

WATER RESOURCES

State Goal

To protect the quality and manage the quantity of the state's water resources, including lakes, aquifers, great ponds, estuaries, rivers, and coastal areas.

Lakes, streams and ponds are an essential part of West Gardiner's landscape and enhance the town's rural character by their natural beauty. They provide recreational opportunities for all town residents and contribute to the economy through tax revenues. The surface waters are home to many species of fish, other aquatic animals and plants. West Gardiner is part of the 240 acre Cobbosseeconte Stream watershed, stretching from Mount Vernon in the north to Bowdoinham in the south traversing through 15 towns where it flows into the City of Gardiner and meets the Kennebec River.

Analyses

The Town of West Gardiner has one storm drain on the Spear's Corner Rd which empties into a culvert and that culvert drains into an adjacent wetland. The State has storm drains in the area where Routes 95 and 295 converge. Drains can be found in the roundabout, the West Gardiner Service Plaza and near exit and entrance ramps and they drain into retention basins adjacent to the highways.

There are no known failed septic systems, and the one previously known cess pool has been removed and replaced with an appro

ved septic system.

Non-point pollution is present as it is in most communities from melting snow and rainfall which transports natural and human-made pollutants to waterbodies. Examples are road salt, fertilizers, pesticides, animal waste and petroleum products. In the last few years, PFA's have been a concern in most towns and West Gardiner is no different. PFAS have been found in Maine in agricultural

sites, drinking water supplies, surface waters, landfills, wastewater, sludge and septage spreading sites, and remediation and cleanup sites. In general, PFAS can enter the environment through direct releases from specific PFAS-containing products (e.g., certain firefighting foams), from various waste streams (sludge and septage when land applied, leachate from unlined landfills), and other pathways still being researched. In Maine, sludge and septage that may contain PFAS was applied to various “sites” for nutrient value. This activity was licensed because at the time little was known about PFAS as an emerging contaminant. West Gardiner has one 20.5-acre lime treated septage site. Septage application site permits for 5 years were granted in 1993 and 2000. In addition, there are 3 wells on the Lewiston Rd (Route 126) and 4 wells on the Indiana Rd and 2 wells on Long Meadow Dr are identified as having levels of PFA’s which are below safe drinking water levels (Maine DEP PFAS Investigation (Formerly the “ Septage and Sludge Map”) (arcgis.com)). The wells were tested on 10/05/2022. Acreage abutting these wells is identified as a sludge utilization site with confirmed spreading. Both the High St property and the Indiana Rd property are designated as Tier II sites. State definition below.

<p>Tier II</p>	<p>Sites where between 5,000 and 10,000 cubic yards of sludge were land applied, where homes are within 1/2 mile, and where PFAS is likely to be present in the sludge based on an evaluation of known sources or contributors of wastewater at a given treatment facility. In cases where homes are over 1/2 mile away, a site may be downgraded to Tier III depending on distance and other hydrogeological factors. Likewise, a site may be elevated to Tier I if results from a Tier II site with similar source contributions show a greater than anticipated impact to the soil and water being tested.</p>
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Phosphorus is the pollutant that has caused the most degradation of surface waters. Excessive phosphorus causes microscopic algae to bloom in the lake and

ponds. Different forms of algae bloom in the streams. Phosphorus is found in fertilizers, human and animal waste, pesticides and herbicides.

The groundwater and surface water supplies are protected through state regulations that the town follows. The Plumbing Code Officer interacts with the select board when a property abuts water. He also approves soil test designs for septic systems and maintains office copies of the plans which are mailed to the state.

Public works crews and contractors assist in the protection of local waters by adhering to best practices. West Gardiner was one of the first smaller towns to build a salt shed to control subsurface water penetration. A large new town garage was constructed in 2017 to hold equipment.

There are local and regional advocacy groups that promote water resource protection. Cobbossee Watershed District was authorized by the Maine Legislature in 1971. The District's mission is to protect, improve, conserve and manage the 28 lakes, ponds and streams of the Cobbossee watershed. CWD carries out this responsibility by monitoring water quality regularly on more than twenty lakes in the watershed and working with public and private landowners to voluntarily implement pollution reduction on roads, shorefront properties, farms, and other lands in the watershed. CWD provides technical assistance to local planning boards, code enforcement officers, and developers. CWD also procures grant funding to assist municipalities and property owners with lake protection and restoration projects, including in lake treatments, and coordinates water level management throughout the watershed to minimize flooding, provide recreational water levels, and protect aquatic life. Friends of the Cobbossee Watershed (FOCW) is an organization based in Winthrop that provides outreach and education, courtesy boat inspections, restoration projects with the Youth Conservation Corps and science programs to local schools.

Conditions and Trends

Within its boundaries, the Town of West Gardiner has portions of Cobbossee Lake, Pleasant Pond, Lily Pond, Horseshoe Pond, Cobbossee Stream, and Cold Stream.

Cold Stream

Cold Stream originates off Northern Avenue in Farmingdale and empties into Cobbossee Stream shortly before the Interstate 95 bridge. It meanders approximately 4.5 miles through the town. It is clay lined and dark in color. From the bridge over Route 126 to Cobbossee Stream it averages 7' in depth and is navigable by boat. Above the bridge it is shallower and access by canoe or kayak is limited. The bridge is a popular spot for fishing and various aquatic animals and birds abound.

Lily Pond

Lily Pond is a small, elongated pond of 24 acres with access by canoe or kayak off the east side of Cobbossee Lake. It is monitored for invasive species but has none recorded to date. Various species of fish, aquatic animals and birds can be found.

Horseshoe Pond

Horseshoe Pond is a warm water pond of 74 acres located in Cobbossee Stream and has a mean depth of 9' although there is a 40' deep hole off the east end of the island. Various fish species, birds and aquatic animals can be found. Variable leaf milfoil was confirmed in 2002.

Pleasant Pond

Pleasant Pond is a long narrow shallow waterbody formed by the damming of Cobbossee Stream in Gardiner in the 1800's. The pond is 970 acres in 2 distinct basins. The upper basin has a depth of 12' and the lower basin 30'. West Gardiner has only a small portion of the pond within its boundaries. The pond is also subject to algae blooms due overly enriched nutrients, the water quality is below average and variable leaf milfoil was confirmed in 2001. It is a popular pond for fishing and boating.

Cobbossee Stream

Cobbossee Stream begins at the outlet dam in Manchester and discharges into the Kennebec River in Gardiner. Approximately 9 miles of the stream is within West Gardiner and it is one of the boundaries between West Gardiner and Litchfield. With the new Tappan Bridge, the stream is now navigable from the town boat launch in Collins Mills to the New Mills section of Gardiner. There are areas of

wetlands that provide habitat for birds and aquatic species. Variable leaf milfoil below the Bog Hill boat landing was confirmed in 2002. The stream is home to many species of warm water fish and the predatory northern pike. Sediment, erosion and phosphorus runoffs are issues and during the summer low water levels, algae blooms are common. West Gardiner has no control of the dams that control the water flow that are a causative factor in erosion. Maine has had a water classification system since the 1950's rating freshwater rivers in Class AA, A, B or C relating to dissolved oxygen, bacteria, habitat and aquatic life. Cobbossee Stream is classified as Class B by the DEP.

Cobbossee Lake

Cobbossee Lake has a surface area of 5541 acres and is the largest lake in the watershed. It is a highly scenic lake used for recreation, especially for boating and fishing and is developed with seasonal and year-round homes with fairly high density. The lake provides a fishery for both cold water and warm water species but it is best known for smallmouth and largemouth bass. Cobbossee Lake was previously on the list of impaired waterbodies but was removed in 2006 and continues to improve in water quality. Frog bit was confirmed at the northern end of the lake in 2018 and in 2023 Eurasian water milfoil was discovered above the dam and in the outlet. No access to the areas involved was permitted. Herbicides were applied for remediation and the area will continue to be monitored.

Water quality testing is done each year in August and the most recent published data from Lake Stewards of Maine from testing stations is below:

	Chlorophyll	Phosphorus	Color	Alkalinity	PH	Conductivity
Cobbosee Lake	8.8	16	16	18.1	7.04	62
Pleasant Pond	7.8	23	26	16.6	6.84	76
Horsehoe Pond	8.7	21	23	20.5	6.92	82

Low is 0

High	11	32	65	32	9	110
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Secchi Disk Transparency is a quick, simple and fairly accurate method for determining lake water quality. Transparency is a measurement of how

deep into a lake the sunlight can penetrate. Factors that interfere with light penetration are algae, zooplankton, water color, and silt. Average transparency for Cobbossee Lake is 18.7 feet, Pleasant Pond 11.7 feet and Horseshoe Pond 14.8 feet. Data goes back to 1975 and both Cobbossee and Pleasant Pond have steadily improved while Horseshoe Pond has remained consistent. Encouragement of local lake associations to eliminate the use of fertilizer has led to improvement along with the buffer zones designated in the Inland Shorelands Protection Act.

Policies

1. To protect current and potential water sources.
2. To protect significant surface water resources from pollution and improve water quality where needed.
3. To protect water resources in growth areas.
4. To minimize pollution discharges.
5. To cooperate with neighboring communities and regional/local advocacy groups to protect water resources.

Strategies

1. Adopt or amend local land use ordinances as applicable to incorporate stormwater runoff performance standards consistent with:
 - a. Maine Stormwater Management Law and Maine Stormwater regulations.
 - b. Maine Department of Environmental Protection's allocations for allowable levels of phosphorus in lake/pond watersheds.
 - c. Maine Pollution Discharge Elimination System Stormwater Program
2. Consider amending local land use ordinances, as applicable, to incorporate low impact development standards.
3. Maintain, enact or amend aquifer recharge area protection.
4. Encourage landowners to protect water quality. Provide local contact information at the municipal office for water quality best management practices such as the Natural Resource Conservation Service, University of Maine Cooperative Extension, Soil and Water Conservation District, Maine Forest Service and Small Woodlot Association of Maine.
5. Consider water quality protection practices and standards for construction and maintenance of public roads.

6. Participate in local and regional efforts to monitor, protect and improve water quality.
7. Provide educational materials at appropriate locations regarding aquatic invasive species.
8. Cooperate with neighboring communities to encourage a fish passage at the New Mills Dam and removal by purchase of both privately owned dams.
9. Support the work of the Cobbossee Watershed District.

Natural Resources

Goal

To protect local wetlands, wildlife and fisheries.

Analyses

There are neither rare or exemplary natural communities or ecosystems nor are there any habitat focus areas of statewide significance identified within the town of West Gardiner. The town has no zoning and a minimal lot size ordinance which does not discourage development. However, with no public water or sewer services, development is limited and is currently not a threat to natural resources.

The Code Enforcement Officer follows the state inland shoreland guidelines when approving septic systems. There are no regulatory measures or ones proposed regarding natural resource protection. The local groups to protect resources are volunteer based.

Conditions and Trends

Scenic areas of interest include Cobbossee Lake and the 113-acre Wakefield Wildlife Sanctuary on Cobbossee Stream.

Policies

To conserve resources within the town and to partner with neighboring towns, regional and state agencies to protect shared natural habitats and resources.

Strategies

Ensure any local land use ordinances are consistent with applicable state law. Consider participating in regional planning and make available information to those whose lands encompass or abut natural resources information regarding current use tax programs.

Agricultural and Forest Resources

Goal

To safeguard the State's agricultural and forest resources from development which threatens those resources.

Analyses

Although agriculture was important in its earlier days, it is no longer a central part of the town's economy. Historically, family farming and logging were prevalent. Today, there are numerous small farming operations that sell plants and produce in farm stands and 3 larger working farms. Both farming and logging are stable at this point.

Landcover classifications in acres from the 2019 National Land Cover data set provided from the Maine Forest Service are:

Barren land - 39	Deciduous Forest – 1279
Cultivated Crops - 1	Developed, High Intensity – 70
Developed, Low Intensity - 743	Developed, Medium Intensity – 396
Developed, Open Space - 819	Emergent Herbaceous Wetland – 427
Evergreen Forest - 2621	Hay/Pasture - 2081
Herbaceous - 227	Mixed Forest – 5944
Open Water - 6821	Shrub/Scrub - 232
Woody Wetlands – 1745	

These numbers will have changed between 2019 and 2024 due to increased development, an increase in cultivated crops and logging.

The town has recently passed ordinances prohibiting solar farms and unmanned storage shed developments to protect open land. There are no local or regional land trusts working to protect farms, but the Kennebec Land Trust (Wakefield Wildlife Sanctuary) has 43 acres designated as forever wild and 61 acres designated as managed forest.

Some farm and forest landowners are taking advantage of the state's current use tax laws.

There is minimal impact of housing and other land use development on local farming and logging operations.

There are no large tracts of agricultural or forest land currently for sale.

The town is a supporter of forestry and agriculture. There are no ordinances that restrict the selling of what an individual or small farm is able to grow, cook or produce on their own property. There are no community gardens or farmer's markets in the town.

The town has no public woodlands under management. The town does own 223 acres of open land, mixed forest and wetlands.

Condition and Trends

West Gardiner is home to several woodlot and acreage owners. Historically family farming formed one base of the economy with open fields in much of the town. Today small farms and farmstands are still present, including Farmer Kev's a certified organic farm which distributes produce mostly through its farm shares.

Most of the threats to woodlots are from invasive pests such as spruce budworm and emerald ash borer. A threat to both forest land and farmland is the recent explosion of the Asian jumping worm because it quickly depletes nutrients from the soil.

In addition to landowner's enrollment into both the tree growth and farmland current use tax programs, one property has been placed into the open space tax program.

Neither farming nor forestry play a significant role in the community. There are numerous small farm stands in town selling seedlings, annual and perennial plants, baked and canned goods, produce, fruit, eggs and small shrubs. There are several loggers who specialize in cordwood and landowners who manage small woodlots for their own purposes.

Deer wintering areas are dispersed throughout the town. Most are near riparian areas associated with lakes, ponds and streams. Maintaining sufficient winter shelter is an exercise in forest management.

Forested land is managed by forestry professionals. Some private landowners have taken advantage of the 1972 Tree Growth Tax Law which requires a forestry management plan for that property.

West Gardiner Land Enrolled in State Farmland and Tree Growth Taxation Programs

Year	Farm			Tree Growth			Open Space		
	Parcels	Acres	Total Valuation	Parcels	Acres	Total Valuation	Parcels	Acres	Total Valuation
2014	4	242	\$49,315	7	286	\$99,916			
2015	4	242	\$47,171	7	286	\$98,292			
2016	4	242	\$45,027	7	269	\$100,881			
2017	5	269	\$47,672	6	262	\$90,083			
2018	5	269	\$48,144	6	258	\$86,998			
2019	5	269	\$46,728	6	258	\$84,355			
2020	4	270	\$44,861	6	258	\$84,665			

2021	4	270	\$45,107	6	258	\$84,665			
2022	4	270	\$46,728	7	256	\$74,716			
2023	4	270	\$43,731	8	317	\$87,530	1	43	\$18,060

Summary of Timber Harvest Information for the Town of West Gardiner

Year	Selection Harvest Acres	Shelterwood Harvest Acres	Change of Land Use Acres	Clearcut Harvest Acres	Total Harvest Acres	# of Reports
1990-1994	381	60	21	31	493	23
1995-1999	712	110	2		824	30
2000-2004	668	40	20		728	28
2005-2009	472	95	87		654	17
2010-2014	397	100	190		687	23
2015-2020	779	15	85		879	38
Total	3409	420	405	31	4265	159
Average	568	70	68	16	711	27

Data compiled from Confidential Year End Landowner Reports to Maine Forest Service

Department of Agriculture, Conservation and Forestry – Maine Forest Service

***To protect confidential landowner information, data is reported only when there are three or more landowner reports reporting harvesting in the town.**

Policies

To protect lands identified as prime farmland or capable of supporting commercial forestry which helps to keep development manageable. To encourage landowners to retain and improve land.

Support farming and forestry and encourage their economic viability.

Strategies

Consult with Maine Forest Service district forester when developing any land use regulations pertaining to forest management practices as required by 12 MRSA 8869.

Consult with Soil and Water Conservation District Staff when developing any land use regulations pertaining to agricultural management practices.

There are no land use ordinances requiring developers to maintain farmland as open space and although the residents of West Gardiner appreciate the value of open space and farmland, they are not in favor of restricting property rights.

The town has no designated rural critical areas.

Encourage owners of productive farm and forest land to enroll in the current use taxation programs.

West Gardiner permits land use activities that support productive agriculture and forestry operations such as roadside stands, greenhouses, firewood operations, sawmills, log buying yards and pick-your-own-operations and townspeople want to continue this policy.