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JOHNSON'S POND WATER QUALITY REPORT

Executive Summary

Johnson's Pond has been classified as an impaired waterbody under the Federal Clean Water Act since 2012. Since 2014, Johnson's Pond has been listed as a Category 5 impaired waterbody due to mercury in fish tissues, requiring a water quality restoration study, known as a Total Maximum Daily Load. Previous studies conducted by Rhode Island Department of Environmental Management identified atmospheric deposition from out-of-state sources as the primary contributor of mercury to the state's waters.

Johnson's Pond also has a history of cyanobacteria (blue-green algae) blooms since 2021 with a severe algal bloom occurring in 2022. While algal bloom advisories did not occur in 2023 or 2024, and routine monitoring documented clear water with no threshold exceedances, two advisories were issued in 2025. Given the history of reoccurring cyanobacteria blooms since 2021, Johnson's Pond continues to be a priority waterbody of concern, especially during mid-summer to early fall when warm, nutrient-rich conditions promote bloom formation.

Frequent and recurring cyanobacteria blooms are difficult to manage and are often an indication that excess nutrients are entering the waterbody from the surrounding watershed. Adopting or reinforcing nutrient-reduction measures (e.g., shoreline buffer vegetation, minimizing fertilizer use, managing stormwater inputs) can help reduce algal bloom risks. Development of site-specific management plans can also help determine what strategies are most effective for specific waterbodies. There are also best management practices homeowners can follow to reduce the amount of nutrients entering Johnson's Pond such as eliminating fertilizer use, picking up pet waste, avoiding waterfowl feeding, keeping up with septic system maintenance, and promoting stormwater infiltration.

Non-native/invasive species have also been a reoccurring issue at Johnson's Pond. A study conducted in 2010 identified three prevalent invasive plant species at the Pond while water quality monitoring dating back to 2012 identified impairment of fish and wildlife habitat due to non-native aquatic species. Maple Root Pond and Stump Pond have also been considered impaired due to non-native aquatic species. While there are several methods that could be employed to manage and remove invasive species, the goals and purposes of non-native plant species control need to be clearly defined for each waterbody.

Introduction

GZA (the Consultants) and the Coventry Redevelopment Agency (RDA) have undertaken an extensive review of publicly available water quality data for Johnson's Pond including Stump Pond and Maple Pond to determine past and current ecological conditions. On December 4, 2025, the RDA and GZA met with RIDEM to review the Redevelopment Plan process, discuss Johnson's Pond's ecological health, and outline future obligations for maintenance, safety, enforcement, and environmental improvements aimed at enhancing public access and restoring pond health. During the meeting, RIDEM offered technical guidance and data resources to support a detailed water quality analysis. The following sections present a summary of Johnson's Pond water quality data based on the resources provided by RIDEM, along with other relevant supporting information. It should be noted that resources dated prior to 2012 (except for the 2010 Aquatic Plant Survey of Johnson's Pond) were not reviewed as part of this evaluation.

State of Rhode Island Section 303(d) List of Impaired Waters and Integrated Water Quality Monitoring Reports (2012 through 2024)

Rhode Island boasts extensive water resources that play a crucial role in drinking water supply, recreational swimming, ecological habitats, and the availability of fish and shellfish for consumption. To comply with the Federal Clean Water Act, RIDEM implements the state's Water Quality Standards Program. The purpose of this program is to protect and improve Rhode Island's water quality so that waterbodies remain safe for existing uses, meet fishable and swimmable goals where attainable, support all designated uses, and safeguard public health and the environment.[1] The Federal Clean Water Act Section 303(d) requires states to identify and list those waterbodies that are not expected to meet state water quality standards after the implementation of technology-based controls and, as such, require the development of Total Maximum Daily Load (TMDL). A TMDL represents the total pollutant that a waterbody can adapt to and still meet water quality standards.[2] Any waterbody that does not meet its water quality standards (designated uses and criteria) is placed on the federal 303(d) List of Impaired Waters.

All surface waters in Rhode Island are assigned to one of four freshwater classifications (Class AA, A, B, B1).[3] Each class is determined by the designated uses, which reflect the most sensitive uses the class is intended to protect. Surface waters may be suitable for other beneficial uses but are regulated to protect and enhance the designated uses. Johnson's Pond is a Class B waterbody. Class B waterbodies are designated for fish and wildlife habitat and primary and secondary contact recreational activities. They should be suitable for compatible industrial processes and cooling, hydropower, aquacultural uses, navigation, and irrigation and other agricultural uses. These waters should have good aesthetic value.

Section 305(b) of the Clean Water Act requires states to check whether their waters meet the fishable and swimmable goals based on the applicable classification of water and to report these findings every two years. To determine if a waterbody meets federal goals, the state evaluates whether a waterbody supports its designated uses by comparing available water quality information to the water quality standards established in the Rhode Island Water Quality Regulations (Class AA, A, B, B1). Each waterbody is placed into only one of the five reporting categories for water quality, with Category 1 considered fully supporting all designated uses, and Category 5

[1] RIDEM. Surface Water Quality. Accessed December 2025. Available at: https://dem.ri.gov/environmental-protection-bureau/water-resources/research-monitoring/water-quality-resources/surface-water-quality

[2] RIDEM. Water Quality Restoration Studies. Accessed December 2025. Available at: https://dem.ri.gov/environmental-protection-bureau/water-resources/research-monitoring/restoration-studies-tmdl

[3] Rhode Island Department of State. Water Quality Regulations (250-RICR-150-05-1). Accessed December 2025. Available at: https://rules.sos.ri.gov/regulations/part/250-150-05-1

requiring the development of a TMDL as the waterbody is impaired or threatened for one or more designated uses.

According to the RIDEM Integrated Water Quality Monitoring and Assessment Reports (Integrated Reports) and 303d Lists of Impaired Waters from 2016 to 2024, Johnson's Pond was included in both Category 4C and Category 5. Category 4C includes waterbodies that are impaired for causes that are not pollutants and do not require a TMDL.

For the 2012 and 2014 reporting years, Johnson's Pond was included in Category 4C for impairment of the fish and wildlife habitat designated use. The cause/impairment was due to non-native (invasive) aquatic species. No TMDL was required as the impairment was not a pollutant. Fish consumption was not assessed, and the Pond was fully supporting of primary contact and secondary contact recreation during these reporting years.[4]

The 2016 through 2024 reporting years included Johnson's Pond in Category 5 due to impairments of two designated uses: fish and wildlife habitat; and fish consumption. For fish and wildlife habitat, non-native (invasive) aquatic species were the cause/impairment; however, no TMDL was required for fish and wildlife habitat. For fish consumption, mercury in fish tissue was the cause/impairment and a scheduled timeframe for development of a TMDL is noted for 2035 in the 2022 and 2024 Integrated Reports.[5] According to the 2024 Integrated Report, the most common cause of impairment in lakes and ponds in Rhode Island is mercury in fish tissue. Previous studies by RIDEM have identified atmospheric deposition from out-of-state sources as the primary contributor of mercury to the state's waters.[6]

Maple Root Pond, encompassing approximately 21 acres and designated as a Class B waterbody, is hydrologically connected to Johnson's Pond. Between 2012 and 2024, Maple Root Pond was included in Category 4C for impairment of fish and wildlife habitat. Similar to Johnson's Pond, non-native (invasive) aquatic species were the cause/impairment and no TMDL has been required.

Coventry Reservoir (Stump Pond), a 168± acre Class B waterbody, is hydrologically connected to Johnson's Pond through Quidnick Brook. Between 2012 and 2016, Stump Pond (Coventry Reservoir), was included on the Category 3 waters list due to insufficient or no data to evaluate any designated uses. In 2022 and 2024, Stump Pond was included in Category 4C for impairment of fish and wildlife habitat. Similar to both Johnson's Pond and Maple Root Pond, non-native (invasive) aquatic species were the cause/impairment and no TMDL has been required.

RIDEM Cyanobacteria Advisories (2021 – 2025)

Johnson's Pond is routinely monitored by the RIDEM Office of Water Resources (OWR) and the Rhode Island Department of Health (RIDOH) as part of the state's Freshwater Cyanobacteria Monitoring Program. Advisories in Rhode Island are issued when any of the following are observed: (i) a visible bloom/scum/mat, (ii) total cyanobacteria cell counts > 70,000 cells/mL, or (iii) total microcystins ≥ 4.0 µg/L. Advisories recommend avoiding contact with the water, including swimming and boating, and preventing pets from exposure. Below is a history

[4] All Integrated Water Quality Monitoring and Assessment Reports and Section 303(d) List of Impaired Waters referenced in this report are available at: Integrated Water Quality Monitoring and Assessment Reporting | Rhode Island Department of Environmental Management and https://dem.ri.gov/environmental-protection-bureau/water-resources/research-monitoring/restoration-studies-tmdl-reports

[5] The 2016 Integrated Report identified a 2020 TMDL schedule while the 2018-2020 Integrated Report identified a 2025 TMDL schedule.

[6] RIDEM Office of Water Resources. 2024 Integrated Water Quality Monitoring and Assessment Report. December 2024. Available at: 2024 RIDEM Integrated Report.pdf

of cyanobacteria advisories issued between 2021 and 2025.[7] It should be noted that there were no advisories issued by RIDEM prior to those listed in the table below.

Advisory Posted Date	Advisory Lifted Date
9/24/2025	11/04/2025
7/21/2025	8/22/2025
7/29/2022	10/31/2022
9/20/2021	12/7/2021

According to RIDEM, frequent and recurring cyanobacteria blooms are difficult to manage. They are often (though not always) an indication that excess nutrients are entering the waterbody from the surrounding watershed. There are many mitigation strategies for cyanobacteria, and the development of site-specific management plans can determine what strategy are be most effective for specific waterbodies.

There are best management practices that homeowners can follow to reduce the amount of nutrients entering the waterbody. These practices include reducing or eliminating the use of fertilizer on the lawn, picking up pet waste in your yard and in public spaces, avoiding feeding of waterfowl, keeping up with septic system maintenance, and promoting stormwater infiltration.[8]

2021, 2022 and 2025 RIDEM Sample Results

RIDEM provided the Consultants with a list of cyanobacteria samples collected at Johnson's Pond in 2021, 2022, and 2025, which are provided in the table below. These samples prompted RIDEM to issue cyanobacteria advisories. The table below also includes follow-up samples (biweekly) taken during those advisories to evaluate whether total microcystin levels or total cell counts had fallen below the thresholds required to lift the advisories.

Sample Collection Date	Total Microcystin Concentration (ug/L)	Total Cell Count (cells/mL)	Sample Location
11/3/2025	<2.5	0	Island Drive Bridge
10/22/2025	<2.5	0	Island Drive Bridge
9/23/2025*	≥10	0	Island Drive Bridge
8/20/2025	Non-detect	3900	Island Drive Bridge
8/13/2025	Non-detect	0	Island Drive Bridge
7/30/2025	Non-detect	62,100	64 Indian Trail
7/16/2025*	Non-detect	129,300	Island Drive Bridge
7/16/2025	Non-detect	11,270	40 Acres Dock
10/26/2022	Non-detect	0	Island Drive Bridge
10/13/2022	Non-detect	0	Island Drive Bridge
9/14/2022	120	1,723,700	Island Drive Bridge
8/30/2022	Non-detect	1,400	Island Drive Bridge
7/28/2022*	35	96,790	Island Drive Bridge
7/21/2022	Non-detect	0	78 Wood Cove Dr.
11/30/2021	Non-detect	0	Island Drive Bridge
11/16/2021	Non-detect	0	39 Sharon Dr
11/16/2021	Non-detect	39,100	Island Drive Bridge

[7] Past and current cyanobacteria advisories are available at: Cyanobacteria (Blue-Green Algae) | Rhode Island Department of Environmental Management

[8] Information available at: Educational Materials: Phosphorus | Rhode Island Department of Environmental Management

Sample Collection Date	Total Microcystin Concentration (ug/L)	Total Cell Count (cells/mL)	Sample Location
11/2/2021	Non-detect	0	39 Sharon Dr
11/2/2021	14	10,220	Island Drive Bridge
9/17/2021	Non-detect	230	222 Racoon Run Rd
9/17/2021*	16	41,940	39 Sharon Dr
6/18/2020	Non-detect	0	Zeke's Bridge

*Advisory issued after testing.

RIDEM Cyanobacteria Monitoring Program Reports (2020 – 2024)

Below is monitoring information from the RIDEM cyanobacteria monitoring program specific to Johnson's Pond. Reports prior to 2020 do not discuss Johnson's Pond.

2024

While no advisories were issued in 2024, the Monitoring Report noted the following:

- Pollen and macro algae buildup (6/27/2024)
- Macroalgae and pine needles (7/1/2024)
- Pine needles and pollen debris (7/15/2024)

2023

On June 6, 2023, RIDEM responded to reports of suspicious looking algae at a private residence at Shippy Cove Rd. Algae was determined to not be cyanobacteria.

2022

The confirmed cyanobacteria bloom at Johnson's Pond between July 29, 2022, and October 31, 2022, was due to samples at the Pond exceeding the total microcystin concentration advisory threshold and the cell count advisory threshold on July 28th and September 14th. The report notes that on July 21, 2022, several residents reported a bloom in their backyards and while green clumps were present in the water, analysis showed no cyanobacteria were present. On July 28, 2022, residents of Sharon Drive claimed to have seen a bloom. While no bloom was present at Sharon Drive per RIDEM, a bloom was present on Island Drive. As a result, an advisory was put in place on July 29, 2022. On September 14, 2022, a large bloom was present at Island Drive with the appearance of bubbling scum on the top of the surface, as well as the bright green streaks along the shoreline. As no blooms were present in October, RIDEM took the first sample to lift the advisory on October 13, 2022, with a second sample occurring on October 26, 2022, and the advisory was lifted on October 31, 2022.

2021

The confirmed cyanobacteria bloom at Johnson's Pond between September 20, 2021, and December 7, 2021, was due to samples at the Pond exceeding the total microcystin concentration advisory threshold from a response visit by RIDEM. On September 17, 2021, RIDEM noted that a cyanobacteria bloom was only visible at response sites but not at access points. A sample from Racoon Run did not exceed the total microcystin concentration advisory threshold but the threshold was exceeded in a sample from Sharon Drive. After samples were collected on November 2, 2021, November 16, 2021, and November 30, 2021, the advisory was lifted.

2020

RIDEM conducted cyanobacteria monitoring at Johnson's Pond on June 18, 2020, in response to an animal (dog) becoming sick the prior day. The sample did not exceed the total microcystin concentration advisory threshold, or the cell count advisory threshold. As such, no advisory was issued.

2010 Aquatic Plant Survey of Johnson's Pond

RIDEM also provided the Consultants with a Plant Survey of Johnson's Pond prepared by Northeast Aquatic Research in 2010. This survey listed 52 species of aquatic plants in the Pond during four days of surveying ranging from shoreline edge plants to those growing in deeper water. During that timeframe, plants grew at depths between 12 and 13 feet. Three invasive plants each had an occurrence of almost 40%. These invasive species were primarily found at depths ranging from 4 feet to 7 feet. The Plant Survey evaluated several strategies for managing weeds and invasive species, including lowering water levels (i.e., drawdown) to expose and freeze plant roots. However, the Plant Survey noted negative impacts associated with drawdown could include:

- Erosion of exposed lakebed
- Impacts on shoreline wetlands
- Impacts on fish spawning areas
- Impacts on a wide range of aquatic animals
- Increased re-cycling of nutrients
- Increased loss of oxygen in deep water during the summer

Clear, detailed goals and objectives must be established before any weed control program can be implemented.

RIDEM Resources

RHODE ISLAND DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

FACT SHEET

Office of Water Resources / May 2025

WHAT CAUSES CYANOBACTERIA BLOOMS?

There are multiple environmental factors that contribute to the formation of cyanobacteria blooms. Cyanobacteria naturally make up the phytoplankton community in most fresh waterbodies and are normally present in low numbers. Excess nutrient input, warm weather and sunlight, and stagnant or slow-moving water help cyanobacteria grow rapidly and produce a bloom.

While the environmental conditions listed above often correlate with cyanobacteria blooms, a complex interaction of physical, biological and chemical parameters contribute to the formation of a bloom and the exact conditions that trigger a bloom are not always fully understood. More information about the factors that contribute to cyanobacteria blooms are listed below.

Excess Nutrients

Phosphorus and nitrogen are nutrients that are essential for all living things and are naturally present in fresh waterbodies. Excess nutrient input from the surrounding watershed can lead to rapid, excessive growth of cyanobacteria, resulting in frequent blooms. Sources of excess nutrients in the surrounding watershed include:

- Lawn fertilizer,
- Pet, wildlife (especially waterfowl) and livestock waste,
- Failing septic systems,
- Erosion and sediment,
- Stormwater runoff.

Excess nutrients, particularly phosphorus, are also often stored in the sediment at the bottom of lakes. Low oxygen conditions at depth encourage the release of sediment-bound phosphorus into the water column, which can further fuel cyanobacteria blooms.

Warm Weather and Sunlight

Cyanobacteria blooms occur more frequently in the summer when the water is warm and sunlight is abundant, however blooms may occur year-round. Cyanobacteria use sunlight to photosynthesize and grow, and their growth is optimal at warmer temperatures.

Slow Moving or Stagnant Water

Nutrient levels and temperature can increase quickly in slow-moving or stagnant water, both of which are beneficial to the growth of cyanobacteria.

Strong Competitors

Cyanobacteria have been around for billions of years and often naturally out-compete green algae.

TO REPORT A BLOOM: Email info and photos to dem.owrcyano@dem.ri.gov
For more information visit dem.ri.gov/bluegreen

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How Healthy Is Your Septic System?

Updated 2017

How Does My Septic System Affect Water Quality?

If your home is not on a municipal sewer, when you flush your toilet or pour something down the drain, it goes to a septic system. Eventually, that wastewater exits the septic tank and enters a drainfield, where it passes into the soil. The soil acts as a biological filter and continues the treatment process that began in the tank. The soil is able to remove harmful organisms, organic matter and some nutrients.

However, if your septic tank is not regularly inspected and pumped, it will begin to accumulate solids and overflow, clogging the drainfield. Not only can this cause your system to fail, but it also can spread disease and contaminate ground and surface waters.

Everyday Actions

Having regular maintenance inspections and pump-outs of your septic system will keep it working efficiently and can prevent costly repairs. However, there are also daily precautions that you can take to help your septic system function properly.

Think before you flush. Aside from wastewater, toilet paper is the only other thing that should be flushed. Using the toilet to dispose of items such as sanitary products, paper towels, disposable diapers, cigarette butts, and even tissues will harm your septic tank and cause you to need pump-outs more often.

Don't put food down your sink. Septic systems are not intended to dispose of food waste, coffee grounds, grease, or fat, and, in fact, they will harm the septic tank. Try using a compost pile for non-meat food waste; it will help you avoid paying for unnecessary septic system repairs!

Don't use a kitchen garbage disposal. Having a garbage disposal doesn't make food waste, grease, or fat any easier for your system to handle. If you do use a garbage disposal, it's especially important that you have a larger than normal tank, that it has an effluent screen, and that you pump out more frequently.

Don't rinse toxic materials down your sink or toilet. Pouring disinfectants, large amounts of bleach, drain clearing products, oils, and other chemicals down your sink, bathtub, or toilet will damage your septic system. Even rinsing paintbrushes in the sink or toilet allows enough paint to travel to your tank that the tank's function can be impaired.

Reduce your water usage. Water conservation protects your septic system because it reduces the load of wastewater your system has to handle. It also will save you money on water bills, and with a little practice, it's easy to do:

- Repair leaky faucets and toilets.
- Install low-flow water fixtures.
- Turn off the water while brushing your teeth or shaving.

Balance your water usage throughout the week. When your septic system receives large volumes of water within a short period of time, it can cause solids to move into the drainfield, resulting in a clog. Don't do all your laundry at one time; spread the chore out over the week.

Did you know?
Improperly maintained septic systems are a top contaminant of water resources in Rhode Island.

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A Strategy for Stormwater Education Through Yard Care Workshops

Updated 2018

Help Lawn and Garden Enthusiasts Be Stormwater-Friendly!

Achieving a lush green lawn, beautiful spring flowers, and hearty summer crops are understandable gardening goals.

Unfortunately, the gardening practices used to achieve those goals often contribute to stormwater pollution. Most notably, the use of excessive lawn chemicals and excessive watering.

It is important to convey to our neighbors that they can still have beautiful lawns and gardens, while promoting the health of local water resources at the same time.

Lawn chemicals often wind up washing directly into local waters. Sparing use of fertilizers and pesticides helps reduce stormwater pollution.

What do we want residents to do?

- Practice more stormwaterfriendly lawn and garden care.

What are the messages?

- Fertilize sparingly.
- Sweep up, don't hose.
- Water wisely.
- Divert or collect rooftop runoff.

Inside this issue:

What Help Is Out There?

If you want lawns and gardens to be less of a stormwater concern in your town, then we have a strategy for you!

This newsletter highlights four steps to achieving that goal. To help you along, we can offer you:

- contact information for URI's Cooperative Extension Master Gardener Program,
- a sample flyer and PowerPoint for the Master Gardener presentation,
- fact sheets on stomewater-friendly gardening practices and diverting rooftop runoff,
- sample factsheets on rain barrels and rain gardens, and
- a sample press release for a rain barrel sale.

These resources can be found on the **Rhode Island Stormwater Solutions** website.
Organizing a rain barrel sale: https://web.uri.edu/riss/take-action/in-your-community/organize-a-rain-barrel-sale/resources/
Building a community rain garden: https://web.uri.edu/riss/take-action/in-your-community/build-a-community-rain-garden/resources/

Step 1. Schedule a Master Gardener Presentation

The following **materials** will be available to help with this step:

- a sample flyer for advertising the event
- a PowerPoint presentation, illustrating the main messages
- factsheets for distribution about lawn care practices and diverting rooftop runoff

Steps to take:

- Contact the Master Gardener Program by email *gardener@uri.edu* or by phone March – October, Monday – Thursday, 9 am – 2 pm at 874-4836.
- Advertise the presentation. Consider making it part of an already-scheduled committee meeting.

Volunteers could be recruited to:

- Help publicize and staff the event or provide refreshments.

Step 2. Hold a Rain Barrel Sale

The following **materials** will be available to help with this step:

- a press release on the rain barrel sale
- a rain barrel fact sheet
- rain barrel purchasing information
- factsheet about diverting rooftop runoff

Steps to take:

- Distribute press releases.

Volunteers could be recruited to:

- Help staff the event or provide refreshments.

Step 3. Create a Demonstration Rain Garden

The following **materials** will be available to help with this step:

- a brochure about an exisiting demonstration rain garden project, including costs and design features
- a rain garden fact sheet

Steps to take:

- Check with RI DEM for Earth Day grants.
- Pick a visible location with some degree of public access.
- Collaborate with a local landscape architect or Master Gardener, *who is familiar with rain garden design.*

Volunteers could be recruited to:

- Seek contributions from local businesses for funds to create the garden or specifically from local plant nurseries to donate advice, labor, and/or plants to the creation of the garden.

Step 4. Publicize Yearly Reminders

The following **materials** will be available to help with this step:

- short articles for local papers reminding people about stormwater-friendly gardening tips.

Steps to take:

- Distribute the short article to local papers.

Keep Track of Your Success

Documenting your success at increasing residents' awareness of stormwater-friendly lawn and garden care will be instrumental to having continued support for the program. Here are a few methods you could use:

1. Keep records of the number of press releases and articles that have been printed, informing the public about related events or stormwater-friendly practices.
2. Keep records of the number of people who attend workshops.
3. Keep records of the number of rain barrels sold through an organized Rain Barrel Sale.

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Do *You* Scoop The Poop?

Updated 2017

Pet waste doesn't just decompose. It adds harmful bacteria and nutrients to local waters when it's not disposed of properly.

It's Really A Problem?

It might not seem like a stormwater problem, but animal waste is one of the many seemingly small sources of pollution that can add up to big problems for water quality, and even human health.

Animal waste contains two main types of pollutants that harm local waters: nutrients and pathogens. When this waste ends up in water bodies, it decomposes, releasing nutrients that cause excessive growth of algae and weeds. This makes the water murky, green, smelly, and even unusable for swimming, boating, or fishing. The pathogens, disease-causing bacteria and viruses, can also make local waters unswimmable and unfishable, and have caused severe illness in humans.

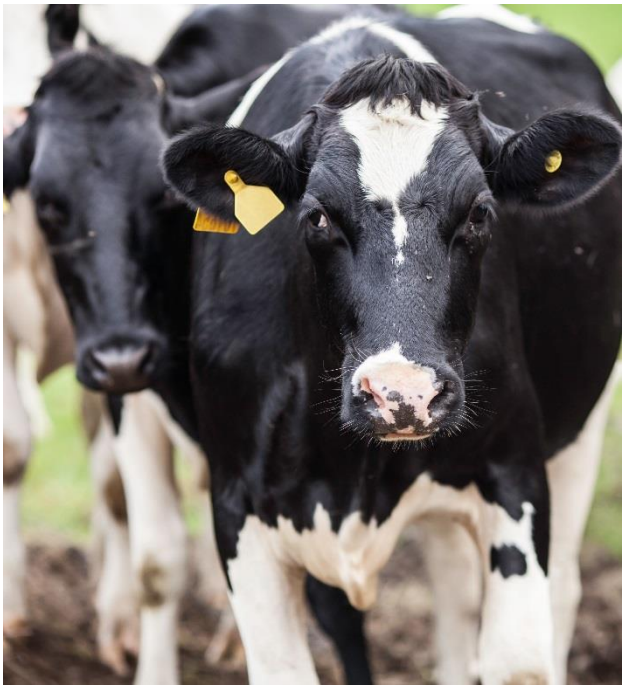
As you can see, animal waste doesn't simply decompose. So, the easiest way to avoid these problems is to clean up after your pet each and every time, and dispose of the waste properly!

Be Prepared

- Picking up after your pet is easy, if you're prepared. Simply carry a plastic bag with you on every walk with your dog, and you'll have the equipment to remove your dog's waste. Then throw it in the nearest trash can, and you're done! There are even compact, refillable bag dispensers (such as Earth Rated®) that you can attach right to your dog's leash.
- Many parks and recreational areas have courtesy bags and disposal boxes, designed specifically for dog waste. Ask your town to install one in the park you like to visit with your pooch.
- Avoid letting your dog do his business within 200 feet of a water body.
- And of course, never throw dog waste into a storm drain!

Pet Waste At Home

- For dog, cats, and other pets that are meat eaters, it's important to **dispose of the waste in the garbage**. Wastes from meat eaters should not be placed in a compost pile because the parasites, bacteria, and viruses are not readily destroyed during the composting process and can be passed on to humans.
- While it's common courtesy to pick up after your dog when you go on walks, it's also a good idea to **pick up after him at home**. Some diseases can be transmitted form pet waste to humans through contact with the soil. Children playing outside and adults who garden are most at risk. Rhode Island has several "pet waste pick-up" services that will come to your home. Check your local directory for listings.
- If you have large animals, **barnyard and manure management is critical** to the protection of water resources. Please visit our website for information specific to livestock.



Don't Feed The Fowl

Unfortunately, an activity many of us enjoyed as children actually has damaging impacts not only for the waterfowl themselves but also for local waters. While ducks, geese, and swans love to eat the bread we offer them, it lacks the nutrition of their natural diet and can cause long-term health problems.

Feeding waterfowl also causes them to concentrate in higher numbers than they would if they had to rely solely on natural food supplies, and that results in large quantities of waste for local waters! It's also illegal in the state of Rhode Island.

If geese visit your property, you can discourage them by letting a natural buffer grow.

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Soil Erosion, Runoff, and Sedimentation Overview

Updated 2017

You've been informed about the necessity of soil erosion, runoff, and sedimentation control measures, but you're still wondering about the details. Why is it so important?

What is Soil Erosion?

Soil erosion is the detachment and movement of soil particles by water, wind, ice, or gravity.

What is Sedimentation?

Sediment is the result of erosion. **Sedimentation** is the build-up of eroded soil particles that are transported in **runoff** from their site of origin and deposited in drainage systems, on other ground surfaces, or in bodies of water or wetlands.

Why Should I Care?

- It's the law: Federal, State, and local regulations require construction sites to be compliant with the Clean Water Act.
- Water quality: Erosion from construction projects can be a non-point source pollutant that deteriorates the health of our lakes, streams and Narragansett Bay.
- Soil loss- Much of the total sediment loss that occurs each year is generated by highway construction and land development projects.
- Quality of life: If you enjoy fishing, eating local shellfish, or swimming at one of Rhode Island's beautiful beaches, this pollution can threaten your quality of life.

What Problems Happen on Construction Sites?

- Safety and Nuisance Issues: Sediment on roadways and in the air can cause safety hazards.
- Flooding: Excessive sediment accumulation in drainage systems can create blockages that promote flooding.
- Sediment Build-Up: Sediment that accumulates in streams, lakes, and bays can only be remediated by costly dredging.
- Increased Costs: Uncontrolled erosion and sedimentation requires costly maintenance and repair. ***It is cheaper and easier to prevent erosion than to fix sedimentation problems.***
- Negative Public Perception: Observing muddy water flowing from construction sites negatively affects how the public feels about your work.

Sediment-filled runoff from a construction site

What can be done to control soil erosion, runoff, and sedimentation?

Install, maintain, and inspect control measures on your construction site according to the site's Soil Erosion and Sediment Control (SESC) Plan or Stormwater Pollution Prevention Plan (SWPPP).

Types of Controls

Erosion Controls

- The primary defense against sediment pollution
- Installed to prevent sediment from being detached by natural causes
- Examples: Keeping exposed soil covered with mulch or temporary vegetation; covering soil stockpiles; slope surface roughening

Runoff Controls

- Used to slow the velocity of flowing stormwater
- Diverts water towards a stabilized outlet or treatment practice
- Examples: check dams; pipe slope drains

Sediment Controls

- The last line of defense against moving sediment
- Prevents sediment from leaving construction sites and entering environmentally sensitive areas
- Examples: construction entrances; sediment traps; inlet protection; compost filter socks; wheel wash system

Compost filter socks used as check dams to control runoff

Where Can I Get Help?

- Your construction project's site-specific **SESC Plan** or **SWPPP** has measures identified specifically for your construction site.
- **RI Erosion and Sediment Control Handbook:** Suitable control measures exist for every conceivable erosion, runoff, and sediment control challenge. Refer to the *RI Soil Erosion and Sediment Control Handbook* at:

  www.dem.ri.gov/programs/bnatres/water/pdf/riesc-handbook16.pdf

Even if control measures are correctly installed and maintained according to the approved SESC Plan/SWPPP, the site is only in compliance when erosion, runoff, and sedimentation are effectively controlled throughout the entire site.

Produced by RI Stormwater Solutions with support from the RI Department of Transportation and the Rhode Island Department of Environmental Management.

know where it goes
take simple steps to reduce STORMWATER POLLUTION

What Do You Do With Household Chemicals?

Updated 2017

There's Hazardous Waste in my Home?

If you look closely in your kitchen, bathrooms, basement, or garage, you just might find some household hazardous waste! Many common household products such as drain and oven cleaners, paint, and paint thinner (to name only a few!) contain chemicals that qualify as hazardous waste. These hazardous substances are toxic, corrosive, can easily catch fire, or are dangerous when mixed with other chemicals. If you see the words *caution, hazardous, danger, flammable, or poison*, you know to use these products with caution. You need to use caution when disposing them, too.

Don't Pour It Out!

When toxic chemicals are poured down household drains, storm drains, toilets, or on the ground, those chemicals are likely to end up in nearby waters. Even throwing household chemicals in the trash can contaminate water resources, once they are in the landfill. And your garbage collector will thank you, too! Many trash handlers have been injured by fumes and splashing chemicals.

In Rhode Island, you can make an appointment to bring your household chemicals to the Eco-Depot, a free drop-off at the Rhode Island Resource Recovery Corporation's facility at the Central Landfill in Johnston. Call 942-1430 ext. 241 to schedule a date and time.

Do I Have Other Options?

Yes! Here are a few ideas for reducing the amount of household hazardous waste in your home, which means less waste you have to dispose of.

- If the product is still useable, but you don't need it all, share with friends or neighbors who might need it.
- Buy only what you need for the job you're working on. More is not always better, when you think about the extra effort to store and dispose of the product.
- Choose non-hazardous products when you can. Lemon juice, vinegar, hot water, borax, soap, and baking soda are good alternatives to harsh, chemical cleansers. Check online for non-toxic toxic home cleaning recipes.
- Buy phosphate-free, biodegradable detergents and cleaners and water-based products, when possible, as these are typically less toxic.

Storm drains lead directly to local waters. No filters. No treatment. Chemicals that enter storm drains wind up in the water we drink, fish, and swim.

A Few Good Recipes

All-purpose cleaner: ½ cup vinegar and ¼ cup baking soda mixed into ½ gallon of water

Bathroom mold: mix one part hydrogen peroxide (3%) with two parts water; spray on mold and wait one hour before cleaning

Carpet stains: ¼ cup borax, ¼ cup salt, and ¼ cup vinegar mixed into a paste; leave on stain for a few hours, then vacuum

Drain cleaner: pour ½ cup baking soda down the drain, then ½ cup vinegar; after 15 minutes, pour in boiling water to clear residue. Caution: only use this method with metal plumbing. Plastic pipes can melt if excess boiling water is used. Do not use this method after trying a commercial drain opener; the vinegar can react with the drain opener to create dangerous fumes.

Toilet bowl cleaner: ¼ cup baking soda mixed with 1 cup vinegar; pour into toilet bowl and let it sit before scrubbing

The Usual Suspects

How can you tell if the product you want to throw away is toxic and needs special disposal procedures? Read the label! If in doubt, the following list includes common household items that contain hazardous ingredients:

Cleaning products: oven cleaners, drain cleaners, wood and metal cleaners and polishes, toilet cleaners, tub, tile and shower cleaners, bleach, pool cleaners

Automotive products: motor oil, fuel additives, carburetor and fuel injection cleaners, air conditioning refrigerants, starter fluids, automotive batteries, transmission and brake fluid, antifreeze

Lawn and garden products: herbicides, pesticides, fungicides, wood preservatives

Indoor pesticides: ant and cockroach sprays and bait, flea repellants and shampoos, bug sprats, houseplant insecticides, moth repellants, mouse and rat poisons and baits

Workshop or painting supplies: adhesives and glues, furniture strippers, oil- or enamel-based paint, stains and finishes, paint thinners and turpentine, paint strippers and removers, photographic chemicals, fixatives, and other solvents

Flammable products: propane tanks and other compressed gas cylinders, kerosene, home heating fuel, diesel fuel, gas/oil mix, lighter fluid

Miscellaneous: batteries, mercury thermometers or thermostats, fluorescent or energy-efficient light bulbs, driveway sealer

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