

How Nature-Based Solutions Improve Climate Resiliency and Watershed Health in Colorado

Climate change poses one of the greatest threats to our watersheds and surface water supplies, especially in Colorado, a headwaters state, where catastrophic [wildfires have increased dramatically](#). Over the past decade, [increasing temperatures, declining snowpack, and frequent droughts](#) have hit Colorado especially hard, illustrating the urgent need to work together to adapt to the impacts of climate change that will invariably affect our communities, environment, and the Colorado way of life.

The Biden Administration has an opportunity to provide federal leadership to ensure a more secure water future and protect and restore healthy watersheds in the face of increasing water scarcity and climate change. Using nature-based solutions, like restoring high elevation, or “source” watershed headwaters, wet meadows, wetlands and floodplains, we can revitalize our economy while implementing solutions to safeguard clean and reliable water today and in the future. Nature-based solutions (also referred to as natural infrastructure strategies) protect, restore or mimic natural water systems and [provide services](#) like improved water quality and reliability, snowpack/storm flow attenuation, aquifer recharge and flood control. These solutions help [sequester carbon](#), [mitigate wildfire impacts](#), protect source watersheds, and improve habitat resiliency.

As record-breaking drought and wildfires continue to impact Colorado, protecting and restoring our source watersheds for water security is a crucial part of the solution. The Biden Administration has a key opportunity to provide federal leadership to ensure a more secure water future by supporting healthy watersheds in the face of increasing water scarcity and climate change. By implementing scaled nature-based solutions (NBS), we can revitalize our economy while implementing durable solutions for increased water security.

While the implementation of nature-based solutions is happening, there is tremendous opportunity to scale up these efforts to ensure resilience and water security for our communities, environment and economy. We recommend the Biden Administration continue implementing NBS projects and increase the scale and pace across the following agencies and program areas:

United States Department of Agriculture: United States Forest Service (USFS) Recommendations

One of the original purposes for establishing the National Forest System was to secure favorable conditions of water flows. Today, over 180 million people in more than 68,000 communities rely on National Forests to capture and filter their drinking water and are the [largest source of municipal water supply](#) in the nation. Climate change is causing significant challenges to our forests and the water supplies they provide, including longer and more frequent droughts, increased tree mortality from insects and disease, and catastrophic wildfires.

Wildfire impacts are an imminent threat, and we support management strategies to reduce fuels for multiple benefits, including the protection of our rivers and water supply. We also recommend the USFS undertake a parallel effort to substantially scale up protection and restoration of our nation’s natural water infrastructure – the source watershed streams, wetlands and meadows that capture the annual snow melt and storm events. Restoring, protecting, and managing this critical natural water infrastructure will

improve wildlife habitat and water security for thousands of communities. To help address these issues, we recommend the following actions:

- **Provide a New National Directive to Protect Water Security:** Secretary Vilsack should direct the Chief of the Forest Service to issue a service-wide Directive for all nine Regions to increase the scale and pace of improving watershed health for water security. Using tools already familiar to the USFS – including using nature-based solutions like restoring degraded streams, wetlands and meadows; improving grazing management; and reducing sedimentation caused by roads and trails among other methods needed based on identified issues – the USFS can improve water security.

Regions can begin this work by identifying their most important HUC 12 source watersheds for drinking water supplies. The USFS Forests to Faucets Assessment (F2F) is a great start and includes a geographic, map-based analysis of the greatest risks to each Region’s surface drinking water supplies. Once priority HUC 12s are identified for each Region, USFS should refine the 2010 Watershed Condition Framework (WCF) analysis to assess the condition of natural water infrastructure in each HUC 12 to determine what is needed to protect those in good health and restore degraded areas.

These actions are similar to what the USFS is prescribed to do under the WCF and in updating National Forest Plans under the 2012 Planning Rule. However, the pace to protect and restore our natural water infrastructure has not matched the scale and rate of climate change impacts. A more intentional directive to focus on water security is needed, along with funding to carry it out. Funding is essential for these strategies to be scaled up effectively, including contracting out project implementation and monitoring, and USFS staff support to plan, oversee, and track successful projects.

- **Obtain and Prioritize Funding to Protect Water Security:** Secretary Vilsack should champion a significant increase in funding for the USFS budget to accelerate the actions to improve our water security on USFS lands. The Regional Foresters, through the WCF assessment work already done, could help provide budget estimates to accelerate from addressing only 2% of their HUC 12s over the past five years to having a goal of addressing 20% every five years. With the Administration’s focus on addressing climate change and the increase of drought and wildfires in just 2020 alone, there is great opportunity to increase USFS funding to build climate resilience by investing in forest health improvements and water security through fuel reduction measures and natural water infrastructure protection and restoration.

United States Department of Agriculture: Natural Resource Conservation Service (NRCS)

Recommendations

NRCS is one of the primary agencies responsible for implementing the Farm Bill’s Title II programs, which provide significant conservation funding for rural America. Communities and the rivers, wetlands and floodplains flowing through them have relied on these programs for decades to improve our natural resources and more recently, improve resilience from the frequent flooding, drought, and wildfire driven by climate change. We urge Secretary Vilsack to direct the NRCS to prioritize the following actions:

- Encourage Climate Resilient Solutions within the Regional Conservation Partnership (RCP): RCP provides five-year matching funds to community partnerships with broad, non-federal contributions to implement water conservation, restore habitat and build drought resiliency at a landscape level. We recommend NRCS fully implement RCP's Conservation Grant Provision by directing 15 grants annually to partnerships that advance conservation innovation and drive impact around climate solutions for working lands. NRCS should promote conservation innovation by prioritizing RCP applications that combine existing practices with innovative ones, particularly those that would build climate resilience, such as floodplain restoration. They should also prioritize applications leveraging scale and conservation outcomes, particularly those providing climate solutions. Finally, NRCS should remove the limit on Technical Assistance (TA) funding to partners, and instead tailor TA funding to support successful adoption of climate resilience strategies on working lands within a RCP.
- Implement the Discretionary Waiver of the Watershed and Flood Prevention Operations Act (PL 566): PL 566 helps communities in small watersheds address drought resiliency and flood-risk reduction. We recommend NRCS implement the NRCS' discretionary waiver of Watershed Plans, as appropriate, for PL-566 projects within a RCP that provide measurable ecological benefits and have already undergone demonstrated planning and environmental impact analysis. The Watershed Plan requirement can be a barrier for smaller communities that lack the resources to prepare one. NRCS should also direct planning dollars only to projects that combine drought or flood-risk reduction with ecological benefit to make working lands more climate resilient, such as projects that restore floodplains and adjacent wetlands.

United States Department of Interior Recommendations

Multiple agencies within the Department of the Interior (DOI) help manage and preserve over 500 million acres of public and tribal lands, rivers, and water resources. Agencies within the DOI helping to manage these lands include the Bureau of Land Management (BLM), U.S. Fish and Wildlife Service (USFWS), the Bureau of Indian Affairs (BIA), and the National Park Service (NPS). The rivers, lakes and wetlands flowing through these public and tribal lands provide clean water, fish and wildlife habitat, natural resources, and a host of ecosystem service benefits. To combat impacts to water resources from changing climate, we recommend the following actions:

- Prioritize watershed health in Land, Conservation, and Habitat Management and Planning Processes: To mitigate climate change impacts to communities and public and tribal lands, Secretary Haaland should direct the DOI to incorporate nature-based solutions that will protect and restore the watersheds, rivers and ecosystems managed by its agencies and the benefits they provide for people and wildlife. Many agencies are already implementing nature-based solutions, but additional prioritization and funding to implement these solutions at a greater scale has become more urgent given the pace of climate change.

We recommend the BLM should further address climate change impacts to critical source watersheds by accelerating the pace of stream, wetland, and meadow restoration as a part of the BLM's Resource Management Planning process. Likewise, the USFWS should seek opportunities to incorporate more nature-based solutions into their Comprehensive Conservation Plans and

Habitat Management Plans. Similar initiatives should be prioritized in planning efforts by the BIA and NPS. There may be opportunities for the BIA Branch of Water Resources to [provide tribes with assistance in identifying nature-based solutions](#) to improve water security, benefit wildlife habitat and enhance tribal drought response planning.

- Obtain and Prioritize Funding to Protect and Restore Critical Watersheds: Secretary Haaland should champion a significant increase in funding for the BLM, NPS, BIA, and USFWS to accelerate the actions improving watershed health and habitat resiliency.

Environmental Protection Agency Recommendations

Water is a key component of the Environmental Protection Agency's (EPA) mission, and is managed by its internal Office of Water (OW). The EPA is a leader in encouraging and supporting nature-based solutions for water quality, however there is an urgent need to increase the pace, scale and funding to improve water supplies for people and the environment. The OW should coordinate with other agencies to identify and prioritize protecting and restoring streams and floodplains, wetlands, and wet meadows in source watersheds to help urban and rural communities. To improve water quality and river health in urban and rural communities, we recommend the following:

- Increase Capacity and Funding for 319 Program Grants: 319 Grants provide funding for watershed projects that reduce or treat nonpoint source pollution that improves water quality. After the wildfires of 2020, Colorado will rely upon these grants more than ever. Unfortunately, the application process is complex and requires significant capacity to apply for and manage a grant. We suggest that the application process be streamlined to address the capacity challenges that many applicants face. Once capacity issues are addressed, states will need additional funding to implement the restoration projects that communities are applying for.
- Restore funding to EPA's Healthy Watershed Program: The Healthy Watershed Program is a non-regulatory program created to provide assistance to identify, assess, and protect healthy source watersheds, but was defunded in 2020. By reinstating this program and its funding, communities can implement impactful natural infrastructure projects in source watersheds from coast to coast. Program grants have allowed recipients to protect healthy watersheds and reduce future costs to communities from restoring critical water supplies after wildfire events, among other things.
- Increase Incentives to Use the Green Project Reserve Funds within the Clean Water State Revolving Fund (CWSRF): The American Recovery and Reinvestment Act established the Green Project Reserve Fund requiring all CWSRF to use a portion (10%) of their grants for projects utilizing green infrastructure, water/energy efficiency, or other innovations. This is an important fund, however the scale of applicants and the funding available for projects needs to increase. We recommend establishing additional incentives and providing training and education capacity to increase state and local communities' use of natural infrastructure solutions under this Fund.

Economic Benefits of Utilizing Nature-Based Solutions

The recommendations we suggest are not only good for the environment but will help revitalize communities and our economies in the wake of the economic downturn. Healthy rivers and watershed restoration are smart investments and can contribute significantly to economic growth and job creation. A [University of Oregon](#) study found that, on average, every \$1 million invested in watershed restoration creates 16 new or sustained jobs on average. These activities lead to \$2.2 million to \$2.5 million in total economic activity. Moreover, eighty percent of restoration project funds remain in the county where the projects are located, creating local jobs. Healthy rivers also spur tourism and recreation, which many communities rely on for their livelihoods. In Colorado, [Business for Water Stewardship](#) found that Colorado's rivers are a major economic driver for the state, supporting over 131,000 recreation and tourism jobs, contributing \$18.8 billion in economic output for the state, providing \$6.3 billion to household income and \$2.7 billion in tax revenue.

To put our economy back on track while addressing some of our nation's most pressing challenges, additional funding is needed for watershed resilience. We recommend the Biden Administration:

- Prioritize Watershed Resilience and Natural Infrastructure in a Stimulus Bill: Any economic stimulus or jobs bill crafted to address the COVID-19 economic crisis must include major investments in nature-based solutions and watershed restoration. These investments will create jobs while ensuring climate resiliency.
- Develop a 21st Century Civilian Conservation Corps (CCC): To restore watersheds and improve recreational access, additional funding and a greater workforce is needed. Establishing a 21st CCC could train and hire people to restore watersheds and public lands, while revitalizing rivers, their surrounding lands and recreational opportunities. This new CCC should be inclusive, employing communities of color and women and must establish important partnerships with all levels of government, tribes and nongovernmental organizations. Such a program would get people back to work and make our communities and watersheds more resilient to looming impacts from climate change.
- Establish a Watershed Restoration Fund: In addition to increasing key agency budgets and staffing we recommended, an additional new Watershed Restoration Fund should be created. This fund could restore forests and watersheds, improve water security, protect and restore wildlife habitat, upgrade agricultural practices and prepare communities for future climate-related challenges. We support efforts like the Outdoor Restoration Fund included in Senator Michael Bennet's [Outdoor Restoration Force Act](#).

We believe these recommendations will be helpful in setting priorities to ensure the health of critical watersheds and benefits they provide, including water security, water quality and habitat resiliency in Colorado and beyond.