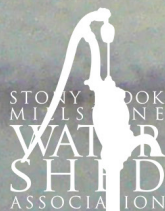


WELLSPRING

A publication of The Watershed Institute. Keeping central New Jersey's water clean, safe, & healthy since 1949.

70th Anniversary Edition



STONY BROOK-MILLSTONE
WATERSHED
Association



The
Watershed
Institute



FROM THE EXECUTIVE DIRECTOR

Seven Decades of Extraordinary People

by Jim Waltman

This year, the Watershed marks the 70th Anniversary of our founding by David Hunter McAlpin, Kathleen Anderson Peyton, and a small group of other visionaries.

During this time, we've provided leadership on virtually every major state water law and policy, worked with municipalities to secure scores of local environmentally protective measures, preserved hundreds of acres of open space, implemented dozens of stream and habitat restoration projects, and taught hundreds of thousands of children, teens, and adults about the environment and their role in its protection.

We've helped restore spawning American shad to the Millstone River (see p.11) and spawned other important non-profit organizations, including D&R Greenway Land Trust and Northeast Organic Farming Association-NJ. We've also inspired untold numbers of students to pursue careers in environmental science, education, and advocacy.

These accomplishments are the result of outstanding leadership from staff and board members, and exceptional generosity from thousands of people who have made our work possible through their financial support and volunteer efforts.

Extraordinary Governance

The organization has benefitted greatly from the leadership of 338 extraordinary men and women who have served on our Board of Trustees. Scores more have served as members of our Advisory Board.

These volunteer leaders have helped set the priorities for the Watershed, served as ambassadors for the organization, made valuable connections within the community, and helped raise the funds necessary to advance our mission in good times and challenging ones.

We've had husbands and wives serve as Trustees, mothers and sons, and fathers and daughters. Sixteen families have contributed two people to our Board. No combination has served the organization with as much vigor as **David H. McAlpin** and the **Rev. David McAlpin, Jr.** Their terms on the Board covered half of the organization's seven decade history.

Twenty-eight men and women have chaired the organization, including both McAlpins. I've been honored to serve with seven of them: Swep Davis, John Ellis, Candace Preston, Lorraine Sciarra, Sophie Glovier, Laura Hanson, and Scott Sillars.



David McAlpin, Jr. (1987)

Inspired Leadership

Ten exceptional men and women served before me as the Watershed's executive director.

James Lawrence was hired as our first director in 1953. He assumed the helm of a fledgling organization with \$3,857 in the bank and an active group of volunteers that included McAlpin, John Faussett, Jr., Paul VanWegan, Helen Woodruff, and Theodore Reed.

Two hundred and forty-two individuals and institutions paid the \$3 membership fee (or more) in Lawrence's first year. Our earliest membership roster, which is memorialized in a well-worn composition book, lists prominent names like Dodds, Flemer, Hamill, Hun, Mathey, Matthews, Scheide, Schluter, Spitzer, Wallace, and Veblen.

Mr. Lawrence started the organization's newsletter, writing a rousing opening message to the gathering Watershed troops: *"The road ahead is an uphill climb, and there is no resting... But we are making progress, and gradually the land will begin to show it. Still, it all takes patience. It takes courage."*

Cover: Skaters enjoy a frozen D&R Canal.
(Watershed archive photo.)

Malcolm Crooks became our second director in 1955 and led us for an active eight years. He was engaged in watershed restoration and water supply issues, and lobbied municipalities to keep developments out of floodplains. Years later, Malcolm shared memories with me of “smoke-filled municipal meetings where the cigar and cigarette smoke was just terrible.”

Richard “Dick” Thorsell served as director from 1963 to 1970. The organization launched the long effort to prevent I-95 from being bulldozed through the Hopewell Valley and the Sourlands, became an active advocate for open space, and helped shepherd the exceptionally generous gift of land from Dr. Muriel Gardiner Buttinger that created the Watershed Reserve.

Before his passing, Dick told me that he’d “closed the deal” while drinking martinis with Muriel in her pool—which was located where the Kate Gorrie Butterfly House now stands.

Seven other men and women held the title of Executive Director before me, each one accomplishing important gains for the environment and the organization:



Jamie Sapoch (1992)

Ian Walker (1970-1975),
Adelle Mitchell (1975-1980),
Jim Gaffney (1980-1985),
Todd Bryan (1985-1989),
Patricia Reed Begel (1989-1991),
Jamie Kyte Sapoch (1991-1997),
and George Hawkins (1997-2004).

Hundreds of scientists, advocates, educators, land stewards, fund-raisers, and administrators have worked for the Watershed over the years. No one has given more of himself to the organization or inspired more people to care for the environment than our education director **Jeff Hoagland**, who joined the organization in 1984 and continues to inspire thousands of children, teens, and adults every year.

Indispensable Volunteers

Our staff may have grown over the years—now topping 30 year-round employees, with another 20 who join our staff during the busy summer season—yet we are as dependent on volunteers as ever. Over the last year, 1,600 volunteers contributed 12,000 hours of service to the Watershed.



A young Jeff Hoagland teaches a nature class. (1980s)

Thousands of passionate, generous people have volunteered for the Watershed. They’ve helped us monitor water quality in streams, maintain our trails, teach programs, restore habitats, speak out at public meetings, care for the critters in our nature centers, welcome visitors, pick up litter, park cars at events, raise funds, mow the lawn, enter data, stuff envelopes, and do all manner of behind the scenes, unglamorous but essential activities.

No one has been a more dedicated volunteer than **Meg Gorrie**, who has been active at the Watershed for nearly 30 years. Meg literally and figuratively walked in the front door at the Watershed one day in 1990 to help around the office and has been part of the Watershed family ever since. She’s been a long-time volunteer with the Watershed Fest Committee (and multiple-year chair), served on the Board for 12 years (chairing multiple committees and serving as vice-chair), chaired the Advisory Board, and co-chaired the capital campaign for the Watershed Center.



Meg Gorrie (2014)

I am extremely proud to be part of an organization that has made such a positive difference over the years. More than anything, though, I’m proud to be part of an organization of such extraordinary people.

A BRIEF HISTORY

70 Years of Conservation, Advocacy, Science & Education



1949

The Stony Brook-Millstone Watersheds Association is founded by Kathleen Peyton, David H. McAlpin Sr., & others.



1996

We announce model Municipal Stream Corridor Protection Ordinance.

1999

Proposed Trenton Sewer Expansion in Hopewell defeated.

1998

We establish the Natural Lands Network to advocate for open space.

Watershed Reserve grows by 200 acres.



2000

The Kate M. Gorrie Memorial Butterfly House opens.

2001

Watershed holds inaugural Butterfly Festival.

2002

The Irving B. Kingsford Room is dedicated.

We launch the River-Friendly Certification Program.



1953

We help plant 146,000 trees throughout the watershed & publish our first newsletter.

1956

We move into our first HQ - an Old Schoolhouse in Hopewell Township.



1984

Dr. Buttinger completes her gift of 535 acres, including building that becomes the Buttinger Nature Center.

1987

Watershed provides leadership for the NJ Freshwater Wetlands Protection Act.

1990

Watershed receives New Jersey Organic Agriculture Award from NOFA-NJ.

1989

Watershed helps found D&R Greenway Land Trust.

1985

Watershed helps found NOFA-NJ. Charlie Townsend donates 50 acres.

2008

NJDEP designates 10-miles of the Stony Brook as a "Category One" waterway.



2007

Watershed organizes first region-wide stream cleanups.

Hildick-Smith Dock is dedicated at Wargo Pond.





1960

We produce regional highway study with Rutgers University and initiate regional open space committee.



1964

Dr. Muriel Gardiner Buttinger donates 174 acres to the Watershed.



1965

Halt sewage discharges into the D&R Canal & lead the drive to regional sewer treatment.



1970

We build Wargo Pond.



1982

Dr. Buttinger donates Wargo Farm, which becomes the Watershed Organic Farm.



1978

Awarded Outstanding Conservation Achievement Award from New Jersey Association of Natural Resource Districts.

1971

We move our headquarters to the Farmhouse on the Watershed Reserve.

1974

We produce "Land Is Not a Product", a 28-minute educational film.



2014

We launch new inquiry-based education programs aligned with the Next Generation Science Standards.



2015

The L.E.E.D.-Platinum certified Watershed Center opens to the public.



2017

Weston Mill Dam is removed from the Millstone River.

Watershed Reserve grows to 950 acres.



2011

We purchase 70 acres from Bryce Thompson, expanding Reserve to 930-acres.

We help pass strong state fertilizer law to address nutrient pollution of waterways.



2018

The Stony Brook-Millstone Watershed Association becomes The Watershed Institute.

Watershed assumes coordination role for statewide volunteer water monitoring network.

Spur trail connects Watershed Center to Lawrence-Hopewell Trail.

Assunpink Creek Watershed Study

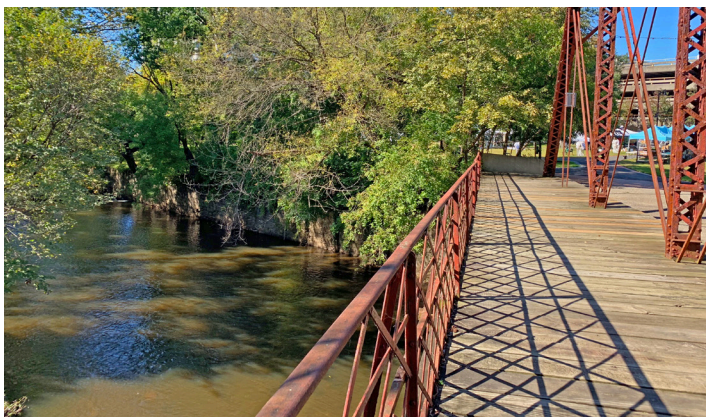
After more than 25 years of water quality monitoring in the Stony Brook-Millstone Watershed, The Watershed Institute has started monitoring streams in the Central Delaware Watershed.

In 2017, we initiated an intensive monitoring project in the lightly developed Jacobs Creek Watershed in Hopewell and Ewing townships and this past summer, we started a companion study in the more urbanized Assunpink Watershed.

The Assunpink begins in the rural agricultural region of Millstone Township and flows through wildlife preserves at its headwaters to where it meets the Delaware River in the highly urbanized center of downtown Trenton. This is an opportunity to study the impacts of a strong gradient of land use change on local water quality and will help us understand how to protect water quality in Trenton and its surrounding communities.

The study began this June when our Watershed Science interns started tracking water quality at 13 locations on Assunpink Creek, as well as seven more sites along its major tributaries: Pond Run and Miry Run in Hamilton, and Shabakunk Creek in Ewing and Lawrence. Chemical data has been collected weekly throughout the year in both dry and wet weather. We are particularly interested in tracking

changes in conductivity during the winter months, as road salt runs off into streams and become a major source of pollution. Measurements are taken both in the field with handheld meters and in the Watershed Center Laboratory to assess nutrient pollution levels using our new Gallery Discrete Analyzer.



A bridge view of Assunpink Creek from Mill Hill Park.

The data from this long-term project will be used to develop baseline knowledge of water quality in the Assunpink Creek watershed so that potential restoration or green infrastructure installation sites in Trenton can be identified. Findings will be shared with the public, as well as municipal and state agencies through the EPA Water Quality Exchange database.



Our Watershed Science interns from left to right: Emily Dallas, Jannat Ali, Krystal Delnoce & Jared Austerlitz, seen in front of a rain garden they helped to renovate at the Woods Road Elementary School in Hillsborough.

Students in Science

Our 2018 Watershed Science interns were an invaluable addition to our Science team this summer. They collected weekly samples from Jacobs Creek and Assunpink Creek, built and maintained green infrastructure projects, monitored water quality changes in the Millstone River after last year's dam removal, helped with our Watershed Science Academies, and spread the word about The Watershed Institute at weekend fairs and farmers markets. Not only did our interns gain hands-on experience in science and stewardship, but we could not have accomplished all that we do without them!

To learn more about these internships and more, visit thewatershed.org/jobs and join our team!

Winter 2018 Calendar

Stay warm with The Watershed Institute! Participate in programs & events with the whole family. Be a part of the magic that makes our work so special. Clean water and a healthy environment depend on you.

Visit us online to register for events, renew your membership, and automatically receive member discounts securely from any device.

thewatershed.org/events

SATURDAY, JANUARY 5

Welcome Winter Walk

9:30-11:30AM, General Audience, Ages 6+; \$5 per person

Join Education Director Jeff Hoagland on a morning walk at the Mountain Lakes Preserve in Princeton to explore the wonders of the natural world in winter. Discover the unique survival strategies of local plants and animals, learn where animals store food and how they survive the season's relentless chill. Dress warmly; boots are recommended. Presented in partnership with the Friends of Princeton Open Space and co-sponsored by the Washington Crossing Audubon Society.



Snow covers Mountain Lakes Preserve in Princeton.

SATURDAY, JANUARY 5

Camp Open House

10:00AM-12:00PM, General Audience; Free

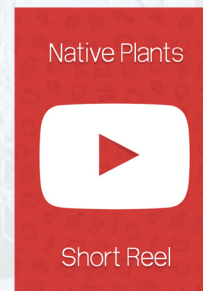
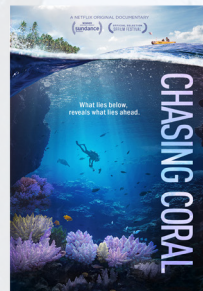
Drop into the Watershed Center to learn more about Watershed Nature Camp 2019! Drop-ins welcome. Camp is open to children who will be age 5-16 by Oct. 1, 2019. Online camp registration opens to the public on January 9, 2019!

JANUARY 6 | FEBRUARY 3 | MARCH 3

First Sunday Environmental Film Series

Sunday, 1:00PM, General Audience, Free; Walk-ins welcome

Visit thewatershed.org/films to learn more about upcoming screenings at the Watershed Center including our exciting short video series in February - all about native plants!

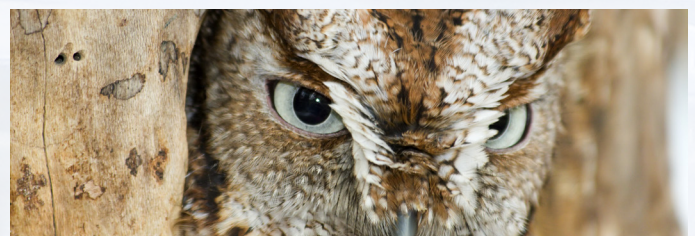


FRIDAYS, JAN 11 | FEB 1 | FEB 8

In Search of Owls

7:00-8:30PM, General Audience, ages 8+; \$10 per person

Begin the evening indoors with a presentation that will introduce you to owls, their calls, and their adaptations. After a Naturalist-led night hike in search of the nocturnal raptors, we will warm up indoors with a hot beverage. Three dates available; please sign up for one date only.



A camouflaged Eastern Screech Owl peers from its roost.

SATURDAY, JANUARY 12

Winter Exploration Geocache Event

12:30 - 2:30PM, General Audience, Free

This “event-cache” is a great introduction to the world of geocaching as well as the ecology of winter. Track animals, meet winter weeds, talk with birds and much more. Perfect for beginners or experienced ‘cachers. Register at www.geocaching.com.

SATURDAY, JANUARY 12

Storytelling: Weaving Winter Tales

3:00-4:30PM, General Audience, ages 7+; \$5 per person

Step away from the screen, cozy up and listen to our storytellers spin yarns from several cultures. Spark your imagination with stories both funny and poignant. Enjoy a hot beverage as you lend an ear to stories from far and near.

THURSDAYS, JAN 17, 24, 31, FEB 7, 14, 21

Literary Language of Nature

7:30-9:00PM, Adults, \$140 per person for the series

This popular course returns for a third year. Through reading some classic and contemporary nature prose and poetry, examine how writers from Genesis to modern times have captured the natural world, addressing their own time even as they transcend it. More than a reading group, this course will open your eyes to the varied terrain of nature in literature. New readings for 2019! Instructed by Dr. Winifred Hughes Spar, Ph.D.

SATURDAY, JANUARY 26

Family Hike – To the Brook and Back

10:00AM-12:00PM, General Audience, ages 8+; Free

Join us as we hike the Stony Brook Trail on the Reserve to enjoy the wonders of winter. Hike past meandering streams, discover an old cattle path, and meet the Hobbit Tree on the way. Dress in warm layers and wear insulated waterproof boots. The hike will be about 3 miles in length. Co-sponsored by the Washington Crossing Audubon Society.



A winter view of The Stony Brook from the trail.

SATURDAY, FEBRUARY 2

Groundhog Day Celebration

10:00AM–12:00PM, General Audience; \$5 per person

Join Watershed Wally the Woodchuck as we celebrate winter and look forward to the return of spring. Learn all about groundhogs, enjoy a hike to a groundhog hole, play the hibernation game, and try your hand a chucking wood with a catapult or trebuchet. Warm yourself by our campfire and enjoy some treats on this festive winter morning.

SATURDAY, FEBRUARY 9

Animal Tracks and Trail Cameras

9:30AM–12:00PM, General Audience, ages 8+; \$5 pp

On this family hike, learn to identify the tracks, trails and signs of our resident mammals. Discover how to “think like an animal”, understanding their movements across the landscape. Visit several hidden trail cameras on the Reserve with Education Director Jeff Hoagland and Naturalist Tyler Christensen to view the latest images, gaining a deeper understanding of life on the Reserve.



Groundhogs walk upright when nobody is watching.

SATURDAY, FEBRUARY 16

Great Backyard Bird Count

10:00AM-12:00PM, General Audience, ages 6+; Free

Anyone (yes, you!) can participate in this annual event by helping us count and identify birds. We will be participating in the Great Backyard Bird Count (GBBC), which is a citizen-science project that helps ornithologists take a snapshot of bird populations. One of our Educators will guide you through the whole process from the comfort of our Discovery Room! Bring binoculars if you have them. Co-sponsored by the Washington Crossing Audubon Society.

SATURDAY, FEBRUARY 23

Winter Fairy Land

10:30AM-1:00PM, Children; \$10 per child (no charge under age 2)

Come celebrate the mystical creatures of the winter Watershed! We will dance, play magical games, listen to winter tales, and create fairy art. Then, venture outside if you wish for some winter wonder exploration too! Dress in fairy attire for indoor activities and/or in winter gear for outdoor activities.

FRIDAY, MARCH 1

Woodcock Watch

6:00-7:00PM, General Audience, ages 6+; Free

Join Jeff Hoagland at dusk as we watch and learn more about the spring courtship dance and fascinating life of this bird. Walk is co-sponsored by Washington Crossing Audubon Society.

SATURDAY, MARCH 2

Maple Sugar Brunch

Two sessions – 9:30-11:30AM or 11:00AM-1:00PM, General Audience; \$22 per adult, \$15 per child ages 3-13, (free for children under 3)

Join us for this sweet and popular annual event. Discover the history, folklore and science of maple sugaring. Take part in our taste test and head out to our trees to learn how they are tapped. The highlight of the morning is a delicious pancake brunch, served with real maple syrup.



Kids learn how to make maple syrup from trees.

SATURDAY, MARCH 9

Family Hike – To the Brook and Back

10:00AM-12:00PM, General Audience, Ages 6+; Free

Join us as we hike a portion of the Watershed Trail to enjoy the wonders of winter. Look for early wildflowers, follow animal tracks on the trail, and listen to the pines on the way. Dress in warm layers and wear insulated waterproof boots. The hike will be just over one mile in length. Co-sponsored by the Washington Crossing Audubon Society.



Jeff Hoagland leads a winter hike on the Reserve.

WED, MAR 13, 20, 27 | APR 10, 17, 24 (LECTURES)
SATURDAYS, MAR 23 | APR 13, 27 (FIELD TRIPS)

Understanding and Identifying the Birds of New Jersey

7:30-9:00PM, Adults; \$245 per person for the series

This intensive and enlightening course returns for a fifth year! Get ready for the song of spring by learning about our feathered neighbors. Examine their evolution, morphology and taxonomy, while discovering their behavior, habits and habitats. Identify bird neighbors on several field trips and learn about bird conservation. Includes three Saturday morning field trips to Forsythe National Wildlife Refuge, the Watershed Reserve, and Rogers Wildlife Refuge. Instructed by Luke K. Butler, Ph.D., Associate Professor, Department of Biology, at The College of New Jersey.

SATURDAY, MARCH 23

World Water Day Festival

10:00AM – 2:00PM, General Audience, ages 3+; \$5 pp

Save the Date for our celebration of world water day. Participate in the Water Olympics, become a River-Friendly Resident, explore life in the Brook with our microscopes, take the water taste challenge and much more.

Programs for Children

TUES, JAN 15 | FEB 12 | MAR 12

Toddler Nature Class

10:00–11:00AM, Children, ages 18-36mo.; \$10 per child

Start 'em young! Toddler Nature Classes provide a fun introduction to animals, plants and nature in general. You and your toddler will experience nature together as we share a song, a story, and a walk outside. Dress for the weather because we always go outside! Children must be accompanied by an adult.

THURSDAYS, JAN - MAR

Preschool Nature Class

10:00-11:30AM, Children, ages 3-5; \$10 per child

Get wild with us weekly, as we learn about a variety of nature topics! Each class includes outdoor exploration, stories and a craft. Dress for the weather because we always go outside. Children must be accompanied by an adult.

JAN. 10 – Cozy Homes

JAN. 17 – Birds and Pinecone Feeders

JAN. 24 – Wild or Not?

JAN. 31 – Hibernation Celebration

FEB. 7 – Winter Winds

FEB. 14 – Messy Science

FEB. 21 – Happy Birthday Dr. Seuss

FEB. 28 – Mammal Animals

MAR. 7 – Squirrels

MAR. 14 – Spring of Life

MAR. 21 – Down and Dirty

MAR. 28 – Nature's Symphony



Local students get a close look at wildlife of vernal pools.

TUESDAYS, JAN - MAR

Homeschool Nature Class

10:00-11:30AM, Children, Ages 5-12; \$10 per child

Delve deep with us into a variety of nature topics! Each class includes a classroom presentation and outdoor exploration. Dress for the weather because we always go outside. Accompanying adults must stay on the property and are encouraged to let their children participate in the class independently.

JAN. 8 – Hibernation

JAN. 22 – Staying Alive

FEB. 5 – Maple Sugar

FEB. 12 – Messy Science

MAR. 5 – Birds

MAR. 19 – Vernal Pools

until it stops
the sound
of water

-Jeff Hoagland

MONITORING OUR WATER

Shad Making a Comeback!

With the removal of the Weston Mill Dam in the summer of 2017, one question loomed: *If we remove it, will they come?*

Built on the Millstone River in the 1840s to power a mill in what is now Manville Borough, the Weston Mill Dam blocked the migration of American shad and other fish for nearly 175 years. Before that, an even older dam at the same general location began impeding fish migrations in the early 1700s.

American shad are the largest member of the herring family and are “anadromous,” meaning that they spend most of their lives in saltwater but return to freshwater rivers in the spring to spawn. Unlike salmon, shad are not natural jumpers so even low-head dams block their migration.

In 2008, The Watershed Institute began advocating for removing dams from the Millstone and Raritan Rivers and we commissioned several reports that explored the feasibility of doing so. Since the fall of 2016, our staff have conducted fish population surveys in the Millstone in collaboration with the U.S. Fish & Wildlife Service and the state’s Division of Fish & Wildlife. This monitoring provided baseline data a year before the removal of the dam; monitoring will continue through at least the spring of 2020.



The American Shad can grow to 24" in length.

Officials from the New Jersey Department of Environmental Protection (DEP) heralded the return of the young fish as the first confirmed shad spawning on the Millstone since 1845. “This is great news and a wonderful environmental success story,” said DEP Commissioner Catherine McCabe. “These juvenile shad were found in the first unimpeded migratory season after the removal of the Weston Mill Dam, indicating this species has an inherent tendency to recolonize once obstacles are removed from its migratory path.”

Our sights are now set on the Blackwell’s Mills Dam, the removal of which will open up a path for migrating fish, recreation, and a cleaner free-flowing Millstone River all the way to Lake Carnegie in Princeton and South Brunswick.



Dr. Steve Tuorto holds a young shad.

Sampling is done in the spring to capture adults during their migration into fresh waters and again in the fall to document juveniles before they begin their journey to the ocean.

With our fingers crossed in our electrically insulated gloves, our teams waded into the Millstone this October. All of our efforts were rewarded when we found juvenile American shad about 4.5 miles upstream from the former dam’s location.



A Watershed archive photo of fish sampling.

State of the Millstone

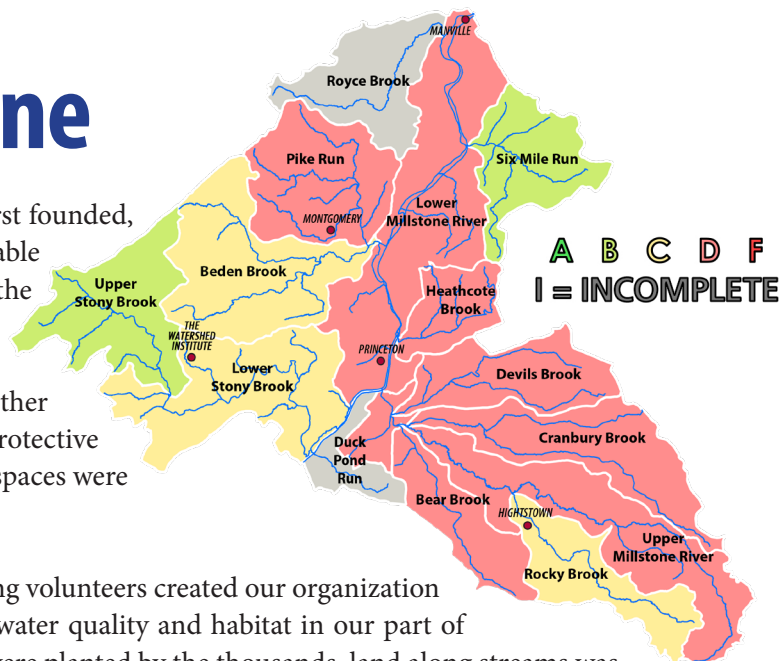
Seventy years ago, when The Watershed Institute was first founded, streams in central New Jersey were in peril. Unsustainable agricultural practices caused fertile soils to erode from the land and smother aquatic habitats. As agricultural land was converted into growing suburban developments, polluted stormwater runoff from sprawling impervious surfaces further threatened water quality. Protective wetlands, forests, and open spaces were destroyed and paved over.



Archive photo - 1960's

Fortunately, forward-thinking volunteers created our organization to help protect and restore water quality and habitat in our part of the state. Trees and shrubs were planted by the thousands, land along streams was preserved, and new regulations were secured to address these problems.

We continue this decades-old legacy to this day. The StreamWatch volunteer monitoring program has tracked water quality in the Millstone Watershed since 1992. Teams of volunteers collect monthly chemical data from a network of about 40 sites across the Millstone watershed, as well as summer bacteria counts and semi-annual macroinvertebrate samples from a dozen sites.



	Subwatershed	Aquatic Life	Bacteria	Dissolved Oxygen	Nitrate	Phosphate	Final Grade
Stony Brook	Lower Stony Brook	C	D	C	B	F	C
	Upper Stony Brook	B	F	A	A	D	B
	Duck Pond Run	I	I	I	I	I	I
Lower Millstone	Beden Brook	B	D	B	B	F	C
	Heathcote Brook	I	F	A	F	F	D
	Lower Millstone River	C	F	B	D	F	D
	Pike Run	B	F	C	C	F	D
	Royce Brook	I	I	I	I	I	I
	Six Mile Run	D	I	B	A	D	B
Upper Millstone	Bear Brook	D	D	D	A	F	D
	Cranbury Brook	D	I	D	A	F	D
	Devils Brook	F	F	D	A	D	D
	Rocky Brook	F	B	B	A	D	C
	Upper Millstone River	I	F	D	B	F	D

Water quality is ever-changing and is responsive to changes in the landscape. Between 1930 and 2012, urban land increased from just 12% to more than 40% of the Millstone Watershed. How are our streams faring in response? We seek to answer this question by reviewing StreamWatch data collected between 2014 and 2018.

An overall grade was determined for each of 14 subwatersheds using eight different parameters. While the individual parameter grades ranged from A through F, the overall grades for water quality health were between B and D, as shown by the map.

Three subwatersheds received the highest grades of B. Among these higher quality subwatersheds, Upper Stony Brook and Beden Brook share headwaters protected by the Sourland Mountain Preserve. The third, Six Mile Run, actually has more forested land in its subwatershed than it did a few decades ago, which is a rare occurrence in central New Jersey. High amounts of dissolved oxygen in the streams here have led to flourishing macroinvertebrate life.



Citizen scientists gather data about our streams.

Lower grades were found primarily amongst the subwatersheds of the Upper Millstone River. The Route 1 corridor that splits the Millstone Watershed generally serves as the dividing line between the rocky streams of the Piedmont in the west and the muddy and sandy bottom streams of the coastal plain to the east. The Upper Millstone River Watershed is located within the coastal plain, and is marked by low dissolved oxygen and pH levels, high bacteria counts, and poor macroinvertebrate communities.



Princeton University freshmen constructing a rain garden on the Watershed Reserve this fall. Projects like this one help reduce flooding and pollution by capturing runoff and filtering contaminants with native plants. (Princeton University photo).

Two subwatersheds with the highest amounts of impervious surface coverage have the least amount of water quality data. We are unable to grade Royce Brook and Duck Pond Run this year due to a lack of volunteer participation in those areas, so they have been given an “I” for incomplete. In order to make a full watershed assessment in the future, we will need the help of a few new citizen scientists.

Would you be excited to bring home this report card? With half of the Millstone subwatersheds below a C average, there are clearly some changes that must be made in central New Jersey to make our waterways healthier. We must reduce the impacts of polluted stormwater runoff through impervious cover reduction, restoration projects, and stronger municipal regulations. At home, River-Friendly practices can go a long way.

Just five of the eight available parameters are shown in the report card at left. The full report is available on our website. Visit thewatershed.org/streamwatch to find scores for individual monitoring sites and our grading methodology.

The StreamWatch program is funded by Janssen Pharmaceuticals, Inc. For more information about StreamWatch and joining our volunteer monitoring program, contact Nik Hansen at nhansen@thewatershed.org.

Did You Know... the Northeast region of the United States has seen the greatest percentage increase in rainfall over the past 50 years? While annual rainfall for the West, Southwest, and Southeast has decreased, a national average increase of 4% has been attributed to extended fall seasonality in this area of the country.



Progress on Polluted Runoff

Advocacy for laws and regulations that protect clean water and the natural environment has been an important part of the Watershed's work for much of our 70-year history. We've been involved in virtually every major policy affecting water over that time period—from managing polluted stormwater runoff and wastewater, to protecting wetlands and streams.



Executive Director Jim Waltman, speaks at the Watershed Stormwater Utilities Conference in September.

Legislation

We've made some progress recently on the topic of managing polluted stormwater runoff—the main source of water pollution and flooding in our state. In June, the state senate approved legislation that would authorize municipalities and counties to create **utilities to manage runoff**. Such utilities currently operate in 40 other states and Washington, DC but are not considered “authorized” in our state.

The bill passed the Assembly Telecommunications and Utility Committee in October and is now poised for action by the Assembly Appropriations Committee and ultimately the full Assembly. We are optimistic that the bill will pass the Assembly and be signed into law by the Gov. Phil Murphy.

Regulation

In December, the New Jersey Department of Environmental Protection (DEP) proposed changes to the state's **Stormwater Rules** to strongly promote the use of rain gardens, vegetated bioswales and other forms of **green infrastructure** in new developments, a transition we believe is a positive and long-overdue step toward protecting waterways from polluted runoff. However, the rule change, which is still in draft form, includes several provisions that we believe would reduce such protections. Our policy team is advocating for changes that would make this rule a more comprehensive win for New Jersey's streams and rivers.

Municipal Action

We continue to urge towns to amend their local **stormwater runoff control ordinances** to make them stronger than DEP's minimum requirements. For example, last year the town of Princeton adopted changes that made its ordinance apply to more developments than were previously covered. The state generally requires action to control runoff be taken only when construction projects add about 11,000-square-feet of asphalt, concrete, and roof tops, while Princeton's new ordinance reduces that threshold to 400-square-feet. The town is considering taking another step forward in 2019 to address runoff from “re-development” projects such as when older buildings are torn down and replaced.

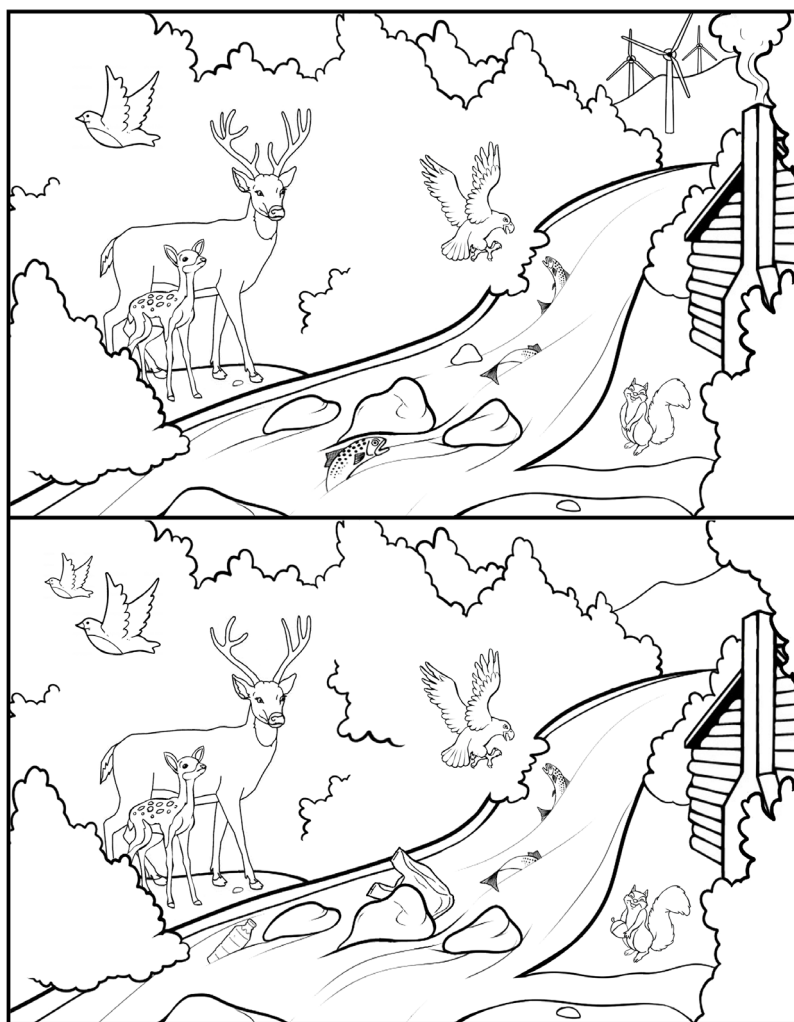
Plastic Pollution

We're also tracking state and local efforts to address plastic pollution. Last year, the NJ Senate Environment and Energy Committee considered and released a bill that would **ban plastic bags, plastic straws, and Styrofoam** and also create a fee for paper bags. This bill arose out of the Governor's veto of previous legislation that created a fee on certain single use plastic bags, but did not ban them. This bill has not received a hearing in an Assembly committee.

Last year, Lambertville adopted a phase-out of single use plastic bags, plastic straws, and Styrofoam; Hopewell Borough adopted a resolution to launch an educational program to discourage the use of these substances and may vote to ban them in 2019.

Spot the Difference

Find ten differences between these two scenes. Color & enjoy!



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Answer Key:

1. Wind Turbines	6. Bird
2. Chimney Smoke	7. Bush Texture
3. Deer Antlers	8. Plastic Bag
4. Stream Rock	9. Water Bottle
5. Jumping Fish	10. Squirrel Acorn



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