

# **Arrowsic Island**

**Caring for Our Land  
and Waters**



**Stewardship Guide**  
**for our Coastal Community**

# TABLE OF CONTENTS

<b>THE ESTUARY AND YOU</b>	<b>PAGE</b>
Introduction .....	1
How to Use This Guide .....	2
<b>PROTECTING GROUNDWATER</b>	
Where Does It Come From? .....	3
Storage Limited to Bedrock Aquifers .....	4–5
Vernal Pools .....	6
<b>ON OR NEAR THE WATER</b>	
Stop Boat Discharges .....	7
Know Your Materials .....	8
Leave No Litter .....	9
<b>MANAGING YOUR LANDSCAPE</b>	
Erosion Control During/After Construction .....	10
Shoreland Protection and Buffer Zones .....	11
For Pollinators .....	12
<b>ARROWSIC ISLAND</b>	
Venerable, Vulnerable Arrowsic .....	13
Our Rivers and Island .....	14–15
Sewall Pond .....	16
<b>CARING FOR YOUR PROPERTY</b>	
How to Have a Truly Green Lawn .....	17
Healthy, Economical Amendments .....	18
Thinking Blue—Watering Wisely .....	19
Rain Gardens .....	20
<b>LIVING WITH PESTS</b>	
Invasive Pests .....	21
Bugs Are Not All Pests .....	22
Living with Ticks .....	23
Getting Out of the Weeds .....	24
<b>AROUND THE HOUSE</b>	
Household Waste .....	25
Household Hazardous Waste and Medical Waste .....	26
Maintaining a Healthy Septic System .....	27
<b>GET INVOLVED</b>	
Conserve Our Resources, Build Community .....	28
Additional Resources .....	Inside Back Cover

# THE ESTUARY AND YOU

## INTRODUCTION

**L**ocated in the Lower Kennebec and Sheepscot river estuaries, the towns of Arrowsic, Georgetown, Phippsburg, and Westport Island are very dependent on water stored in the bedrock under our feet and in the coastal waters that surround our communities. Without urban infrastructure such as publicly supplied potable water, sewer, and stormwater management systems, it is up to us to take actions on our own properties to protect our communities' vitally important resources.



This guide contains steps each of us can take to protect our water resources, conserve our local habitat, and provide a healthy community for our family and friends for generations to come.

*Information and contacts, specific to your town, can be found in the center section of this guide (pages 13–16) and on the inside back cover.*

# THE ESTUARY AND YOU

## HOW TO USE THIS GUIDE

The conservation commissions of Arrowsic, Georgetown, Phippsburg, and Westport Island, as well as the Kennebec Estuary Land Trust, have been working on protecting and enhancing the natural resources within our towns. Since we all share the same estuary waters, we decided



Gayle Wagner

to pool our collective energies and focus on the challenges shared by our communities. This guide is the result of that effort, and we invite you to join us in protecting our drinking water, important habitat, favorite views, and sacred spots. Suggestions included in this booklet will help keep our communities safe and healthy for our families, friends, and the creatures that live among us.



Michael Kreindler

Our guiding principles are to:

- Protect drinking water
- Conserve or restore the native ecosystem so it can, in return, provide the priceless functions on which we rely
- Ensure that our communities will be as beautiful tomorrow as they are today

Each page of this guide focuses on a resource or management action, identifies its importance to our region, and then provides suggestions for management practices. If you have questions, the last page and the inside back cover list additional resources and contact information.

# PROTECTING GROUNDWATER

## WHERE DOES IT COME FROM?

### **Introduction**

Maine is blessed with an average of 42 inches of precipitation per year. On average, about half this amount ends up as surface water runoff. Most of the rest returns to the atmosphere through evaporation or transpiration through plants. Less than a quarter is absorbed into the soil and cracks in the bedrock to become groundwater.

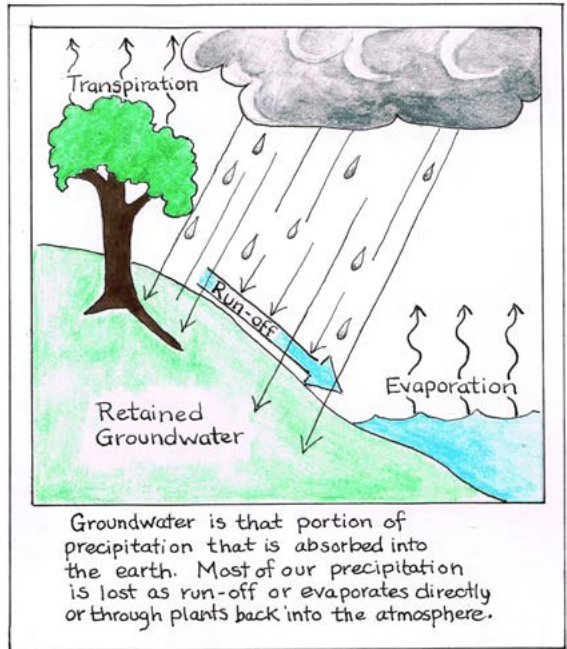
Our four coastal towns depend on the availability and cleanliness of the water that surrounds us, both below ground and lapping our shorelines. We have no municipal water supplies, and our domestic water comes entirely from private wells. Our coastline has the potential to keep supplying us with fresh, local food, if we keep the water clean.

In the following three pages, we propose ways to decrease surface water runoff, increase groundwater retention, and prevent pollution to our wells and our waterways.

**Your well and your family are dependent on that retention!**

### **Additional Information on Groundwater**

- The Groundwater Foundation:  
[groundwater.org/get-informed/basics/hydrocycle.html](http://groundwater.org/get-informed/basics/hydrocycle.html)



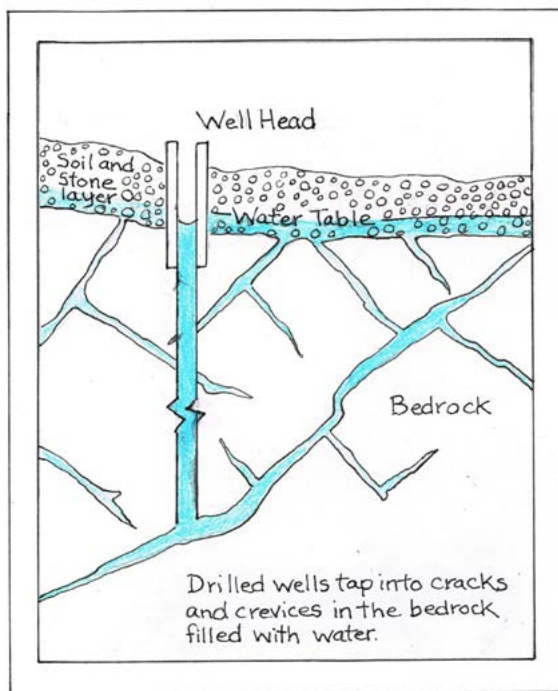
Phine Ewing

# PROTECTING GROUNDWATER

## STORAGE LIMITED TO BEDROCK AQUIFERS

### Why?

Groundwater is that 10–20% of the annual precipitation that does not run off the land or evaporate back to the atmosphere. It accumulates deep in the soils and within cracks and fissures in the bedrock. Soil and glacial till have more water storage capacity than bedrock; however, in our rocky coastal towns, bedrock is very close to the surface of the ground. Therefore, our water storage capacity is limited and must be nurtured. Furthermore, the filtering capacity of sands and living soil are likewise limited. We must be very careful to prevent pollutants from seeping into the bedrock aquifers.



Phine Ewing

### Steps You Can Take

- Minimize runoff (*see section, Managing Your Landscape*).
- Make sure your septic system is sited properly and is well maintained (*see section, Around the House*).
- Select low-flow appliances and toilets to save water.
- Don't store toxic substances that might leak: petroleum (over 20 gallons), antifreeze, pesticides, solid wastes, or leachable materials. Don't store unregistered cars, as they can leak, too.

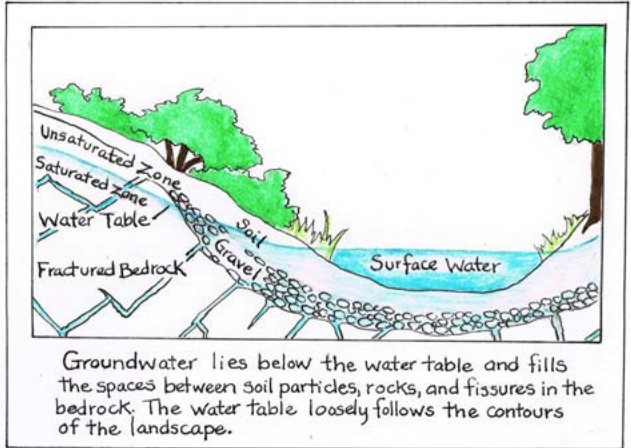
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# PROTECTING GROUNDWATER

## STORAGE LIMITED TO BEDROCK AQUIFERS *(continued)*

### **Steps You Can Take** *(continued)*

- Watch out for road salt near your well.
- Be aware of the possibility of salt-water intrusion into your well water. As sea level rises, this may affect more and more wells.
- If you are on a shared aquifer, contamination in one area can quickly spread to affect many neighbors.
- Test your tap water every 3–5 years (*see link below*, Maine Division of Environmental Health). Testing should include coliform, radon, pH, arsenic, and salt. Individual wells may have other problem minerals such as too much iron or magnesium.



### **Additional Information on Aquifers**

- See your town plumbing inspector and code enforcement officer for questions, and check town ordinances and the town comprehensive plan.
- To learn how to test your well water and more, check the Maine Division of Environmental Health website: [maine.gov/dhhs/mecdc/environmental-health/eohp/wells/mewellwater.htm](http://maine.gov/dhhs/mecdc/environmental-health/eohp/wells/mewellwater.htm).
- To learn about wells drilled in your town since 1987 (and some before) check the Maine Well Water Database: [maine.gov/dacf/mgs/pubs/digital/well.htm](http://maine.gov/dacf/mgs/pubs/digital/well.htm).

# PROTECTING GROUNDWATER

## VERNAL POOLS

### **Why?**

Vernal pools, also known as “ephemeral pools,” are temporary wetlands. In Maine, they are typically filled with water in winter and spring, and dry out by mid-summer, although occasionally they can persist throughout an entire year.

Vernal pools serve as reservoirs for the slow replenishment of bedrock aquifers. They are also important because they are home to several rare species that depend on this particular habitat. Because vernal pools dry up periodically, they do not support fish. Frog and salamander eggs laid in vernal pools are therefore safe from predation by fish. Some sensitive Maine species that require vernal pools for survival include the spotted salamander, Blanding’s turtle, and fairy shrimp. The salamanders and reptiles that breed in vernal pools typically spend the dry months within several hundred yards of their natal pool, so it is important to preserve nearby upland habitat as well as the pool itself.



*Vernal pool with masses of wood frog eggs. Inset: Wood frog eggs.*

Ellen Winchester

### **Steps You Can Take**

- Identify any vernal pools on your property or close by. They should be visible and audible in spring before the trees leaf out.
- Do not disturb, build on, or drain a vernal pool, and protect surrounding habitat.
- Check your town’s codes for setback requirements.

### **Additional Information on Vernal Pools**

- Of Pools and People: [vernalpools.me](http://vernalpools.me)
- Maine Audubon—Vernal Pools: [maineaudubon.org/wildlife-habitat/vernal-pools/](http://maineaudubon.org/wildlife-habitat/vernal-pools/)



# ON OR NEAR THE WATER

## STOP BOAT DISCHARGES

### *Why?*

Sewage discharge from boats can carry pathogens that impair water quality, cause sickness, and harm sea creatures.

Federal law prohibits discharging sewage within three miles of shore or in EPA-designated No Discharge Areas (NDAs). As no area of the Kennebec and Sheepscot river estuaries lies outside the three-mile zone, discharge is entirely prohibited. By not releasing waste in the waters around Arrowsic, Georgetown, Phippsburg, and Westport Island, boaters are helping to protect shellfish resources and the people who work and play in the estuary.



Friends of Casco Bay

### *Steps You Can Take*

- Install a US Coast Guard-approved holding tank.
- If a pumpout facility is not available, empty your holding tank at least three miles from shore and outside any NDAs.
- If your boat does not have an installed toilet, use a portable toilet or onshore restroom facilities.
- Do not use holding tank additives with chlorine, formaldehyde, or chemicals that can interfere with treatment plant and septic system operation, or harm marine life, if pumped directly overboard.
- Area pumpout stations: Bath Waterfront Park Dock; Boothbay Harbor; Boothbay Region Boatyard, Southport; Derecktor/Robinhood (formerly Robinhood Marine), Georgetown; Sebasco Harbor Resort, Phippsburg; Wiscasset Town Landing.

### *Additional Information on Boat Discharges*

- Keeping Sewage Out of Maine Waters:  
[maine.gov/dmr/rm/public\\_health/sewagefacts2012.pdf](http://maine.gov/dmr/rm/public_health/sewagefacts2012.pdf)
- Maine Pumpout Stations/NDAs:  
[maine.gov/dep/water/wd/vessel/pumpout/pumpoutguide.pdf](http://maine.gov/dep/water/wd/vessel/pumpout/pumpoutguide.pdf)

# ON OR NEAR THE WATER

## KNOW YOUR MATERIALS

### **Why?**

Materials used to build docks and floats can leach harmful chemicals into waterways. Sanding residue and wash water from antifouling paint can harm marine life. Marine coatings and solvents can be highly toxic.



Dennis Dunbar

### **Steps You Can Take**

- Discuss the most appropriate and environment-friendly materials to use for proposed docks and floats with the permitting agency and your contractor prior to finalizing the design and submitting an application.
- Select the least-toxic antifouling paint possible.
- The Maine Clean Boatyards & Marinas Program (*see link below*) is a partnership among industry, state and federal agencies, and environmental organizations dedicated to promoting best management practices in boatyards and marinas. Best practices include storm-water runoff management, erosion and sedimentation control, boat maintenance and repair, fueling activities and petroleum control, waste recycling, disposal, storage, and boat pumpouts. Encourage your marina or boatyard to participate in this program and/or consider these guidelines when working on or operating your own boat.

### **Additional Information on Materials**

- Maine Clean Boatyards & Marinas Program: [mainemarinetrades.com/clean\\_marinas/](http://mainemarinetrades.com/clean_marinas/)
- Boat Bottom Wash Water: [maine.gov/dep/water/wd/antifouling-paint/is\\_clean.pdf](http://maine.gov/dep/water/wd/antifouling-paint/is_clean.pdf)

# ON OR NEAR THE WATER

## LEAVE NO LITTER

### Why?

Besides being unsightly, litter, particularly plastic, can break down in the water and create even more harmful materials. The smaller particles and chemical substances can be a threat to shellfish and coastal nurseries which form the bottom of the food chain for nearly all marine species. Aquatic life, birds, and marine mammals can be sickened or killed by consuming plastic or other foreign materials.



Camille Kauffinger

### Steps You Can Take

- When no facilities are available, bury human waste at least 200 feet from the shore.
- Use pocket ashtrays to dispose of cigarette butts, which are toxic to fish and birds.
- Dispose of pet waste by placing in trash cans or by burying it well away from the shore.
- Pick up trash, especially after a storm, when large quantities of litter are often deposited on the shoreline.
- Carry containers to haul out trash, even if it's not yours.
- Take part in Maine Coastal Cleanup activities in your town.

*Trash doesn't fall from the sky. It falls from human hands. And human hands have the power to stop it.*

—Ocean Conservancy

### Additional Information on Litter

- Marine Debris: [epa.gov/region9/marine-debris/](http://epa.gov/region9/marine-debris/)
- Maine Coastal Cleanup: [maine.gov/dacf/mcp/planning/coastweek/index.htm](http://maine.gov/dacf/mcp/planning/coastweek/index.htm)

# MANAGING YOUR LANDSCAPE

## EROSION CONTROL DURING/AFTER CONSTRUCTION

### **Why?**

Soil, the number one pollutant in Maine waterbodies, can harm plant and animal life. Erosion-control measures protect water quality by preventing soils from leaving a site and becoming suspended in water, by limiting exposed soils during construction, and by slowing the velocity of water in the landscape.



Maine DEP

### **Steps You Can Take**

- **Temporary measures**—required by Maine state law when soil is disturbed, and maintained until the site is stabilized:
  - To break the impact of falling rain, mulch with hay, straw, or erosion-control mix.  
([cumberlandswcd.org/publications/bmp\\_fact\\_sheets/ECM.pdf](http://cumberlandswcd.org/publications/bmp_fact_sheets/ECM.pdf))
  - Install/maintain sediment barriers (straw bales, silt fencing).
- **Permanent controls**—a permanent part of the landscape, covering bare soil, stabilizing slopes, and stopping areas from becoming unstable from flowing water:
  - Plant new or protect existing vegetation to stabilize exposed soil, increase permeability, and slow the velocity of water.
  - Use angular stone riprap to protect inlets and outlets of culverts or to line ditches or coastal banks where water velocity and energy are too great for soil to remain stable.
  - Use ditch turnouts or install rubber edges (razors) on steep areas of driveways to direct runoff toward vegetated areas.

### **Additional Information on Erosion Control**

- Maine Erosion Control Law: [maine.gov/dep/land/erosion](http://maine.gov/dep/land/erosion)
- Certified Contractors: [maine.gov/dep/land/training/ccec.html](http://maine.gov/dep/land/training/ccec.html)
- Need an expert? Contact: Bill LaFlamme, Maine DEP, [william.n.laflamme@maine.gov](mailto:william.n.laflamme@maine.gov), 207-215-9237.

# MANAGING YOUR LANDSCAPE

## SHORELAND PROTECTION AND BUFFER ZONES

### Why?

Buffer zones are well-distributed stands of trees, shrubs, ground cover, and duff (decomposed plant material) which support soil-binding fungi and a sturdy network of roots. They protect water quality by providing erosion control, and reducing nonpoint source pollution



Maine DEP

*A natural buffer.*

by trapping pollutants such as excess fertilizer or road salt before they enter a waterbody. Buffered areas composed of native vegetation can provide food, shelter, and nesting sites for birds and other wildlife.

Shoreland is one of Maine's special features, and buffer zones are one of the most effective ways to provide protection. Our towns have adopted *shoreland zoning ordinances* governing the area within 250 feet of the ocean, rivers, great ponds, and wetlands.

### Steps You Can Take

- Review your town's Shoreland Zoning Ordinance.
- Contact your local code enforcement officer with questions before clearing vegetation, creating paths or driveways, planning a structure, stabilizing a shoreline, or otherwise disturbing soils in the regulated shoreland zones.
- Utilize meandering paths, rather than straight-line, down-slope paths, to reduce erosion and minimize runoff.
- Stabilize and maintain banks with easy-to-establish native plants.

### Additional Information on Protecting Shorelands

- Maine Shoreland Zoning: [maine.gov/dep/land/slz/citizenguide.pdf](http://maine.gov/dep/land/slz/citizenguide.pdf)
- The Buffer Handbook: [maine.gov/dep/land/watershed/buffhandbook.pdf](http://maine.gov/dep/land/watershed/buffhandbook.pdf)
- Conserving Native Landscapes: [umaine.edu/publications/2500e/](http://umaine.edu/publications/2500e/)
- Native Plants: [umaine.edu/publications/2502e/](http://umaine.edu/publications/2502e/)

# MANAGING YOUR LANDSCAPE

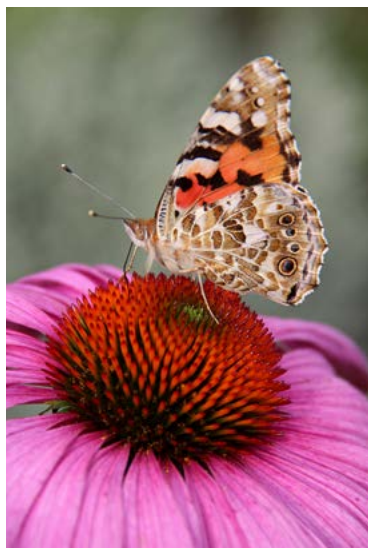
## FOR POLLINATORS

### **Why?**

Not all insects are pests. Nearly 75 percent of flowering plants rely on pollinators to set fruit or seed, and one-third of humankind's food comes from plants dependent on pollinators. Pollinators keep plant communities healthy and productive and kill harmful insects. Use of insecticides to control insect pests can also kill pollinators and other beneficial insects, and result in these toxins leaching into the estuary and our groundwater.

### **Steps You Can Take**

- Protect existing pollinator habitat. Minimize lawn area or mow less often.
- Increase foraging habitat to include a range of plants and blooming periods. Pollinators prefer patches of plants that are a minimum of three feet wide.
- For butterflies and moths, provide forage plants for the larvae.
- Provide a source of pesticide-free water.
- Provide nesting sites or build nesting boxes or nest blocks.



Ellen Winchester

### **Additional Information on Pollinators**

- Landscaping for Butterflies: [umaine.edu/publications/7151e/](http://umaine.edu/publications/7151e/)
- Understanding Native Bees: [umaine.edu/publications/7153e/](http://umaine.edu/publications/7153e/)
- Farming for Bees: [www.xerces.org/guidelines-farming-for-bees/](http://www.xerces.org/guidelines-farming-for-bees/)
- Field Conservation Management of Native Leafcutting and Mason Osmia Bees: [umaine.edu/blueberries/factsheets/bees/301-field-conservation-management-of-native-leafcutting-and-mason-osmia-bees/](http://umaine.edu/blueberries/factsheets/bees/301-field-conservation-management-of-native-leafcutting-and-mason-osmia-bees/)
- Need an expert? Contact: Frank Drummond, UMaine, [frank.drummond@umit.maine.edu](mailto:frank.drummond@umit.maine.edu), 207-581-2989.

# VENERABLE, VULNERABLE ARROWSIC

**Arrowsic** is the only local town with an Abenaki name:

Arros-eg,\* the place of the obstruction, probably refers to Doubling Point, which impedes the main channel of the Kennebec River on the west side of the island, or Upper Hell Gate, which similarly restricts the flow of the Sasanoa River on the east side.



Douglas Photo Shop,  
Bath—Boothbay Harbor, Me.

*The old Arrowsic bridge.*

- Arrowsic is an island, wrapped in tidal rivers, unique in a region that is itself unique on the Atlantic seaboard. An island with bridges, it is itself a bridge, a connector, to another island—a connector, and a strong reminder that everything is connected to everything else.
- Early settlers stripped the island of trees to clear land for farming and to supply sawmills that provided lumber for local use and trade. After the French and Indian War, later settlers became more careful of resources.
- Today, Arrowsic has several large areas of conserved land, mostly reforested, and some is open to the public. It is an island with an intense sense of community and a growing awareness that the human population depends on bedrock interspersed with freshwater aquifers and the mosaic of plant and animal life above them. We are part of that mosaic and must nurture the land under our feet and the air we breathe.
- Arrowsic is a very beautiful, unique, and vulnerable place to live.

*\*Arrowsick, Arowsic, 'Rowsic, Arrowseg, Arrowsic. According to Town Historian Milly Stafford, old documents offer at least six different spellings.*

# Arrowsic Island

## ...surrounded by three rivers

### The Kennebec

Today's Kennebec is an environmental success story spanning more than 50 years of recent history. Maine began to clean up the river in 1961, when our legislature required water treatment facilities to be built. The Federal Clean Water Act of 1972 and the end of river drives in 1976, along with other cleanup efforts, have brought the Kennebec back from a polluted mess with little ecological or recreational value to the thriving artery we see today. While much work is yet to be done, the Kennebec is on track to a successful recovery.

- Maine's largest estuarine river complex, the Kennebec and tributaries drain 38% of the state.
- The Kennebec Estuary supports the state's largest run of alewives.
- The Kennebec and its tidal marshes are home to several endangered species.
- The Kennebec has been an important resource for aboriginal tribes and colonists for centuries.

### The Sasanoa River

The Sasanoa runs from the Kennebec in Bath, along the northern and north-eastern shore of Arrowsic, to Mill Island, where it enters Hockomock Bay and splits. The northeast branch becomes the Back River joining the Sheepscot River in Wiscasset, and the southeast branch flows along the east side of Georgetown where it also meets the Sheepscot.

The most famous part of the Arrowsic section of the Sasanoa is Upper Hell Gate, its tightest constriction. A great challenge to sailors at certain tides, Hell Gate was modified by the Army Corps of Engineers in 1898 and 1908 to allow safer passage from Bath to Boothbay and Wiscasset.

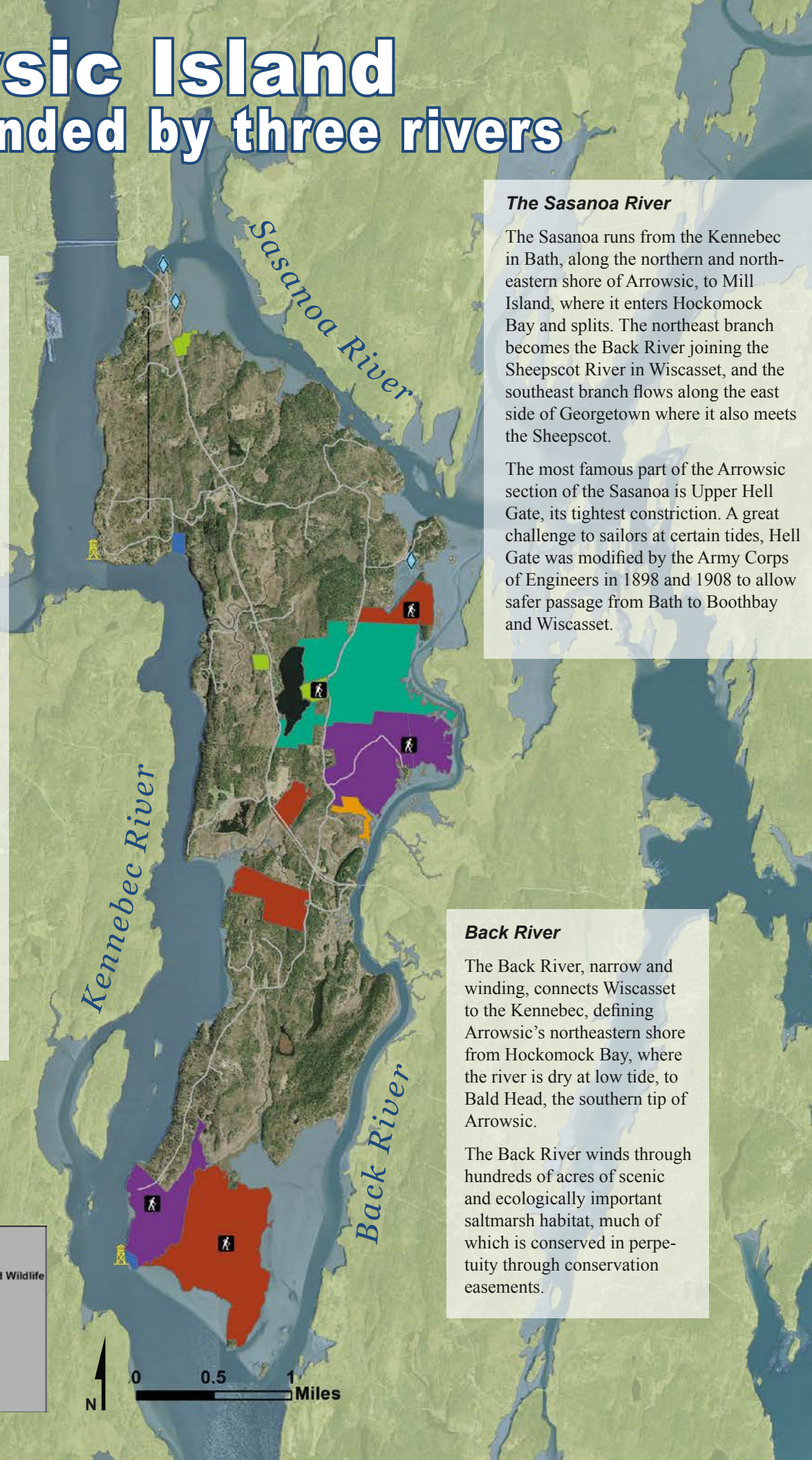
### Back River

The Back River, narrow and winding, connects Wiscasset to the Kennebec, defining Arrowsic's northeastern shore from Hockomock Bay, where the river is dry at low tide, to Bald Head, the southern tip of Arrowsic.

The Back River winds through hundreds of acres of scenic and ecologically important saltmarsh habitat, much of which is conserved in perpetuity through conservation easements.

**Legend**

- Holt Research Foundation
- Maine Department of Inland Fisheries and Wildlife
- The Nature Conservancy
- US Coast Guard
- Private Conservation Easements
- Town Owned Property
- Undeveloped Water Access
- Trail
- Lighthouse





## SEWALL POND

Cherished by the town, Sewall Pond is a favorite spot for swimming, fishing, and boating in the summer, and for skating, ice fishing, and occasionally iceboating in winter.

On the east side, off Old Stage Road, a trail crosses the 13-acre town parcel to the town's swimming rocks. Public access is also provisionally allowed over private property on the west side, where Route 127 brushes the pond.



KM Robbins

Sewall Pond covers 44 acres, and is 11 feet deep at its deepest. It is spring fed, and outflow is via the culvert on the west side of the pond that leads to Spinney Mill Creek. Occasionally at the highest tides, the creek reverses flow into the pond.

Water quality has been monitored throughout the summer months for the last 30 years, and an annual invasive plant patrol is carried out in August. A large volunteer corps monitors alewife arrivals in spring and departures in late summer and fall.

The pond is home to a number of fish species, including alewife, black crappie, eel, smallmouth bass, sunfish, and yellow perch; as well as beavers, frogs, mink, and snapping turtles.

Please help us maintain this valuable resource:

- Pick up after yourself and your leashed pets.
- Respect landowner's property when gaining access to the pond.
- Internal combustion (gas) engines are prohibited on the pond.
- Public access is closed from dusk to dawn.

# CARING FOR YOUR PROPERTY

## HOW TO HAVE A TRULY GREEN LAWN

### Why?

An attractive lawn *can* be grown without the use of pesticides (weed, insect, or disease controls) and little or no added fertilizer. The following tips will help you to have a truly “green” lawn that can significantly reduce the risks for our families, pets, and the environment.

### Steps You Can Take

- *Mow high.* Three inches or more for vigorous roots and to shade out weeds.
- *Let the clippings lie.* Clippings are high-quality, low-cost fertilizer.
- *Fertilize?* Lawns older than 10 years need only clippings. Younger lawns need nitrogen. Look for 10-0-0 on the bag (the key is nitrogen only; no phosphorus or potassium). When needed, apply in September, when grass can best use it. To prevent runoff, never apply to frozen/saturated soils or in advance of rain, and always sweep back onto the lawn from sidewalks and driveways.
- *Got weeds?* Liberally apply perennial ryegrass seed all season long to out-compete the weeds.
- *Got bugs like grubs?* Overseed with insect-resistant fescue grasses or use beneficial nematodes, fungi, or bacteria.
- *Water wisely.* If needed, water once or twice a week with a deep soaking (1–1½"), to encourage root growth.



*A local lawn on the water—treated with nothing except what visiting geese leave behind.*

Gayle Wagner

### Additional Information on Caring for Your Lawn

- Maine YardScaping Partnership: [yardscaping.org](http://yardscaping.org)
- Need an expert? Contact: Megan Patterson, Maine YardScaping Partnership, [megan.i.patterson@maine.gov](mailto:megan.i.patterson@maine.gov), 207-287-7593.

# CARING FOR YOUR PROPERTY

## HEALTHY, ECONOMICAL AMENDMENTS

### Why?

Making smart choices about which soil amendments we use in our yards can protect our families' health and our water supply. It also conserves habitat and saves us money.

### Steps You Can Take

- Mix **compost** into your garden soil. Healthy, living soil allows water and air into the plant's root zone, holds and recycles nutrients, stores water, and provides protection from pests and disease.
- Apply an organic layer of **mulch**, such as leaves, wood chips, or compost to the surface of your yard or garden. This helps to conserve water, reduce weeds, and provide nutrients to the soil.
- If you need to use a **fertilizer**, use one that is organically based. If using a synthetic fertilizer, use one labeled "phosphorus-free" or "slow release." Products should be water insoluble. Ask your landscaper or lawn care professional to do the same.
- Avoid "weed and feed" products. These contain fertilizers and harmful herbicides that can end up in our waterways.



Paul Schlein

*Compost is free and worth its weight in gold.*

### Additional Information on Amendments

- Maine Organic Farmers and Gardeners Association Fact Sheets: [mofga.org/Publications/FactSheets/tabid/133/Default.aspx](http://mofga.org/Publications/FactSheets/tabid/133/Default.aspx)
- Maine YardScaping Partnership—Fertilization: [maine.gov/dacf/php/pesticides/yardscaping/lawn/fertilization.htm](http://maine.gov/dacf/php/pesticides/yardscaping/lawn/fertilization.htm)

# CARING FOR YOUR PROPERTY

## THINKING BLUE—WATERING WISELY

### *Why?*

Our towns' water comes out of the sky and is stored in our soils and bedrock (*see section*, Protecting Groundwater—Where Does It Come From?). To protect our limited supply, it is important to use water in our landscapes wisely and conservatively, so they will thrive with minimal waste.

### *Steps You Can Take*

- Water deeply and infrequently. Annual vegetables and flowers can be watered at the first sign of wilting. Perennials usually need watering only if still wilting late in the day.
- Moisten the entire root zone, the area under the footprint of the tree branches or vegetation. Deep, infrequent watering helps the plant develop a healthy root system.
- Using soaker hoses or drip irrigation at the soil surface adjacent to the plants helps to focus the water where it is needed most. Using a sprinkler is inefficient, as it allows water to evaporate before it can be used by the plants.
- If your lawn must be watered, make sure sprinklers are not creating runoff by over-spraying onto adjacent, impervious surfaces, such as roofs and driveways.



Sue Sergeant

### *Additional Information on Watering Wisely*

- Maine YardScaping Partnership—Watering: [maine.gov/dacf/php/pesticides/yardscaping/lawn/water.htm](http://maine.gov/dacf/php/pesticides/yardscaping/lawn/water.htm)
- Think Blue Maine: [thinkbluemaine.org](http://thinkbluemaine.org)
- Drip Irrigation: [umaine.edu/publications/2160e/](http://umaine.edu/publications/2160e/)

# CARING FOR YOUR PROPERTY

## RAIN GARDENS

### *Why?*

Rain gardens are planted to catch the rain that flows off impervious surfaces, such as roofs and driveways. They detain the water for long enough to allow it to soak into the ground, instead of becoming runoff that carries pollutants to the shore.

### *Steps You Can Take*

- Locate a dry site, not over a leach field or near your well. Direct water from your impervious surface to this area.
- Determine size and shape of the rain garden based on drainage area. Typical rain gardens are 100–300 square feet, twice as wide as long, and 4–8" deep.
- Plant with native plants to create habitat for birds, butterflies, and other pollinators.
- Install a rain barrel (with a tight-fitting screen or other suitable cover to keep out mosquitoes) at the outlet of a gutter and use collected water to irrigate a conventional or rain garden.



*Rain gardens help minimize runoff.*

Laura Wilson

### *Additional Information on Rain Gardens*

- Landscapes for Maine: Adding a Rain Garden to Your Landscape: [umaine.edu/publications/2702e/](http://umaine.edu/publications/2702e/)
- Native Plants: A Maine Source List: [umaine.edu/publications/2502e/](http://umaine.edu/publications/2502e/)
- Need an expert? Contact: Cumberland County Soil & Water Conservation District, 207-892-4700.

# LIVING WITH PESTS

## INVASIVE PESTS

### Why?

Invasive plants and insects are those not native to a particular ecosystem, where their introduction is likely to cause economic, environmental, or human harm.

*Invasive plants in our region include:* Japanese barberry, Japanese knotweed, multiflora rose, Norway maple, purple loosestrife.

*Invasive insects include:* Asiatic garden beetle, browntail moth, hemlock wooly adelgid, Japanese beetle, lily leaf beetle, winter moth.



*Japanese knotweed.*

Tom Heutte, USDA Forest Service,  
Bugwood.org

### Steps You Can Take

- **Plants**
  - Use native Maine plants for landscaping and gardening.
  - Dig up invasive plants and remove roots remaining.
- **Insects**
  - Buy firewood where you burn it.
  - Report invasive insect sightings:  
[maine.gov/dacf/mfs/forest\\_health/tree\\_ailment.html](http://maine.gov/dacf/mfs/forest_health/tree_ailment.html)

### Additional Information on Invasive Pests

- Invasive Species Network: [umaine.edu/invasivespecies/](http://umaine.edu/invasivespecies/)
- Invasive Plant Fact Sheets:  
[maine.gov/dacf/mnap/features/invasive\\_plants/invsheets.htm](http://maine.gov/dacf/mnap/features/invasive_plants/invsheets.htm)
- Native Plants: [extension.umaine.edu/publications/2500e/](http://extension.umaine.edu/publications/2500e/)
- Invasive Insect Threats to Maine's Forests and Trees:  
[maine.gov/dacf/mfs/forest\\_health/invasive\\_threats/index.htm](http://maine.gov/dacf/mfs/forest_health/invasive_threats/index.htm)
- Need an expert?
  - Invasive Plants: Nancy Olmstead, Maine Natural Areas Program, [nancy.olmstead@maine.gov](mailto:nancy.olmstead@maine.gov), 207-287-8044
  - Invasive Insects: Allison Kanoti, Maine Forest Service, [allison.m.kanoti@maine.gov](mailto:allison.m.kanoti@maine.gov), 207-287-2431

# LIVING WITH PESTS

## BUGS ARE NOT ALL PESTS

### *Why?*

Insects can be pests, but many more are beneficial. Beneficial insects prey on pests, pollinate, or serve as food sources for bats or birds. Use of insecticides to control insect pests threatens ecosystem health. These chemicals may kill and temporarily keep harmful insects in check, but they may also kill beneficial ones. Insecticides applied near the shore can get into the water and harm aquatic life.

### *Steps You Can Take*

- **Home**

- Carpenter ants build homes in wet or rotting wood. Don't store firewood next to your house.

- **Garden**

- Plant native flowers near your garden to attract beneficial insects that eat or parasitize insect pests.
- Clean out plant debris around your garden.

- **Yard**

- Bees and wasps are important pollinators or insect predators. If you don't bother them, they won't bother you.
- Applying insecticides in your yard to kill a pest will also kill beneficial insects.
- Eliminate mosquito-breeding sites by emptying or removing all potential sources of stagnant water.



Paul Schlein

*Tomato hornworm parasitized by braconid wasp larva.*

### *Additional Information on Bugs*

- Plants that Attract Beneficial Insects:

[maine.gov/dacf/php/pesticides/documents2/master%20gardeners/BeneficialsFinalPDF.pdf](http://maine.gov/dacf/php/pesticides/documents2/master%20gardeners/BeneficialsFinalPDF.pdf)

- Got Pests?: [maine.gov/dacf/php/gotpests/index.html](http://maine.gov/dacf/php/gotpests/index.html)

# LIVING WITH PESTS

## LIVING WITH TICKS

### Why?

Ticks are present in our ecosystem and they are not going away. The deer tick can transmit four diseases, with Lyme being the most common. Fortunately, there are things you can do to reduce your family's interaction with ticks, other than applying toxic insecticides that can harm you and the environment. There is no substitute for daily personal inspection when in a tick-infested area.



*Sexes/stages of blacklegged (deer) tick, compared to the head of a pin.*

Jim Occi, BugPics, Bugwood.org

### Steps You Can Take

- Maintain a well-manicured border between your house and brushy areas.
- Trim back tree branches that overhang your lawn. Clear out low brush, vines, and leaf litter.
- **When in the woods**
  - Wear long sleeves and long pants.
  - Wear light-colored clothing to make tick detection easy.
  - Pull your socks up over your pant legs.
  - Avoid brushy areas and sitting or lying on the ground.
- **After returning home**
  - Inspect your children, pets, and yourself for ticks. Ask another person to inspect those hard-to-see places.
  - Remove ticks found with tweezers or a tick removal spoon.
  - Monitor the bite site for any signs of a bull's-eye rash. If the rash or other symptoms appear, contact your physician.

### Additional Information on Ticks

- Tick Identification Lab: [extension.umaine.edu/ipm/tickid/](http://extension.umaine.edu/ipm/tickid/)
- Lyme Disease Fact Sheet: [maine.gov/dhhs/mecdc/infectious-disease/epi/vector-borne/lyme/documents/Lyme-Fact-Sheet.pdf](http://maine.gov/dhhs/mecdc/infectious-disease/epi/vector-borne/lyme/documents/Lyme-Fact-Sheet.pdf)



# LIVING WITH PESTS

## GETTING OUT OF THE WEEDS

### **Why?**

Although weeds can be annoying additions to gardens and lawns, herbicides are not the solution. Besides the potential human health effects, they can run off into coastal water or groundwater and threaten local ecosystems. There are other control methods that will protect our water resources.

### **Steps You Can Take**

- Know your weeds. Identify which weeds grow in your yard and decide how much of each weed you are willing to live with. Some weeds are beneficial and fix nitrogen or feed pollinators; others indicate problems like soil compaction or lack of nutrients that weed removal alone will not fix.



*Crabgrass*

R Dyer, Bugwood.org

- **Lawn**

- *See section, How to Have a Truly Green Lawn.*

- **Garden**

- Place mulch or composted material around garden plants to suppress weed growth.
- Pull weeds by hand or with weeding tools. Weeds are easier to pull when they are small in the spring and when the soil is slightly moist.

### **Additional Information on Weeds**

- Weeds and Your Garden: [maine.gov/dacf/php/gotpests/weeds/factsheets/weeds-garden-cornell.pdf](http://maine.gov/dacf/php/gotpests/weeds/factsheets/weeds-garden-cornell.pdf)
- Weed ID: [maine.gov/dacf/php/gotpests/weeds/index.htm](http://maine.gov/dacf/php/gotpests/weeds/index.htm)
- Need an expert? Contact: Lois Stack, UMaine, [lois.stack@maine.edu](mailto:lois.stack@maine.edu), 207-581-2949.

# AROUND THE HOUSE

## HOUSEHOLD WASTE

### Why?

The three Rs—Reduce, Reuse, Recycle—are a great way to save resources, protect the environment, and save money. When material needs to be disposed of, it should be handled in an environmentally sound way. Every year, we are getting better and smarter about how to safely, efficiently, and effectively manage what we no longer want.



**REDUCE**

**UPCYCLE**

**REUSE**

**REPAIR**

**COMPOST**

**RECYCLE**

**DISPOSE**

### Steps You Can Take

- Upcycle or recycle everything possible.
- Take beverage containers to a redemption center.
- Plastic bags can be recycled at local grocery stores.
- Compost vegetable waste.
- Electronics can be recycled at some transfer stations.
- Fluorescent bulbs are collected at hardware and home centers.
- For ideas on recycling used oil:  
[maine.gov/dep/waste/wasteoil/documents/morpdire.pdf](http://maine.gov/dep/waste/wasteoil/documents/morpdire.pdf)
- Hazardous waste day collections prevent contamination from dangerous materials. *See:*  
[maine.gov/dep/waste/publications/hhwbroch.html](http://maine.gov/dep/waste/publications/hhwbroch.html)
- Pet and disposable diaper waste are both significant waste categories—each about 1–2% of the waste stream. Pet waste can be disposed of in septic or wastewater systems, or buried away from edible plants, and well away from the shore, where it will decompose. Use reusable cloth diapers or a delivery service.
- For paint recycling, *see* [paintcare.org/drop-off-locations/](http://paintcare.org/drop-off-locations/)

### Additional Information on Household Waste

- Reducing Municipal Waste: [epa.gov/waste/nonhaz/municipal/](http://epa.gov/waste/nonhaz/municipal/)
- Reduce, Reuse, Recycle: [epa.gov/recycle](http://epa.gov/recycle)

## AROUND THE HOUSE

### HOUSEHOLD HAZARDOUS WASTE AND MEDICAL WASTE

#### **Why?**

Households purchase and use toxic chemicals, including medicines, solvents and paint removers, oil and gas, pesticides, batteries, and oil- and water-based paint. Excess toxic material and waste need to be properly disposed of, to prevent contamination of the environment.



*Obsolete and banned pesticides should be disposed of at free town HHW collection days.*

Maine Board of Pesticides Control

#### **Steps You Can Take**

- Try to find safer, alternative products.
- Only purchase the amount you need.
- When you have hazardous waste, use the town hazardous waste collection day or contact Maine DEP for alternatives.
- The state sponsors an annual waste medicine collection day, typically through local police departments. Check with local police, pharmacies, and hospitals for everyday drop off.

#### **Additional Information on Waste**

- Medical Waste:
  - Maine Drug Enforcement Agency: [maine.gov/dps/mdea/](http://maine.gov/dps/mdea/)
  - Dispose My Meds: [disposemy meds.org/index.php/pharmacy-locator](http://disposemy meds.org/index.php/pharmacy-locator)
- Maine Waste Disposal: [maine.gov/dep/waste/publications/hhwbroch.html](http://maine.gov/dep/waste/publications/hhwbroch.html)

# AROUND THE HOUSE

## MAINTAINING A HEALTHY SEPTIC SYSTEM

### Why?

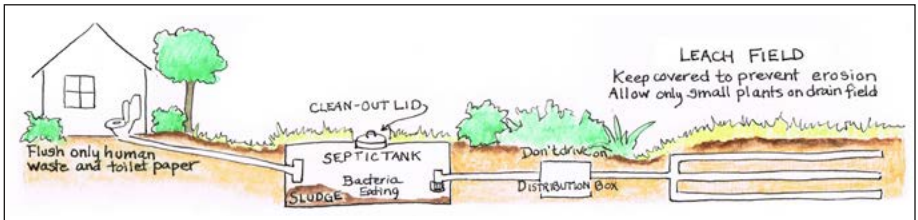
A healthy septic system will protect your environment and the environment of neighbors downhill. It will avoid contaminating your and your neighbor's groundwater with disease-causing bacteria and viruses. A malfunctioning or failed septic system will lower your property value and cost you money.



Phine Ewing

### Steps You Can Take

- Have your septic system pumped every 3–5 years.
- Conserving water improves the operation of your septic system.
- *Do not* use your toilet as a trash can. Only flush human waste and toilet paper.
- Don't dispose of toxic chemicals or oils down your drain.
- Avoid parking on or driving across your leach field.
- Plant trees and bushes away from your leach field; roots can damage septic systems.



Phine Ewing

### Additional Information on Septic Systems

- Your Septic System: [umaine.edu/publications/7080e/](http://umaine.edu/publications/7080e/)
- Septic Systems: [epa.gov/septic](http://epa.gov/septic) (see Why Maintain Your Septic System, How to Care for Your Septic System, What to Do If Your Septic System Fails, and How Your Septic System Works)

# GET INVOLVED

## CONSERVE OUR RESOURCES, BUILD COMMUNITY

### *Why?*

In small towns such as ours, each of us takes care of our families and joins with our neighbors to conserve our resources and protect our environment. Together we will ensure a great future for our kids and the community. If this guide has left you with questions, or an increased desire to help out, please ask and please do.



Kathy Gravino

### *Steps You Can Take*

- Pick up litter.
- Offer to steward a favorite place.
- Volunteer with a nonprofit.
- Join a town committee.
- Stay involved and help educate others.

### *Additional Information on Getting Involved*

- Annual Maine Coastal Cleanup: [maine.gov/dacf/mcp/planning/coastweek/cleanup.htm](http://maine.gov/dacf/mcp/planning/coastweek/cleanup.htm)
- Kennebec Estuary Land Trust: [kennebecestuary.org/](http://kennebecestuary.org/)
- Friends of Merrymeeting Bay: [fomb.org/](http://fomb.org/)
- Maine Master Naturalist Program: [mainemasternaturalist.org](http://mainemasternaturalist.org)
- Midcoast Conservancy: [midcoastconservancy.org/](http://midcoastconservancy.org/)
- Town committee or conservation commission

# GET INVOLVED

## LOCAL CONTACTS

### **Arrowsic**

- Code Enforcement Officer: Michael Kreindler, 207-442-7443
  - Shoreland requirements found in town ordinances: [arrowsic.org/codes/Zoning\\_Ordinances%202015-10-5.pdf](http://arrowsic.org/codes/Zoning_Ordinances%202015-10-5.pdf)
- Shellfish Warden: Jon Hentz, 207-371-2732
- Shellfish Committee: Bill Blaikock, 207-443-3725
- Conservation Commission: Phine Ewing, 207-443-9795
- Solid Waste/Recycling Committee: Paul Schlein, 207-443-3209
- Town Office: 207-443-4609
- For the most up-to-date town information: [arrowsic.org](http://arrowsic.org)

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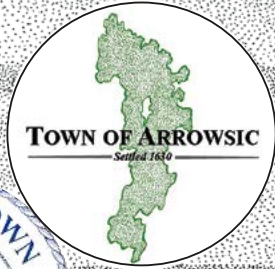
*Arrowsic Marshland Association (Conservation Commission precursor) explores Spinney Marsh.*

Arrowsic Historic Archive

This project was funded in part by the Maine Outdoor Heritage Fund (MOHF), in which proceeds from the sale of the dedicated instant lottery ticket, currently “Moose Moolah,” are used to support outdoor recreation and natural resource conservation. For more information about MOHF, go to [maine.gov/ifw/MOHF.html](http://maine.gov/ifw/MOHF.html).

Conservation Commission  
Town of Arrowsic  
340 Arrowsic Road  
Arrowsic, ME 04530

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