State Forest Action Plans and Drinking Water: Making the Connection

Memo

To: State Forest Action Plan Revision Leads
From: Whitney Forman-Cook, NASF Communications Director
Subject: Making the Connection: Forest Action Plans and Drinking Water
Date: March 26, 2020

Dear Forest Action Plan Revision Leads:

You have a terrific opportunity with the 2020 State Forest Action Plan 10-year revision process to define (and strengthen!) the connection between forests and drinking water. In each of your states, there are source water protection programs, water utilities, and other water resource managers interested in working with you to do just that.

The Source Water Collaborative put together the following resources for you as revision leads. They include state and national drinking water contacts, data and communications resources, and examples of how your state forestry agency colleagues have incorporated source water considerations into their State Forest Action Plans (SFAPs).

What is Source Water Protection? Source water protection is the protection of all present and potential drinking water sources including surface water, groundwater, wellheads, aquifers, and watersheds pertaining to drinking water sources.

Mutual Benefits for Forests and Drinking Water: Forest conservation, management practices, and wildfire mitigation improve ecosystem health and reduce water quality and quantity impacts, public health risks, and drinking water treatment costs. The USDA Forest Service estimates 180 million people in over 68,000 communities in the United States rely on forested lands to capture and filter their drinking water.

Ways to include source water protection in State Forest Action Plans (SFAPs):

1. **Defining Priority Landscapes**: In developing spatial priorities for forest land protection, stewardship or Forest Legacy areas please incorporate source water protection areas (SWPAs) into your GIS analysis. State source water coordinators can provide maps of these SWPAs for surface and groundwater. National data sources are also listed below. This is also a way for states to prioritize Landscape Scale Restoration Projects.

2. **In a Watershed Forestry section**: Include activities which focus on forest protection and stewardship specifically to maintain healthy watersheds or restore degraded ones, and forested lands in the SWPAs which are most vulnerable. Strategies can include riparian corridors, headwaters protections, water quality Best Management Practices (BMPs), targeted landowner outreach, and laws or regulations which require BMPs that support watersheds. The Northeast Midwest (NEMW) Guide for State Forest Action Plans (August 2018) includes a section on Watershed Forestry (page 23). A handful of example watershed forestry programs are provided below.

3. **By leveraging funding**: In addition to Forest Legacy funds, programs that can help implement SFAPs and protect drinking water sources include new USDA NRCS source water funding or each state's Drinking Water State Revolving Fund (SRF) set-asides, Clean Water SRF and Nonpoint Source (319) programs.

4. **Through partnerships**: Source water protection is all about collaboration to leverage authorities, resources, and expertise for mutually beneficial purposes. Coordination with federal and other state agencies, local governments, communities, landowners, water utilities, and NGOs can help implement SFAPs while protecting drinking water.

Key Drinking Water Stakeholders and Contacts

State Source Water Protection Coordinators: Each state has a coordinator usually located in the drinking water program (within the State Environment Department or sometimes the State Health Department) who oversees the state's voluntary source water protection activities: www.asdwa.org/sourcewatercontacts

U.S. EPA Regional Source Water Protection contacts: EPA has source water protection coordinators that work in each of their ten regions: https://www.epa.gov/sourcewaterprotection/source-water-contacts-epas-regional-offices

American Water Works Association (AWWA): AWWA has 43 sections representing drinking water utilities and stakeholders with information on local source water challenges. Contacts are attached.

National Source Water Protection Partner Contacts:
The National Source Water Collaborative (SWC) is comprised of 29 organizations. Below are key contacts.

- **Association of State Drinking Water Administrators (ASDWA) and Ground Water Protection Counsel (GWPC):** ASDWA and GWPC serve as the co-chairs of the SWC and represent the state drinking water and groundwater programs for all 50 states and territories. **Contact:** Deirdre White of ASDWA at dwhite@asdwa.org or Sylvia Malm of GWPC at sylvia.malm2015@gmail.com.
- **U.S. EPA Source Water Protection Program:** The EPA Headquarters source water protection program is responsible for implementing the provisions of the Safe Drinking Water Act at the national level as they relate to the protection of current and future sources of drinking water. **Contact:** Karen Wirth at wirth.karen@epa.gov.
- **American Water Works Association (AWWA):** AWWA's membership includes over 4,300 utilities that supply roughly 80 percent of the nation's drinking water and treat almost half of the nation's wastewater. **Contact:** Adam Carpenter at acarpenter@awwa.org.
- **USDA/NRCS:** 2018 Farm Bill conservation programs. **Contact:** Dee Carlson at dee.carlson@usda.gov.
- **USDA/NRCS:** Joint Chiefs Landscape Partnership Initiative. **Contact:** Matthew Vandersande at matthew.vandersande@usda.gov.

Data Resources

Forests to Faucets 2.0 (F2F2): F2F2 assesses all 88,000 HUC12 watersheds in the U.S. to identify those important to downstream surface drinking water supplies and evaluate a watershed's natural ability to produce clean water. F2F2 includes future risks to watersheds such as development, wildfire or climate-induced changes to water quantity.

Drinking Water Mapping Application to Protect Source Waters (DWMAPS): DWMAPs is an online mapping tool that helps users update source water assessments and protection plans. Watershed protection groups and source water collaboratives can use DWMAPS to locate drinking water providers, potential sources of contamination, polluted waterways and information on protection projects.

Communications Resources

The Importance of Groundwater: While many forestry and drinking water efforts focus on surface water watersheds, it is also important to consider groundwater sources of drinking water as described in the ASDWA–GWPC Groundwater-Based Source Water Protection Paper.

Southeastern Partnership for Forests and Water works with SE states to strengthen partnerships and identify priority watersheds and projects for funding. With the Southern Group of State Foresters they have produced Videos on forests and source water protection.

Examples of Drinking Water in State Forest Action Plans

In 2010 versions of SFAPs or subsequent updates several states incorporate drinking water supply information, strategies and objectives, and have outlined specific coordination efforts. Many overlaid source water areas with forested watersheds to prioritize forests that will provide the most benefits for protecting drinking water sources.

Colorado: In the state's 2010 Forest Resource Assessment Map 15 shows the watersheds most important for drinking water supply and most at-risk from post-fire erosion. Composite maps of all issues related to national Theme 3 "Enhance the public benefits from trees and forests" (page 72) and of all three national themes (page 73) shows how drinking water supply can be incorporated into statewide forest priorities by watershed.

Georgia: The number one issue in the SFAP is Water Quality and Quantity. Maps show drinking water supplies (Fig. 33) and reservoir watersheds (Fig. 44). High Priority Waters from the Wildlife Action Plan include headwater areas (Fig. 51). Priority Forest Areas include core forest areas overlapping major public water supplies and high priority waters (Fig. 41). The state has a Water Quality Forestry Program with forestry BMPs and monitoring dating back to 1981 (pages 46-48).

Hawaii: The state's number one issue is water quality and quantity. The 2016 SFAP update includes detailed maps of priority watershed areas for each island (pages 56-64). The Hawaii Association of Watershed Partnerships is supported by the state to implement protection in those areas. The state has a goal to protect 30% of these watersheds by 2030. The actions on these upland forests will ultimately protect groundwater sources which supply 99% of the state's water.

New Mexico: "Protect Watersheds from Harm" is a major theme shared among the state's Priority Landscapes. New Mexico's SFAP includes maps showing wildfire risk, water supply, and water quality emphasis for watersheds. Profiles of districts throughout the state include priority watersheds for water quality and quantity. In the 2015 SFAP update a Priority Landscapes map (page 54) is overlaid on a water quality and supply model built using aquifer recharge, aquifer sensitivity, erosion risk, impervious surfaces, priority quality watersheds, public drinking water supplies, and Clean Water Act 305b impaired waters layers. Using the maps, the state launched the Watershed Restoration Initiative.

Maryland: The state's number three issue is Ensure Clean and Abundant Water (pages 25-27). The 2015 SFAP update includes a map of Priority areas for protecting water quality and supply, with emphasis on drinking water supply areas (Fig. 6). Goals include using watershed forestry to apply BMPs, identify priority watersheds and work with communities to improve source water protection and protect 70% of streams with forested riparian buffers.

Massachusetts: The Massachusetts Department of Conservation and Recreation Watershed Forestry Program has a forestry BMP manual to help protect drinking water. The 2010 SFAP includes discussion of Watershed Forest Management and Source Water Protection (pg. 77) such as Quabbin Reservoir lands, which are FSC-certified public forest lands for source water. Other maps and data layers show ability of forests to produce clean water (pg. 72); public water supply watersheds (pg. 75); groundwater and wellhead protection (pg. 78); and impervious surface (pg. 81).

Minnesota: The 2015 SFAP update provides two specific success stories on forests and water (pages 25-27): Water Quality BMPs and Sustainable Forest Practices: The Minnesota Model, and Protecting Forests for Fish: Forested Watersheds Matter. It is also worth noting that the state's Clean Water Legacy Fund (created in 2008) provides approximately $200 million annually for land conservation which can include forested watershed protection. The 2018 Minnesota Forests and Drinking Water Evaluation is based on Principle 9 of the 2015 FSC Standard for identifying, mapping, management, and monitoring the high conservation value (HCV-4 for critical ecosystem services) of forests related to community Drinking Water Supply Management Areas and groundwater Wellhead Protection Areas.

Missouri: The Missouri 2010 SFAP Issue 4 "Maintaining High Quality Soil and Water Resources" (pages 55-60) includes drinking water in the desired future conditions, a map assessment, and BMPs. Figure 4.2 shows Important Forest Watersheds for Maintaining Drinking Water Supplies. The 2015 SFAP Update provides a summary of Forest Opportunity Areas identified using several data layers, including drinking water supply. Page 12 summarizes the strategies related to Issue 4: BMPs, Protecting and restoring riparian forests, coordination with watershed partnerships.

Forestry and Drinking Water Partnerships: Two states have partnerships focused on forests and drinking water and include drinking water as a priority in their SFAPs.

Arkansas Forests & Drinking Water Collaborative: Partners have worked together to use GIS to prioritize forested watersheds for drinking water protection (Fact Sheet). The Arkansas 2010 SFAP: Strategic Issue 1 on Water Quality and Quantity (page 8) includes drinking water as a priority. Mapping includes state designated Exceptional Resource Waters.

Texas Forests & Drinking Water Partnership: This partnership was formed in 2015 with state and federal agencies, water utilities, and forest owners to enhance drinking water, forest lands, and local economies. In the Texas 2015 SFAP update, Strategic Issue 4 on Water Resources (page 16) includes drinking water and identifies priority landscapes for forests and water using the Forests to Faucets methodology.