

NOTE TO READERS: This is a *draft* of the Kennebunk Comprehensive Plan. The Comprehensive Plan provides us with a description of the town today in a range of categories, and identifies issues and recommendations for the future. The final version will include an introduction, be professionally formatted and contain multiple photographs. As a town resident, you are encouraged to look at this draft in this early format. **We are now looking for comments and opinions on its contents**, especially the *Issues & Implications* and *Recommendations* sections at the end of each chapter.

The Town will make changes to this draft based on the comments and opinions received, and residents will vote whether or not to accept the final Plan in June 2019.

Chapter D: Natural Resources

The natural resources of the community - marshes, stream corridors, beaches, forested areas, rivers, barrens, shoreland, plants and animals - are all part of what makes Kennebunk special.

The definition and importance of each of the resource systems have not changed from those included in previous Comprehensive Plans, but this chapter reflects new information and changes to the Resources over time.

Mapping

The inventory and analysis of Kennebunk's natural resources was a major component of previous Plans. The current Plan provides a refinement and update of that inventory through mapping and data provided from Federal, State and regional agencies. In most cases the data is in GIS form which allows the Town to review the natural resource information in a variety of ways, and includes online availability to all.

GIS Maps for many resource systems have been printed in very large format and are available at Town Hall in the Town Planner's office. Reduced copies of many of these maps are attached and made a part of this plan. There are also very detailed interactive maps online at Beginning with Habitat, the U.S. Department of Agriculture (soils), U.S. Fish & Wildlife (wetlands and watersheds), the Maine Department of Marine Resources, the Maine Department of Environmental Protection and the Maine Geological Survey. (*Hyperlinks to come.*)

Watersheds

Understanding watersheds is critical to protecting groundwater quality and keeping rivers clean and healthy. A watershed is a geographic region defined by a ridge or ridges of high land draining into a river, river system, or other body of water. The Town of Kennebunk is divided into three watersheds: The Kennebunk River watershed, the Mousam River watershed, and the Little River watershed which includes Branch Brook.

The Kennebunk River watershed drains about 44% of Kennebunk and is shared with the communities of Kennebunkport, Arundel and Lyman. The River's headwaters originate in Kennebunk Pond in Lyman. From there, Lords Brook converges with Ward Brook to form the Kennebunk. In the upper reaches, the landscape is sparsely developed consisting of mixed forest and agricultural lands. As it flows through Arundel and Kennebunk, it is bordered by heavy agricultural use and then, before discharging into the Atlantic at Goochs Beach, the river enters an area of high-density development between Route 1 and the Atlantic Ocean.

An additional 44% of the Town's acreage falls within the Mousam River watershed. The Mousam River originates at Square Pond and flows into Mousam Lake in Shapleigh. From there, it flows through Sanford and Alfred to Estes Lake. From Estes Lake, it flows through Lyman and Kennebunk to discharge into the Atlantic Ocean at Parsons Beach.

A smaller area of the Town, about 12% aligned along Branch Brook, is drained by the Little River watershed.

The Kennebunk and Mousam Rivers serve the community as important recreation areas for aquatic life, fishing and boating. Branch Brook overlies a sand and gravel aquifer. Both the aquifer and the Brook have in the past been the source of the public water supply for four towns, including Kennebunk. However, recent changes have introduced well sources (Kimball Well) as primary supplies for public water. Groundwater is the primary source of drinking water (public utility and residential wells) for Kennebunk.

Useful watershed maps can be found online at <https://water.usgs.gov/maps.html>

Topography

Kennebunk's topography consists of mostly level or gently rolling terrain typical of coastal lowlands. Elevations rise gradually from less than 20 feet above sea level near the coast to a few isolated high points at an elevation of 240 feet. Elevation defines the watershed boundaries for the three major rivers of Kennebunk, and the land rises in a general east to west pattern within each watershed. The land east of the Maine Turnpike is mostly between sea level and 100 feet of elevation and the highest elevations occur mostly in the southwest portion of the Town between the Mousam and Branch Brook watersheds.

Slopes are described as a percentage, and represent the ratio of vertical rise of the land to horizontal distance. Slope is a factor to be considered in determining areas suitable for development, since steeply sloping lands (those exceeding a 15% slope) may be prone to excessive erosion and sloughing if they are disturbed. When these slopes are adjacent to water bodies, erosion can result in sedimentation and have adverse effects on water quality. *Note:* The related Kennebunk ordinance allows development on up to a 20% slope.

Soils

Soils are vital resources that are a part of the natural environment and store water, nutrients, and support for plants. In Kennebunk there are over two dozen different soils, as identified by the Natural Resource Conservation Service (NRCS). Soils are of great importance to a community

and are evaluated for properties including texture, permeability, slope, drainage, water table, flooding and depth to bedrock. An overview of the Town of Kennebunk shows that approximately 50-60% of the soils present are non-discharge soils, that is, soils which cannot support subsurface on-site waste disposal. Most soils east of the Turnpike are given a very low rating in terms of their ability to support septic systems. West of the Turnpike, the largest proportion are given a medium rating per NRCS Soil Potential Ratings

An online website provided by the US Department of Agriculture (NRCS) that includes detailed soil maps and tables is below. This database is a high-level planning level tool. It should be noted that ground truth evaluation of soil profiles may indicate suitable soils to support surface waste disposal where NRCS maps may not so indicate.

NRCS maps can be found at <https://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm>

Beaches

Kennebunk has sandy beaches along most of its coastline. Goochs, Middle and Mothers run southwest from the Kennebunk River to Lords Point while Parsons and Crescent run southwest from the Mousam River to the Little River. Goochs, Middle and Mothers are public beaches that are actively used during the summer. Parsons and Crescent are privately owned, but Parsons is open to residents and tourists and is also heavily used in the summer. The beaches are an important economic asset to the Town. Properties between Route 9 and the beach, including all of Lower Village, generate roughly 40% of Kennebunk's total property tax revenues; beach parking fees provide revenue to the Town; and tourist revenues support many local businesses (see Chapter C, Local Economy).

There are two important monitoring programs that evaluate the health of Kennebunk's publicly owned beaches:

- Maine Healthy Beaches (MHB) is a program established to ensure that Maine's salt-water beaches remain safe and clean. MHB staff and volunteers perform standardized monitoring of beach water quality, notifying the public if health risks are detected. In Kennebunk, the water at Goochs and Mothers is tested twice weekly from June to September for temperature, salinity and bacteria. For the years 2006-2015, Goochs ranked 6th out of 60 Maine beaches for the highest per cent of samples with bacteria exceeding the health risk threshold (19%). Mothers ranked 23rd with an incidence of 9%. High bacteria counts tend to coincide with heavy rainfall, which flushes bacteria laden storm water into the Kennebunk River towards the beaches. Efforts are underway to identify and better mitigate sources of pollution to the Kennebunk River (see Rivers discussion below).
 - Healthy Beaches Data can be found online at <http://www.mainehealthybeaches.org/resources.html>
- The Southern Maine Volunteer Beach Profile Program is sponsored by a partnership among the Wells Reserve, Maine Sea Grant and the University of Maine Cooperative Extension. Under this program, once every month a team measures the profile of Goochs

Beach at three transects and Middle Beach at one transect to determine the slope and width of the beach at lunar low tide. Fifteen years of data are posted on the web and allow the user to graph the beach's profile over time. This allows the Town to see the impact of severe weather events and whether the beach is growing or eroding over time.

- Beach profiling data can be found online at <http://www.seagrant.umaine.edu/extension/beach-profile-monitoring/home>

Water Bodies and Wetlands

As mentioned previously, Kennebunk's three major surface water systems are the Kennebunk River, the Mousam River and the Little River, which includes Branch Brook. There are also dozens of associated streams and tributaries that flow and ultimately impact the quality and functioning of those systems. The level of protection of these water bodies impacts their use for fishing, swimming, wildlife habitat, and as a water supply.

Rivers

The Kennebunk River is 15 miles long and originates at Kennebunk Pond in Lyman where Lords Brook joins Carlisle Brook. Tributaries in Kennebunk include Goochs Creek, Lake Brook, Wonder Brook, Wards Brook, and Sucker Brook. Tributaries in Arundel include Goff Mill Brook, Duck Brook, Saunders Brook and Arundel Swamp Brook. Tributaries in Kennebunkport include Fairfield Creek, Chicks Creek, Gristmill Pond and Bass Cove. The town of Kennebunkport sewer department has a license to discharge treated effluent into the Kennebunk River.

The Mousam River is 23 miles long. It flows through Alfred and Sanford to Estes Lake, where it is joined by the Littlefield River and Middle Branch River – then from Estes Lake through Kennebunk to the Atlantic Ocean at Parsons Beach. The River has ten dams on its main stem, including three in Kennebunk. The Kennebunk Sewer District and Sanford Sewer District have licenses to discharge treated sewer effluent into the Mousam River.

Water Quality Monitoring

Both the Kennebunk and the Mousam Rivers are monitored by volunteers reporting to the Maine DEP through the Mousam and Kennebunk River Alliance, and with support from the Wells Reserve and Maine Rivers. There is also coordination with the Maine Healthy Beaches staff (EPA) and volunteers who monitor bacteria levels at the beaches. Testing of the rivers is done on a biweekly basis from June through September.

Annual reports on the health of the rivers are available online at http://www.maine.gov/dep/water/monitoring/rivers_and_streams/vrmp/reports.

The key metrics of the health of the rivers are dissolved oxygen, bacteria, salinity, temperature and specific conductance. Primary sources of pollution and stress to the rivers are:

- Non-point sources - septic systems, erosion, fertilizers and pesticides, heavy metals, petroleum residues, road salt, wildlife and pet feces, and polluted storm water runoff from impervious surfaces, agriculture and forestry.
- Point sources - direct discharge, wastewater treatment plant discharge, sewer overflows and overboard discharges.
- Ponds and impoundments - higher temperatures and lower dissolved oxygen.
- Wetlands - decomposition of organic matter leading to low dissolved oxygen levels.

The statutory class of the Kennebunk River and tributaries is Class B in a range AA to C where the range reflects a “hierarchy of risk, more than one of use or quality, the risk being the possibility of a breakdown of the ecosystem and loss of use due to either natural or human-caused events.” For the summer of 2016, test results were as follows: dissolved oxygen readings were only fair for three of the six testing sites but good to excellent for the other three; temperatures were good to excellent at all sites; and specific conductance was good to excellent at all freshwater sites. But bacteria at all sites except the Western Avenue Bridge (tidal) was poor to fair, a similar result to previous years. As a result, the Kennebunk River is listed by the Maine DEP as impaired for bacteria.

In 2018, a regional steering committee was formed including representative of the towns of Lyman, Arundel, Kennebunk and Kennebunkport as well as the Wells Reserve, the Mousam and Kennebunk Rivers Alliance and the Kennebunk, Kennebunkport and Wells Water District. Led by a project manager for the York County Soil & Water Conservation District, the Committee applied for and received a \$41,600 grant to conduct a two-year assessment of historical and current data and to devise a plan to address the water quality of the Kennebunk. The result of that assessment will be a 10-year strategic plan including cost estimates and action recommendations that each watershed town might take to better protect the health of the Kennebunk River.

The statutory class of the Mousam from Estes Lake to tidewater is B. Maine DEP lists a 9.9-mile segment of the river in Sanford above Estes Lake as impaired due to toxics and nutrients from high levels of development (impervious surfaces), point source discharges and the impact on water quality of several dams. From Estes Lake to tidewater, the River is designated Class B (see definition above). Dissolved oxygen, specific conductance and bacteria metrics for both the upper and lower Mousam were rated good to excellent for the summer of 2016 but water temperatures are high for most sites, probably reflecting the impact of the impoundments.

Shellfish

As of 2009, “because of pollution,” the Maine Department of Marine Resources prohibits the taking of clams, quahogs, oysters or mussels from any Kennebunk flats, shoreland, and offshore waters. This includes the Little, Mousam and Kennebunk Rivers. Nevertheless, Maine DMR

volunteer teams test the water at Parsons Beach weekly for phytoplankton that might be toxic to shellfish and/or humans. Despite the ban on shellfish harvesting, the Town retains a licensing procedure offered through the Clerk’s Office that could be utilized if the ban is ever lifted.

Wetlands

Kennebunk’s wetland map, prepared by Normandeau Associates in 1991, utilizing National Wetlands Inventory maps and additional state mapping, evaluates the wetland’s benefits and functions. That map is on file along with the full report, in the Town Planning Office. The report includes a detailed assessment of 49 of the most significant wetlands, a review of wetland laws and ordinances at the time of the report, and specific recommendations to provide for their long-term protection. Excerpts from that report follow:

“Wetlands serve Kennebunk as transitional zones between terrestrial and aquatic ecosystems. They support a diversity of wildlife and vegetation typically adapted for life in saturated soil conditions. Wetlands provide both biological and open space/aesthetic benefits. Biological benefits include fish and wildlife habitat or nutrient export which supports productive and diverse food webs. The tidal (salt) marshes on the Little River, the Mousam, Lake Brook and the Kennebunk River are prime examples of high productivity wetlands. Water resource values include groundwater discharge, stream flow maintenance, flood prevention, water quality maintenance, and shoreline protection. And humans directly use and receive many cultural and economic benefits from wetlands. Recreational uses, such as nature study, hunting, fishing and boating are widely recognized.

“Wetlands also provide open space and aesthetic values. Broad tidal marshes backed by protective dunes are an important feature of Kennebunk’s landscape. While not offering impressive vistas, forested wetlands present the visitor with a rich mosaic of trees, shrubs, ferns and delicate wildflowers. Wetlands often provide open space buffers between developed areas in what otherwise might have become a continuously developed area.”

Kennebunk values its wetlands and has among the more stringent regulations in the State regarding wetland filling or alteration. The Town regulates wetlands of one acre or larger and requires sign-offs from Maine DEP for all wetland permits.

Normandeau evaluated 49 wetlands in Kennebunk according to a complex model using over 30 variables to determine and rank protection priority. High priority connoted high value and high vulnerability; medium priority, high value and low vulnerability; and low priority, moderate to low value. The specific rating assigned to each of the 49 wetlands is included in the report. A summary of the distribution is as follows:

Evaluated Wetlands	High Value/ High Vulnerability	High Value/Low Vulnerability	Moderate/ Low Value	Total
Large (over 100 acres)	4	6	0	10
Medium (10-	10	15	3	28

100 acres)				
Small (less than 10 acres)	1	3	7	11
Total	15	24	10	49

In the summary of findings, Normandeau concluded:

- 75% of Kennebunk's highest priority wetlands are east of the Turnpike.
- Salt marshes, which have exceptionally high wildlife, fisheries, recreational, aesthetic and educational values, are relatively uncommon in Maine. Kennebunk has two major salt marsh complexes (Little River and Mousam River/Back Creek) as well as smaller salt and brackish marshes associated with the Kennebunk River and Lake Brook Creek. These wetlands, which are highly visible, are the "Crown Jewels" of Kennebunk's wetlands.
- Wetlands within the Branch Brook watershed are highly valuable due to their contribution to the Kennebunk-Kennebunkport-Wells public water supply and to the Little River salt marsh.
- Stream-associated wetlands provide high value wildlife and water quality benefits. Relatively narrow forested wetlands along stream corridors provide key habitat for animals which require aquatic habitat for all or part of their life cycle. These wetlands also serve as travel corridors between large blocks of undeveloped land. Forested wetlands adjacent to streams also filter contaminants and sediments caused by human activities on nearby uplands. The narrow width of these wetlands is sometimes insufficient to provide water quality and wildlife habitat protection without added development setbacks in bordering uplands.
- Medium and large forested wetlands are important for wildlife and water quality. Forested wetlands east of the Maine Turnpike wetlands comprise the majority of available wildlife habitat. These wetlands are primarily used by non water-dependent species such as white tailed deer and songbirds. For forest interior songbirds, large tracts of unbroken forest are essential. As growth pressures increase, these wetlands will become increasingly important as wildlife refuges. Forested wetlands west of the Turnpike, while still supporting a high diversity of species, are less critical as refuges. Forested wetlands also provide important water resource benefits by detaining and cleansing runoff and storm water, discharging water and nutrients to downstream aquatic ecosystems, and seasonally recharging groundwater through coarse, sandy soils. As undeveloped areas, they also provide open space and recreational benefits for hunting, hiking, and nature study. The larger wetlands are less vulnerable to nearby site

development but their value may be severely impacted if they are fragmented into smaller blocks by development.

- Linking wetlands is essential for long-term natural resource protection. Protecting isolated forested wetlands is insufficient to insure the future viability of wildlife populations.
- Small wetlands have a large cumulative value to the community's water resources. Long-term "nibbling" away at larger wetlands is likely to have a noticeable effect on water quality.
- Both on-site and off-site activities can impact wetlands. Buffer strips of undisturbed soil and vegetation adjacent to wetlands can mitigate the impacts of nearby human activities.
- Public education is necessary for local wetland protection. An effort by the Conservation Commission or other appropriate town board is necessary to actively involve the public in understanding and helping to monitor wetland impacts.

Detailed wetlands maps can be found online at:
<https://www.fws.gov/wetlands/data/mapper.html>

Sand and Gravel Aquifers

Extensive sand and gravel aquifers underlie much of the land area of Kennebunk, providing the water supply for private wells and for the replenishment of the surface waters of Branch Brook from which some of the public water supply is drawn. This groundwater is a valuable resource for the town, increasingly at risk from various sources of contamination because of the permeability of the sand and gravel deposits.

There are five moderate yield aquifers identified on the Maine Geological Survey Maps within the Town of Kennebunk.

- One small aquifer is located to the south of and immediately adjacent to the Mousam River in the eastern part of town.
- Two larger aquifers are located between the Mousam and Kennebunk Rivers. The larger of these two is bordered by the railroad, Kennebunk Landing and Heath Road. The former municipal landfill is located in a gravel pit over this aquifer but the 27-acre site was shut down using Maine DEP regulation closure procedures in 1987. Groundwater samples from onsite monitoring wells were found to be contaminated. A methane collection system and clay cap were installed as part of Phase I. The landfill closure was completed in 1994 under a Phase II reduced closure procedure. In March of 1999, the site

was given a no further action necessary status by Maine DEP. No significant methane is available. It has been suggested that the site might be a good location for solar production and/or a new skateboard park.

- A very extensive aquifer underlies almost all the land area east of the Turnpike and south of Route 35. This aquifer stretches from west of Crescent Beach up to the junction of the Turnpike and Cat Mousam Road, then extends west under all the land between the Mousam River and Branch Brook. It is joined to a system that reaches west and north into Sanford and Waterboro.
- The fifth aquifer in Kennebunk is a large system west of the Maine Turnpike that surrounds Alfred Road. Parts of these two aquifers, the Kennebunk Plains area and the Radio Range Tower in West Kennebunk, were the subject of more intensive study in 1979 by SEA Consultants. Field testing indicated significant water supply in these areas which was recharged from almost all of the surface area over the aquifers, as well as from recharge areas located outside of the municipal boundaries. Soils maps show large amounts of Adams soils in these locations, which are very permeable and well drained.

Detailed maps of Kennebunk's aquifers can be found online at:
<http://www.maine.gov/dacf/mgs/pubs/digital/aquifers.htm>

100-Year Floodplains

Floodplains are mostly flat areas adjacent to rivers, streams, ponds and tidal waters that are an integral part of a river ecosystem. These areas serve as overflow for excess water and can become periodically flooded. They are important to Kennebunk because they act as flood buffers, water filters, nurseries and are major centers of biological life in the river ecosystem. Floodplains are important in maintaining the health of the river through water quality, habitats and breeding sites for plants and animals. They are important for maintenance of water quality as they provide fresh water to wetlands and backwaters, dilute salts and nutrients and improve the overall health of the habitat used by many species of birds, fish and plants. Important biologically, floodplain areas in Kennebunk represent areas where many species reproduce and as such are important for breeding and regeneration cycles.

Wildlife and Plant Habitat

The State of Maine has two programs for the direct protection of wildlife habitat: The Maine Endangered Species Act and the Natural Resource Protection Act. The Maine Department of Inland Fisheries and Wildlife and the Maine Department of Environmental Protection are the primary agencies that regulate activity under these programs. In addition, Federal oversight is mandated by the US Endangered and Threatened Species Act under the auspices of the US Fish and Wildlife Service.

The primary resource informing Town planners about local wildlife and habitat and species of special interest to their community is an organization called *Beginning with Habitat (BwH)* – a collaborative program of federal, state, local and non-governmental organizations dedicated to conserving wildlife and plant habitat. Its goal is to maintain sufficient habitat to support all

native plant and animal species currently breeding in Maine. *BwH* makes available to each town a collection of GIS-based maps depicting habitats of statewide and national significance found in the town. They also provide a powerful digital toolbox and advisory services. Their goal is to help local decision makers develop a plan that provides habitat for all species and balances future development with conservation.

Detailed maps of habitats and species incidence are online at
http://beginningwithhabitat.org/the_maps/index.html

BwH's primary map (Map 2) is "High Value Plant and Animal Habitats." The map of Kennebunk is available at Town Hall or online and contains a wealth of information. It depicts a hierarchy of habitats and pinpoints the exact location of the incidence of various species as well as their status under State and Federal regulations. This map should be a standard tool for those involved in land development activity – such as the Kennebunk Planning Office, the Planning Board, the Site Plan Review Board and all builders and developers – in order to facilitate directed growth and development away from Kennebunk's irreplaceable habitats and rare, endangered and threatened plant and animal communities.

The following inventory provides just a portion of the information for Kennebunk provided by the *BwH* Map 2:

Threatened or endangered species:

- West of the Turnpike – Grasshopper Sparrow, Upland Sandpiper, Northern Blazing Star, White-topped Aster, Upright Bindweed, Northern Black Racer, Sleepy Duskywing.
- East of the Turnpike – Slender Blue Flag, Piping Plover, American Sea-blite, Flowering Dogwood, New England Cottontail, Spotted Wintergreen

Species of special concern:

- West of the Turnpike – Great Blue Heron, Broad Sallow, Small Reed-grass, Wild Garlic, Barrens Chaetoglaea, Indian Grass, Cobweb Skipper, Dusted Skipper, White Vervain.
- East of the Turnpike – Smooth Winterberry Holly, Spongy Leaved Arrowhead, Pygmyweed, Saltmarsh Sparrow, Saltmarsh Bulrush, Saltmarsh False-foxtail, Dwarf Glasswort, Saltmarsh Tiger Beetle, Beach Wormwood.

Significant Habitats and Natural Communities:

- West of the Turnpike – Red Maple Swamp, Pitch Pine-scrub Oak Barren, Inland Waterfowl/Wading Bird Habitat, Sandplain Grassland Natural Community, Candidate Deer Wintering Areas, Significant Vernal Pools
- East of the Turnpike – Tidal Marsh Estuary Ecosystems, Brackish Tidal Marsh, Salt-hay Saltmarsh, Deer Wintering Areas, Tidal Waterfowl/Wading Bird Habitat, Tern and Plover Nesting Areas, Significant Vernal Pools
- *BwH* also has other detailed GIS based maps of Kennebunk which are available at Town Hall or online and which provide further detail with regard to important natural habitat in Kennebunk including:
 - Water Resources & Riparian Habitats (Map 1) displays the transitional zones between open water and wetlands and dry or upland habitats. Included are the banks and shores of streams, rivers, ponds, and lakes, and the upland edge of wetlands. This map shows areas around water bodies that approximately correspond with State Shoreland Zoning guidelines which are that “Great Ponds” (ponds of at least 10 acres in size), rivers, coastline, and wetlands at least 10 acres in size are surrounded by a 250’ buffer zone and streams are bordered by 75’ buffer zones. Also shown are National Wetlands Inventory wetlands. Based on these maps, brook trout habitat appears to exist within Branch Brook, western portions of Day Brook and Ward Brook, as well as western portions of the Mousam River and Kennebunk River. Water resources shown include public water supply wells and their associated protection areas as well as aquifers with flows of at least 10 gallons per minute.

Undeveloped Habitat Blocks & Connectors and Conserved Lands (Map3) shows development corridors, large blocks of undeveloped land (with acreage in some cases) and natural corridors for the movement of wildlife including road and water crossings. It provides a very complete picture of the complexity of co-existing development and wildlife habitat. It, too, should be a standard tool for the Planning Office, the Planning Board, the Site Plan Review Board and builders and developers.

It should also be noted that *BwH* lists 166 Focus Areas of Statewide Ecological Significance based on the richness of the ecology in terms of rare plants and animals and “rare and exemplary” natural communities. There are 20 such sites in York County and one in Kennebunk - The Kennebunk Plains and Wells Barrens.

The 2004 Town of Kennebunk Open Space Plan which was approved by voters at a special town meeting is an extensive study of the Town’s cultural, historic, scenic, recreational and ecologically important open spaces. Embedded in that report is a ranking system of 1 to 3 for Environmental Priority Areas as High Value Riparian Habitat Corridor (RH), High Value Water

Resources (WR) and High Value Plant and/or Animal Corridors (P/AHC). The summary emphasizes that “they are *all* priorities.”

Environmental Priority Area	RH	WR	P/AHC
Branch Book Corridor	1	1	3
Blueberry Plains near Branch Brook			3
Branch Brook/Little River Estuary	1		3
Kennebunk River Corridor	1	1	3
Ward Brook/Alewive Pond Corridor	2	2	3
Punky Swamp Corridor	2	2	3
Wonder Brook Corridor	2	2	
Lake Brook/Goochs Creek Corridor	1	1	2
Mousam River West Corridor	2	2	2
Cold Water Brook Corridor	3	3	3
Day Brook Corridor	2	2	3
Mousam River East Corridor	2	2	3
Mousam River Back Creek Estuary	1	1	1

Viewed in the context of its natural habitats and plant and animal species, Kennebunk is very rich. The variety of its special environments – from the barrens to the estuaries – and the species that inhabit them may complicate the planning process, but their protection should be one of the Town’s highest priorities.

Pesticides

All pesticides (herbicides, fungicides, insecticides, miticides, avicides and rodenticides), whether organic or synthetic, are toxic by definition. Their widespread use is a source of controversy with regard to their impact on the environment, plants and animals and public health.

In 2012, the Kennebunk Conservation Commission submitted a Pest Management Policy for Town-owned lands that was accepted by the Board of Selectmen. The basis of this policy is the widely accepted Wingspread Precautionary Principle, which states “When an activity raises threats of harm to the environment or human health, precautionary measures should be taken even if some cause and effect relationships are not yet fully established.”

In June 2015, Kennebunk voters narrowly defeated a proposal for the Town to pay Central Maine Power to hand cut the brush in its 170-acre power line corridor rather than using herbicides. The annual cost at that time was estimated at \$12,000. The KK&W Water District clears its property along Branch Brook by hand.

Sources:

- Town of Kennebunk Open Space Plan 2004

- The Kennebunk River Watershed Plan, 1983
- Wells Bay Regional Beach Management Plan, September 2001
- Kennebunk River Watershed, April 2001
- MBLR Watershed Shoreland Survey, August 2002
- Open Space Plan, November, 2004 (includes sections on natural resources)
- Beginning with Habitat from MDIF&W, MNAP, & USFWS, October 2015
- A Basic Guide to the Kennebunk River and its Tributaries by Mary Rosenfeld (1986)
- Maine Department of Environmental Protection – Kennebunk and Mousam River Data Reports 2016 and earlier.
- Kennebunk’s Wetlands: Functions, Values and Relationship to Growth by Normandeau Associates, 1990
- Kennebunk River Watershed – Nonpoint Source Pollution Survey by the Arundel, Kennebunk, Kennebunkport Watershed Association Steering Committee, 2001
- Wetlands Mapper Documentation and Instructions Manual by the US Fish & Wildlife Service, 2010.
- Maine Healthy Beaches website
- Beginning with Habitat website
- US Fish & Wildlife website
- Maine Sea Grant website
- Mousam & Kennebunk Rivers Alliance website
- Wells Reserve website

(All websites will be included via hyperlink)

Recommendations:

- The Town should establish a database of Town private septic systems. Consideration should also be given to an ordinance requiring evidence of the inspection/pump out of these systems at designated intervals.
- The Town should establish a database of private wells in the Town and the aquifers from which they draw in order to better inform the public about the risk from damage and pollution of those aquifers.
- The Town should continue the effort underway by a joint group from Lyman, Kennebunk, Arundel and Kennebunkport that, with the assistance of the York County Soil and Water Conservation Commission, continue efforts to identify sources of bacterial pollution of the Kennebunk River and Kennebunk’s public beaches. The towns should make the effort to find additional EPA grant funding to implement recommendations that come as a result of this work.
- *Beginning with Habitat* maps and other source documents should be made a regular screening tool for the Code Office, the Planning Board and the Site Plan Review Board with regard to any building or development where they have oversight. Similarly, the priorities for conservation established by the

Open Space Planning Commission and approved by the voters in 2004 should be an elemental consideration vis a vis any new development.

- The Town should continue to fund the Maine Healthy Beaches program with funding for water testing and posting of appropriate signage and warning flags.
- The Town should find any funding needed to support the volunteer testing programs for the Mousam and Kennebunk Rivers and the volunteer beach profiling program.
- The Town should encourage Marinas to provide public education and easily available pump-out equipment for resident and visiting watercraft. The River Committee – a joint Kennebunk-Kennebunkport-Arundel Committee - should be tasked with deciding whether the public pump out station that was removed in 2016 should be phased back into service.
- The Town should give the River Committee the ability to levy fines or take other actions to ensure the ability to enforce mandatory pump outs and other infractions.
- The Town should adopt best practices with regard to storm water management and impervious surface reduction around water bodies in order to limit the impact of polluted run-off into the rivers and streams.
- Under the auspices of the Conservation Commission, the Town has adopted a Pest Management Policy that was approved by the Board of Selectmen in 2012. In conjunction with this Policy, the Town should undertake an aggressive public education program that would inform citizens of the risks to health and welfare of the public as well as the impact on our soil, water and air of using toxic solutions for “ordinary problems”.
- Because Central Maine Power (CMP) uses herbicides to clear large swaths of land around its transmission lines, the Kennebunk Conservation Commission recommended that the Town adopt a policy to pay CMP for hand clearing. The Town should prohibit the use of herbicides by all utilities within the Town of Kennebunk.
- The Town should develop and implement a community-wide wetland policy and mitigation program.
- Ordinances for the protection of wetlands should be reviewed to consider wider setbacks around important animal corridors along Kennebunk’s streams to reduce run-off impacts to water quality.
- The Town should continue to encourage public education* on the subject of vernal pools (most of which occur on private land) and their importance to the ecosystem.
- The KKWWD has indicated that its long-term planning may shift its reliance away from Branch Brook to the Saco River. The Town should consider carefully the implications of this shift for the heretofore protected wetlands and natural habitats.

- The Town should create a public education program around the importance of protecting and managing wetlands.
- The Town should evaluate the current extent to which alteration of small wetlands is leading to a “nibbling” away of significant wetlands.

*“Public Education” means Town website, the municipal channel, RSU 21 educational programs, Town newsletters, etc.

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