

Raritan Headwaters Association Strategic Plan 2022-2024



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Fairview Farm Wildlife Preserve, Bedminster, NJ – Headquarters of Raritan Headwaters Association

Mission

Since 1959, Raritan Headwaters Association has focused on one thing – clean water. We engage citizens and decision-makers in the protection of our watershed and beyond through science, education, land preservation and advocacy.

Vision

Our vision is that everyone within our reach has access to safe, clean water that is swimmable, fishable, and above all, drinkable.



Black River at twilight, Marc Reynolds

Executive Summary

Raritan Headwaters Association (RHA) has six decades of experience and a proven track record of successfully protecting the source of clean water for those in the Upper Raritan region and downstream to the Lower Raritan River, Raritan Bay and ultimately the Atlantic Ocean. Since 1959, RHA has informed and advanced priorities for protecting water quality, preserving and managing land, enhancing outdoor recreation, educating residents and community leaders, and advocating for policies that support sound land use decisions that improve the ecological integrity of critical habitats like our forests and riparian corridors.

The world is continually changing and the stresses on our ecosystems are changing with it. Conservation non-profits across New Jersey are having to reassess their strategies to ensure they are delivering effective programs that are reaching the broader community and making a significant impact on the health of natural resources. Climate change is negatively affecting water quality because of direct and indirect impacts to ecosystems including decreasing biodiversity and forest cover, and pollution from point and non-point sources. A heightened awareness exists around ensuring we are inclusive in the way we provide access to nature and support a wider diversity of communities in safeguarding clean water. The need for sustainable funding, to ensure high quality data on land and water resources, as well as ensuring RHA's capacity to address threats to these resources, is more pressing than ever.

The urgency to protect the environmental health of the watershed, paired with the demand for the services that residents depend on for their quality of life affirms that this is the right time for RHA to establish a clear path for the next three years and beyond. This Strategic Plan includes well-defined and attainable goals and strategies to improve water quality, expand education programs, increase access to nature and clean drinking water, promote natural solutions to support climate resilience for communities, and improve the ecological integrity of habitat in the Raritan headwaters. It is designed to be implemented through annual work plans and budgets for the organization and regular evaluation and updating of metrics.

Introduction

The Raritan River originates in the New Jersey Highlands region and flows east to the Raritan Bay and eventually into the Atlantic Ocean. Water quality is impacted along the way by land use, which changes in dominant type and development patterns from upstream to downstream.

The river system and communities within the entire Raritan Basin watershed are interconnected. The headwaters region of the Raritan River provides clean water for 300,000 residents and an additional 1.5 million people downstream, offers numerous recreational opportunities such as hiking, kayaking and fishing, and contains important forest reserves and productive agricultural lands.

The top challenges and trends facing RHA and the watershed it serves include:

- Increased flooding events are threatening communities and exacerbating the issue of polluted stormwater
- Demand for more nature-based solutions to climate change issues is increasing
- More frequent and severe storms are negatively impacting water quality, stream health, and biodiversity as well as affecting human communities, particularly those located in areas most vulnerable to flooding.
- Loss of habitat has continued, due to urbanization and poorly planned new development, often connected to the need to create affordable housing
- Drinking water contaminants such as VOCs, bacteria, arsenic, radionuclides and lead have resulted in an increased demand for well testing services
- Despite the well-documented benefits of nature-based recreation on physical and mental health, there are still substantial gaps in access to outdoor experiences across the watershed
- Lack of knowledge by communities and their decision-makers about how policies, actions, and behaviors can impact water quality, both negatively or positively
- An increased interest in and need to reach underserved, vulnerable communities and make the headwaters-to-bay connection is more fully recognized now
- There is a heightened need for a regional “sense of place” centered around the Raritan River, which will foster connections between communities and nature
- Organizational capacity issues related to human resources and the need to achieve increased financial sustainability

With RHA’s success comes increasing demands on the organization’s expertise and capacity. RHA is well positioned to capitalize on the strength of its highly professional and dedicated team to adjust activities and programs with a focus on measuring the impact of the organization through updated goals, strategies, and metrics/outputs. This effort will allow RHA to set priorities for the organization that revolve around doing what it does best and identifying where to leverage its resources to achieve the biggest impact.

Raritan Headwaters Association’s Background

RHA was formed by the 2011 merger of the South Branch Watershed Association and the Upper Raritan Watershed Association, both founded in 1959 to engage New Jersey residents in safeguarding water resources and natural ecosystems in the region that constitutes the headwaters of the Raritan River. For more than 60 years, the organization’s programs have safeguarded clean drinking water while engaging New Jersey residents in actions and decisions that protect the state’s environmental health and quality of life. RHA serves as the watchdog for the 470-square mile headwaters of the Raritan River, a region covering 38 municipalities in New Jersey’s Hunterdon, Somerset, and Morris counties (shown in Figure 1).

The drainage basin of the entire Raritan River system covers 1,100 square miles, approximately the size of Rhode Island, making it the largest river basin located entirely within the State of New Jersey. The headwaters region is defined by the South Branch, which is 51 miles long from its source in Budd Lake to its confluence with the North Branch in Branchburg; the 23-mile North Branch, which originates as a spring-fed stream in Morris County; and numerous streams and tributaries, including the Lamington River, Rockaway Creek, Neshanic River, and Peapack, Holland and Drakes Brooks. Altogether, the headwaters region contains 1,403 miles of stream and two of New Jersey’s largest water supply reservoirs: Round Valley and Spruce Run. After leaving the watershed, the main branch of the Raritan River flows 31 miles before emptying into the Raritan Bay, which is part of the larger Hudson-Raritan Estuary that tidally flows into the Atlantic Ocean.

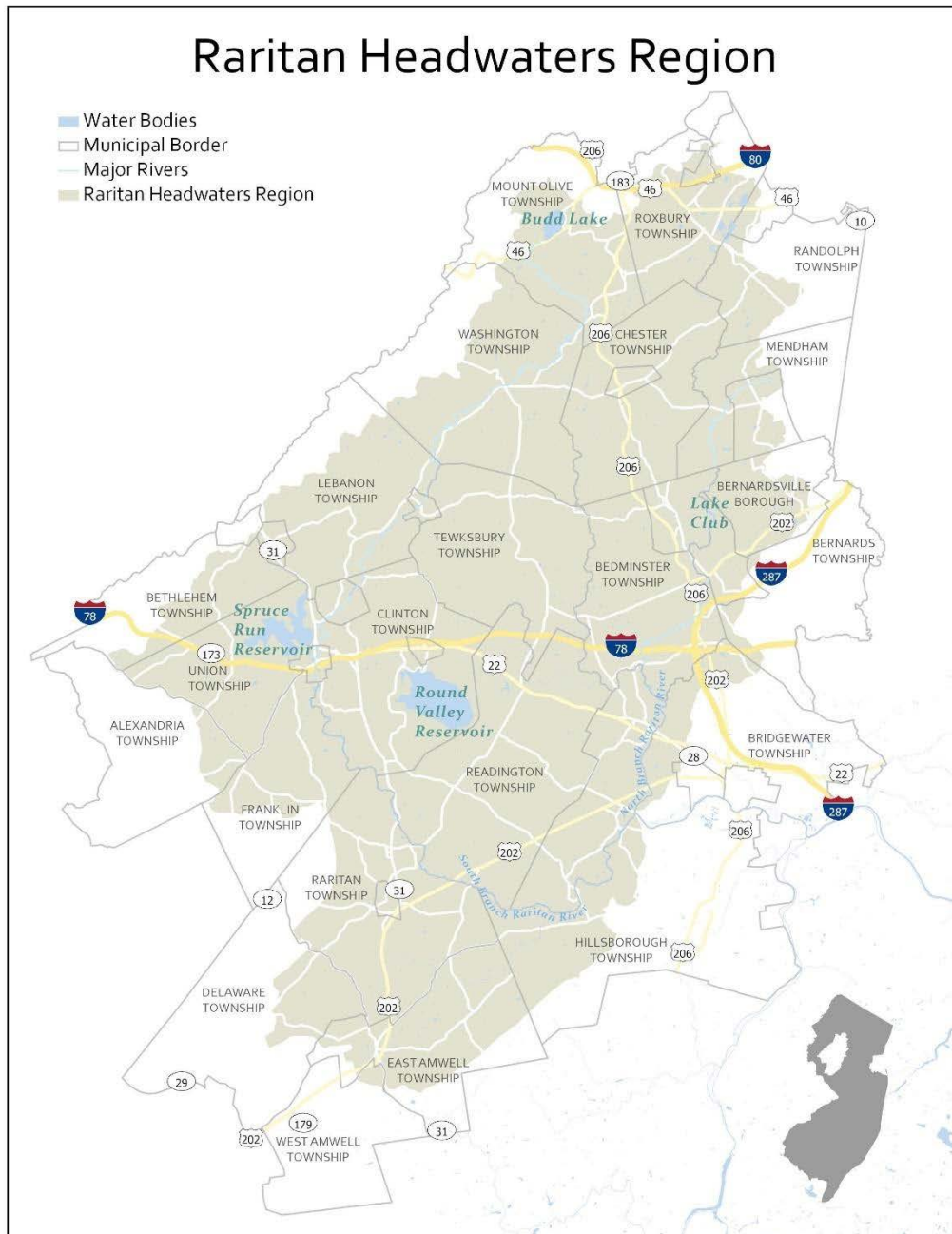


Figure 1. Map of the headwaters region of the Raritan River Watershed

RHA is known for its environmental education and outreach programs, and for its work in water quality monitoring and advocacy, ecological research, habitat restoration, and land preservation and stewardship.

RHA often states that it is “a small organization making a big impact” and the numbers bear this out. In 2019*, RHA

- Collected and analyzed water quality data from 74 stream sites
- Removed 18 tons of trash with 1,700 volunteers at an annual Stream CleanUp event
- Educated 15,611 adults and children through school programs, River Friendly workshops, trainings, and nature camps
- Conducted 6,311 tests on drinking water wells, directly benefiting the health and wellbeing of over 3,200 people
- Planted 3,800 trees
- Monitored 33 conservation easements and managed 10 wildlife preserves
- Enhanced 2,203 acres of land through stewardship projects

But the numbers are just one part of the story. A February 2021 McKinsey & Company report found that every stakeholder interviewed admired and valued RHA’s work. The report also found that RHA is well known in New Jersey’s academic-NGO-environmental science and governmental agency community as one of the leading nonprofit conservation organizations.

The report recommended that RHA develop 3-5 clearly defined, actionable goals to guide its work moving forward. This will give staff a framework for when to say no to initiatives that do not directly lead to impact and will free up time to prioritize projects that fit RHA’s capacity and directly contribute to RHA’s mission.

RHA’s mission protecting clean water is achieved through these program areas:

- **Science.** The science team collects a wide range of biological, chemical, and physical data on surface water and groundwater each year at hundreds of points across the watershed. The stream monitoring program partners RHA staff with a corps of volunteer citizen scientists trained in the NJDEP monitoring protocols to collect data from over 70 sites throughout the watershed. The Well Test program allows RHA to monitor groundwater and drinking water quality by enlisting the help of municipalities and residents in collecting data from their taps. The team also creates tools and reports to support evidence-based decision-making, and partners with stakeholders to implement conservation projects that benefit water quality across the watershed.
- **Education.** RHA offers a wide variety of educational programs that target both schools and communities. Preschool through high school curricula is aligned with New Jersey’s “Next Generation Science Standards.” Programs for school-aged children all fall under the umbrella of RHA’s Nature Days programs and include summer camps and Watershed University, a career preparation program for high school students. Community programs include sojourns and paddles, nature hikes, citizen science opportunities, the River Friendly program, and the Watershed Tools for Local Leaders outreach program.

* Since the pandemic, some 2020-2021 programs were interrupted

- **Advocacy.** RHA is a staunch advocate for laws and regulations that safeguard natural resources. The organization brings its science, fact-based data to bear when collaborating with conservation partners to oppose those that threaten water supplies. RHA values participatory decision-making and empowers citizen advocacy, providing information and tools to help members of the public voice their opinions to elected officials and other decision-makers. Recognizing that advocating for watershed protection on the local level is a key to success, RHA recently launched an advocacy program to engage volunteer delegates (aka Watershed Champions) from each of the region's 38 municipalities. Their role is to serve as a watchdog of local environmental issues, develop partnerships with key decision-makers, assist in raising awareness about RHA's mission, and expand access to conservation resources.
- **Land preservation and stewardship.** RHA is an accredited land trust that partners with other conservation organizations to collaboratively preserve the most critical lands in the watershed. In addition, RHA owns and maintains 10 nature preserves, encompassing 450 acres open to the public for passive recreation, and holds and monitors 33 conservation easements that preserve 880 acres in perpetuity. The organization is a model for good stewardship practices including maintaining native habitats by controlling invasives, planting trees, and using best management practices (BMPs) to steward natural habitats.



RHA's 65-acre Fox Hill Preserve, Tewksbury Township



"Waterways" – a school program led by RHA Educator

Strategic Plan Process

A good strategic planning process acknowledges the complexity of the landscape. While the Raritan headwaters region is less urbanized than the Lower Raritan, it is still a densely populated area with increasingly complex societal trends. The quality of life in the watershed communities is directly improved by having healthy, functioning ecosystems. Conservation goals are more likely to succeed when natural solutions are applied. Thus, human well-being goals are not considered separately, but are embedded within the strategic planning process. Complex social and ecological problems require complex solutions. If the solutions were easy, these problems would have already been fixed.

Strategic planning for non-profits follows a different process than strategic planning for businesses. While businesses need to focus on net profits, non-profit managers arguably have a more challenging task as they need to demonstrate financial sustainability while, in this case, also showing positive outcomes for nature and communities. Thus, strategic planning begins with the mission, then identifies goals and strategies that support that mission. After the important outcomes are identified for communities and nature, a later step in the process identifies financial sustainability and governance goals.

Goals show the positive change in the world that will result from organizational programs. They quantify the benefit to communities and nature that result from the work spearheaded by RHA.

Strategies are the pathways towards achieving those goals. Having clearly defined strategies helps ensure that resources are committed to areas most likely to have the biggest impact.

The Plan

This plan resulting from the strategic planning process has goals, strategies to meet those goals, and conservation and human well-being metrics (Figure 3). While governance and financial goals are important issues for the organization, the focus of this portion of RHA's strategic planning process addresses the organization's conservation goals. It is designed to inform financial and governance goals separately established by the organization by providing a framework for fundraising, budgetary planning, annual program work plans, and regular evaluation of metrics for tracking success. This plan directly connects to RHA's visibility, marketing, and fundraising activities because it provides a basis for the organization's board and staff to align and communicate their work to stakeholders and funders.

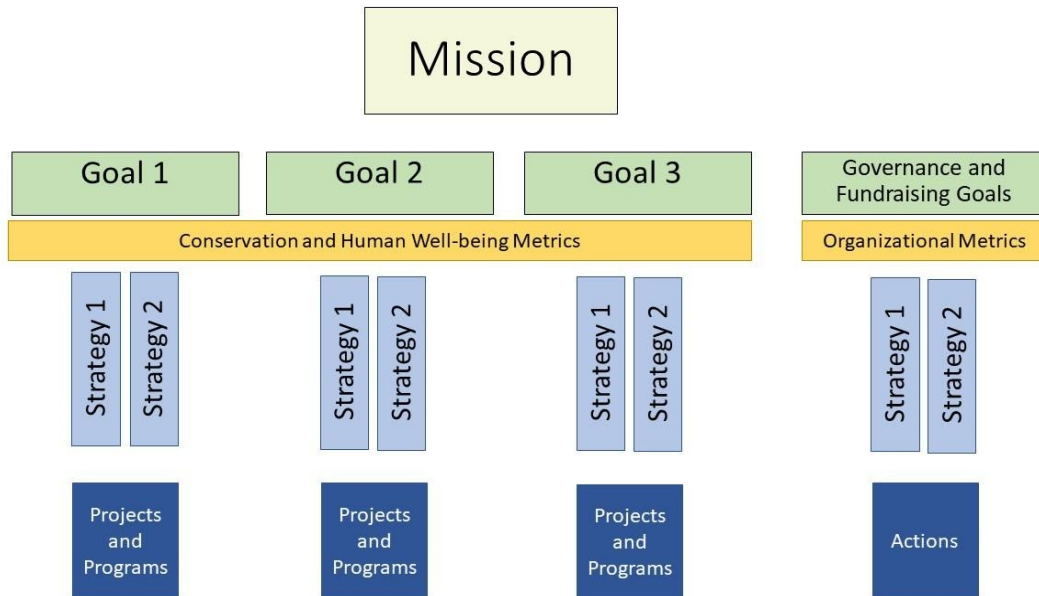


Figure 3. How goals, strategies and projects and programs support the organization's mission

Well-designed goals meet three criteria:

1. Achievable impact: the impact on nature and people is possible. While it's common to have stretch (ambitious) goals, they should be attainable under the right conditions.
2. Fundable: there must be more than one source of funding for the goal to be fundable.
3. Alignment: goals must be in alignment with RHA's core mission and strengths.

Five Goals:

1. Water Quality
2. Education
3. Quality of Life for Communities
4. Natural Solutions for Climate Resilience
5. Ecological Integrity of Habitat



Volunteer Citizen Scientists stream monitoring in the Raritan headwaters

Goal 1, Water Quality

Protect, restore, and improve water quality in the headwaters of the Raritan River to meet the highest water quality standards from the state for aquatic and human health.

Strategy 1. Data collection, analysis, and sharing

- Be the leading science experts in the Raritan headwaters region, strategically collecting and analyzing water quality data from streams and aquifers. By creating tools for a wide range of watershed partners and stakeholders throughout the entire Raritan River Basin, RHA serves as a resource for actions, programs, and policies.

Strategy 2. Implementing water quality programs

- Improve participation in RHA programs for individuals and institutions through targeted outreach and conservation projects.

Strategy 3. Using science to drive sound policies and influence change

- Effectively communicate the science to empower evidence-based planning and decision-making at local, regional, and state-levels.

Description:

Strategy 1 formalizes the organization’s long-term commitment to maintaining stellar surface and ground water programs, with an added focus on presenting data in a way that can be interpreted and useful to a range of partners including individuals, conservation colleagues, academia and policymakers.

RHA's GIS (Geographic Information Systems) program is very effective in presenting scientific data in an interactive, graphical format that offers understandable information through maps, infographics, and other tools that engage and educate the public. Enhancing RHA's website with dashboards and other interactive components will provide an important resource for a range of users.

"Headwaters to the Bay" is an RHA-led project developed with Duke Farms and downstream partners to gather and analyze water quality data, identify data gaps, and create a shared plan and commitment to increase our breadth of impact and visibility from the headwaters region to the Raritan Bay. The project will inform plans to protect clean water throughout the entire Raritan River Basin, including the 1.5 million people in NJ's more urban communities who rely on the drinking water that comes from the headwaters.

Strategy 2 includes River Friendly, Stream Cleanup, Citizen Science Stream Monitoring, and Community Well Test, among others. Programs will continue to target new partners and participants to further RHA's goal to protect, restore and improve water quality.

Using science to inform policy, Strategy 3 emphasizes the importance of evidence-based decision making. RHA has a reputation for being able to marry on-the-ground water science with higher level policy and regulatory discussions. RHA will continue to play a role in advocating on a regional and statewide level. However, the Watershed Tools for Local Leaders and Watershed Champions programs are designed to expand relationships within the region's 38 municipalities to influence change on the local level.



RHA education program, Watershed University, kayak paddle

Goal 2, Education

Expand environmental education to promote human behaviors that enhance rather than exacerbate water quality issues.

Strategy 1. Environmental education for youth

- Scale up environmental education programming across the watershed, leverage new partnerships from the headwaters to the bay, apply technology, increase train-the-trainer programs and career development curricula.

Strategy 2. Water quality education for communities

- Develop and implement educational programs for individuals and families that focus on actions to be taken to improve water quality in the watershed.
- Expand citizen engagement in the volunteer stream monitoring, Community Well Test, and River Friendly programs.

Strategy 3. Municipal outreach and education

- Strengthen municipal outreach and education through implementing the Watershed Tools for Local Leaders and Watershed Champions programs.

Description:

RHA has a 60+ year history of providing quality environmental education for children and adults. The emphasis has been to offer education on water quality and watersheds, ecology, and around connecting people with nature. This strategic plan provides a pathway for scaling up the impact from education programs, including building more connections in the Lower Raritan region.

The organization is preparing to expand school and camp programs into communities throughout the region that are not currently being served. In addition, curriculum and partnerships with schools in the lower Raritan Basin will be developed to increase access to experiential environmental education.

With the renewed emphasis on workforce development, there may be increased opportunities to provide career development curricula in the environmental sciences and related fields. Four years ago, RHA launched Watershed University (WU), a week-long summer program for high school students exploring an academic and/or career path in the environmental sector. Scaling up WU will entail targeting new school districts to expand reach. In addition, RHA will continue to partner with Rutgers and other learning institutions to engage interns to support watershed science programs, offering multi-disciplinary teamwork experiences in the field and laboratory as well as opportunities to focus on specific research projects. RHA will continue to serve as a lead agency for the NJ Watershed Ambassador Program, a unique partnership that marries community service, water quality education, and career development.

For water quality education for communities, as programs scale, the emphasis is on behaviors – focusing on skills that can be taught to result in more behaviors and policies that benefit water quality. The River Friendly program will be emphasized, as it offers residents, schools, businesses and other community institutions the technical information and guidance to become better stewards of land and water by raising awareness and embracing positive environmental actions.

Regarding municipal outreach and education, the emphasis is also on behavior change – what skills can be taught at the local level to implement changes in practices that benefit water quality and habitat? The Watershed Tools for Local Leaders seminars provide resources and guidance for decision makers. Watershed Champions translate education into action by serving as leaders in their community who act as a conduit between RHA and local environmental issues, build partnerships, and advocate for the protection of healthy water resources.



The Raritan River watershed benefits residents directly through providing clean drinking water, but also through more intangible benefits like time in nature and scenic views.

Goal 3, Quality of Life for Communities

From the headwaters to the bay, connect people with nature to improve quality of life through increased access to clean water and nature-based recreational opportunities.

Strategy 1. Improve access to clean water

- Provide water quality information that informs health-based decision-making by residents and communities.
- Expand surface and ground water/drinking water testing programs with a focus on vulnerable neighborhoods and communities where water quality is most likely to be at risk.

Strategy 2. Increased access to nature-based recreation

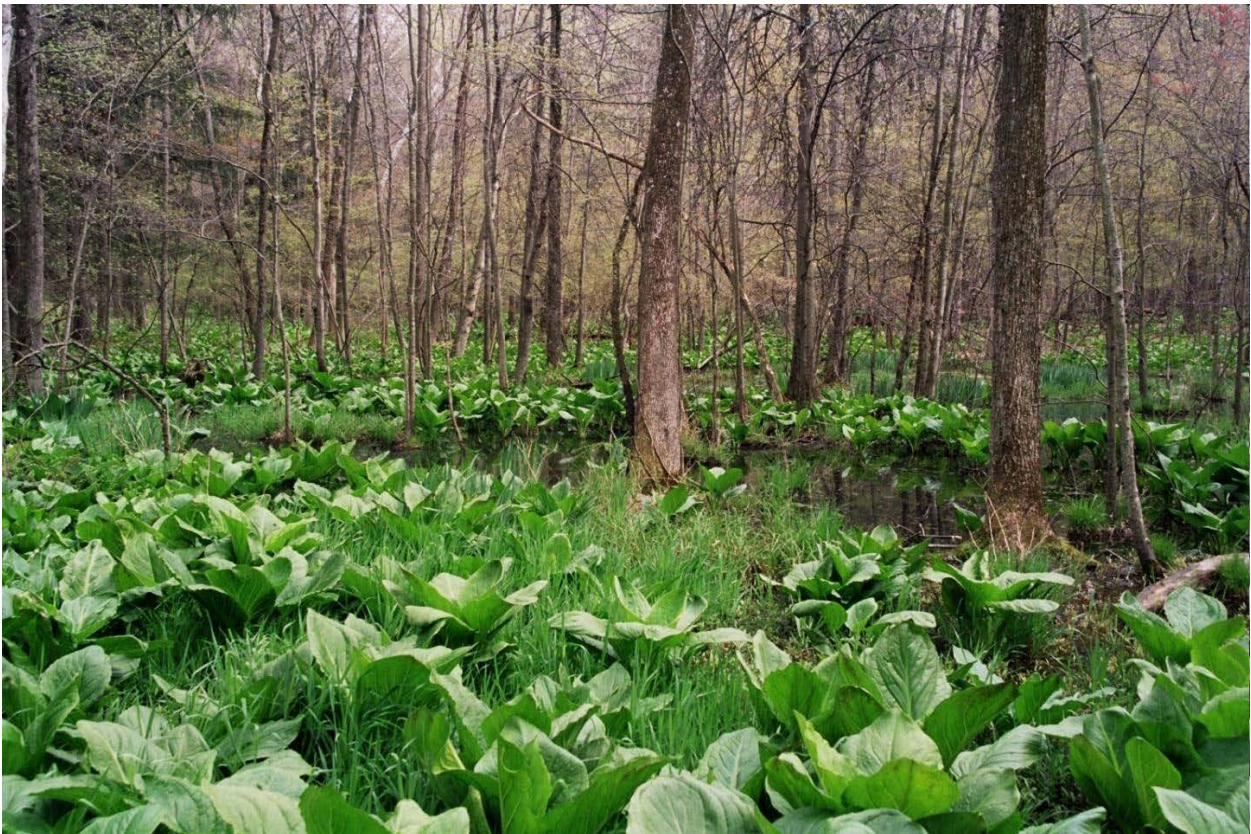
- Increase access to nature-based recreation through improving access to rivers, trails and preserve amenities, and promoting of river-based opportunities and protecting water quality for activities such as swimming, fishing, and kayaking.
- Increase diversity of participants in nature-based activities through more inclusive programming and by specifically targeting communities with traditionally underrepresented groups.

Description:

Strategy 1 addresses improving water quality to benefit human health through the Individual and Community Well Test program. RHA will continue to raise awareness and provide affordable and accessible testing and information about treatment throughout the region. However, there is a strategic shift to focus on vulnerable neighborhoods where drinking water supplies are most likely to be at risk. RHA will target outreach to people that may not be aware of the threat of lead in their drinking water due to language or other barriers, including the unclear assignment of responsibility between landlords and tenants.

Strategy 2 addresses increasing access to outdoor, nature-based recreation and calls for a detailed management plan for each of our 10 preserves that includes priorities and budgets for projects that will improve amenities where appropriate for public access. Making trail improvements on RHA preserves that connect with neighboring systems will be accomplished in partnership with others. Expanding RHA's online Water Trail maps is a strategy to connect people to kayaking, canoeing, and fishing opportunities.

Further, analysis will be needed to identify gaps in access to nature-based programming in communities with traditionally underrepresented groups. Strategies to engage and accommodate these groups will need to be tailored to each and will be an ongoing focus of the Education team.



Native vegetation that includes forest cover, is better for wildlife and better for absorbing stormwater.

Goal 4, Natural Solutions for Climate Resilience

Promoting natural solutions to support climate resilience for communities within the Raritan Headwaters region.

Strategy 1. Climate resilience plans for municipalities

- Utilizing a participatory process with municipalities, contribute to climate resilience planning that includes natural solutions that manage stormwater, target sources of non-point sources of pollution, increase forest cover, riparian buffers and wetlands, and promote widespread implementation of BMPs for every landowner.

Strategy 2. Collaborate with municipalities to implement solutions to climate change impacts

- Prioritizing actions that benefit both communities and water quality in the face of climate change, including support stronger stormwater ordinances and the implementation of natural solutions such as green infrastructure and reforestation to address increased stormwater pollution and flooding.

Description:

Strategy 1: [Recent amendments to the Municipal Land Use Law \(MLUL\)](#) require the creation of a climate change hazard vulnerability assessment and resilience strategies to manage climate-related risks at the local level. This serves as an opportunity for RHA to help our local communities integrate nature-based solutions and habitat protection into resilience strategies.

Strategy 2: RHA will provide municipalities with guidance to implement projects that mitigate climate change. RHA will support green infrastructure projects, identify resources to develop Watershed Restoration and Protection Plans, and support achievement of Sustainable Jersey Water Gold certification. RHA's Watershed Conservation Plan and water quality report cards will help direct these efforts in addition to participation in Watershed Tools for Local Leaders seminars, the Watershed Champions program, and River Friendly programs that promote BMPs among residents, schools, and businesses.

For increased forest cover to truly benefit both communities and nature, reforestation projects will target areas where there are higher levels of stormwater runoff and/or in riparian corridors where planting vegetative buffers could help with infiltration of floodwaters.

The Watershed Tools for Local Leaders program will include seminars, roundtable, and practical tools for addressing climate change impacts, including increasing damage from extreme weather events and minimizing polluted runoff from entering our streams and groundwater.

RHA's Watershed Champions will educate and train community leaders working in concert with RHA staff to advocate for local stormwater management and other watershed protection policies.



Watershed Tools for Local Leaders workshop



Ravine Lake, Far Hills, Dallas Hetherington

Goal 5, Ecological Integrity of Habitat

Preserve and steward land, protect riparian corridors and stream connectivity, and restore the ecological integrity of key ecosystems that link together land and water in the Raritan headwaters.

Strategy 1. Prioritization of protection and restoration

- Work with conservation partners to preserve critical watershed lands, expand greenways and restore habitat connectivity.
- Steward critical habitats to protect and restore key ecosystem functions with government, academic, business, student, scout, community volunteers and nonprofit partners.

Strategy 2. Biodiversity

- Identify threats to aquatic and terrestrial biodiversity (native organisms and habitats) specifically in the headwaters region through research, compilation and synthesis of data from our own research as well as partner organizations.
- Enhance biodiversity through targeted ecological restoration, and education and outreach around the importance of healthy populations of native species in maintaining ecosystem functions and as indicators of watershed health.

Description:

The connection between healthy forests and clean water has been demonstrated many times in the scientific literature. The integrity of ecosystems is a goal largely because many species of native organisms

and their populations are at risk in the Raritan headwaters and beyond. Importantly, much of what can be done to help native species, including preservation and stewardship of land and protection of riparian corridors, also has a positive impact on water quality and stream health.

Because there are multiple stressors impacting the watershed's ecosystem integrity, including urban and agricultural land use, deer, invasive species, pests and diseases, stormwater pollution and climate change, ecosystems need to be managed to ensure they are providing quality habitat for native species and ecosystem services that will support clean water.

Through engagement of a range of volunteers and partners, RHA will demonstrate and implement BMPs in land management. In addition, RHA will utilize nest box projects (e.g., American kestrels, bluebirds, and owls), the organization's online resources, Watershed Tools for Local Leaders, River Friendly and other training opportunities to encourage good stewardship of public and private lands.

In the spring of 2022, RHA will launch a 4-year project to plant 10,000 native trees and shrubs to create or restore forested riparian buffers along the North Branch Raritan River where buffers are lacking or in poor condition. In addition, RHA will oversee four proposed dam removal projects. Expected outcomes of the riparian restoration and dam removals include a healthy forested stream corridor, improved water quality, enhanced fish and wildlife habitat, and protection of threatened or endangered species.

Further, RHA will directly work to reduce the loss of biodiversity in the Raritan headwaters region through two strategies, one focused on science and research and another focused on ecological restoration and education. Annual work plans will be developed to identify priorities, specific projects, activities, timelines, and partners.

RHA is an accredited land trust and has significant expertise in working with conservation partners to identify and preserve watershed lands that have a direct benefit on water quality. The organization is scheduled for accreditation renewal with the Land Trust Accreditation Commission in the last quarter of 2022 through 2023. Accreditation demonstrates a continued commitment to excellence, trust and permanence as well as assuring that RHA is staying current with best practices.



Days of Caring: Corporate partners volunteer to support stewardship projects