SECTION 5. NATURAL RESOURCES

TOPOGRAPHY

The Town of Poland consists of approximately 31,799 acres or 49.69 square miles. (Geographically, it is the 60th largest community in the State.) The topography is characterized by relatively flat areas of Land to steep hills and ridges. The Town is interspersed with many ponds, streams, wetlands and brooks. Thompson Lake is located in the western part of Town and the Little Androscoggin River borders the Town on the northeast. Black Cat Mountain (860 feet above sea level) is situated in the southwest. Other hills include Range Hill, Shaker Hill, Kicker Hill, Bailey Hill, Harris Hill, Bragdon Hill, Raspberry Hill, White Oak Hill, Megquier Hill and Johnson Hill. Approximately fifteen percent of Poland's land area has slopes greater than fifteen percent.

The topography of the Town is a result of events that occurred during the last ice age at a time when ancient oceans extended over parts of the State and glaciers scraped, scoured, and coated other areas with glacial tills, sands, and clay. The Town is generally made up of glaciomarine deposits that accumulated on the ocean floor consisting of silt, clay, sand, and minor amounts of gravel. Sand is dominant in some places, but may be underlain by finer—grained sediments. There are small areas of till and other units that are not completely covered by marine sediments.

SOILS

Knowledge of the types of soils which exist in a community helps in planning land use activities. The various characteristics of soil types present different limitations for development which can often, be overcome through special planning, design, construction, and/or maintenance.

The Soil Survey of Androscoggin and Sagadahoc Counties, published by the U. S. Soil Conservation Service, describes the different soil types which exist in the County and provides information on their limitations. The soils map displays the predominate soil type for an area, although there may be pockets of other soils. Therefore, a high intensity soil survey is necessary to gather the precise information needed for individual site planning.

According to the Soil Survey, there are five soil associations located in Poland. Associations are groups of different soil types that usually occur together. Each association has major and minor soils within it. The Charlton-Sutton-Paxton association and the Adams-Hinckley-Ninigret association are the predominant associations in the Town.

SOIL ASSOCIATIONS AND THEIR CHARACTERISTICS

Soil Association Description	Uses and Limitations
Charlton-Sutton-Paxton Association: Deep, medium textured and moderately coarse textured, well drained and moderately well drained, nearly level to moderately steep soils, on hills and ridges.	Used mainly for woodland. Also for orchard farms. Large percentage of Poland's soils.
Hollis-Sutton-Buxton Association: Shallow to deep, medium textured and moderately coarse textured, well drained and moderately well drained, nearly LEVEL to steep soils, generally on the top of low hills and ridges.	Used mainly for woodland. Have serious limitations for septic tanks. Small percentage of Poland's soils.
Scantic-Leicester-Scarboro Association: Deep, medium textured and moderately coarse textured, poorly drained and very poorly drained, level to gently sloping soils.	Used mainly for woodland. Scantic soils can be improved by constructing drainage ditches. Small percentage of Poland's soils.
Buxton-Hartland-Belgrade Association: Deep, medium textured, moderately well drained and well drained, nearly level to moderately steep soils.	These soils are well suited for truck crops and most forage crops. Also used for woodland. Small percentage of Poland's soils.
Adajns-Hinckley-Ninigret Association: Deep, excessively drained to moderately well drained, nearly level to moderately steep coarse textured and moderately coarse textured soils.	Used mainly for woodland and urban development. Can be irrigated and used for crops. Large percentage of Poland's soils.

Source: Soil Survey Androscoggin and Sagadahoc Counties, Maine, 1970.

Various soil characteristics, such as depth to water table, depth to bedrock, flooding potential, and erosion potential can present serious limitations to development. For example, roads, utilities, and cellar foundations are difficult and expensive when bedrock is present.

Perhaps one of the most limiting characteristics is depth to water table. Poorly drained soils (9-18 inches depth to water table) place severe limits on the use of the land. Frequent fluctuations in water level as well as frost heaving can be damaging to buildings, roads, and the proper functioning of septic systems. These limitations can sometimes be overcome through special design and maintenance. There are three soil types in Poland where septic systems should not be permitted. These include Scantic, Leicester, and Scarboro. Sutton and Buxton are unsuitable only in areas where they are considered somewhat poorly drained, and Hollis can be unsuitable depending on the depth to bedrock in a particular area.

Moderately well drained soils (18 to 30 inches to water table) have less severe limitations on land uses, and deep, well drained soils present few problems. The latter have a depth greater than 30 inches to water table. The Charlton-Sutton-Paxton association is identified as varying from well drained to moderately well drained soils, the Hollis-Sutton-Buxton association is characterized by well drained and moderately well drained soils, the Scantic-Leicester-Scarboro association has poorly drained and very poorly drained soils, the Buxton-Hartland-Belgrade association has moderately well drained and well drained soils, and the Adams-Hinckley-Ninigret Association varies from excessively drained to moderately well drained.

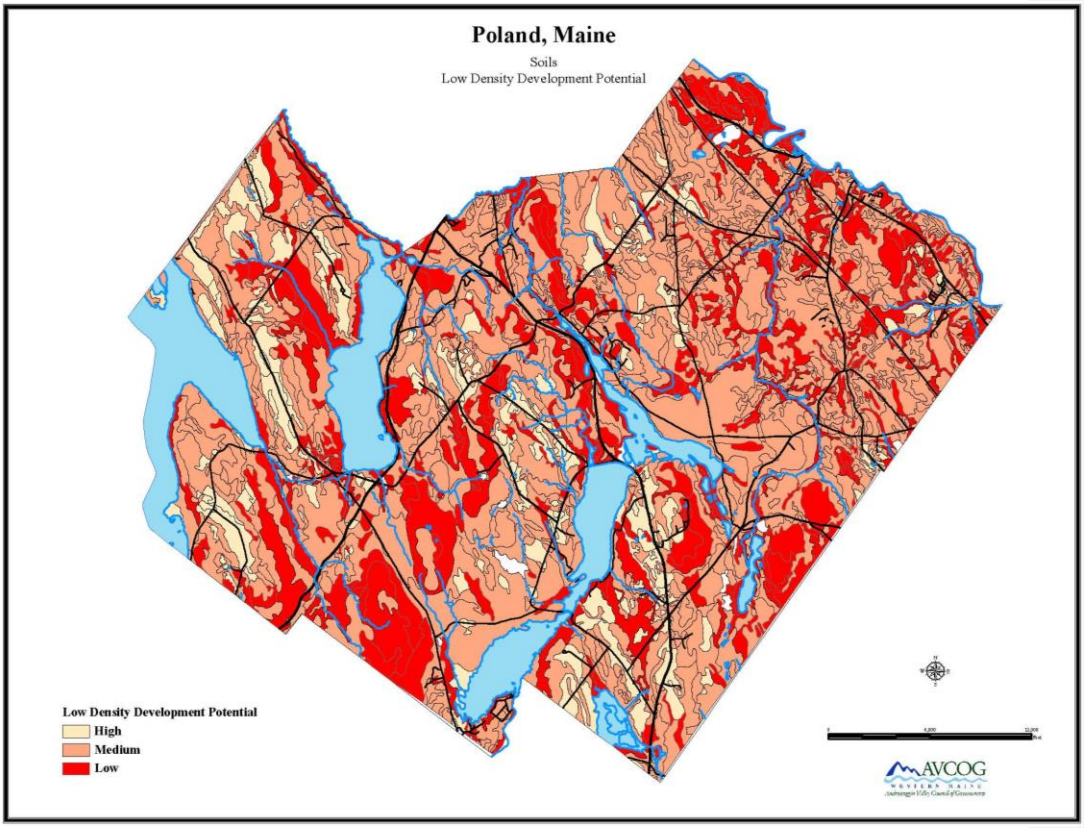
A composite soils map has been prepared for the Town showing soils which may be suitable for septic systems. Based on this information, approximately 80 percent of Poland's soils are suitable for subsurface sewage disposal.

Septic design has changed in recent years and some sites that may have been unsuitable in the past could have a septic system constructed using a raised bed system with imported soils. It is also important to note that this data is not detailed and should be used for the purposes of broad planning and development considerations. Field analysis should take place when considering a site for development which will provide greater specificity as to what a certain location can support for development type.

LAND COVER

The 1986 Poland Comprehensive Plan, indicated that approximately 27,000 acres of Poland's land area were devoted to woodland, 2,500 acres was surface water, and 1,800 acres were utilized for agricultural purposes. The remaining land area consisted of residential and commercial uses. In the 20 plus years since the 1986 Plan there has been a shift in land cover. First there has been a decrease in agricultural land some having grown its last crop, new homes and some reverting to woodland. The amount of commercial wood land has decreased having been broken up into smaller parcels not suited to management and to place new homes on. Land use for industrial uses has increased with expansions at Poland Spring Bottling, Pike Industry's and two large bulk mulch plants.

Commented [SN1]: AVCOG hasn't updated this section yet.



Source: Data from the 1970 Soil Survey

WETLANDS

The U.S. Fish and Wildlife Service defines wetlands as lands transitional between terrestrial and aquatic systems where the water table usually at or near the surface of the land is covered by shallow water. For purposes of this classification, wetlands must have one or more of the following three attributes: 1) at least periodically, the land supports predominantly hydrophytes (wetland vegetation); 2) the substrate is predominantly undrained hydric (waterlogged) soil; and 3) the substrate is nonsoil and is saturated with water or covered by shallow water at some time during the growing season of each year. (Cowardin, et al. 1979)

For many areas, wetlands were considered breeding habitat for mosquitoes and areas that need to be drained or filled for agricultural purposes or to create developable land. More recently, there has been a growing awareness of the value of wetlands. In a study of the impacts of development in Southern Maine, the State Planning Office examined the functions of wetlands and the implications of the loss of these areas. The State study identified the following features:

1. Ground water recharge. Wetlands may serve to replenish and cleanse aquifers which the Town uses for water supply
2. Ground water discharge. Ground water may discharge into wetlands, providing public water supply, wildlife habitat, and a means of maintaining lake and river quality.
3. Flood flow alteration. Wetlands serve as temporary storage areas during high water flows, thus reducing peak flows and potentially damaging floods.
4. Sediment and toxicant retention. In agricultural areas, wetlands can retain and stabilize sediments and toxic materials.
5. Nutrient retention and removal. Wetlands can retain or transform inorganic phosphorus and/or nitrogen into their organic form and may save downstream lakes and ponds from eutrophication.
6. Productivity export. Wetlands flush out dead plant and animal life, thereby providing nutrients for a new generation of plant and animal life.
7. Aquatic diversity. Certain wetlands provide habitat, including breeding grounds and nurseries, for fish.
8. Wildlife diversity and abundance. Wetlands serve as habitat and a food source for birds, deer, and other animals.
9. Uniqueness. A number of rare plant and animal species can be found in wetlands. Approximately 43% of the 230 rare plants, which occur in Maine, are found exclusively in wetlands.

The Department of Inland Fisheries and Wildlife has rated wetlands based on their value for inland waterfowl and wading bird habitat. The State's Beginning with Habitat program developed a map in Spring 2020 entitled "High Value Plant & Animal Habitats, shown on page 39. This map shows these areas with a vertical blue line striped pattern.

Commented [SN2]: Do we want to include the maps in an Appendix and show them at the 11x17 size? With paper printed copies of the Comp Plan they can be folded as a pull-out. The detail shown on an 8.5x11 map is really not very useful, but I will show them here for now so the board can see what they would look like.

If yes to an appendix of maps, then we wouldn't imbed them but would just reference the appendix and which figure number they are.

Also wondering if the town is planning to have these maps online so folks can easily access them and zoom in on the screen, that would possibly be the most valuable way to show them.

WATER RESOURCES

There are approximately 2,500 acres of surface water bodies in Poland. The major water bodies which constitute the primary natural assets of the Town include Upper, Middle, and Lower Range Ponds (east), Worthley Pond, Tripp Pond, Thompson Lake (southwest) and Little Androscoggin River (forms the border from Auburn and Minot). Other water bodies include Mud Pond, Wilson Brook, Davis Brook, Worthley Brook, May Brook, Winter Brook, Cousins Brook, Meadow Brook, and Potash Brook. There are two bogs in the Town: Shaker Bog and Estes Bog. The Town's lakes and ponds provide numerous recreational opportunities as well as locations for seasonal and year-round housing.

MAJOR CHARACTERISTICS OF POLAND'S LAKES AND PONDS					
Water Body	Surface Area Acres	Total Drainage Area - Acres	Town's Percent Drainage Area	Water Quality Classifications	Invasive Aquatic Plant Presence
Lower Range Pond	270	2328	100	Moderate/sensitive	None
Middle Range Pond	382	3170	100	Moderate/stable	Yes
Mud Pond	6	959	100	Moderate/sensitive	None
Mud Pond	17	334	69.5	Moderate/sensitive	None
Thompson Lake	4419	2866	13	Outstanding	Yes
Tripp Pond	735	3993	99.6	Moderate/stable	None
Upper Range Pond	357	1698	65	Moderate/sensitive	None
Worthley Pond	54	937	100	Moderate/sensitive	None

Source: Maine Department of Environmental Protection (ME-DEP) and the Volunteer Lake Monitoring Program (VLMP)

Commented [SN3]: I have asked DEP to verify ratings and provide us with any updates.

WATER QUALITY SUMMARY

Commented [SN4]: I have updated with the data that DEP and the VLMP provide online. I don't have the expertise to make determinations as to a water quality rating, likelihood based on the data for algal blooms, etc. I have highlighted in this section all of the values decisions. DEP is going to review this for us and interpret the data that has been collected so these determinations align with how they interpret the water test results.

The Maine Department of Environmental Protection (ME-DEP) and the Volunteer Lake Monitoring Program (VLMP) have collaborated in the collection of lake data to evaluate present water quality, track algal blooms, and determine water quality trends and publish it on a joint website. This dataset does not include bacteria, mercury, or nutrients other than phosphorus.

Upper Range Pond: Water quality monitoring data for Upper Range Pond have been collected since 1979. During this period, basic chemical information was collected in addition to Secchi Disk Transparencies (SDT). In summary, the water quality of Upper Range Pond is considered to be above average based on measures of SDT, total phosphorus (TP), and Chlorophyll-a (Chla). The potential for nuisance algal blooms on Upper Range Pond is moderate.

Water Quality Measures: Upper Range Pond is a non-colored lake (average color 13 SPU) with an average SDT of 6.4 m (21 ft). The range of water column TP for Upper Range Pond is 5-16 parts per billion (ppb) with an average of 8 ppb, while Chla annual averages range from 2.4-9.9 ppb with an average of 4.2 ppb. Since testing began in 1979, there has been a patterns of dissolved oxygen (DO) profiles showing high to moderate DO depletion in deep areas of the lake. The potential for TP to leave the bottom sediments and become available to algae in the water column (internal loading) is moderate. Oxygen levels below 5 parts per million (ppm) stress certain cold water fish and a persistent loss of oxygen may eliminate or reduce habitat for sensitive coldwater species.

Fish species include American Eel, Black Crappie, Brook Trout, Brown Trout, Lake Trout, Rainbow Trout, Largemouth and Smallmouth Bass, White and Yellow Perch. Loon chicks were observed every year from the 2016-2020 period with one chick each year in 2016-2018 and two chicks each year of 2019 and 2020.

Middle Range Pond: Water quality monitoring data for Middle Range Pond have been collected since 1974. In summary, the water quality of Middle Range Pond is considered to be above average based on measures of SDT, total phosphorus (TP), and Chlorophyll-a (Chla). The potential for nuisance algal blooms on Middle Range Pond is low.

Water Quality Measures: Middle Range Pond is a non-colored lake (average color 13 SPU) with an average SDT of 6.2 m (20.3 ft). The range of water column TP for Middle Range Pond is 5-12 parts per billion (ppb) with an average of 8 ppb, while Chla annual averages range from 2.3-6.9 ppb with an average of 4.1 ppb. Dissolved oxygen (DO) profiles show moderate DO depletion in deep areas of the lake. The potential for TP to leave the bottom sediments and become available to algae in the water column (internal loading) is low to moderate. Oxygen levels below 5 parts per million (ppm) stress certain cold water fish and a persistent loss of oxygen may eliminate or reduce habitat for sensitive coldwater species. To date, there does not appear sufficient DO loss to seriously affect this habitat.

Fish species include American Eel, Black Crappie, Brook Trout, Brown Trout, Lake Trout, Rainbow Trout,

Largemouth and Smallmouth Bass, White and Yellow Perch. Loon chicks have been observed in 2013, 2014, 2016 and 2019 with 2013 and 2019 showing two chicks present and one chick the other years. Presence of variable-leaf milfoil, an invasive aquatic plant, was confirmed in 2004 and it was determined to be eradicated in 2011.

Lower Range Pond: Water quality monitoring data for Lower Range Pond have been collected since 1980. In summary, the water quality of Lower Range Pond is considered to be above average based on measures of SDT, total phosphorus (TP), and Chlorophyll-a (Chla). The potential for nuisance algal blooms on Lower Range Pond is moderate.

Water Quality Measures: Lower Range Pond is a non-colored lake (average color 11 SPU) with an average SDT of 6.9 m (22.6 ft). The range of water column TP for Lower Range Pond is 5-20 parts per billion (ppb) with an average of 7 ppb, while Chla annual averages range from 2.0-5.1 ppb with an average of 3.6 ppb. Dissolved oxygen (DO) profiles show significant DO depletion in deep areas of the lake. The potential for TP to leave the bottom sediments and become available to algae in the water column (internal loading) is moderate. Oxygen levels below 5 parts per million (ppm) stress certain cold water fish and a persistent loss of oxygen may eliminate or reduce habitat for sensitive coldwater species. Readings well below 5 ppm are common in the lowest 5 meters of the lake.

Fish species noted include American Eel, Black Crappie, Brown Trout, Lake Trout, Rainbow Trout, Largemouth and Smallmouth Bass, and Yellow Perch. Limited loon data is available, but in the years 2014-2017 one nest was noted each year with one chick in 2016. The lake was screened for invasive aquatic plants in 2006 and 2013, no presence was confirmed.

Thompson Lake: Water quality monitoring data for Thompson Lake have been collected since 1977. In summary, the water quality of Thompson Lake is considered to be excellent, based on measures of SDT, total phosphorus (TP), and Chlorophyll-a (Chla). The potential for nuisance algal blooms on Thompson Lake Pond is low. In the following data, overall averages contain multiple stations, but ranges of data are from station 1 only.

Water Quality Measures: Thompson Lake is a non-colored lake (average color 12 SPU) with an average SDT of 9.1 m (29.9 ft). The annual averages of water column TP for Thompson Lake range from 3-11 parts per billion (ppb) with an average of 5 ppb, while Chla ranges from 1.3-4.1 ppb with an average of 2.4 ppb. Dissolved oxygen (DO) profiles show little DO depletion in deep areas of the lake. The potential for TP to leave the bottom sediments and become available to algae in the water column (internal loading) is low. Oxygen levels below 5 parts per million (ppm) stress certain cold water fish and a persistent loss of oxygen may eliminate or reduce habitat for sensitive coldwater species. There have been few instances of DO below 5 ppm.

Fish species include American Eel, Lake Trout, Landlocked Salmon, Largemouth and Smallmouth Bass, White and Yellow Perch. Loon chicks have been observed in 2019 (3 chicks), 2010 (3), 2009 (2) , and periodic years going back to 1983. Presence of variable-leaf milfoil, an invasive aquatic plant, was confirmed in 1975.

Tripp Pond: Water quality monitoring data for Tripp Pond have been collected since 1974. In summary, the water quality of Tripp Pond is considered to be average based on measures of SDT, total phosphorus (TP), and Chlorophyll-a (Chla). The potential for nuisance algal blooms on Tripp Pond is moderate.

Water Quality Measures: Tripp Pond is a non-colored lake (average color 23 SPU) with an average SDT of 4.7 m (15.4 ft). The range of water column TP for Tripp Pond is 6-13 parts per billion (ppb) with an average of 9 ppb, while Chla annual averages range from 2.8-10 ppb with an average of 5.7 ppb. Dissolved oxygen (DO) profiles show moderate DO depletion in deep areas of the lake. The potential for TP to leave the bottom sediments and become available to algae in the water column (internal loading) is low.

Fish species include American Eel, Brown Trout, Landlocked Salmon, Largemouth and Smallmouth Bass, White and Yellow Perch. A loon chick was observed on the lake in 2006, while adult loons continue to use to use the lake in recent years and in some years there has been a nest observed.

Source of data for this subsection: www.lakesofmaine.org.

PHOSPHORUS ALLOCATIONS

Phosphorus allocations for each of the Town's major lakes are shown in the following Table.

PHOSPHORUS ALLOCATIONS

Watershed	Water Quality[1]	Protection Level[2]	F[3]	C[4]	D[5]	P[6]
Tripp Pond	Mod/Sensitive	Medium	44.34	1.00	911	0.049
WORTHLEY POND	Mod/Sensitive	High	7.43	0.75	211	0.026
THOMPSON LAKE	Outstanding	High	46.76	0.50	642	0.036
UPPER RANGE POND	Mod/Sensitive	High	19.13	0.75	361	0.040
Middle Range Pond	Mod/Sensitive	High	43.52	0.75	718	0.045
Lower Range Pond	Mod/Sensitive	High	31.26	0.75	421	0.056

[1]Lake Quality - from DEP

[2]Lake Protection Level - determined by Town

[3]Lbs. Phosphorus allocated to Town's share of watershed per ppb in lake

[4]Acceptable Increase in lake's phosphorus concentration in ppb

[5]Area likely to be developed in acres (DDA-ANAD)

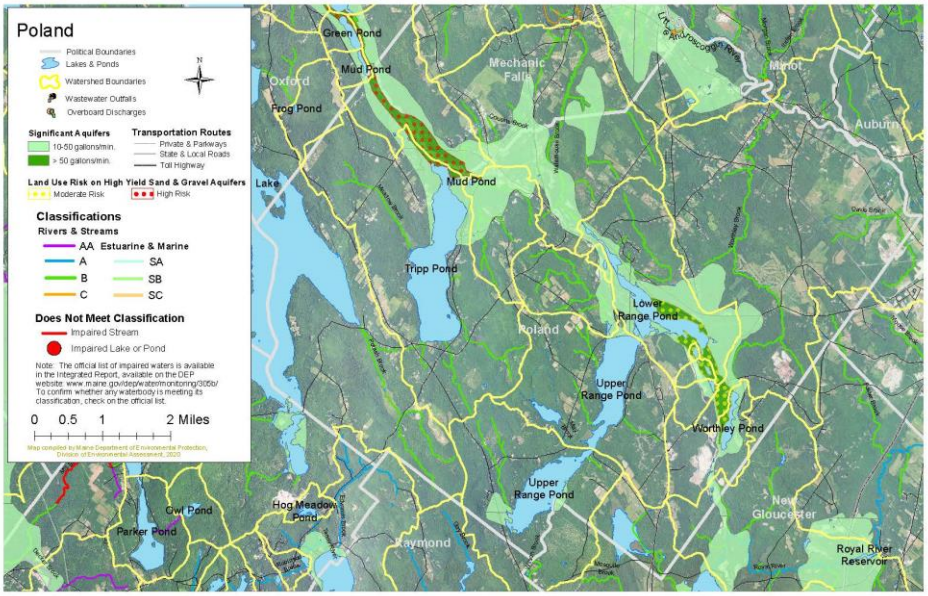
[6]Lbs. Per acre phosphorus allocation (FC/D)

Commented [SN5]: I have asked DEP to update the phosphorus allocations for the town's lakes. This is something they do when it is requested, not on a regular basis. They said they would be able to get to this in a few weeks. At that time they will also verify the protection level and evaluate the water quality level rating to see if those need to change.

AQUIFERS

Sand and gravel aquifers in Maine were deposited by glacial melt—water streams 10,000 to 15,000 years ago. Wells which are properly constructed in these aquifers have the capacity to yield large volumes of water. Three separate aquifers in Poland which cover large sections of the Town were identified by the Maine Geological Survey. One is located in the northeast portion of Town and has the potential for moderate to good ground water yield (10 to 50 gallons per minute). A smaller aquifer is located just to the southwest of this aquifer. There are also two small aquifers adjacent to Upper Range Pond. These are generally sand overlying marine deposits which will yield sufficient water for domestic supplies for dug or driven wells, but not major supplies.

A larger aquifer goes through the central portion of the Town and has two regions with excellent potential for ground water yields of fifty or more gallons of water per minute. The first region is located around Lower Range Pond and Worthley Pond, this is where the Poland Spring water bottling plant is located. This aquifer is made up of ice-contact deposits, and the yields are excellent in terms of quality and quantity. A six inch diameter test well yielded 90 gpm. The DEP has identified land development and use on this aquifer as moderate risk of impacting the aquifer. The second high yield aquifer area is north of Tripp Pond following the hydrologic connection between Hogan Pond, Green Pond, Mud Pond and Tripp Pond. The DEP has identified land use here as a high risk to the aquifer.



GROUND WATER CONTAMINATION THREATS

The residents of Poland rely on ground water for their safe drinking water. Continued assurance of plentiful, clean water is dependent on wise management of the resources. Aquifers (saturated geological formations containing usable quantities of water) can be contaminated by many different types of land uses that discharge pollutants into or onto the ground. The primary sources of ground water contamination in Maine are malfunctioning septic tanks, leaking underground fuel storage tanks, salt leachate from salt/sand stockpiles, and leachate from landfill refuse. Certain land uses such as automobile graveyards/ junkyards, agricultural use of pesticides and herbicides, and certain industrial activities also have the potential for contaminating ground water.

FLOODPLAINS

The National Flood Insurance Program is administered by the Federal Emergency Management Agency (FEMA). The program has been designed to provide flood insurance for existing properties and to discourage additional development within the 100-year flood-plain. A 100-year flood is a flood that has one chance in 100 of being equaled or exceeded in any one year period. Floodplains are best suited for uses such as open space, recreational uses not requiring major structures, and wildlife habitat.

According to FEMA maps, 100—year floodplain areas are located at Range Brook, Cousins Brook, Little Androscoggin River, Worthley Brook, Lower Range Pond, Middle Range Pond, Upper Range Pond, Davis Brook, Worthley Brook, Worthley Pond, and Shaker Bog. Within the Range Pond watershed, forest lands account for 73 percent of the area. Within the area of the floodplain, there are several residential developments, several small businesses, woodlands, and water—related recreation areas. In the Worthley Brook watershed, forest lands account for 88 percent of the total area. Within the floodplain are water— related recreation areas, woodlands, and a golf course.

Commented [SN6]: AVCOG is working on a way to update these numbers for how forested the watersheds are.

Minor flooding of lowland areas within the Range Pond and Worthley Brook watersheds occurs annually from heavy

spring rains and high antecedent moisture conditions. Numerous low—lying areas within the watersheds are subject to flooding, the lower portion of Range Brook has a high damage potential due to back water from the Little Androscoggin River. The most significant floodplains are located along the Little Androscoggin River, Davis, Range, and Worthley Brooks.

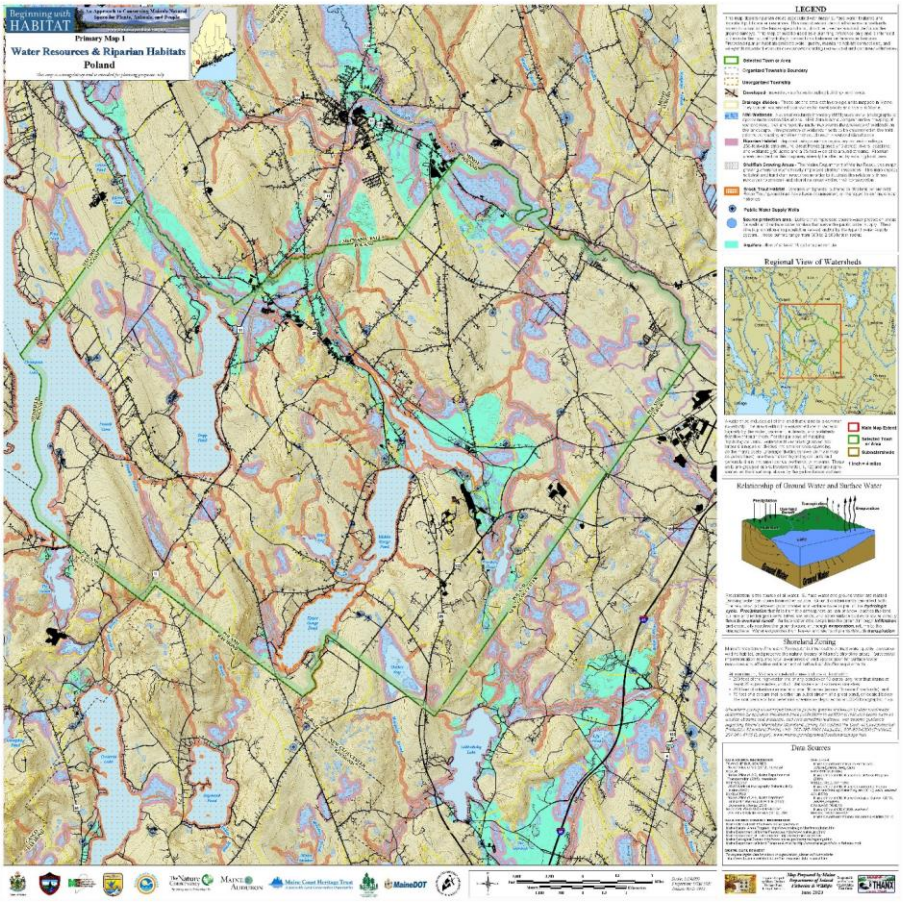
Commented [SN7]: Can folks who are local verify that these are still an issue.

FISHERY RESOURCES

The lakes, ponds and streams in Poland provide for both cold and warm water sport fisheries. Cold water species that can be found in one or more of the surface waters include Landlocked Salmon, Lake Trout, Cusk, Brook, Brown and Rainbow Trout, Large and Small Mouth Bass, Chain Pickerel and White Perch. The Department of Inland Fisheries and Wildlife manages the Range Ponds, Thompson Lake and Worthley Pond for cold water fisheries and Tripp Pond for warm water species. In addition to the sport fisheries in lakes and ponds lakes a there several brooks and streams including Worthley and Potash that have populations of wild Brook Trout.

Commented [SN8]: Sent request to IFW for verification on 5/13

Brook trout habitat can be seen on the map titled “Water Resources & Riparian Habitats.



WILDLIFE RESOURCES

Wildlife should be considered a natural resource similar to surface waters or forest land. Our wildlife species are a product of the land and, thus, are directly dependent on the land base for habitat. Therefore, if a habitat does not exist or an existing habitat is lost, various types of species will not be present. Although there are many types of habitats important to our numerous species, there are three which are considered critical: water resources and riparian habitats, essential and significant wildlife habitats and large undeveloped habitat blocks.

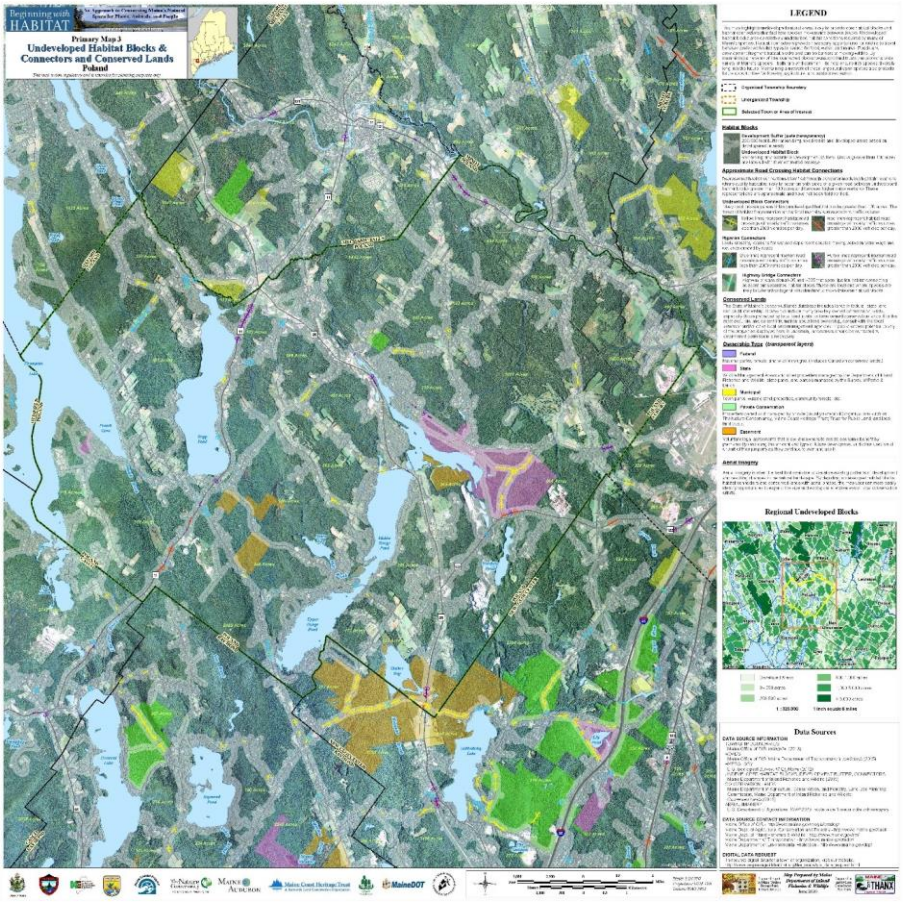
In addition to providing nesting and feeding habitat for waterfowl and other birds, wetlands are used in varying degrees by fish, beaver, muskrats, mink, otter, raccoon, deer and moose. Each wetland type consists of plant, fish and wildlife associations specific to it. Whether an individual wetland is a highly productive waterfowl marsh or a low value area capable of producing just one brood of ducks, it is still valuable. The Maine Department of Inland Fisheries and Wildlife has identified 17 wetland areas in Poland that have high or moderate waterfowl and wading bird habitat value which are shown on the Beginning with Habitat map entitled "High Value Plant & Animal Habitats," shown on page 39 of this section

Riparian habitat is the transitional zone between open water or wetlands and the dry or upland habitats. It includes the banks and shores of streams, rivers and ponds and the upland edge of wetlands. Land adjacent to these areas provides travel lanes for numerous wildlife species. Buffer strips along waterways provide adequate cover for wildlife movements, as well as maintenance of water temperatures critical to fish survival.

While deer range freely over most of their habitat during spring, summer and fall, deep snow (over 18 inches) forces them to seek out areas which provide protection from deep snow and wind. These areas, commonly known as deer yards or wintering areas, represent a small portion (10-20%) of their normal summer range. Wintering areas provide the food and cover necessary to sustain deer during the critical winter months. While size and shape of the areas can vary from year to year or within a given year, most are traditional in the sense that they are used year after year. The Maine Department of Inland Fisheries and Wildlife has mapped eight deer wintering areas in Poland ranging in size from 25 to 480 acres. These are shown on the "High Value Plant & Animal Habitats" map referenced above. The habitat values of these yards have yet to be determined.

Large undeveloped habitat blocks are relatively unbroken areas that include forest, grassland/agricultural land and wetlands. Unbroken means that the habitat is crossed by few roads and has relatively little development and human habitation. These undeveloped habitat blocks are needed by animals that have large home ranges such as bear, bobcat, fisher and moose.

The State's Beginning with Habitat program has developed a map titled Undeveloped Habitat Blocks & Connectors and Conserved Lands. This map shows the large blocks of unfragmented habitat as well as the primary connectors for habitat

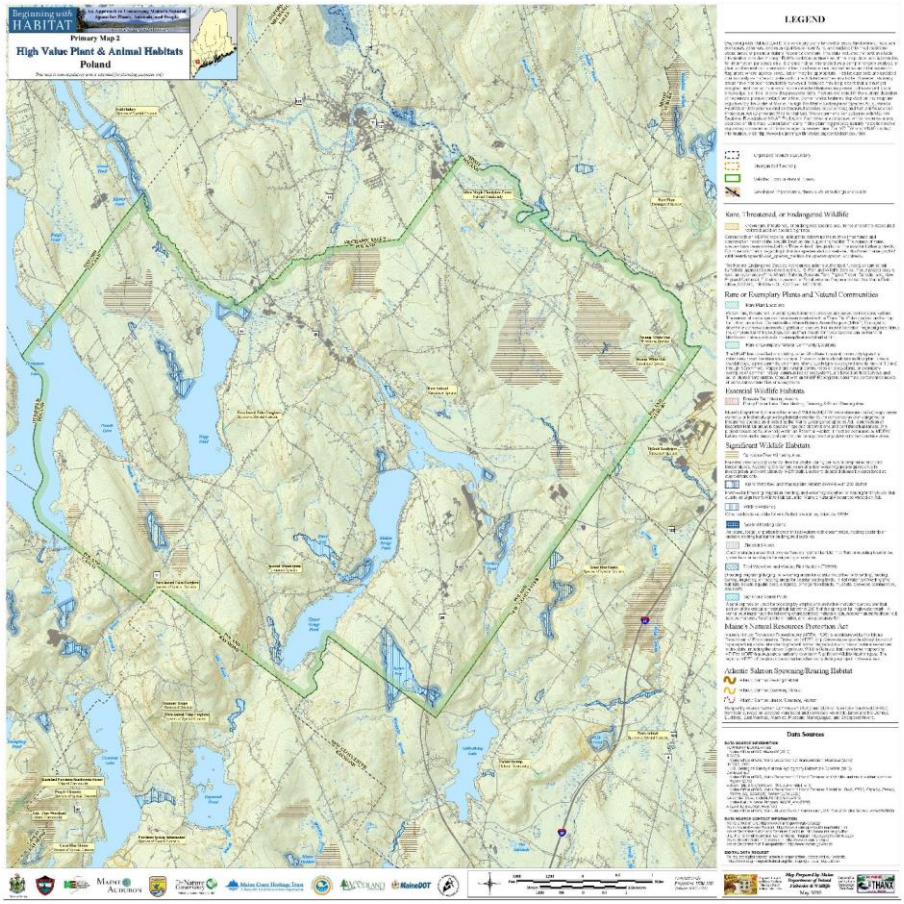

Beginning with HABITAT
Primary Map 3
Undeveloped Habitat Blocks & Connectors and Conserved Lands
Poland
LEGEND
Regional Undeveloped Blocks
Data Sources

CRITICAL AND NATURAL AREAS

The Natural Areas Program has compiled data on Maine's rare, endangered or otherwise significant plant and animal species. While this information is available for preparation and review of environmental assessments, it is not a substitute for on-site surveys. The quantity and quality of data collected by the Natural Area Program are dependent on the research and observations of many individuals and organizations. In most cases, information on natural features is not the result of comprehensive field surveys. For this reason, the Maine Natural Areas Program cannot provide a definitive statement on the presence or absence of unusual natural features in any part of Maine.

Threatened plant species know to exist of have existed in Poland include Spotted Wintergreen (*Chimaphila maculata),* Swamp White Oak (*Quercus bicolor),* Fern-leaved False Foxglove (*Aureolaria pedicularia).* Poland is the northern part of the endangered Blanding's Turtle's *(Emydoidea blandingii)* range. It lives in vernal pools and pocket swamps, most frequently in complexes or small, acidic wetlands and vernal pools located in large blocks of forested habitat of over 500 acres and it is rarely seen. The threatened Spotted Turtle *(clemmys guttata)* also has range in Poland, most frequently found in complexes of small, acidic wetlands and vernal pools located in large , intact forested landscapes. They also use small streams, shrub swamps, wet meadows, bogs and forested swamps.

Where the location of these species is known, they are shown on Map 2, the High Value Plant & Animal Habitats map, shown below.


Beginning with HABITAT
Primary Map 2
High Value Plant & Animal Habitats
Poland
LEGEND
Rare, Threatened, or Endangered Wildlife
Rare or Exemplary Plants and Natural Communities
Essential Wildlife Habitats
Significant Wildlife Habitats
Maine's Natural Resources Protection Act
Atlantic Salmon Spawning/Rearing Habitat
Data Sources

SCENIC RESOURCES

Poland's Comprehensive Plan Committee has identified 22 scenic vistas, which are listed in the following table.

Commented [SN9]: Committee to review these, AVCOG made no changes.

VISTAS - TOWN OF POLAND, MAINE

Vista Number	Location: Road	Location: Point	Remarks
1		Black Cat Mountain	Panoramic (unlimited)
2	Heath	Near Town line with Casco	Thompson Lake (1-1 1/2 miles)
3	Megquier Hill	Top of hill	Maple trees about a mile in length
4	Megquier Hill	West side, north of Fernald Road	As far as Mount Washington
5	Megquier Hill	East side, north of Fernald Road	Tripp Lake and beyond
6	Megquier Hill	Opposite Highland Cemetery	Streaked Mountain in Buckfield
7	Megquier Hill	1/4 mile north of Intersection with North Raymond Road Extension	Tripp Lake, White Oak Hill
8	McCann	End of opened road	White Mountains
9	Summit Spring	North, first tee of S.S. Golf Course	White Mountains
10	White Oak Hill	Northwest side near Worthen residence	White Mountains
11	Poland Corner	Northwest side near Thompson residence	White Mountains
12	Torrey	1000' from Torrey Road	Hemonds in Minot and Streaked Mountain
13	Route 26	Top of Shaker Hill	Poland Spring Complex and mountains beyond
14	Route 26	Top of Shaker Hill	Mount Washington and other White Mountains
15	Range Hill	Opposite Chipman's Farm	Shaker Bog (3/4 mile)
16	Range Hill	Opposite Chipman's Farm	Black Cat Mountain and White Mountains
17	Range Hill	Causeway between Upper and Middle Range Ponds	Upper Range Pond (1 1/2 miles)
18	Range Hill	Causeway between Upper and Middle Range Ponds	Middle Range Pond (1 1/4 miles)
19	Birch Drive	End of gravel road	Middle Range Pond (1 mile)
20	Summit Spring	From Poland Spring Health Institute	Poland Spring Complex (1 1/2 miles)
21	Poland Spring	From Poland Spring Inn	White Mountains
22	Poland Spring	From Poland Spring Inn	Streaked Mountain in Buckfield