

ENVIRONMENTAL RESOURCES

Introduction

Solon is fortunate to be surrounded by exceptional natural beauty and a high-quality environment. The town encompasses approximately 40.74 square miles, of which about 1.09 square miles are water (approximately 2.7%).

Solon's natural resources are responsible for productive forests and farmland, clean water, and wildlife habitat. The most noticeable natural feature in Solon is the historic and scenic Kennebec River. Since antiquity, the Kennebec River has played a defining role in Solon's development, shaping both its history and many aspects of the town as it functions today.

Other important and noticeable natural resources in Solon are the other, smaller waterbodies found throughout town, as well as the abundant outdoor recreational opportunities. It is these outdoor recreational opportunities for which Solon has become known.

The seasonal and waterfront properties in Solon contribute significantly to the town's tax base because they are appraised at a higher value than non-waterfront properties. The subsequent tax base is necessary to support public services, municipal government, and public schools. All of that contributes to the overall quality and natural beauty of the town.

One of the functions of this plan is to ensure that growth and development can occur concurrently with preservation of the natural environment. It is possible, but it requires foresight. Some forms of development have greater potential for negative environmental impacts, resulting in some locations that are more suitable for development than others. It is in the town's best interests to ensure that future development is appropriate and in locations to allow maintenance of the natural assets so valued by the town's residents and by visitors.

This chapter identifies and documents Solon's natural and water resources and identifies the physical limitations the natural environment imposes on the planning process for future development.

Natural Land Resources

Geology and Soils

Solon's soils- and the underlying bedrock- shape its topography, vegetation, and the feasibility of development, farming, and forestry. Solon has in excess of over 40 different soil types or variations scattered throughout the community.

Glacial advance and retreat created much of the town's terrain, leaving extensive deposits of glacial till: a mixed layer of sand, silt, clay, and stones that often overlies bedrock and can exceed 100 feet in depth.

The State Plumbing Code identifies soils unsuitable for subsurface wastewater disposal, typically where groundwater is too close to the surface or slopes are too steep. Examples include but are not limited to Biddeford silt loam, Leicester stony loam, Monarda silt loam, Walpole fine sandy loam, Limerick silt loam, and peat and muck.

Solon's *Soils Map* (Appendix) shows the distribution of soil types, though mapping is generalized. Poor soil conditions do not automatically prohibit development but signal potential challenges.

All soils erode more quickly when vegetation is removed. Erosion contributes silt and phosphorus to waterbodies, reducing water quality, harming fish, and increasing the risk of algal blooms- issues documented across Maine and beyond. In addition to inherent environmental value, impaired water quality has been linked to reduced property values and decreased recreational opportunities.

Solon's Shoreland Zoning Ordinance includes the state's minimal regulatory requirements to prevent soil erosion and manage stormwater during before, during and after construction.

The Site Plan Review Ordinance also includes provisions under the Performance Standards section that strive to regulate and prevent excessive runoff and erosion.

Topography

Topography refers to the physical relief of an area—whether it is mountainous, hilly, or flat. Understanding a community's topographic characteristics helps identify areas limited by slope or terrain, while also recognizing that development patterns are often influenced by aesthetics and scenic views.

Two key factors define topography: **relief** and **slope**. Relief is the land's elevation above sea level, measured in feet. Slope (or gradient) is the change in elevation over a given horizontal distance, expressed as a percentage for land use planning purposes. For example, a 20-foot rise over 100 feet represents a 20% slope.

Solon's topography is often challenging, as shown on the *Topographic Map* (Appendix). The town features small mountains and valleys, with elevations ranging from about 250 feet along the Kennebec River to several peaks exceeding 900 feet in the northeast.

The topography of an individual site accounts for much of the cost, difficulty, and potential adverse impact of land development. Development on slopes greater than 15% accelerates stormwater runoff velocity, erosion, and sedimentation, particularly in sensitive watersheds. The state Plumbing Code limits the installation of septic systems to land with an original slope of 20% or less. Road construction on steep slopes becomes expensive and road maintenance costs increase significantly. Therefore, large contiguous areas with slopes of more than 20% are impractical for new construction.

Areas of slope exceeding 20% show up on topographic maps, but those are only as accurate as the scale of the map. Solon's Shoreland Zoning Ordinance classifies areas of two or more contiguous acres, with sustained slopes of 20% or greater, as a Resource Protection District. Resource Protection Districts include standards governing allowable land uses for these areas in order to prevent environmental degradation.

Although slopes greater than 20% are scattered around Solon, the greatest concentration of these areas can be found around French Hill, Parkman Hill, Rowell Mountain, Eaton Hill, Whipple Hill, and along the Kennebec River's banks, south of the village.

The topography of the land is responsible for the array of lakes and drainage basins or watersheds. A watershed is the area of land within which all precipitation drains to a single water body. The delineation of watersheds (*Water Resources Map*) shows how water runs off the land, where it accumulates, and how it collects into larger bodies of surface water. Solon's watersheds are detailed further in this chapter.

Scenic Resources

The town's varied topography, rolling hills, ridges, and hill tops, accessible by public roads, provide travelers with striking scenic views of Solon village, the Kennebec River, the White Mountains, and panoramic views of the surrounding countryside. In fact, the State has recognized the scenic quality of the area and has designated Route 201 a National Scenic Byway through Solon.

The previous Comprehensive Plan went to great extents to document and rate the numerous scenic views throughout Solon. The scenic views considered valued by residents during this Comprehensive Plan update include:

- Robbin's Hill on Route 201
- Parkman Hill Road- Somerset Woods Trustees property
- French Hill Road south and west
- Kennebec River from Solon Bridge
- Kennebec River from rest stop on Rt. 201
- Fall Brook, Solon Center
- Solon Center on Route 201
- Brighton Road on hill before Drury Road
- Williams Dam at Falls Road
- Entering Solon, traveling south on Route 201
- Solon Center looking south on Route 201

Scenic Buildings:

- Solon Hotel
- Federated Church
- Congregational Church
- South Solon Meeting House
- Fire Station on Route 201
- Solon Elementary School
- Coolidge Library

The views listed that originate from public property or permanently preserved land are not threatened in any known significant way; however, views from private property cannot be preserved by the town.

Water Resources

Floodplains

A floodplain is an area adjacent to a water body that is subject to periodic flooding. Solon's 100-year floodplains are depicted on the *Critical Natural Resources Map* in the Appendix. A 100-year flood is one in which there is a 1-percent chance of flooding in any given year. The 100-year designation is significant because federal law requires local regulation of 100-year floodplains. Solon has an approved local Floodplain Management Ordinance, which is enforced, consistent with state and federal standards, and requires periodic reviews and updates.

Solon can thank its naturally hilly topography for minimizing the number of floodplains adjacent to its larger waterbodies. In fact, there are not many properties in floodplains in Solon. The few that are in the floodplain are primarily along the Kennebec River, such as the Evergreens Campground and a few houses.

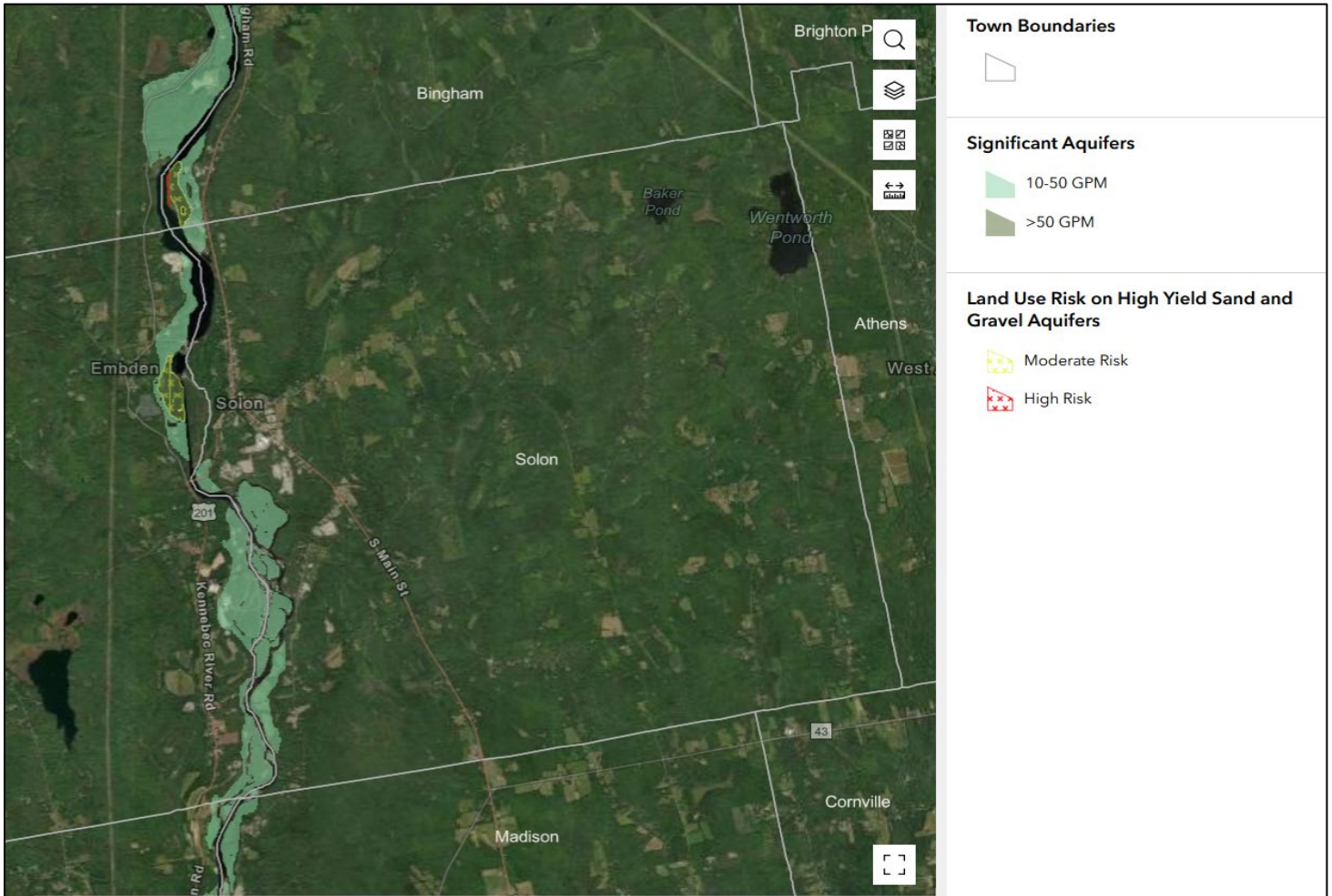
Through the years, there were a few properties in Solon and throughout Somerset County that were misidentified (for several reasons) as being in the floodplain, but upon re-evaluation, it was determined they were not actually in the floodplains, and they were removed from that designation.

Groundwater and Aquifers

Enough groundwater exists in Solon, as throughout Maine, to support residential uses. Larger supplies of groundwater exist in underground aquifers in sand and gravel deposits. The U.S. Geologic Survey maintains maps of sand and gravel aquifers throughout the State of Maine.

Significant aquifers are those that produce water in the 10-50 gallons per minute category. There are numerous significant aquifers in Solon, both fully and partially, along the Kennebec River. While they appear to be connected in Figure 1 below, the State has assigned different Aquifer ID numbers to each, so they are not all considered one aquifer.

FIGURE 1: AQUIFERS IN SOLON



Source: Maine DEP

<https://experience.arcgis.com/experience/f0d870cd18e141448cb5944c16ed5251>

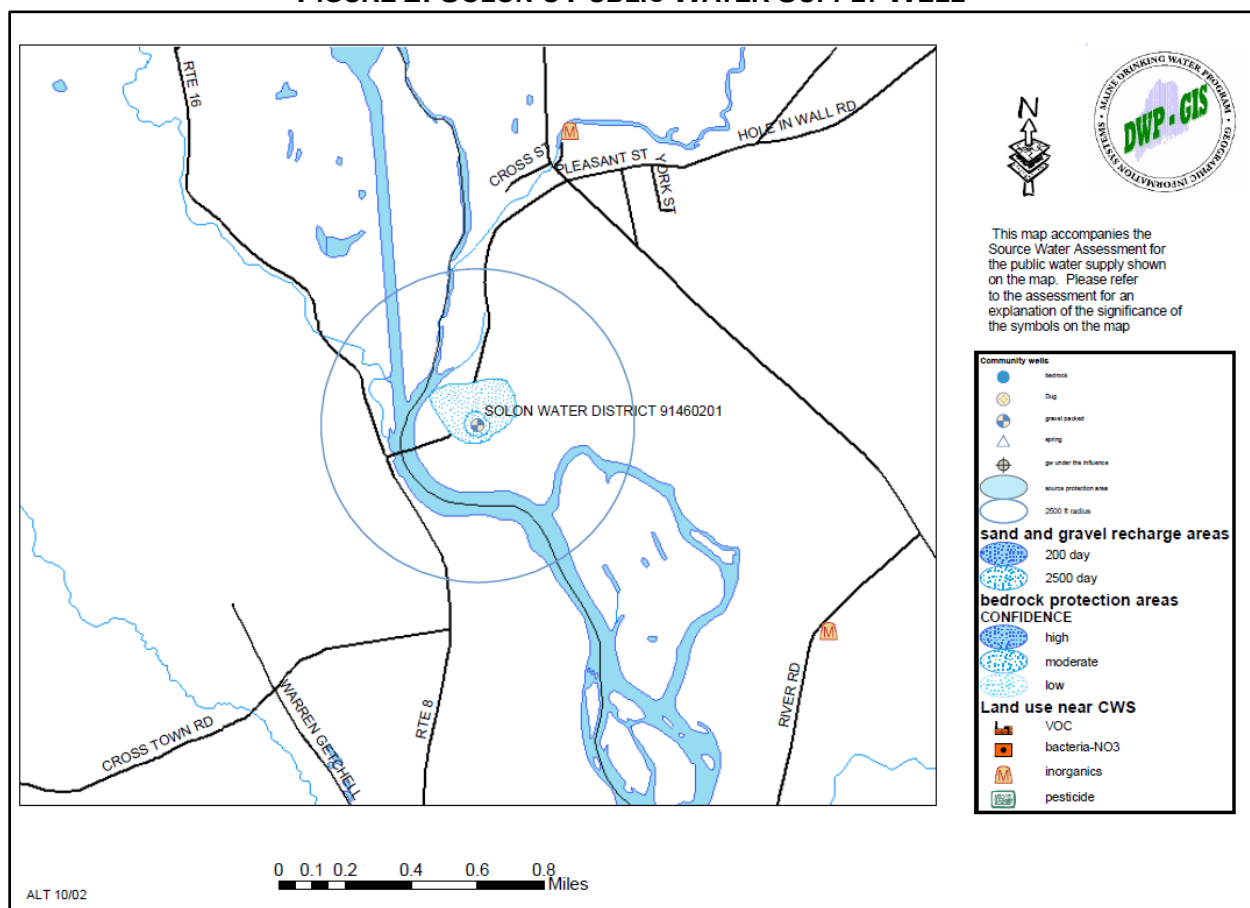
Figure 1 Highlights:

- The Kennebec River defines Solon's border with Embden. Aquifers exist all along the Kennebec River.
- None of the aquifers in Solon appear to be at risk, although since all of Solon's aquifers are shared with Embden Bingham, and Madison, any aquifer at risk even over town lines, is a concern. As an example, just over the town lines in both Embden and Bingham there are aquifers that are considered moderate risk (denoted in yellow).

Local groundwater and aquifers are the source of drinking water for all residents, not serviced by the municipal public water system. Groundwater is also a potential future source for public supplies. A "significant aquifer" provides a water supply in large enough volumes for commercial use, but all groundwater and aquifers in the town should be protected from potential contamination by oil, chemicals, or other sources.

Solon has two public water supply wells, both out of the same aquifer source. The aquifer location and public water supply well is shown in Figure 2 below.

FIGURE 2: SOLON'S PUBLIC WATER SUPPLY WELL



Source: Maine Center for Disease Control and Prevention- Drinking Water Program

Details of the public supply wells from the aquifer, as reported by the Maine Department of Health and Human Services, Drinking Water Program, which regulates public water supplies, are as follows:

TABLE 1: PUBLIC WATER SOURCES

System Name	System Type	Source ID#	Well Type	Depth	Overburden Thickness (ft)
ME0203102- Evergreens Campground	Non community	203102701*	Well Point	24'	Unknown
ME0091460- Solon Water District	Community	91460201 91460202	Gravel Gravel	70' 65'	10' 10'

Source: Drinking Water Program

* This is believed to be inoperable

The Department of Health and Human Services, Bureau of Health, Division of Health Engineering, oversees the Drinking Water Program (DWP), based on the Federal Safe Drinking Water Act (SDWA). The SDWA requires each state to complete an assessment for each public water source, which identifies and describes conditions that may threaten the quality of water available. The DWP is responsible for these assessments through the Maine Source Water Assessment Program (SWAP), which include current and potential future risks to public water supply sources.

The assessment evaluation is based on the Environmental Protection Agency's (EPA) approved evaluation methodology. Categories evaluated include risk based on well type and geology; existing and future risk of acute contamination; and existing and future risk of chronic contamination.

While no drinking water source is completely free from threats to water quality, some wells, by nature of their construction and the geology of their site, are more at risk than others. For example, dug wells and springs test positive for coliform bacteria more frequently than drilled wells; thus, drilled wells are evaluated as being a lower risk for contamination.

Solon Water District Well PWSID ME0091460

The most recent Source Water Assessment Program (SWAP) report provided by the state for this well dates to 2003, so that outdated information will not be included here. Rather, the 2022 and 2024 Annual Drinking Water Quality Report (also known as the Consumer Confidence Report) both stated that Solon Water District had no violations and the drinking water met all State and Federal requirements. Those reports can be found at the following links below:

https://assets.noviams.com/novi-file-uploads/mainerwa/2022_CCRs/solon_water_district_22-7eba96a6.pdf

https://assets.noviams.com/novi-file-uploads/mainerwa/2024_CCRs/solon_water_district_24.pdf

In 2006, Solon adopted the Solon Water Supply Protection Ordinance to protect the wellhead area around the municipal water supply well. The town enforces this Ordinance in conjunction with the Solon Water District, a quasi-governmental entity.

Source Water Assessment Program (SWAP) reports more current than 2003 could not be found for the well at the Evergreens Campground. It is important to note that this information is not up to date.

Evergreens Campground Well

Risk based on well type and site geology: Moderate risk

Existing risk of acute contamination: Moderate risk (no positive tests for contaminants and there is a septic system within 300ft of the well)

Future risk of acute contamination: Moderate risk (The status of land ownership is unknown or it has been determined that the proprietor does not own or control all the land within 300 feet of this water supply source)

The Evergreens Campground is currently on town water. The well detailed above is likely no longer in operation. The new owner of the Evergreens Campground recently had a new well drilled and is in the process of testing the water to bring it online. After required testing is done, the campground will disconnect from town water and rely on the newly drilled well.

Surface Waters

Surface waters form an interconnected system of brooks, streams, ponds, wetlands, and lakes that ultimately drain to the sea. Wetlands regulate stormwater and provide wildlife habitat, while lakes and rivers support scenic value, recreation, and local economic activity. All waterbodies are vulnerable to pollution and overuse, which can diminish environmental quality and reduce property values.

Solon's surface waters are central to the town's natural character and to the health of its residents and wildlife. However, land-use activities- such as failing wastewater systems, poor agricultural practices, and construction-related erosion- can degrade water quality. Protecting these resources begins with understanding their condition and the factors that influence them.

State law requires all waterbodies to be protected under the local Shoreland Zoning Ordinance. Solon's Shoreland Zoning Ordinance, detailed more completely later in this chapter, includes four districts with varying levels of protection and intended use.

Additionally, the State regulates all wetlands greater than 10 acres by enforcing the "Freshwater Wetlands Act", the "Stream Alteration Act", and the "Great Ponds Act". Plans to develop or make alterations to these areas require a permit from the Department of Environmental Protection.

Rivers and Streams

The state has four classifications for freshwater rivers, streams, and brooks: AA, A, B, and C. The classification system should be viewed as a hierarchy of risk more than for use or quality assessment. Ecosystems that are more natural in their structure and function can be expected to be more resilient to new stressors and to show more rapid recovery. The classifications are detailed below.

- **Classes AA** involve little risk since activities such as waste discharge and impoundment are prohibited. The expectation to achieve natural conditions is high and degradation is unlikely.
- **Class A** waters allow impoundments and very restricted discharges, so the risk of degradation, while quite small, does increase since there is some small human intervention in the maintenance of the ecosystem.
- **Classes B** has fewer restrictions on activities but still maintain high water quality criteria. Class B is considered more at risk than a Class A stream. The risk is the possibility of a breakdown of the ecosystem and loss of use due to either natural or human-caused events.
- **Classes C** has the least restrictions on use and the lowest (but not low) water quality criteria. Classes C waters are still good quality, but the margin for error before significant degradation might occur in these waters in the event of an additional stress being introduced (such as a spill or a drought) is the least.

The federal Environmental Protection Agency (EPA) also classifies some rivers and streams through a 1-5 numbering system, with subcategories for some numbers.

Category 1: The waterbody is attaining all designated uses, meaning all water quality standards are met for that river or stream.

Category 2: Attaining some designated uses- insufficient or no data to determine if the remaining uses are met.

Category 3: There is insufficient or no data and information to determine if any designated use is attained.

Category 4: The waterbody is impaired or threatened for one or more uses, but does not require a Total Maximum Daily Load (TMDL) cleanup plan because:

- **4a:** A TMDL has already been completed.
- **4b:** Other pollution control requirements are expected to meet standards.
- **4c:** The impairment is not caused by a pollutant.

Category 5: The waterbody is impaired or threatened for one or more designated uses by one or more pollutants and requires a TMDL. These are the waters entered onto a state's 303(d) list of polluted waters.

In addition to multiple minor tributaries and unnamed streams, Solon's primary rivers and streams include the following:

TABLE 2: RIVER AND STREAM CLASSIFICATIONS

Name	Location	Classification	
		EPA	State
Kennebec River	Western town boundary	2	A
Fall Brook	Northwest corner, flows into the Kennebec River	2	B
Michael Stream	North-central west to Kennebec River	2	B
Longley Brook	Parallels the eastern town boundary with Athens	–	B
Meadow Brook	Northeast corner, flows into Wentworth Pond	–	B
Kincaid Stream	Originates in the center of town and flows into Cornville	–	B
Padham Brook	South-central part of town	2	B

Sources:

<https://maine.maps.arcgis.com/apps/instant/portfolio/index.html?appid=7ad05604168b4264bb4a14dcb56f6eeb>

<https://experience.arcgis.com/experience/d74a8708950c4bc184c3cb031f8dcd93>

Aside from the Kennebec River, all rivers and streams in Solon were classified by the State as Class B. Class B waterbodies are suitable for drinking water supply, recreation in and on the water, fishing, industrial processes and cooling water supply, hydroelectric power generation, navigation and an unimpaired habitat for fish and other aquatic life.

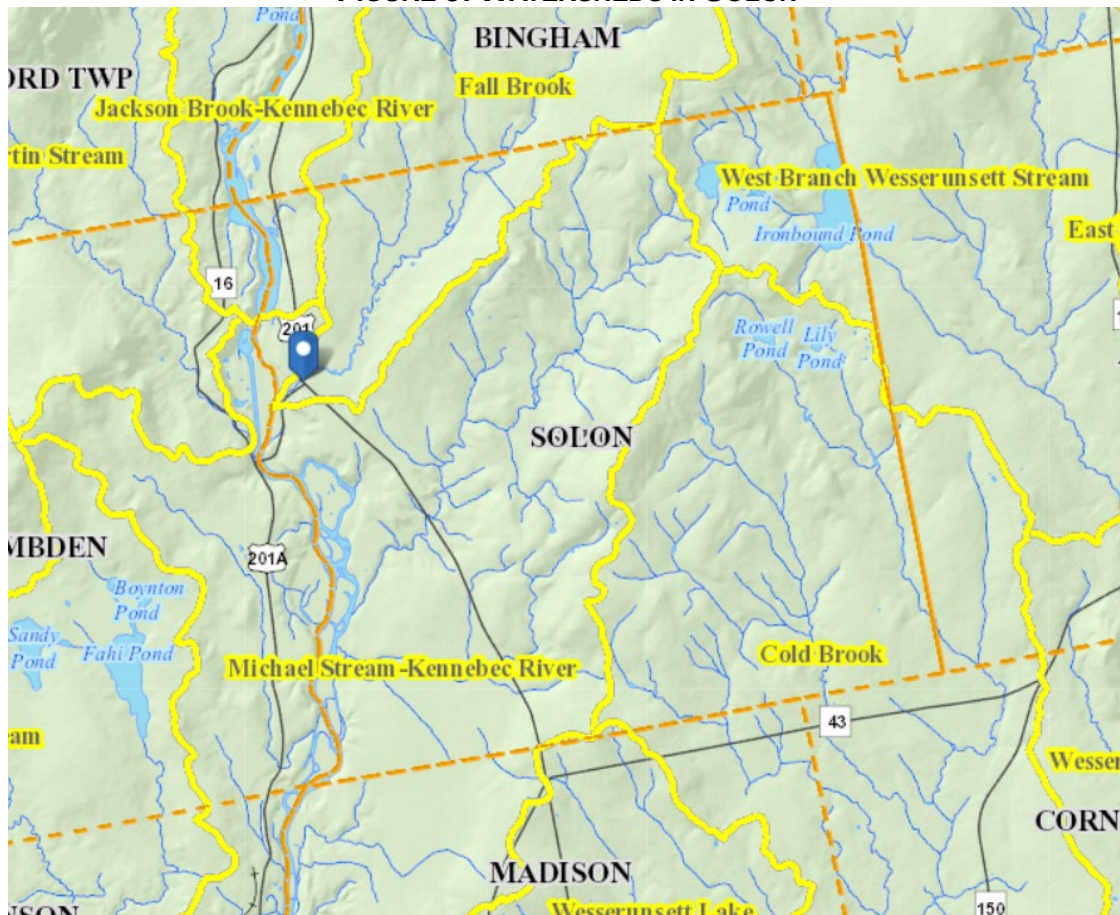
Of the rivers and streams evaluated by the EPA, all were category 2, which does not necessarily mean they are impaired- it may mean there is insufficient data to make a full evaluation.

The *Water Resources Map* (Appendix) shows Solon's streams, lakes, ponds, and wetlands. Most streams are bounded by the Stream Protection District, as set forth in the Shoreland Zoning Ordinance. The Stream Protection District covers all land within 75 feet of a stream's normal high-water line, except where that area falls within 250 feet of a great pond, river, or the upland edge of a wetland. In those cases, the land is regulated under the shoreland district for the larger waterbody or wetland. Shoreland Zoning protection measures will be detailed completely in this chapter.

Watersheds

A watershed is a natural drainage basin that collects precipitation and sends it to a body of water through an interconnected system of streams, brooks, and other wetlands. Smaller watersheds then feed into larger watersheds. Unmanaged or improper human activities in any part of a watershed can negatively affect the water quality of the waterbody into which the watershed drains.

FIGURE 3: WATERSHEDS IN SOLON



Source: Beginning with Habitat

Figure 3 Highlights:

- Solon consists of the following major watershed divides:
 - Michael Stream-Kennebec River
 - Cold Brook
 - West Branch Wesserunsett Stream
 - Fall Brook
 - Jackson Brook-Kennebec River

Because the Fall Brook watershed encompasses a large drainage area, precipitation events can result in substantial increases in stream volume and flow. This is often underestimated and should be considered for future planning.

All the watershed divides also extend into other neighboring towns, underscoring the importance of regional watershed planning to maintain water quality. Unfortunately, there have not been opportunities to partner with other municipalities or regional advocacy groups to promote water resource protection, nor have there been opportunities for regional cooperation or planning to protect shared natural resources, such as watersheds.

Wetlands

Wetlands are essential parts of a healthy environment. As natural low points, they absorb flood waters. As a lush and moist habitat, they are the best and sometimes only breeding areas for fish and wildlife, including most waterfowl. They have been proven to hold sediments and nutrients from water before they reach streams, straining out pollution. Wetlands also serve as important travel corridors for many species of wildlife and provide open space for some forms of recreational enjoyment and/or aesthetic appreciation.

Even the slightest alteration to a wetland can seriously affect its natural function and result in adverse impacts to the environment. A few examples of impacts include flooding, decreased water quality, decreased recharge of groundwater, loss of habitat and eventually loss of wildlife.

While a precise definition of a wetland is not universally accepted, making it difficult for local authorities to enforce the laws, wetlands share three essential elements. They all have non-permeable soils, a water table at or near the surface, and there is a presence of water-loving vegetation (rushes, cattails, red maple).

Solon is home to numerous such wetlands (*Water Resources Map, Critical Natural Resources Map* in the Appendix). The most significant are often associated with open water. The Kennebec River, Fall Brook, and Michael Stream are all lined with wetlands. There are also other small lakes and ponds throughout Solon with at least some wildlife wetlands connected to them.

The Solon Shoreland Zoning Ordinance provides protection of wetlands through setback requirements consistent with the mandatory Shoreland Zoning Ordinance.

Vernal Pools

A vernal pool is a seasonal inland waterbody that fills in spring or fall and often dries in summer. Because they lack predatory fish, these pools provide essential breeding habitat for wood frogs, spotted and blue-spotted salamanders, and fairy shrimp.

Since 2007, significant vernal pools—those supporting state-listed species or high numbers of key amphibians—are protected under the Natural Resources Protection Act (NRPA). A 250-foot buffer around these pools is regulated, and activities within it require Maine DEP approval.

No significant vernal pools are currently mapped in Solon. The town may wish to survey for vernal pools and consider incorporating related protections into development review or Shoreland Zoning.

Lakes and Ponds

In addition to the Kennebec River, Solon's lakes and ponds are essential to the town's landscape, character, and recreational draw. Open bodies of water provide scenic views, a variety of recreational opportunities, important fish and wildlife habitats, sources of drinking water, and prime real estate development opportunities.

The quality of water in any waterbody depends on many factors, including (not an exhaustive list):

- surface area and depth;
- flushing rate;
- size of the watershed;
- extent of development on the shore;
- extent of agricultural activity in the watershed; and,
- degree to which obvious sources of pollution, such as septic effluent, sewage, agricultural fertilizers, and manure are kept from entering the waterbody.

The state classifies all waterbodies of 10 acres or more as Great Ponds, which- along with their shorelands- are regulated under Shoreland Zoning and Maine's Natural Resources Protection Act (MNRPA). Both Great Ponds and smaller natural lakes and ponds share the same GPA water quality classification. Class GPA waters are intended to support drinking water, recreation, fishing, hydropower, and healthy aquatic habitat. Waterbodies that do not meet these standards are considered "nonattainment" lakes. As with river classifications, GPA reflects a hierarchy of ecological risk rather than a measure of current use or water quality, indicating the potential for ecosystem decline from natural or human impacts.

Solon's lakes and ponds include the following, along with several smaller, unnamed ponds:

- Baker Pond
- Chase Pond
- Lily Pond
- Mud Pond
- Rowell Pond
- Solon Flowage (area of impoundment behind Williams Dam)
- Wentworth (Ironbound) Pond

Currently, none of Solon's lakes or ponds are threatened by development, overuse, or other activities. As of Maine Department of Environmental Protection Agency's 2024 Integrated Report on Water Quality, all Solon's waterbodies currently meet the GPA classification.

The following section describes the natural features and characteristics of the seven ponds and lakes in Solon. Included in these descriptions are an assessment of water quality based on eight indicators. Those indicators are listed along with the State's averages in the table below.

If sufficient data is available, the water quality for each pond or lake in Solon is shown on a scorecard created by the Lakes of Maine. The table below details the four categories on each score card.

TABLE 4: SCORE CARD CATEGORY DETAILS

Condition Category	Water Quality Trends	Invasive Plants	Shoreland & Habitat	Lake Vulnerability
Good	Available data indicate that water quality is <i>stable or improving</i>	The lake may be at a <i>reduced risk</i> for a new aquatic invasive plant infestation	Shoreland and littoral habitat are likely only <i>minimally</i> impacted by shoreland activities	The lake may be <i>less vulnerable</i> to water quality changes than other lakes
Fair	Available data indicate that water quality may be <i>declining</i>	The lake may be at a <i>moderate risk</i> for a new aquatic invasive plant infestation	Shoreland and littoral habitat are likely <i>moderately</i> impacted by shoreland activities	The lake may be <i>moderately vulnerable</i> to water quality changes
Poor/At Risk	Available data indicate that water quality may be <i>strongly declining</i>	The lake may be at a <i>higher risk</i> for a new aquatic invasive plant infestation	Shoreland and littoral habitat are likely <i>heavily</i> impacted by shoreland activities	The lake may be <i>highly vulnerable</i> to water quality changes
Unknown	There isn't enough information available to determine Water Quality Trends	There isn't enough information to determine the threat of a new aquatic plant infestation due to lack of available data.	There isn't enough information to determine the condition of the shoreland and littoral habitat due to lack of available data	There isn't enough information to determine the vulnerability of the lake to water quality changes due to lack of data

Source: <https://lakesofmaine.org/index.html>

Baker Pond

Direct Drainage Area: approximately 407 acres in Solon

Area: 58 acres

Maximum Depth: 67 feet

Mean Depth: 26 feet

Invasive species: unknown

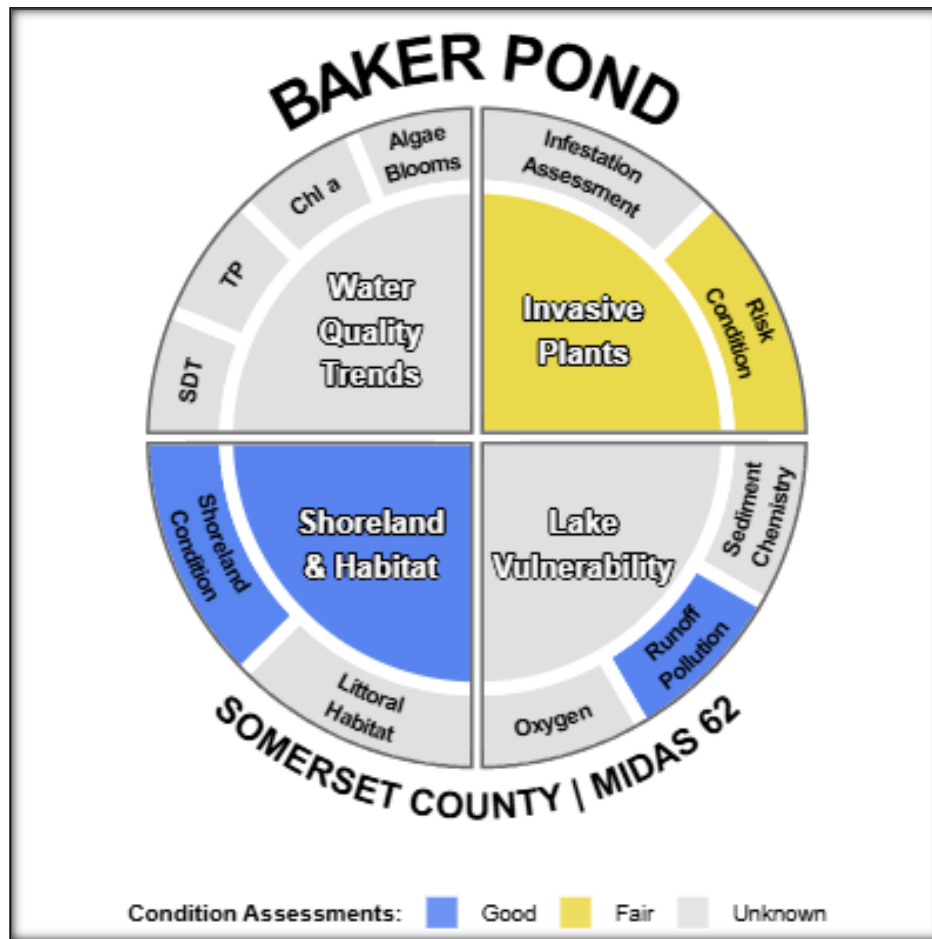
Fisheries management: Cold and warmwater

Fish species:
Brook trout (<i>Salvelinus fontinalis</i>)
Brown Trout (<i>Salmo trutta</i>)
Golden Shiner (<i>Notemigonus crysoleucas</i>)
Pumpkinseed (<i>Lepomis gibbosus</i>)
Redbreasted Sunfish (<i>Lepomis auritus</i>)
Smallmouth bass (<i>Micropterus dolomieu</i>)
White Sucker (<i>Catostomus commersoni</i>)

Source: Lakes of Maine

No information was available on plant species, mussels, crayfish, or loon counts.

BAKER POND SCORE CARD:



Source: Lakes of Maine

Baker Pond Score Card Highlights:

- Water Quality Trends:
 - There was not enough data to make a determination on Baker Pond's Water Quality Trends.
- Shoreland and Habitat:
 - Any conversion of natural habitat to developed land has an adverse impact on water quality and habitat conditions.
 - Pond is rated as having **good** shoreland conditions due to little to no development. This rating is based on the percentage of impervious surfaces near the shoreline. Baker Pond's shoreline development was less than 1%, placing it in the "good" category.
 - There was not enough data to evaluate the littoral habitat of Baker Pond.
- Lake Vulnerability:
 - Sediment samples have not yet been collected for evaluation.
 - Baker Pond has not been identified as especially vulnerable to Runoff Pollution at this time. By default, this places Baker Pond in the "Good" category.

- There is not enough data to evaluate the dissolved oxygen levels at this time.
- Invasive Plants
 - Although the current status of aquatic invasive species is unknown, Baker Pond is considered at moderate risk for aquatic invasive species infestation through DEP's risk-assessment model. This risk condition was based on the fact that the last invasive species survey was conducted 3-6 years ago, even though no aquatic invasives were found at that time.

Chase Pond

Direct Drainage in Solon: 217 acres

Area: 12 acres

Maximum Depth: 5 feet

Mean Depth: 4 feet

Invasive species: unknown

Fisheries management: no fishery

Fish species:
American Eel (<i>Anguilla rostrata</i>)
Brook trout (<i>Salvelinus fontinalis</i>)
Brown Bullhead (<i>Ameiurus nebulosus</i>)
Creek chub (<i>Semotilus atromaculatus</i>)
Finescale dace (<i>Phoxinus neogaeus</i>)
Golden shiner (<i>Notemigonus crysoleucas</i>)
Pumpkinseed (<i>Lepomis gibbosus</i>)
Redbreasted Sunfish (<i>Lepomis auratus</i>)
Smallmouth Bass (<i>Micropterus dolomieu</i>)
White Sucker (<i>Catostomus commersoni</i>)

Source: *Lakes of Maine*

No information was available on plant species, mussels, crayfish, or loon counts.

Baker Pond flows into Chase Pond. Chase Ponds drains into Ironbound Pond. Chase Pond is also known as Chase Bog.

Chase Pond Score Card: There was no water quality information available.

Lily Pond

Direct Drainage in Solon: –
Area: 11 acres
Maximum Depth: –
Mean Depth: –
Invasive species: unknown
Fisheries management: N/A

Fish species:
Banded Killifish (<i>Fundulus diaphanous</i>)
Blacknose Shiner (<i>Notropis heterolepis</i>)
Fathead Minnow (<i>Pimephales promelas</i>)
Norther Redbelly dace (<i>Phoxinus eos</i>)
Pumpkinseed (<i>Lepomis gibbosus</i>)

Source: Lakes of Maine

No information was available on plant species, mussels, crayfish, or loon counts.

The land around Lily Pond is mostly privately owned, preventing extensive development.

Lily Pond Score Card: There was no water quality information available.

Mud Pond

Direct Drainage:
Area: 6 acres
Maximum Depth: –
Mean Depth: –
Invasive species: unknown
Fisheries management: N/A

No information was available on plant species, mussels, crayfish, or loon counts.

Mud Pond is located on the northwest corner of Ironbound Pond. It is inaccessible by road.

Mud Pond Score Card: There was no water quality information available.

Rowell Pond

Direct Drainage in Solon: 521 acres

Area: 23 acres

Maximum Depth: 6 feet

Mean Depth: 5 feet

Invasive species: unknown

Fisheries management: Bait

Fish species:
Common shiner (<i>Luxilus cornutus</i>)
Creek chub (<i>Semotilus atromaculatus</i>)
Fathead Minnow (<i>Pimephales promelas</i>)
Finescale dace (<i>Phoxinus neogaeus</i>)
Golden shiner (<i>Notemigonus crysoleucas</i>)
Pumpkinseed (<i>Lepomis gibbosus</i>)
White sucker (<i>Catostomus commersoni</i>)

Source: Lakes of Maine

No information was available on plant species, mussels, crayfish, or loon counts.

There is very little development on Rowell Pond as the shoreline is in the Resource Protection District.

Rowell Pond Score Card: There was no water quality information available.

Solon Flowage (impoundment behind Williams Dam)

Area: 285 acres

Maximum Depth: –

Mean Depth: –

Invasive species: unknown

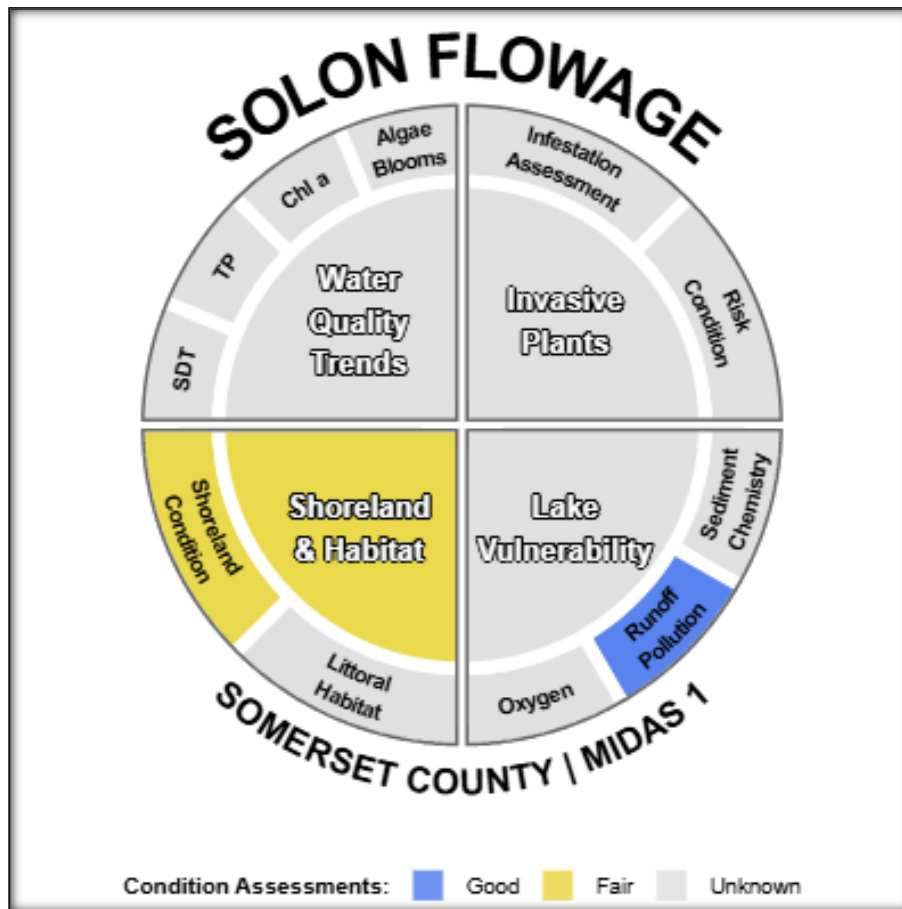
Fisheries management: N/A

No information was available on plant species, mussels, crayfish, or loon counts.

Loon counts: No information available.

The Solon Flowage is a section of the Kennebec River impounded by Williams Dam located above the town.

SOLON FLOWAGE SCORE CARD



Source: Lakes of Maine

Solon Flowage Score Card Highlights:

- Water Quality Trends:
 - There was not enough data to make a determination on Solon Flowage's Water Quality Trends.
- Shoreland and Habitat:
 - Any conversion of natural habitat to developed land has an adverse impact on water quality and habitat conditions.
 - The Solon Flowage is rated as having **fair** shoreland conditions due to a moderate level of development. This rating is based on the percentage of impervious surfaces near the shoreline; in this case, 1–10% impervious area placed it in the “intermediate development” category, resulting in a fair condition assessment.
- Lake Vulnerability:
 - Sediment samples have not yet been collected for evaluation.
 - Solon Flowage has not been identified as especially vulnerable to Runoff Pollution at this time. By default, this places Solon Flowage in the “Good” category.
 - There is not enough data to evaluate the dissolved oxygen levels at this time.

- Invasive Plants:
 - The current status of aquatic invasive plants in Solon Flowage is unknown because of a lack of data. Surveys for aquatic invasive plants have not been completed at Solon Flowage.

Wentworth (Ironbound) Pond

Direct Drainage in Solon: 568 acres

Area: 224 acres

Maximum Depth: 48 feet

Mean Depth: 19 feet

Invasive species: Unknown

Fisheries management: Warm and coldwater

Fish species:
Banded Killifish (<i>Fundulus diaphanus</i>)
Brook trout (<i>Salvelinus fontinalis</i>)
Creek chub (<i>Semotilus atromaculatus</i>)
Golden shiner (<i>Notemigonus crysoleucas</i>)
Northern redbelly dace (<i>Phoxinus eos</i>)
Rainbow smelt (<i>Osmerus mordax</i>)
Redbreasted Sunfish (<i>Lepomis auratus</i>)
Smallmouth Bass (<i>Micropterus dolomieu</i>)
Splake (<i>Salvelinus hybrid</i>)
White Perch (<i>Morone americana</i>)
White Sucker (<i>Catostomus commersoni</i>)

Source: *Lakes of Maine*

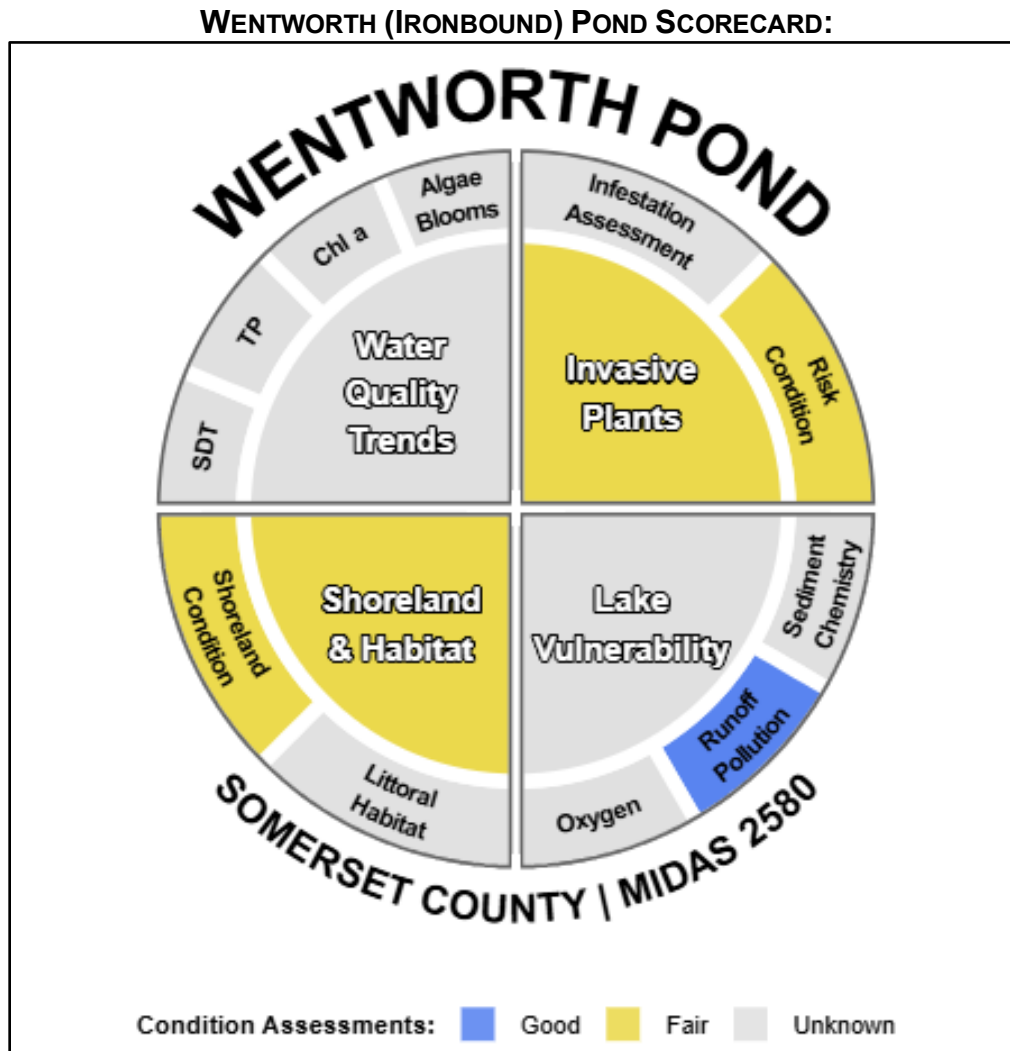
No information was available on plant species, mussels, crayfish, or loon counts.

The dual names of Ironbound and Wentworth Pond stem from a mixture of early pioneer homesteading and colloquial descriptions of the landscape.

The geographic and historical context behind the names includes:

- **The Wentworth Legacy:** The name Wentworth Pond traces back to John Wentworth, a Revolutionary War soldier from Massachusetts who arrived as a pioneer in 1798. He cleared 300 acres of wilderness near the water's edge, built the area's first two-story home in 1800s, and raised his family there. Because the Wentworth family homestead anchored the early settlement of the West Athens and Solon border, early cartographers and town records formally designated the body of water as "Wentworth Pond". It remains the official name recognized on state documents and Maine Department of Inland Fisheries and Wildlife maps.

- **The "Ironbound" Moniker:** Locally, residents frequently call it "Ironbound Pond". In Maine topographer history, "Ironbound" was a descriptive term used by early settlers to describe bodies of water with dense, rocky shorelines, dark water, or an abundance of bog iron ore in the surrounding soil.
- **Classical Neighbors:** The name history of the pond is also tied to the regional theme of the towns it spans. When the town of Solon was incorporated in 1809, it was named after Solon, one of the great sages of Ancient Greece. This choice directly complemented its neighboring town, Athens, which borders the eastern half of Wentworth Pond.



Wentworth (Ironbound) Pond Score Card Highlights:

- Water Quality Trends:
 - There was not enough data to make a determination on Wentworth Pond's Water Quality Trends.
- Shoreland and Habitat:
 - Any conversion of natural habitat to developed land has an adverse impact on water quality and habitat conditions.

- Wentworth Pond is rated as having **fair** shoreland conditions due to a moderate level of development. This rating is based on the percentage of impervious surfaces near the shoreline; in this case, 1–10% impervious area placed it in the “intermediate development” category, resulting in a fair condition assessment.
- There was not enough data to evaluate the littoral habitat of Wentworth Pond.
- Lake Vulnerability:
 - Sediment samples have not yet been collected for evaluation.
 - Wentworth Pond has not been identified as especially vulnerable to Runoff Pollution at this time. By default, this places Wentworth Pond in the “Good” category.
 - There is not enough data to evaluate the dissolved oxygen levels at this time.
- Invasive Plants
 - The current status of aquatic invasive plants in Wentworth Pond is unknown because of a lack of data. The lake was surveyed 3-6 years ago (2018-2020), and no aquatic invasive plants were found. New survey data are needed to make a better-informed determination, resulting in the **fair** status category.
 - Infestation Assessment- no data.

Wentworth Pond is the most developed pond/waterbody in Solon. The north end of the pond is not developable land, because it is in the Resource Protection District because it is swampy.

Of the land around Wentworth that is developed, the majority of the parcels are within the Skylark Subdivision (approved in 1972). This subdivision established deed restrictions preventing further division of the parcels, resulting in a lower density of development for parcels within this subdivision.

Developed parcels outside the Skylark Subdivision are subject to further division if they are large enough and meet the town’s minimum lot size requirements.

Threats to Solon’s Water and Natural Resources

Water quality is influenced by many factors, including a waterbody’s size and depth, flushing rate, watershed size, shoreline development, agricultural activity, and the presence of pollution sources. The greatest current threat is phosphorus runoff from the watershed. Although naturally occurring, excess phosphorus causes nuisance algal blooms and heavy plant growth, which can reduce dissolved oxygen and lead to fish kills.

Phosphorus levels increase when a watershed is disturbed, especially by human activity. Because most of Solon lies within the Michael Stream–Kennebec River, Fall Brook, or Cold Brook watersheds, development in these areas increases the risk of phosphorus and other pollutants entering local waters.

Common contributors to water quality decline include poorly managed development, impervious surfaces, failing septic systems, fertilizers, poor stormwater management, and erosion. Impervious surfaces accelerate runoff that carries pollutants into storm drains and ultimately into waterbodies. Faulty septic systems—especially in older or converted seasonal homes within the Shoreland Zone—also pose a significant risk. Although Maine requires septic inspections for property transfers in the Shoreland Zone, this requirement is not triggered when properties are passed down without a formal title transfer, and Solon does not require inspection reports to be filed with the town.

Fertilizers from agriculture or lawn care can also enter surface waters, fueling algal blooms and degrading water quality. The absence of natural vegetative buffers between lawns and waterbodies further increases this risk.

Public infrastructure work near water is managed to minimize erosion and sedimentation. Solon’s Public Works Department incorporates Maine DOT best management practices—such as proper culvert replacement, street sweeping, salt/sand storage, and ditch maintenance—to help protect local water quality. In addition, Public Works are required to attend “Safe Stream Crossing” workshops and culvert replacements must meet State standards and regulations.

An increasing concern statewide in relation to water quality is the threat of invasive water plants. Maine, for years isolated from the plague of milfoil, is now seeing increasingly frequent occurrences. Although Solon is currently not yet infested with any known aquatic invasives, Wentworth Pond is considered to be at moderate risk for infestation. This is particularly concerning since this lakeshore is where many of the seasonal camps are located. Invasive aquatic species could have a significant impact on property values there.

Point and Nonpoint Source Pollution

Point Source Pollution can be linked back to one location, or point, such as a leaking oil tank. Point sources come from a direct source and are easily identified and managed.

Nonpoint Source Pollution cannot be traced to one sole source. One example is stormwater runoff. Stormwater can come from anywhere, especially impervious surfaces. Stormwater is water that does not soak into the ground during a precipitation event, but flows on top of the ground instead, to a body of water. As this water travels across the surface of the ground, it collects pollutants such as petroleum products, heavy metals, fertilizers and manure, which can originate from any location within a watershed. Where stormwater runoff erodes soil, the soil itself transports phosphorus into waterbodies.

There are no known or specified nonpoint source impaired watersheds in Solon.

Known point sources of pollution include such things as oil spills, leaking underground storage tanks, fuel spills/leaks, and other accidents. The DEP maintains a list of documented cases dated back to the early 1990s and possibly before then. To further protect the environment and document potential sources of pollution, the DEP also maintains a record of registered petroleum tanks, both aboveground and below ground, active and inactive.

According to the DEP EGAD site, , the following point sources of pollution have been documented in Solon:

(<https://experience.arcgis.com/experience/33fb5bafba71434fa88f3111bc224492>)

- Leaking aboveground storage tank (South Main Street)
- Two fuel oil spills
- The Transfer Station (River Road)
- Several ash utilization sites

As preventive measures, two gas stations in Solon removed underground storage tanks a while ago, even though they weren't leaking. Griswold's Country Store has always had above-ground storage tanks as preventive measures, as per requirements set by the Planning Board.

To further manage and prevent both point and nonpoint sources of pollution, Solon's Shoreland Zoning Ordinance includes the state's mandatory language about managing stormwater runoff. The Site Plan Review Ordinance also includes language about managing stormwater runoff under Section II. C- Performance Standards.

Brookfield White Pine Hydro LLC, a renewable energy generating plant on the Embden side of the Kennebec River, has an active Maine Pollutant Discharge Elimination System (MEPDES) permit for discharging water into the Kennebec River. This type of permit is issued by the State of Maine and regulated by the Environmental Protection Agency.

Remediation Sites

In addition to the point and nonpoint sources of pollution detailed above, there is one three-acre remediation site in Solon- the municipal landfill on River Road. The landfill was abandoned in 1977, then closed in 1994, as required by the DEP Landfill Closure and Remediation Program. The closure used the Interim Cover and Grading (ICAG) Program and was capped with topsoil, according to State regulations.

The old Solon Landfill remediation site had wells that were monitored for a period of time; however, this is no longer required.

The former Solon Manufacturing facility (once a critical economic pillar) on Ferry Street near the Kennebec River in Solon is a closed industrial site. While the company's traditional wooden products division ended, the Ferry Street property is currently a defunct, privately held parcel.

Prior to closing, the facility operated for decades before the implementation of modern environmental regulations, resulting in potential legacy environmental concerns associated with past industrial practices.

When in operation, Solon Manufacturing produced two main waste streams that impacted the local environment:

1. Organic industrial wood waste (sawdust and wood shavings)
2. Municipal/industrial wastewater treatment byproducts (sludge)

Today, this site is acknowledged and noted by DEP's Environmental and Geographic Analysis Database (EGAD).

Wildlife Habitat in Solon

Waterbodies, watercourses, wetlands, and large unfragmented forest blocks are all essential to sustaining wildlife in Solon. Together, they support woodland birds, diverse wildlife populations, and in some cases, rare or endangered species. The amount and quality of these habitats reflect not only Solon's ecological diversity but also the overall health of its ecosystems. High-quality habitat is vital for maintaining robust plant, fish, and wildlife populations that support ecological, economic, and recreational needs.

The Maine Department of Inland Fisheries and Wildlife (MDIF&W) administers the **Beginning with Habitat (BwH)** program, which identifies significant wildlife habitat and critical natural areas under the Natural Resources Protection Act. BwH is a statewide, multi-agency effort that compiles and shares habitat data to help towns, land trusts, and conservation groups plan proactively for habitat protection. Solon's *Critical Natural Resources Map* (Appendix) incorporates this information.

Under MDIF&W definitions, significant habitat includes areas used by state or federally listed endangered or threatened species, as well as high- and moderate-value deer wintering areas and waterfowl/wading bird habitats.

Before conducting any activities in, on, or over significant wildlife habitats, a National Resources Protection Act (NRPA) permit must be obtained. Activities include construction, repair, or alteration of any permanent structure; dredging, bulldozing, removing or displacing soil, sand, or vegetation; and drainage or filling. The standard for protecting significant habitats highlights mitigation and compensation. Actions must be taken to A) avoid negative impacts on habitats, B) minimize the impacts if unavoidable, C) restore or rehabilitate impacted habitats, D) reduce an impact over time, or E) replace the affected habitat.

Deer Wintering Areas



Although white-tailed deer (*Odocoileus virginianus*) are common in Solon, their existence is predicated on sufficient habitat. Summer habitat is commonly referred to as “edge habitat,” which includes farm fields, orchards, and open areas adjacent to forested lands. The habitat limitations for deer occur in the winter when there is heavy snow and extreme cold. Deer wintering areas (DWA) are defined as a forested area used by deer when snow depth in the open/hardwoods exceeds 12 inches; deer sinking depth in the open/hardwoods exceeds eight inches and mean daily temperatures are below 32° F. Non-forested wetlands, non-stocked clear cuts, hardwood types,

and stands predominated by Eastern Larch are included in DWAs only if less than 10 acres in size. Agricultural and development areas within DWAs are excluded regardless of size. Deer wintering areas that have yet to be confirmed through professional survey are considered “Candidate Deer Wintering Areas” until otherwise verified through a survey.

Solon has approximately three “Candidate Deer Wintering Areas,” either entirely or partially within town boundaries, though they have yet to be confirmed through a survey. The Candidate Deer Wintering areas are shown in brown on the map above, as well as in the *Critical Natural Resources Map* in the Appendix.

The Deer Wintering Area in the northwest corner of town is not well developed and since it's a wet area, both sides of that area are in the Resource Protection District. In fact, none of the Candidate Deer Wintering Areas are threatened by overuse, development or other activities.

Other Wildlife

Raccoon, beaver, and red fox are the most abundant species of furbearers in Solon. Other abundant species include mink, fisher, coyote, otter and various waterfowl species.

Accurate or estimated waterfowl population counts are generally unavailable, except for loon surveys conducted by Maine Audubon Society. The Maine Department of Inland Fisheries and Wildlife is also surveying wild duck and inland waterfowl populations, but results are not yet published.

Beyond broad wetland-focused habitat protections, the state has no coordinated waterfowl management program. Most support comes from volunteers, conservation groups, and lake associations that install duck nest boxes and loon nesting platforms to bolster local populations.

Solon contains many waterfowl and wading bird habitats of varying sizes, providing breeding, migration, and wintering grounds for numerous species. Since 2006, Maine's Shoreland Zoning regulations have required a 250-foot protective buffer around all MDIF&W-designated habitats.

These habitats are shown on Solon's *Critical Natural Resources Map* (Appendix). The largest habitat spans the length of the Kennebec River. Smaller habitats include Chase Pond, Rowell Pond, Lily Pond, and several unnamed waterbodies.

Additional wetland areas throughout Solon have been identified by the National Wetlands Inventory (NWI), though these maps are based on aerial photography and often under-represent wetlands. Field verification is therefore necessary before any activity that may disturb wetland resources.

BwH mapping also highlights many wetlands valuable to wildlife that are *not* regulated as inland waterfowl and wading bird habitats, meaning they do not receive the 250-foot protective buffer.

Rare, Endangered, and Valuable Species and Habitats

Beginning with Habitat compiles data on rare, endangered, valuable species and habitats, as well as rare or exemplary natural communities (see *Critical Natural Resources Map* in Appendix). These include:

- Wild Garlic (*Allium canadense*)
- Pubescent sedge (*Carex hirtifolia*)
- MacGregor's Rye (*Elymus macgregorii*)
- Long-leaved Bluet (*Houstonia longifolia* var. *longifolia*)
- Upper Floodplain Hardwood Forest (Hardwood river terrace forest)
- Silver Maple Floodplain Forest

There is/are also rare plant(s) for which information and locations were withheld for their protection.

While no rare or endangered animals were included in these surveys, that does not mean they do not exist in Solon.

Plants

Maine Natural Areas Program (MNAP) through Maine Department of Agriculture, Conservation & Forestry (DACF) ranks species on both a global level and a state level. A 5-point ranking system from critically imperiled (1) to secure (5) facilitates a quick assessment of a species or habitat type's rarity. Each species or habitat is assigned both a state (S) or global (G) ranking on the scale of 1-5. Factors such as range extent, the number of occurrences, intensity of threats, as well as other factors, contribute to the assignment of state and global ranks. The definitions for state and global ranks are comparable but applied at different geographic scales; for example, something that is state imperiled may be globally secure.

There are four locations in Solon providing habitats for rare plants and/or natural communities.

Wild Garlic (*Allium canadense*)

State status- Species of Special Concern

S2- Imperiled in Maine– At high risk of extirpation in the jurisdiction due to restricted range, few populations or occurrences, steep declines, severe threats, or other factors.

G5- Secure Globally– At very low risk of extinction (species) or collapse (ecosystem) due to a very extensive range, abundant populations or occurrences, and little to no concern from declines or threats.



- **Habitat:** Alluvial woods, thickets, and meadows.
- **Ecological Characteristics:** Usually found in rich wooded bottomlands (hardwood floodplain forests), in alluvial soils near streams. Vegetative reproduction, both by the inflorescence bulblets and underground bulbs, is common and the plant may become dominant, its leaves forming dense mats over small areas.
- **Range:** New Brunswick to North Dakota, south to Florida and Texas.
- **Known Distributions in Maine:** This rare plant has been documented from a total of 17 town(s) in the following county(ies): Aroostook, Cumberland, Kennebec, Knox, Penobscot, Somerset, York.
- **Phenology:** Flowers in early summer.
- **Reasons for Rarity:** At northern limit of its range, not rare southward.
- **Conservation Considerations:** Effects of logging are not well known; partial removal of the canopy would be less likely to adversely affect the plant than would complete removal.

Pubescent sedge (*Carex hirtifolia*)

State status- Species of Special Concern

S2- Imperiled in Maine– At high risk of extirpation in the jurisdiction due to restricted range, few populations or occurrences, steep declines, severe threats, or other factors.

G5- Secure Globally– At very low risk of extinction (species) or collapse (ecosystem) due to a very extensive range, abundant populations or occurrences, and little to no concern from declines or threats.

- **Habitat:** Rich woods and meadows
- **Range:** New Brunswick, south to Maryland, Kentucky, and Missouri, west to Kansas, Minnesota, and Ontario.
- **Known Distributions in Maine:** This rare plant has been documented from a total of 3 town(s) in the following county(ies): Kennebec, Oxford, Penobscot.

MacGregor's Rye (*Elymus macgregorii*)

State status- Species of Special Concern

S2- Imperiled in Maine– At high risk of extirpation in the jurisdiction due to restricted range, few populations or occurrences, steep declines, severe threats, or other factors.

G5- Secure Globally– At very low risk of extinction (species) or collapse (ecosystem) due to a very extensive range, abundant populations or occurrences, and little to no concern from declines or threats.

- **Habitat:** Rich, mesic, circumneutral soils of hardwood forests and floodplains.
- **Ecological Characteristics:** Little is known ecologically about this plant in Maine.
- **Range:** Eastern U.S.
- **Known Distributions in Maine:** This rare plant has been documented from a total of 10 towns in the following counties: Kennebec, Oxford, Penobscot, Somerset, Waldo.
- **Phenology:** Flowering and fruiting late May through mid-June.
- **Reasons for Rarity:** Possibly confused with *Elymus virginicus* and overlooked.



Long-leaved Bluet (*Houstonia longifolia* var. *longifolia*)

State status- Species of Special Concern

S2S3- Imperiled in Maine— At high risk of extirpation in the jurisdiction due to restricted range, few populations or occurrences, steep declines, severe threats, or other factors. (S#/S#- A numeric range rank (e.g., S2S3 or S1S3) is used to indicate any range of uncertainty about the status of the species or ecosystem.)

G5TNR- Secure Globally, T= Subspecies or varieties receive a “T-rank” added to the species’ global rank.

NR= global rank not yet assessed – At very low risk or extinction (species) or collapse (ecosystem) due to a very extensive range, abundant populations or occurrences, and little to no concern from declines or threats.



- **Habitat:** Slaty ledges or rivershore gravels, not strongly acidic.
- **Ecological Characteristics:** Usually found growing in slight cracks or depressions on rivershore ledges. Maine populations although apparently persistent are not large and the plants tend to be small.
- **Range:** Maine to Saskatchewan, south to Georgia, Oklahoma.
- **Known Distributions in Maine:** This rare plant has been documented from a total of 24 town(s) in the following county(ies): Cumberland, Kennebec, Penobscot, Piscataquis, Sagadahoc, Somerset.
- **Phenology:** Herbaceous perennial, flowers July - September.
- **Reasons for Rarity:** Habitat naturally scarce, at northern limit of range.

Important Habitat

The Maine Natural Areas Program (MNAP) has classified and distinguished two natural community types in Solon (see *Critical Natural Resources Map* in the Appendix). Statewide there are 104 different natural community types that span the state's landscape. These include such habitats as floodplain forests, coastal bogs, alpine summits, and many others. Each type is assigned a rarity rank of 1 (rare) through 5 (common) both within Maine (state rank) and globally (global rank). MNAP is particularly interested in *any* example of a natural community type ranked S1, S2, or S3, and outstanding examples (e.g., large, old growth stands) of S4 and S5 types.

Upper Floodplain Hardwood Forest (Hardwood river terrace forest)

- **Community Description:** An almost complete canopy is dominated by sugar maple, red oak, or yellow birch, with red maple and ash often common and basswood or black cherry occasional. The understory is open and shrubs are sparse. The lush carpet of herbs changes from spring ephemerals such as trout lily and bloodroot to variable cover of mixed graminoids and forbs in summer. Bryoid cover is minor.



- **Diagnostics:** Sites occupy floodplain or river terrace settings with mineral soil. The canopy is dominated by sugar maple, red oak or yellow birch. Silver maple and red maple may be present. A dense herb layer that includes species not typical of wetlands (e.g. starflower, zig-zag goldenrod, big-leaved aster, silvery spleenwort). Sensitive fern is often present but not dominant. Spring ephemerals are often abundant.
- **Conservation, Wildlife and Management Considerations:** Virtually all of these forests have been harvested, and many have been converted to agriculture. Non-native plant species such as Japanese knotweed and Asiatic bittersweet, which may displace those native to our area, represent a threat to the integrity of these forests and have degraded at least some Maine examples.
- The northern waterthrush, barred owl, belted kingfisher, bank swallow, scarlet tanager, and green heron are associates of this community type. Wood turtles overwinter in river channels and forage in floodplain forests where they may feed on amphibian egg masses in vernal pools. The silver-haired bat often roosts in riparian habitats in trees with loose bark. Fairy shrimp may also occur in isolated vernal pools.
- **Distribution:** Throughout Maine, New England, and New Brunswick.

Silver Maple Floodplain Forest

- **Community Description:** These forests are dominated by silver maple (>60% cover). Associates include red maple and American elm (up to 30% cover) or, in a few locations, bur oak (up to 25% cover). Widely spaced trees, many with multiple trunks, give a park like feeling. The understory is open and shrubs are sparse. Musclemore may be present and is a good indicator. The lush carpet of herbs changes from spring ephemerals such as trout lilies and bloodroot to dense fern cover in summer. Bryoid cover is minor. Some forests have a berm adjacent to the river channel, and herbaceous species composition here is different from the lower elevation interior of the floodplain.
- 
- **Diagnostics:** Sites occur in a floodplain setting with mineral soil. Silver maple is the dominant tree. There is a dense herb layer with sensitive fern and, locally, ostrich fern. Spring ephemerals are frequent.
 - **Conservation, Wildlife and Management Considerations:** Although a number of sites have been cleared or pastured in the past, current shoreland regulations provide increased protection to a number of these sites. Exotic plant species such as Japanese knotweed, which may displace those native to our area, also represent a threat to the integrity of these forests and have degraded some Maine examples. Several of the known examples are formally protected from conversion.
 - Northern waterthrush, barred owl, belted kingfisher, bank swallow, and green heron are associates of this community type. In the southern part of the state, the Louisiana waterthrush and yellow-throated vireo are likely associates if the canopy is closed or nearly so. Rare turtles like wood, spotted, and Blanding's turtles may feed on amphibian egg masses present in isolated pools within such forests. Wood turtles overwinter in river channels and forage in floodplain forests. The silver-haired bat often roosts in riparian habitats in trees with loose bark.
 - **Distribution:** Long and narrow floodplains along the shores or islands of large rivers and streams throughout Maine, New England, and New Brunswick.

Focus Area of Statewide Significance

In addition to the important habitats detailed above, Solon also shares a Focus Area of Statewide Ecological Significance- the Kennebec- Carrabassett Confluence.

Beginning with Habitat (BwH) identifies Focus Areas as key places where voluntary, collaborative conservation can best support Maine's biodiversity. These areas represent only about 11.5% of the state but contain over 85% of Maine's rare, threatened, or endangered species, as well as high-quality examples of all natural community types.

Focus Areas highlight concentrations of at-risk species and habitats and guide non-regulatory conservation efforts such as land protection, habitat restoration, improved road crossings, municipal planning, invasive species control, and landowner outreach.

BwH partners, including DACF-MNAP, MDIFW, DMR, USFWS, The Nature Conservancy, Maine Audubon, and Maine Coast Heritage Trust, select Focus Areas based on the presence of significant ecological features. A Focus Area typically includes two or more of the following:

- A globally rare species
- Three or more healthy populations of a rare plant
- Any healthy population of a rare animal
- A rare natural community
- An excellent example of a common natural community
- A good example of a common natural community plus high-value wildlife habitat
- A large undeveloped block combined with either a high-quality natural community, high-value habitat, or multiple rare plant populations

The **Kennebec–Carrabassett Confluence** (also known as the Kennebec Floodplain – Madison and Anson) contains one of the region's richest concentrations of ecological features shaped by seasonal flooding. The dynamic interaction of the two rivers creates alluvial soils that support two rare natural communities—**Silver Maple Floodplain Forest** and **Upper Floodplain Hardwood Forest**—found on islands in the Kennebec River. These communities host several rare plant species, including wild garlic, wild leek, and long-leaved bluet.

This stretch of the Kennebec River also sustains high-value wildlife habitat. Rare species such as the brook floater mussel and wood turtle occur here, reflecting high water quality and intact riparian conditions. The area includes over 150 acres of Inland Waterfowl and Wading Bird Habitat, and bald eagles have historically nested along this corridor where large, undisturbed trees remain available.

Nearly half of the focus area consists of wetlands or open water, making the preservation of natural hydrology and forested buffers critical to maintaining ecological integrity. Key threats include invasive plants, soil disturbance, habitat fragmentation, and activities that alter water flow or quality.

Long-term land use in and around the floodplain should emphasize protecting natural flood processes, retaining wide forested buffers, limiting impervious surfaces near wetlands, and managing forestry and agricultural practices to prevent sedimentation and habitat degradation. These actions help sustain the ecological health and biodiversity of this important river corridor.

These critical natural resources within the Focus Area of Statewide Significance are provided some protection. For example, Central Maine Power owns Gray Island, one of the islands in Solon in the Kennebec River where the rare natural communities are found. Additionally, Brookfield Renewable owns the flowage rights on the Kennebec River, preventing any development a certain distance from the shores. Lastly, the banks of the Kennebec River are steep and flood prone in most areas, preventing any development.

Brook Trout Habitat

Maine supports the most extensive distribution and abundance of wild brook trout (*Salvelinus fontinalis*) in their native range within the United States; more than 1,200 lakes and ponds are managed for brook trout, of which approximately 60 percent are sustained by natural reproduction. In addition, brook trout occur in an estimated 22,248 miles of stream habitat, the vast majority of which are wild. Although brook trout populations are declining across their historic range within the United States (Maine to Georgia), a 2006 range-wide assessment by the Eastern Brook Trout Joint Venture found that Maine is the only state with extensive, intact populations of wild, self-reproducing brook trout in lakes and ponds, including some lakes over 5,000 acres in size. Lake populations of brook trout are intact in 185 subwatersheds (18 percent) of their historic range in Maine, and only six intact watersheds throughout the 16 other states. Maine is the last true stronghold for stream dwelling populations of wild brook trout, supporting more than twice the number of intact subwatersheds as the other 16 states in the eastern range combined.



In Solon, BwH delineated Fall Brook as wild brook trout habitat. This habitat is a priority conservation area for wild brook trout and includes a recommended 100-foot (on either side) no disturbance buffer around the waterbodies. These areas may also be candidates for instream habitat restoration actions and/or stream connectivity enhancement.

The land area around Fall Brook is in the Resource Protection District, providing this area a level of protection. In other parts of Fall Brook, the property is privately held woodlots, which provide a different level of protection.

Undeveloped Habitat Blocks, Connectors, and Conserved Land

Wildlife abundance and diversity are closely tied to the size and continuity of their habitat. While some species, like skunks and mourning doves, adapt easily to developed areas, many others rely on large, unbroken forest blocks. As roads, farms, and homes encroach, these habitat blocks become fragmented, forcing out species that depend on them.

Rural development often drives this fragmentation, reducing habitat quality. Maintaining wildlife travel corridors between habitat blocks is essential for animal movement, biodiversity, and the rural character of the community. Limiting development along the edges of unfragmented habitat also helps preserve environmental integrity by providing a natural buffer for forest-dwelling species.

Beginning with Habitat maps these unfragmented blocks, including ownership and conservation status. Solon's *Critical Natural Resources Map* (Appendix) also identifies these areas.

By virtue of the town's rural nature, Solon is primarily composed of large blocks of unfragmented habitat areas. Some of these are a couple of hundred acres, while others are in the thousands of acres category. The largest block is 5,170 acres and spans the town line into Madison. Another of similar size is shared with Bingham.

These unfragmented blocks are not formally preserved in any way; they just have not been developed. Solon is fortunate to have several parcels of land permanently conserved. These are detailed further in Table 5 below.

TABLE 5: PERMANENTLY PRESERVED LAND IN SOLON

Name	Location	Designation	Interest	Size (approx. acres)
Indian and Fowl Meadow Islands	Islands in the Kennebec River	Privately conserved	Somerset Woods Trustees	34
Henderson	S. Main St. and Kennebec River	Private easement	Somerset Woods Trustees	107
Pfeiffer	Shore of Lilly Pond	Private Easement	Somerset Woods Trustees	122
Wentworth Pond Access	Wentworth Pond	State Water Access	MDIF&W	1
Groundswell Seed Farm	Parkman Hill Road	Private Easement	Maine Farmland Trust	81
Ofria Preserve	Along Kennebec River	Private	Somerset Woods Trustees	3
Somerset Woods Trustees	Parkman Hill Road		Somerset Woods Trustees	650
Robbins Hill	Route 201	State-owned	Old Canada Road	128 acres -west side of 201 & 9.4 acres- east side of 201

Source: Department of Agriculture and Forestry, Maine Natural Areas Program

Somerset Woods Trustees (SWT) is a land trust founded in 1927 with a mission to protect and conserve the lands and waters important to Somerset County and manage them for public good. Working in partnership with willing landowners, SWT is responsible for nearly 4,000 acres in total throughout Somerset County, all of which are permanently conserved for wildlife and fisheries habitat, recreation and water access, and resiliency in a changing climate.

In 2024, a long-time landowner who wishes to remain anonymous, gifted the Parkman Hill Farm to the Somerset Woods Trustees for the benefit of the Solon community. The property features 650 acres of field and forest on Parkman Hill Road which, for decades, has been managed for wildlife, birds, and pollinators. SWT appreciates the warm welcome from the Solon community.

SWT's vision for Parkman Hill Farm is to develop it as a venue for advancing their commitment to building community and advancing conservation in a changing climate. The farmhouse, at 380 Parkman Hill Road, houses their offices, provides staff housing, and supports year-round programs and events presented by the land trust and community groups. SWT looks forward to working with the Solon community to develop Parkman Hill Farm as a center of community programs and activities.

SWT continues to work on a trail system that is open for public use – including hiking, skiing, and biking. There are also picnic tables and mowed trails at the overlook on Parkman Hill Road, at the yellow farmhouse, and off McCarty Road. Trail maps can be found at the trailheads on McCarty Road, College Ave, and on the red barn.

Most of the property is open for hunting; although, hunters are encouraged to visit the website to review property guidelines and complete the Hunter Registration form, as required (www.SomersetWoodsTrustees.org/hunting).

In addition, though not permanently preserved, Solon Historical Society owns 249 acres on Parkman Hill Road. The land is preserved in that it is owned by the Society; however, if they need to raise funds for any reason, they can divide it into 10-acre parcels and sell them.

Regulatory Protections

Solon's municipal ordinances that provide standards intended to protect the environment include:

- Shoreland Zoning Ordinance (2019)
- Building Ordinance (2024)
- Site Plan Review Ordinance (2022)
- Subdivision Ordinance (no date)
- Solon Water Supply Protection Ordinance (2006)

The Shoreland Zoning Ordinance (found here: <https://solon.maine.gov/documents>) is the most influential in setting best management practices and standards to prevent water quality degradation. This Ordinance is up to date, including the minimum mandatory standards, and reflects the most current version of the model ordinance provided by the state.

The Shoreland Zoning Ordinance designated two districts for protection of natural resources. They are:

Resource Protection District

The Resource Protection District includes areas in which development would adversely affect water quality, productive habitat, biological ecosystems, or scenic and natural values. This district shall include the following areas when they occur within the limits of the shoreland zone, exclusive of the Stream Protection District, except that areas which are currently developed and areas which meet the criteria for the Limited Commercial District need not be included within the Resource Protection District.

1. Floodplains along rivers and floodplains along artificially formed great ponds along rivers, defined by the 100 year floodplain as designated on the Federal Emergency Management Agency's (FEMA) Flood Insurance Rate Maps or Flood Hazard Boundary Maps, or the flood of record, or in the absence of these, by soil types identified as recent floodplain soils.

2. Areas of two or more contiguous acres with sustained slopes of 20% or greater.
3. Areas of two (2) or more contiguous acres supporting wetland vegetation and hydric soils, which are not part of a freshwater wetland as defined, and which are not surficially connected to a water body during the period of normal high water.
4. Land areas along rivers subject to severe bank erosion, undercutting, or river bed movement.

Stream Protection District

The Stream Protection District includes all land areas within seventy-five (75) feet, horizontal distance, of the normal high-water line of a stream, exclusive of those areas within two-hundred and fifty (250) feet, horizontal distance, of the normal high-water line of a great pond, or river, or within two hundred and fifty (250) feet, horizontal distance, of the upland edge of a wetland. Where a stream and its associated shoreland area are located within two-hundred and fifty (250) feet, horizontal distance, of the above water bodies or wetlands, that land area shall be regulated under the terms of the shoreland district associated with that water body or wetland.

Solon's **Building Ordinance** and **Site Plan Review Ordinance** are the first lines of protection for environmental resources and water quality, since development and other human-related activities within a watershed are the largest contributors to degraded water quality. Development can be designed to minimize phosphorus runoff, by mandating Best Management Practices (BMPs) for construction and Low Impact Development (LID) design criteria (*LID Guidance Manual for Maine Communities, Approaches for Implementation of Low Impact Development Practices at the Local Level*, 2007). LID describes land planning and engineering design approaches to manage stormwater runoff that mimics natural processes, resulting in the infiltration, evapotranspiration, or use of stormwater to protect water quality and associated aquatic habitats.

To preserve and protect water quality, it is imperative that the Shoreland Zoning, Building, and Site Plan Review ordinances are reviewed and updated regularly. Regular updates will ensure the most current standards and practices are included, such as LID and BMPs for phosphorus control and stormwater management.

Solon's **Subdivision Ordinance** is outdated and offers minimal environmental protective measures or current standards. The town should update this Ordinance in the near future.

The **Solon Water Supply Protection Ordinance** is designed to protect the wellhead area around Solon's public water supply well. This Ordinance should be updated to reflect current standards.

Currently, to the best of the Comprehensive Plan Committees knowledge, none of Solon's natural or water resources are under threat by development, overuse, or other activities.

Local and Regional Coordination

Solon has had minimal opportunities or local inclination to coordinate on local or regional projects. Any endeavors to preserve land, protect natural resources, improve and protect water quality, and more have been brought about by entities such as Somerset Woods Trustees.

Below is a list of local and regional partners.

Local Partners:

Solon Water District

Solon Historical Society

Regional Partners:

Somerset Woods Trustees <https://www.somersetwoodstrustees.org/>

Old Canada Road National Scenic Byway

Analysis

- Solon's land area is roughly 40.74 square miles with 1.09 square miles of water.
- The town's topography is varied and presents challenges for construction.
- There is an abundance of scenic views in town- both man-made and natural.
- A series of aquifers run along the Kennebec River in Solon and beyond.
- One significant aquifer is the source of Solon's drinking water.
- There are seven named streams in Solon, five major watersheds, and numerous wetlands.
- There are seven named lakes and ponds in Solon.
- Threats to water resources and water quality are numerous, but excess phosphorous loading remains the greatest current threat statewide.
- Solon has three "Candidate Deer Wintering Areas", numerous waterfowl and wading bird habitat areas, and one stream that supports brook trout.
- There are six plant species of special concern in Solon, two natural community types, and one Focus Area of Statewide Significance.
- Solon has a number of large, unfragmented habitat blocks throughout town.
- There are several permanently preserved properties throughout town- of which several are held by the Somerset Woods Trustees.
- Regulatory protections of natural resources are administered through the Shoreland Zoning Ordinance, Building Ordinance, Site Plan Review Ordinance, Subdivision Ordinance, and the Solon Water Supply Protection Ordinance.