Programs in the Raritan Basin

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NJDEP 319(h) 2018 Public Information Sessions

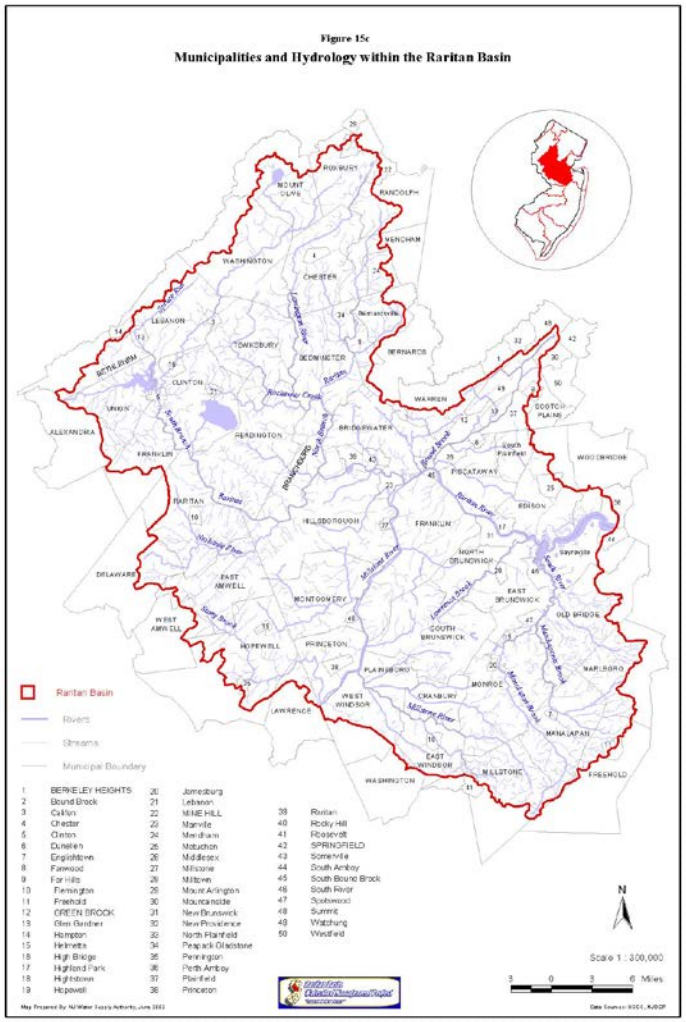
History

Raritan Headwaters

Stony Brook Millstone Watershed Association

North Jersey Resource Conservation & Development
Dedicated to Community Needs, Through Conservation.

NEW JERSEY
EST. 1981
WATER SUPPLY AUTHORITY



* Early 2000s: SBMWA initiated programs
* 2003: SBWA & NJWSA expanded geographic range of programs
* 2009: NJWSA revised programs to include baseline standards

Partnerships to improve water quality

- Water Quality Management
- Water Conservation Techniques
- Wildlife and Habitat Enhancement
- Education & Outreach

Program Benefits

- Reduce nonpoint source pollution & improve water quality
- Reduce landscape maintenance (mowing, chemical use, irrigation) and costs
- Create healthier vegetation and soils
- Increase natural habitat
- Create aesthetically pleasing and environmentally beneficial facility
- Educate employees, visitors and community
- Showcase facility's commitment to environmental stewardship and sustainability
- Promote positive relationship between facility and community

River-Friendly by the numbers

- Golf Courses: 7 participants/1,823 acres
- Businesses: 15 participants/5,345 acres acres/10,000+ employees
- Schools: 13 participants/463 acres/~8,000 students
- Farms: 70 participants/~4,000 acres

- Spooky Brook GC installed 15 bird boxes
- Green Knoll GC installed 11 bird boxes
- Sanofi aventis research facility reduced irrigation by 33%
- NJWSA Admin facility established 12 acres of native grasses
- Green Knoll GC established 31 acres of no-mow areas

Program Basics

- Focus on documenting institutional knowledge and practices
- Identify opportunities for stormwater management improvements, including chemical usage
- Informed decision-making with contractors (including landscape professionals)
- Enhance visual appeal of naturalized areas while maintaining aesthetics
- Stewardship model for employees, visitors, and community
- Integration with institutional environmental goals and other certification programs
- RF Coordinators provide hands-on, direct support to participants to achieve goals

River-Friendly Business & Golf Course Framework

21 Baseline Standards:

- Soil & Landscape Vegetation Care
- Integrated Pest Management
- Snow Removal & Deicing Practices
- Stormwater Drainage Management
- Water Conservation
- Employee Education & Outreach Programs
- Stream/Waterbody Assessment

+

3 Site-Specific Actions

River-Friendly Business & Golf Course Certification Process

- Identify interest
- Receive invitation to enroll from Coordinator
  - Meet with Coordinator and go through standards
  - Review existing management plans
  - Implement three site-specific actions
- Gather information for certification narrative
  - Approval by Technical Advisory Committee
- Certification and recognition
- Recertification – additional stewardship

River-Friendly Business & Golf Course Site-Specific Actions

- Install a rain garden or a pollinator garden.
- Implement a reduced-mow area.
- Naturalize a detention basin.
- Replace an existing impervious surface (asphalt or concrete) with pervious pavers/asphalt/concrete.
- Create or enhance a stream buffer.
- Conduct a stream clean-up
- Reduce soil erosion by stabilizing exposed soil
- Develop an invasive species removal plan.
- Install a weather station and participate in Co-Co-Ras, providing data to the state climatologist.
- Follow-up from baseline standards and issues that are important to the course staff



Program Basics

- Focus on supporting teachers while providing place-based learning opportunities
- Identify opportunities for stormwater management projects
- Incorporate Next Generation Science Standards into RF actions
- Stewardship model for students, parents, teachers, and community
- Integration with other certification programs
- RF Coordinators provide hands-on, direct support to participants to achieve goals

River-Friendly School Framework

Four <u>Required</u> Standards: One lesson on each of the **River-Friendly concepts:**

Standard 1: Water quality lesson

Standard 2: Water conservation lesson

Standard 3: Wildlife lesson

Standard 4: Education & outreach to parents, PTA, community, etc.

Advanced Stewardship Levels:

Stream: 10 points **River: 20 points** **Watershed: 30 points**

Achieve points for projects, additional lessons, outreach, etc.

Point values range from 1 to 5 points per lesson or project

Work with your River Friendly program coordinator to decide on projects for your school!
(Some may be assigned by our Technical Advisory Committee)

River-Friendly School Certification Process

- Identify interest
- Enroll online: njriverfriendly.org/school
- Review existing programs and lesson plans
- Discuss ideas with Coordinator and stakeholders
- Develop a certification plan
- Implement actions
- Approval by Technical Advisory Committee
- Certification and recognition
- Additional stewardship

River-Friendly School Advanced Stewardship

- Establish a pesticide-free zone
- Conduct a stream/campus cleanup
- Install a rain barrel or cistern
- Conduct a school water audit
- Install bird or bat boxes
- Create a River-Friendly Club
- Have teachers take a Project WET Workshop
- Hold a Project WET Splash! Water Festival or other water-related event at the school
- Start a composting program
- Install a rain garden

Make a Splash with Project WET
Water Education for Teachers
A Journey into Water Education

Program Basics

- Focus on providing technical assistance to farmers to support implementation of conservation practices
- Identify opportunities for implementation of conservation practices to improve water quality and prevent soil erosion
- Connect farmers with cost-share funding through USDA-NRCS, NJWSA, NJRCD and others
- RF Coordinators work with farmers to meet certification criteria in conjunction with farm goals
- Work closely with USDA-NRCS

River-Friendly Farm Framework

- Raritan Basin: NJWSA primary contact for most watersheds
- Musconetcong Watershed: NJRCD primary contact
- 6 Primary criteria
  - Soil erosion and soil health
  - Nutrient and pest management
  - Riparian buffers
  - Livestock control and manure management
  - Runoff management
  - Irrigation water management

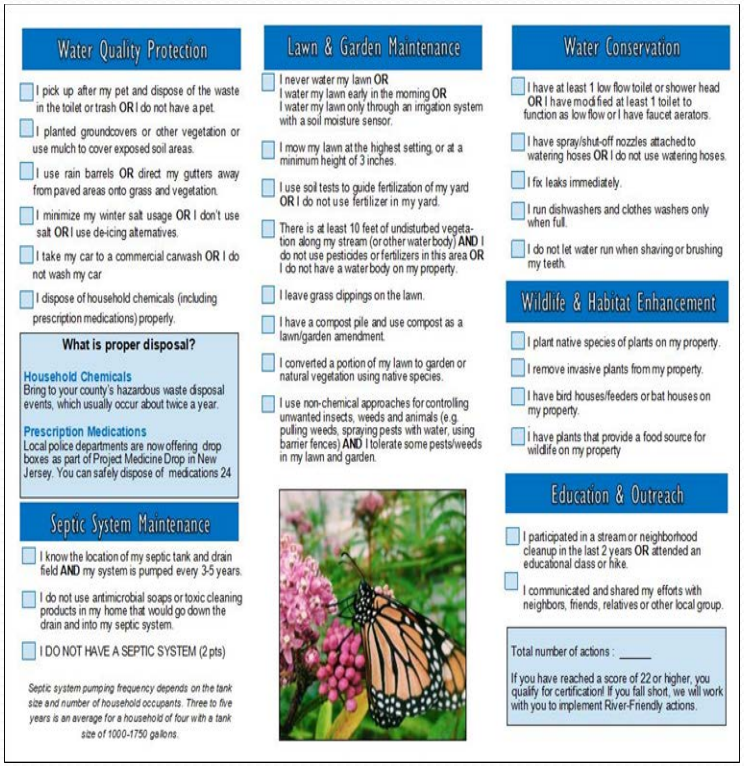
River-Friendly Farm Certification Process

- Identify interest
- Enroll through RF Coordinator
- RF Coordinator meets with farmer to review existing conditions on the farm and assess progress toward meeting criteria
- Farmer implements actions to meet certification criteria
- Review and approval by Technical Advisory Committee
- Certification and recognition
- Re-certification

Program Basics

- Connection with the community & neighborhood education
- Questionnaire – https://docs.google.com/forms/d/e/1FAIpQLSeZ4cROki8BgMe01DEl1kGaVCZVRq49hntMQXIChf_0zYlfQQ/viewform
- Workshop series focusing on residential issues – rain barrels, rain gardens, native plants
- Recognition as a leader in water quality protection, water conservation and wildlife habitat enhancement

River-Friendly Resident Program Framework & Certification Process



Water Quality Protection

- ☐ I pick up after my pet and dispose of the waste in the toilet or trash **OR** I do not have a pet.
- ☐ I planted groundcovers or other vegetation or use mulch to cover exposed soil areas.
- ☐ I use rain barrels **OR** direct my gutters away from paved areas onto grass and vegetation.
- ☐ I minimize my winter salt usage **OR** I don't use salt **OR** I use de-icing alternatives.
- ☐ I take my car to a commercial carwash **OR** I do not wash my car
- ☐ I dispose of household chemicals (including prescription medications) properly.

What is proper disposal?

Household Chemicals
Bring to your county's hazardous waste disposal events, which usually occur about twice a year.

Prescription Medications
Local police departments are now offering drop boxes as part of Project Medicine Drop in New Jersey. You can safely dispose of medications 24

Septic System Maintenance

- ☐ I know the location of my septic tank and drain field **AND** my system is pumped every 3-5 years.
- ☐ I do not use antimicrobial soaps or toxic cleaning products in my home that would go down the drain and into my septic system.
- ☐ I DO NOT HAVE A SEPTIC SYSTEM (2 pts)

Septic system pumping frequency depends on the tank size and number of household occupants. Three to five years is an average for a household of four with a tank size of 1000-1750 gallons.

Lawn & Garden Maintenance

- ☐ I never water my lawn **OR** I water my lawn early in the morning **OR** I water my lawn only through an irrigation system with a soil moisture sensor.
- ☐ I mow my lawn at the highest setting, or at a minimum height of 3 inches.
- ☐ I use soil tests to guide fertilization of my yard **OR** I do not use fertilizer in my yard.
- ☐ There is at least 10 feet of undisturbed vegetation along my stream (or other water body) **AND** I do not use pesticides or fertilizers in this area **OR** I do not have a water body on my property.
- ☐ I leave grass clippings on the lawn.
- ☐ I have a compost pile and use compost as a lawn/garden amendment.
- ☐ I converted a portion of my lawn to garden or natural vegetation using native species.
- ☐ I use non-chemical approaches for controlling unwanted insects, weeds and animals (e.g. pulling weeds, spraying pests with water, using barrier fences) **AND** I tolerate some pests/weeds in my lawn and garden.

Water Conservation

- ☐ I have at least 1 low flow toilet or shower head **OR** I have modified at least 1 toilet to function as low flow or I have faucet aerators.
- ☐ I have spray/shut-off nozzles attached to watering hoses **OR** I do not use watering hoses.
- ☐ I fix leaks immediately.
- ☐ I run dishwashers and clothes washers only when full.
- ☐ I do not let water run when shaving or brushing my teeth.

Wildlife & Habitat Enhancement

- ☐ I plant native species of plants on my property.
- ☐ I remove invasive plants from my property.
- ☐ I have bird houses/feeders or bat houses on my property.
- ☐ I have plants that provide a food source for wildlife on my property

Education & Outreach

- ☐ I participated in a stream or neighborhood cleanup in the last 2 years **OR** attended an educational class or hike.
- ☐ I communicated and shared my efforts with neighbors, friends, relatives or other local group.

Total number of actions : ____

If you have reached a score of 22 or higher, you qualify for certification! If you fall short, we will work with you to implement River-Friendly actions.

- Fill out survey online or mail in paper version
- Resident must meet 22 of the 27 suggested at-home actions to reach certification
- Actions are categorized into six parts:
  - Water Quality Management
  - Lawn & Garden Care
  - Septic System Maintenance
  - Water Conservation
  - Wildlife Habitat Enhancement
  - Education & Outreach

Technical Advisory Committees

- Business, Golf Course, Schools- focus on Raritan Basin
- Farm – review Raritan Basin and Musconetcong Watershed projects
- Subject matter experts
- Representatives of participating groups- e.g. GC superintendents, farmers
- Provide input to facilities during certification process on technical questions
- Review applications for certification
- Input on standards development
- Third-party objectivity & new set of eyes




Case Studies

SCHOOL PROGRAM

Case Study:
Bridgewater-Raritan High School

Certified at **River** Level in 2015

2800+ students, grades 9-12

Primarily driven by Env. Science teacher & Garden Club Coordinators

Cross-curricular engagement

Grant-funded projects

Concurrently participating in NJ Audubon's Eco-Schools Program

Bridgewater-Raritan High School

River-Friendly Certified **River** Level, 2015

COMPOST BINS

RAIN GARDEN

BUTTERFLY HABITAT

VEGETABLE GARDEN

Eco-Schools Pathways: Consumption & Waste, Water, Schoolyard Habitats, Sustainable Food

BRHS received Eco-Schools Bronze award for Consumption & Waste in 2015.

Bridgewater-Raritan High School

River-Friendly Certified **River** Level, 2015




Outdoor Classroom Collaborators

- Environmental Science Classes
- Life Skills (Special Education)
- Home Improvement Classes
- Photoshop Classes
- Garden Club

BRHS Garden Club Building Outdoor Oasis

By Audrey Levine Blumberg

Bridgewater-Raritan High School Garden Club members Margot Pitney and Aishwarya Sadh thought it would be a great idea to have an outdoor garden at the school – and after a couple years and gathering sponsors and more, that dream is going to become a reality.

The purpose of the project is to create an organic, sustainable and environmentally friendly garden that can continue to grow for years to come.

deer away, and they are going to begin planting vegetables and more in the spring.

In addition, Herman said, the plan is to build rain barrels, with help from Bridgewater Township, and use those to water the garden. The barrels will collect rainwater from the school rooftop, while also reducing stormwater runoff at the school.

"We will plant native plants and vegetables and more," he said.

The garden is being planted outside the 800 building, near

Margot Pitney

BUSINESS PROGRAM

Case Study: Ethicon, Inc.

A Johnson & Johnson Company

Certified in 2013

Working on re-certification under new standards

Peters Brook runs along one edge of the property

Has worked with RHA for employee volunteer days

Employee Engagement

Proposed meadow conversion plan

Rain garden and sign

Employee tips

GOLF COURSE PROGRAM

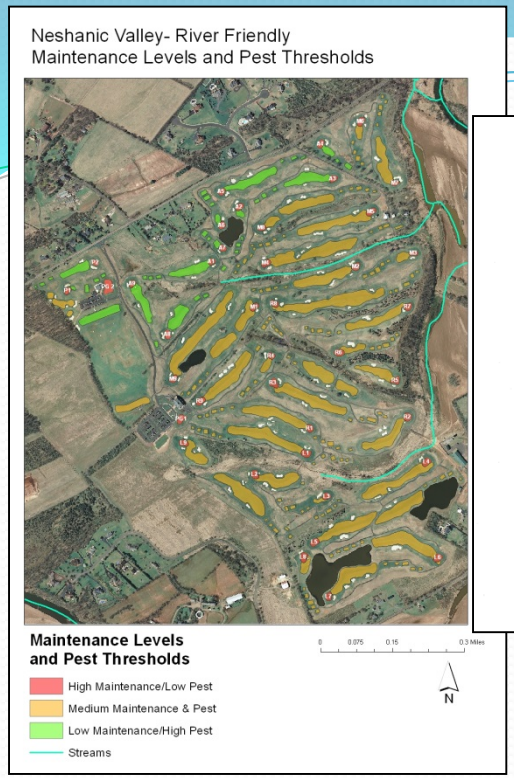
Case Study: Neshanic Valley Golf Course

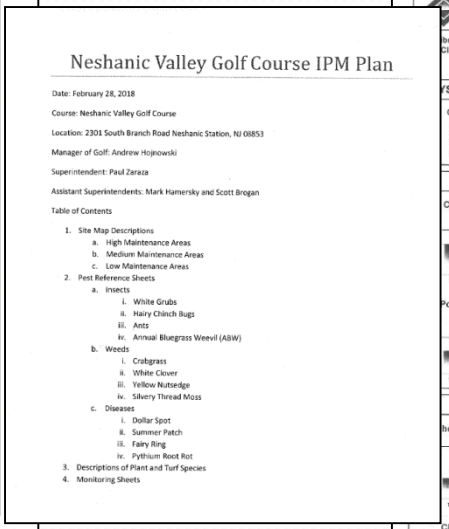
Certified in 2008 under original standards

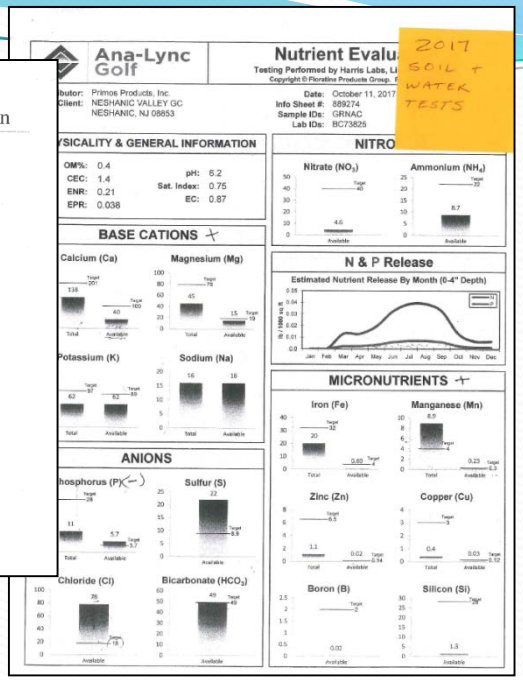
Working on re-certification under new standards

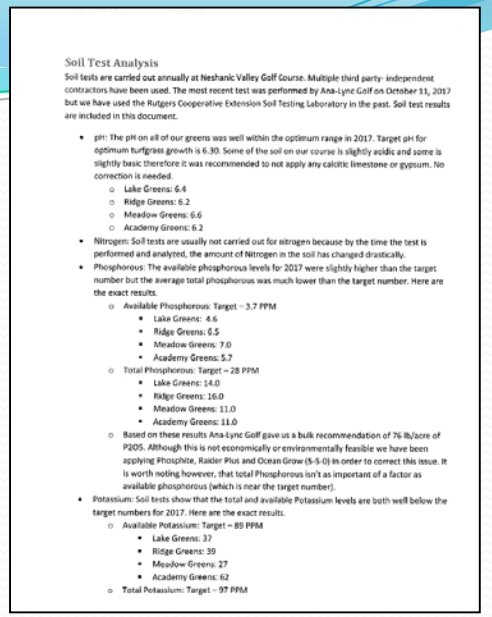
One of 5 Somerset County golf courses participating in program

Wildlife and habitat management









Nutrient and pest management

Water Quality Management
Water Feature Management Information

Water Feature	*Total Acres*	*% of In Play Shoreline*	*Description of Shoreline*	*Management Approach Along Shorelines*
Pond 1	2.9	40%	20%Turf 80% Tall Grass	Heightened tolerance for weeds/diseases Designated no spray zone Remove invasive plant species Manually remove aquatic weeds Visually monitor water quality
Pond 2	4.7	70%	8% Cattails(in pond) 52% Tall Grass 40% Turf	Heightened tolerance for weeds/diseases Designated no spray zone Remove invasive plant species Manually remove aquatic weeds Visually monitor water quality
Pond 3	1.4	60%	5% Cattails (in pond) 30% Tall Grass 65% Turf	Heightened tolerance for weeds/diseases Designated no spray zone Remove invasive plant species Manually remove aquatic weeds Visually monitor water quality
Pond 4	1	60%	60% Turf 40% Tall Grass	Heightened tolerance for weeds/diseases Designated no spray zone Remove invasive plant species Manually remove aquatic weeds Visually monitor water quality Installed aerator

Protecting water quality

Case Study: Wingover Farm

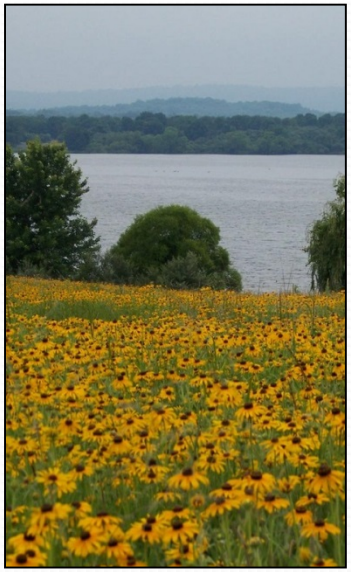
Certified in 2016

Also participating in NJWSA mini-grant program and USDA-NRCS cost-share programs

RFF Criteria	Data for Farm
Erosion	Pasture >90% cover; no gullies
Nutrient Management	2016 soil tests provided
Pest Management	No pesticides used
Irrigation/Water Management	N/A
Water bodies/Riparian Buffer	Herbaceous buffer on spring-fed stream Wooded buffer adjacent to S. Branch Trib

- Fencing to implement rotational grazing
- Heavy use area protection (HUAP) to prevent soil erosion where animals congregate
- Fencing to exclude animals from environmentally sensitive areas
- Maintain vegetated cover on pastures to prevent soil erosion and gullies
- Maintain vegetation along drainageways

River-Friendly Resident



Lessons Learned

- Be flexible, but not too flexible
- Be prepared to start over
- Build upon a solid foundation
- Engage the experts
- Always learn and grow
- Cultivate regularly!
- Anticipate being a victim of your own success
- Adjust as necessary
- Know when to hold 'em, fold 'em, walk away, run

Replicability & Transferability

- Contact us!
- Match your mission
- Know your expertise, limits
- Find and secure the funding
- Build the right TAC
- Find the right entry contact

RIVER FRIENDLY

www.njriverfriendly.org

www.njriverfriendlyfarm.org

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