and silver. When massive flooding hit the mined landscape, it washed tons of toxic mining sediment downstream where it settled at the base of the Milltown Dam. As a result, the watershed now encompasses the largest Superfund site in America, a megasite that includes three separate major sites, including Butte, Anaconda, and over 100 miles of the Clark Fork River, one being Milltown Dam.

Since 1985, the Clark Fork Coalition has been dedicated to watershed restoration, including advocating for large-scale cleanup like removing the Milltown Dam and toxic sediments behind it. With over \$600 million of Superfund cleanup and restoration monies flowing into the Upper Clark Fork, the Clark Fork Coalition saw a great chance to implement restoration strategies that plan for and adapt to the likely impacts of climate change so that the Clark Fork River is not only put back together but sustainable for the long haul. Recently, Clark Fork Coalition invested in reconnecting tributaries to the river to maintain the health and resiliency of these wildlife corridors. Projects include planting riparian vegetation, fixing degraded creeks, removing fish passage barriers, and working with landowners to keep water in streams.

When the Clark Fork Coalition began developing their current five-year strategic plan in 2008, climate change was not yet identified as a ‘top threat’ in the basin. But the Clark Fork Coalition’s board president knew it was a threat. He initiated a discussion with Clark Fork Coalition board and staff about how climate change could fit into their program

work to protect and restore the watershed. This led to the creation of a new program within Clark Fork Coalition’s 2008-2012 Strategic Plan—Climate Action in the Clark Fork—that had two immediate priorities:

- 1) to provide research, education, and leadership on the impacts of climate change on Clark Fork communities, and
- 2) to spark basin-wide discussion on how best to help rivers and streams in the watershed buffer the impacts of global warming.

The Coalition felt the best way to shed light on recent climate impacts and engage the community would be to



Stream gauge measurements help to document changes in water flow on the Clark Fork River. Picture provided by the Clark Fork Coalition.

present scientific data on how the climate has changed in the Clark Fork Watershed into an easy-to-understand, locally relevant format.

“We wanted to make it accessible at a local level and felt like that was a huge gap with climate activism,” says Brianna Randall, the Coalition’s Water Policy Director.

The Clark Fork Coalition teamed up with the National Wildlife Federation to write a plan that lays out local patterns in climate science over the past 100 years and what it

actually means for the communities, businesses, and natural resources of the Clark Fork Watershed. A plan is only as good as the process used to develop it and it must be relevant—or it will join the other “dust collecting” plans on the shelf. Rather than simply present the scientific facts, the Clark Fork Coalition chose to interview community members. “People like to talk about what they see on the ground and how it impacts their business and their life,” says Randall.

One community member, a ski area owner, talked about seeing a later opening date for his business and less snowpack, which makes him worried about the economic



Trout fishing is a vital part of the economy in the communities surrounding the Clark Fork.

impact of changing weather patterns on his business. Other community members interviewed—a rancher, smokejumper foreman, hunting guide, and regional fisheries manager—had similar observations and concerns about their livelihoods. A common theme emerged: changes in climate meant impacts to local business and the economy.

Having input from many different people about how climate changes are affecting their lives and livelihoods proved crucial: “...it gives us traction, having the data and

having the real-life stories of how it’s impacting our communities gives us...the platform for saying...we have...A, B, and C happening and if we put into place these two policies, then it will help here,” says Randall.

Based on this community input, staff focused climate change adaptation strategies on four key areas:

- 1) Growth and development
- 2) Water use
- 3) Restoration
- 4) Recreation

Adaptation options for each area ranged from small, individual-level actions to large, state-level policy changes.

Some of the recommendations include:

- Adopting stream buffer and setback requirements for new development.
- Incentives for agricultural producers to install more efficient irrigation systems.
- Encouraging more water conservation at the individual level, by charging higher fees to water lawns during drought and incentives to plant drought resistant plants.

The plan and adaptation strategies were published in a report titled *Low Flows, Hot Trout: Climate Impacts in the Clark Fork Watershed*. The report received a great reception—locally, regionally and nationally—and has served to jumpstart initiatives by other watershed

groups dealing with the impacts of climate change. As for the future of the Clark Fork Watershed, the Clark Fork Coalition plans to continue its work engaging people in restoring habitats and water flow to the rivers and streams of the basin. The Clark Fork Coalition hopes this restoration work will not only help buffer the watershed from climate change impacts, but will preserve the natural beauty, quality of life, and last but not least, the economic opportunities that people living in the basin depend.

A common theme emerged: changes in climate meant impacts to local business and the economy.