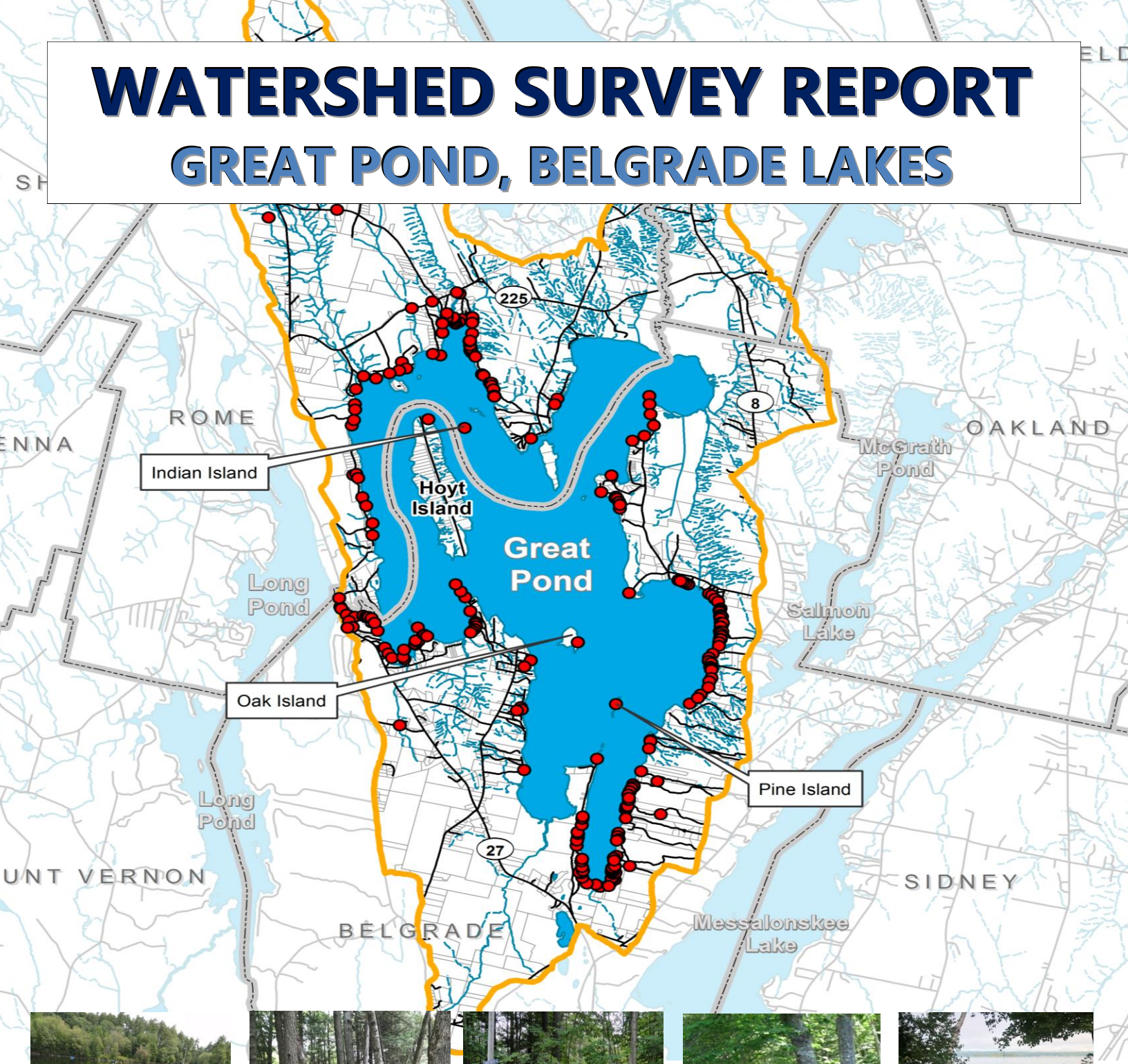
WATERSHED SURVEY REPORT

GREAT POND, BELGRADE LAKES



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JANUARY 2019

GREAT POND
WATERSHED SURVEY REPORT

Prepared for:

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Cover Images: *Map showing location of documented watershed survey sites, photos of survey sites.*

ACKNOWLEDGEMENTS

The following people and organizations were instrumental in helping with the 2018 Great Pond Watershed Survey, and deserve special recognition for their efforts:

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Report prepared by: Ecological Instincts with maps by WB GIS Services.

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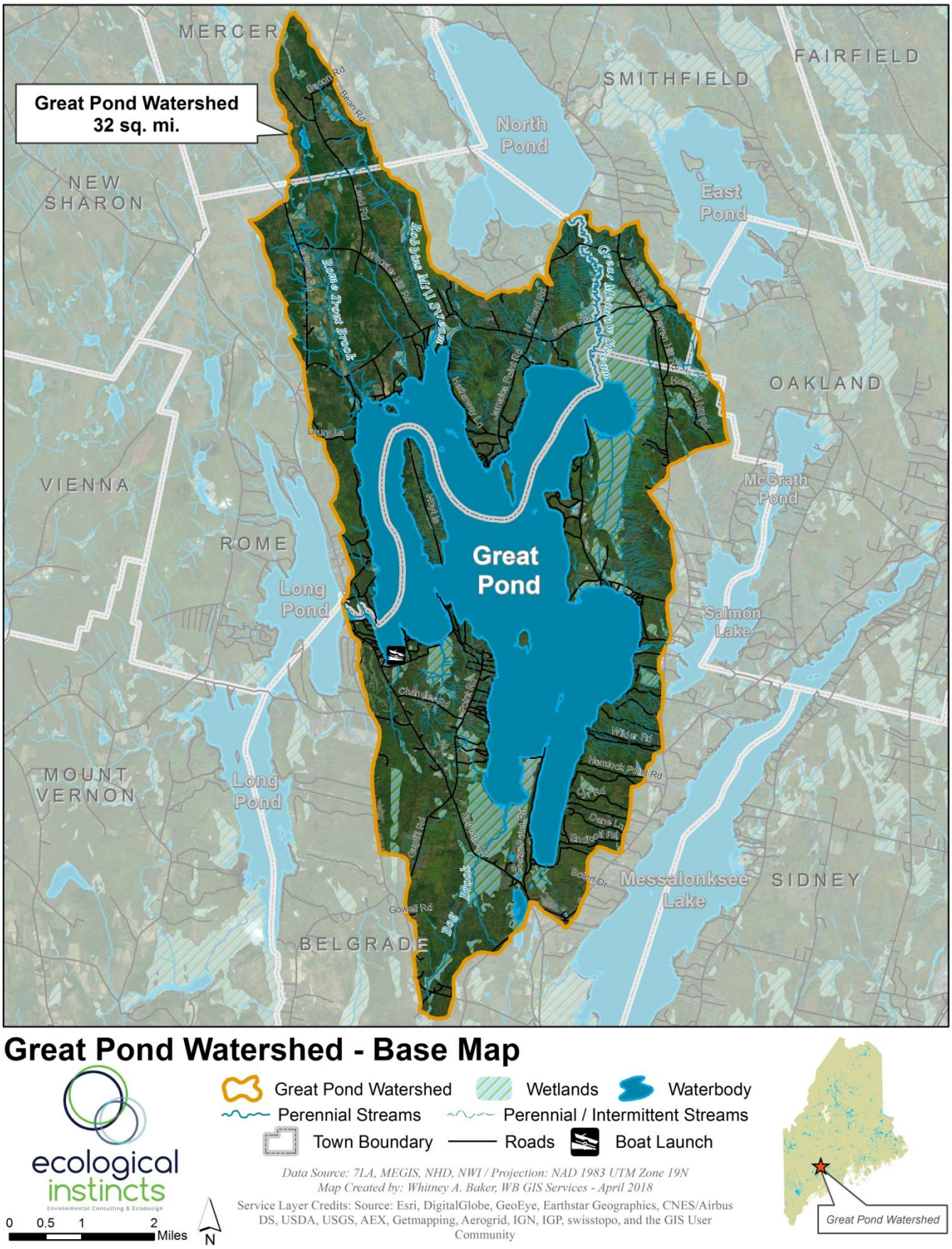


Figure 1. Map of the Great Pond watershed.

GLOSSARY OF TERMS

BEST MANAGEMENT PRACTICE Best Management Practices (BMPs) are conservation practices designed to minimize discharge of nonpoint source (NPS) pollution from developed land. BMPs include planting buffers, stabilizing steep slopes, upgrading culverts, using erosion control mulch on bare soil. "Non-structural" BMPs include road salt management, land conservation and improving ordinances to protect water quality.

CHLOROPHYLL-A (CHL-A) A measurement of the green pigment found in all plants, including microscopic plants such as algae. It is used as an estimate of algal biomass; higher Chl-a equates to greater amount of algae in the lake.

DISSOLVED OXYGEN Dissolved oxygen (DO) is the measure of the amount of oxygen dissolved in the water. Organisms living in lakes use the oxygen in the water to breathe. Low DO conditions can severely reduce the diversity and populations of aquatic organisms. Water with < 1 part per million (ppm) of oxygen is considered anoxic (no oxygen present); less than 5 ppm of oxygen is considered so stressful that most coldwater fish will avoid these areas. Anoxic conditions can also promote phosphorus release (internal loading) from the lake sediments.

MIDAS (Maine Information Display and Analysis System) MIDAS numbers are unique identification numbers assigned in the 1970's to Maine lakes and ponds monitored and managed by Maine state agencies.

NONPOINT SOURCE POLLUTION Nonpoint Source (NPS) pollution, or polluted stormwater runoff comes from a number of diffuse sources within a watershed. This includes soil, fertilizers, septic waste and other pollutants from diffuse sources across the landscape that are carried into a waterbody by rainfall.

SECHHI DISK TRANSPARENCY (SDT) A vertical measure of water transparency (ability of light to penetrate water) obtained by lowering a black and white disk into the water until it is no longer visible. Measuring SDT is one of the most useful ways to show whether a lake is changing from year to year. Changes in transparency may be due to increased or decreased algal growth, or the amount of dissolved or particulate materials in a lake, resulting from human disturbance or other impacts to the lake watershed area. Factors that affect transparency include algae, water color, and sediment. Since algal density is usually the most common factor affecting transparency in Maine lakes, transparency is an indirect measure of algae abundance.

TOTAL PHOSPHORUS (TP) The total concentration of phosphorus found in the water, including organic and inorganic forms. TP is one of the major nutrients needed for plant growth. It is generally present in small amounts and limits plant growth in freshwater ecosystems. As phosphorus increases, the amount of algae generally increases. Humans can add phosphorous to a lake through stormwater runoff, lawn or garden fertilizers, and leaky or poorly maintained septic tanks.

FLUSHING RATE The number of years the volume of water in a lake is replaced. For example, a lake with a flushing rate of two flushes twice per year. A lake with a flushing rate of 0.5 flushes once every two years.

INTRODUCTION

Great Pond (MIDAS 5348) is located in the central Maine towns of Belgrade and Rome. Great Pond is the fifth and largest of the seven Belgrade lakes and occupies a central position within the larger Belgrade Lakes watershed (Figure 2).

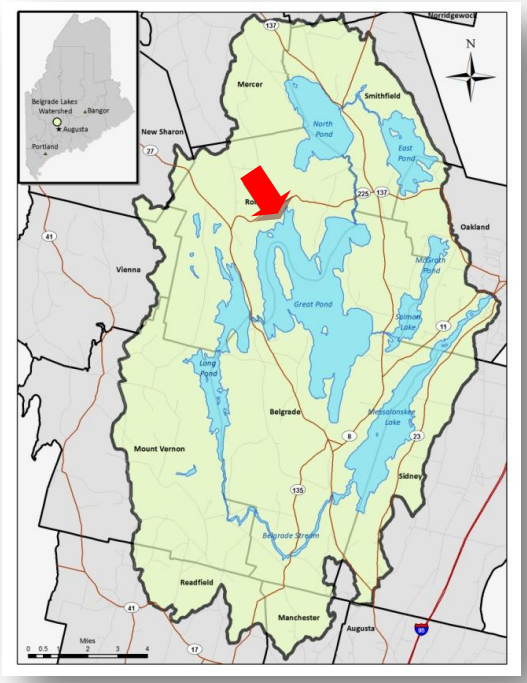


Figure 2. Map of the Belgrade Lakes watershed. (Colby.edu)

Great Pond receives water from North Pond (via Great Meadow Stream) to the north and from Salmon Lake to the east. There are six major tributaries that flow into Great Pond, and several other seasonal drainages that contribute water in the spring and fall. Major tributaries include: Rome Trout Brook, Robbins Mill Stream, Great Meadow Stream, and Bog Brook. Water from Great Pond flows through Mill Stream and over a dam in Belgrade Lakes Village into the north basin of Long Pond, which flows into Messalonskee Lake and onto the Kennebec River and the Gulf of Maine.

Great Pond's direct watershed is expansive, covering 32 square miles; adding the drainage area of North Pond (27,900 acres) and Salmon Lake (4,100 acres) brings this total to 53,000 acres, or 83 square miles.[1] The watershed area includes five municipalities, with the largest land area in the towns of Belgrade (54%) and Rome (35%). Smaller areas of the upper watershed are located in Mercer, Smithfield and Oakland. There are an estimated 1,227 residences in the watershed,[2] including 750 on the shoreline.[3]

WATERSHED
The area of land around a lake that drains (or sheds) its water into the lake through streams, ditches, as overland flow, or through groundwater.

There are three large summer youth camps on Great Pond, two marinas, a golf course, multiple commercial properties in Belgrade Lakes Village, and several gravel pits. Forested land represents about 77.1% of all watershed land, with wetlands listed at another 11.7%. Barren or herbaceous open land covers only about 0.5% leaving developed land (residential, commercial, transportation) at 5.7% and agricultural uses at 4%. Agricultural land is scattered around the watershed, but in close proximity to the shoreline near Ram Island, Jamaica Point, and Hatch Cove, among others. Several of the Pond's islands are developed including Pine Island, Ram Island, Chute Island and Hoyt Island. Large wetlands flank the north and south ends of the lake, including the large wetland complex in the northeast around Great Meadow Stream and Camp Bomazeen west of Route 8, and in the southwest around Austin Bog near Route 27.

[1] WRS (2016). Phosphorus Loading and Related Lake Management Considerations for Great Pond, Belgrade, ME.
[2] CEAT (1999). Land Use Patterns in Relation to Lake Water Quality in the Great Pond Watershed.

Steep slopes in the Great Pond watershed (>20%) encompass 1,845 acres of land scattered on hillsides throughout the watershed.[3] Mt. Phillip (755 ft) and Mosher Hill (632 ft) on the north shore, Howland Hill (702 ft) and Bickford Hill (510 ft) on the northeast shore, and The Mountain (663 ft) on the northwest shore, are among the highest elevations in the watershed. Other steep slopes can be found along the narrow shoreline reaches at Horse Point and Foster Point. Lower elevations include the lake itself (248 ft), streams, and wetlands including Great Meadow Stream on the north end of the lake, and Austin Bog on the south end of the lake (248 ft).

Topographic map showing the areas with steep slopes on the north end of Great Pond. (USGS, Rome, ME)

The Great Pond watershed is home to the following large properties that are unique to this watershed:

- **Large Commercial Camps** (Camp Runoia, Camp Bomazeen, Camp Merryweather Camp Taconnet, Bear Spring Camps)
- **Gravel Pits** (Hallowell, Childs, Stevens Labbe)
- **Homeowner/Condo Associations** (Woodlands, Chute's Island HOA, Hillside Camps, Crystal Spring Camps, Hoyt Island Camps, Camp Merryweather)
- **Businesses** (Belgrade Lakes Golf Club, Great Pond Marina, Village Inn, Brightside Marina, Lakepoint Real Estate, Maine Lakes Resource Center)
- **Municipal/Public** (Public boat launch, Center for All Seasons, US Post Office)

Great Pond and its surrounding watershed are used extensively for swimming, fishing, and boating as well as bird watching and hiking in the summer, and ice fishing, skiing and snowmobiling in the winter. Great Pond is a prominent scenic fixture in the landscape as it is located in the center of downtown Belgrade and provides the backdrop for the sweeping lake views from the top of the Kennebec Highlands' hiking trails which overlook the watershed. The cool deep waters of Great Pond have historically provided an excellent cold water fishery (brown trout and land-locked salmon) as well as warm-water species such as bass, among others. Maintaining the cold water fishery is important to local residents.

[3] *Long Pond Watershed-Based Management Plan*. Kennebec County SWCD. December 2009.

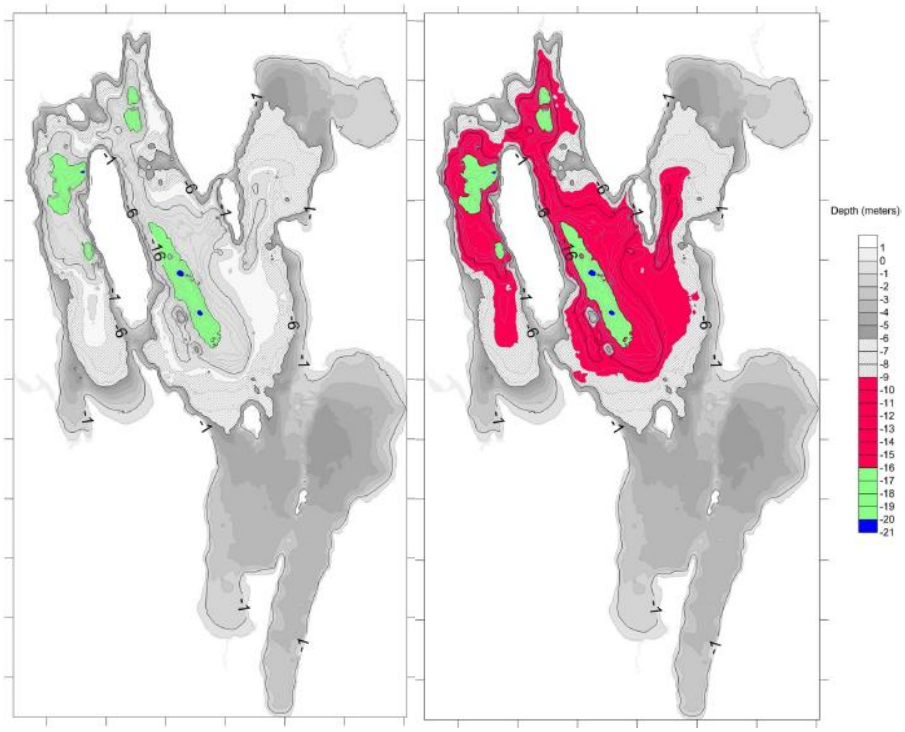
Water-quality data has been collected in Great Pond since 1970. The water quality of Great Pond is declining despite several phases of watershed improvement projects to address nonpoint source (NPS) pollution in the watershed. The large size of the watershed, extent of development, and susceptibility to internal phosphorus loading coupled with limited financial resources shared among several impaired or threatened lakes, and the effects of a changing climate all play a role in this decline.

Table 1. Lake characteristics, Great Pond.

Lake Characteristics	Great Pond
Surface Area	8,200 acres
Perimeter	46.1 mi
Maximum Depth	69 ft
Average Depth	21 ft
Flushing Rate	0.43/yr

Data collected over time by volunteers, state officials, and Colby College researchers revealed an increase of *Gloeotrichia echinulata* (a cyanobacteria species found in localized areas of the lake), the presence of filamentous algal blooms in the fall, and a severe dissolved oxygen problem in the lake that is resulting in release of phosphorus from the sediments.

Since the late 1980's, the area of anoxia (dissolved oxygen concentrations < 2ppm) in Great Pond has grown by 35 times, and is now equal to 30-40% of the of the lake area. Not only has the areal extent increased, the depth of anoxia has increased. In 1989, anoxia was limited to small areas in the deepest part of the lake below 20 meters.



Area of anoxia on Great Pond in 1988 (left) and 2014 (right). (Source: Colby, D.W. King, 2014)

Today, anoxia is occurring in all areas of the lake below 9 m, resulting in loss of deep water habitat for fish and release of sediment-bound phosphorus into the water column (internal loading). The release of nutrients into the water column is fueling filamentous algal blooms in late October when the lake turns over. Unfortunately, the length of time that the lake is anoxic has also increased over this same time period- now lasting between 3-4 weeks.[4] This is important because sediments exposed to anoxia for longer periods of time may release more phosphorus than sediments with shorter periods of anoxia. Once a cycle of oxygen loss in deep water and increasing availability of phosphorus from sediment become established, watershed management is unlikely to reverse that trend, and a combination of

[4] Personal Communication, Whitney King, Colby College, May 2, 2018.

watershed and in-lake methods becomes essential to maintaining the desirable features of a lake.[5]

Water quality data has been collected by Maine DEP and the Volunteer Lake Monitoring Program in cooperation with the Belgrade Lakes Association since 1970. More recent and more intensive monitoring has been completed by Colby including deployment of "Goldie" in 2014- a research buoy that collects information about the physical and biological conditions in the lake. Great Pond's buoy is a node in an international observation network (GLEON) to assess lakes across the world. In addition, a three-year intensive water quality study (2015-2017) was conducted by Colby researchers which included weekly collection of dissolved oxygen/temperature/pH profiles and water clarity, nutrients, metals and phytoplankton, as well as sediment sampling.

Table 2. Water quality averages for Great Pond, Station 1 (1970-2017).

Water Quality Parameter[6]	Great Pond
SDT	6.3 m
TP	8.8 ppb
TP Range	5-11 ppb
Chl-a	4.7 ppb
Color	9.7 SPU

Figure 3 (right) shows the annual average water clarity for Great Pond. Variability in water clarity measurements over time may be influenced by weather (e.g., annual fluctuations in rain/snow), or land-use changes in the watershed (e.g., period of heavy development or forestry activities or watershed improvements).

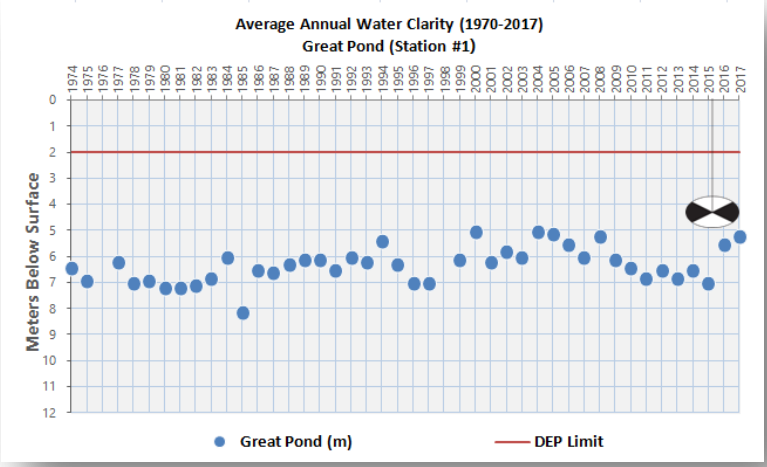


Figure 3. Average annual water clarity data for Great Pond (Station 1). (Ecological Instincts, data from LakesofMaine.org)

In 2010, Variable watermilfoil (*Myriophyllum heterophyllum*), an invasive aquatic plant species that grows rapidly, reproduces by fragmentation, and virtually impossible to eradicate, was discovered in Great Meadow Stream. By September 2011, the infestation had spread into North Bay. Successful remediation efforts began in 2010 to control the plant by educating the community, controlling access to infested areas, hand-pulling plants, and placing benthic barriers and surveying the lake for new outbreaks. BLA spear-headed the Stop Milfoil Campaign, raising thousands of dollars to control

Variable watermilfoil (Photo: belgradelakesassociation.org)

[5] WRS (2016). Great Pond. Phosphorus Loading and Related Lake Management Considerations for Great Pond, Belgrade Lakes, Maine.
[6] Maine DEP Lake Reports for Great Pond. Averages are based on data collected between 1970-2017 at Station 1.

the plants. Without this effort a thick mat of variable milfoil would form in areas from the shore to 20 ft. in depth, making swimming and boating difficult to impossible, lowering shoreline property values, and potentially reducing lake water quality.

GREAT POND WATER QUALITY – WHY IS WATER QUALITY AT RISK?

A primary contributor to the long-term decline in water clarity and increased area of anoxia in Great Pond is **polluted runoff** or nonpoint source (NPS) pollution. Stormwater runoff from rain and snowmelt picks up soil, nutrients and other pollutants as it flows across the land and washes into the lake.

POLLUTED RUNOFF
Also called NPS or nonpoint source pollution. Soil, fertilizers, septic waste and other pollutants from diffuse sources across the landscape that are carried into a waterbody by rainfall.

In an undeveloped, forested watershed, stormwater runoff is slowed and filtered by tree and shrub roots, grasses, leaves, and other natural debris on the forest floor. It then soaks into the uneven forest floor and filters through the soil. In a developed watershed, however, stormwater does not always receive the filtering treatment the forest once provided. Rain water picks up speed as it flows across impervious surfaces like rooftops, compacted soil, gravel roads and pavement, and it becomes a destructive erosive force.

Runoff from historical land uses such as agriculture and forestry that has resulted in delivery of phosphorus-laden sediment to the bottom of the lake adds a second level of concern, where the potential for internal phosphorus loading is high due to low levels of dissolved oxygen. Runoff from current development and roads, as well as future development and seasonal conversions needs to be managed properly to prevent delivery of pollutants into Great Pond, especially along the shoreline where soils can easily be washed into the lake. Roads and their counterparts- poorly maintained gravel roads, and driveways, road shoulders, winter sanding, ditches and culverts- all influence lake water quality.

Addressing NPS pollution in the watershed is a necessary piece for managing the watershed and reducing the amount of phosphorus delivered to the lake. However, an additional level of lake management is needed to address the internal phosphorus load as well. This combination of management strategies will help meet water quality standards by reducing both external and internal phosphorus loading to Great Pond, minimizing algal blooms and maximizing the habitat available for the coldwater fishery.

*Great Pond is on **Maine DEPs Nonpoint Source Impaired Lakes Priority List** because it does not meet water quality standards due to **excess phosphorus, increasing loss of oxygen in deep areas of the lake and declining water clarity.***

WHY IS RUNOFF A PROBLEM?

The problem with runoff is not the water itself, but the sediment and nutrients that get carried by and delivered to lakes in stormwater runoff. **Phosphorus**, a naturally occurring element, is considered a nutrient that provides food for algae and other aquatic plants. Phosphorus is found in soils, septic waste, animal waste and fertilizers.

Algae floating in the shallows of upstream North Pond.

Under natural conditions, phosphorus is limited in freshwater systems, which helps limit algae growth. However, when a lake receives extra phosphorus from developed land, algae growth increases dramatically. Sometimes this growth causes choking blooms, but more often it results in small changes in water quality that, over time, damage the ecology, aesthetics and economy of our lakes.

Soil is the biggest source of phosphorus in Maine lakes. As every gardener knows, phosphorus and other nutrients are naturally present in the soil. So, we are essentially "fertilizing" our lakes and ponds with the soil that erodes from our driveways, roads, ditches, pathways and beaches. Studies have shown that runoff from even stable developed areas has **5 to 10 times the amount of phosphorus** compared to runoff from forested areas. Runoff from forestry activities can also contribute significant inputs of nutrients and sediments if not managed properly. This may include limiting clear cutting, protecting natural vegetative buffers along waterbodies and wetlands, and limiting runoff from roads that serve as access to the forest resources.

WHY PROTECT OUR LAKES FROM POLLUTED RUNOFF?

- Phosphorus reductions from developed land are needed to help protect the water quality of Great Pond.
- The U.S. Fish & Wildlife Service identified three priority wetland habitat types located throughout the watershed (grass/shrub, freshwater, and forest).
- The Maine Department of Inland Fisheries and Wildlife (MDIFW) documented two rare wildlife occurrences around Great Meadow Stream, three prominent areas of protected waterfowl and wading bird habitat (IWWH), and numerous deer wintering areas which also provide habitat for resident moose populations.
- The Maine Natural Areas Program (MNAP) identified an area of ecological significance on the south end of the lake, as well as a MNAP focus area around Hamilton Pond (Esker and Kettle Complex). The watershed includes large areas of interior forest with several large undeveloped habitat blocks in excess of 2,000 acres that provide valuable habitat for many wildlife species.
- There are 2,422 acres of wetlands, 4,113 acres of riparian habitat and 184 miles of streams in the Great Pond watershed.

- The cool deep waters of Great Pond have historically provided an excellent cold water fishery (brown trout and land-locked salmon) as well as warm-water species such as bass, among others. Maintaining the cold water fishery is important to local residents.
- The 2017 Maine Audubon Loon count reports 43 adult loons and 3 chicks on Great Pond.[7]
- Great Pond is susceptible to changes in water quality resulting from too much phosphorus. Proper management of shorelines, maintenance of roads, and minimizing the effects existing and new development and forestry activities are crucial in both watersheds.
- Sediment deposited into lakes and ponds from erosion creates the ideal environment for invasive aquatic plant species. A combination of sediment deposits and phosphorus-rich water could make Great Pond even more susceptible to the establishment of new invasive species. Establishment of Variable watermilfoil in Great Pond has shown the expense and difficulty in managing these invaders.
- Water from Great Pond flows into Long Pond. Reducing phosphorus inputs into Great Pond also benefits efforts to restore water quality in Long Pond, which is also impaired.
- A 1996 University of Maine study found that lake water quality affects property values. For every three-foot decline in water clarity, shorefront property values can decline as much as 10 to 20%! Declining property values affect individual landowners as well as the entire community.

WHAT IS BEING DONE TO PROTECT GREAT POND?

The Belgrade Lakes Association (BLA), its partners, and landowners have already begun taking steps to protect the water quality of Great Pond. In addition to the activities listed below, BLA holds an annual meeting for its members and the public each July, coordinates the LakeSmart program for Great and Long ponds, organizes the annual Stop Milfoil Campaign and Courtesy Boat Inspection (CBI) Program, participates in invasive plant patrols and water quality monitoring, and sponsors water quality research. A summary of primary historical watershed activities is provided below:

Free programs such as the 7 Lakes Alliance Youth Conservation Corps (YCC) and LakeSmart help landowners to protect the lake. (Photo: 7LA)

- **Clean Water Act Section 319 funds-** Since 2009, four 319 implementation grants (Phase I, II, III, and IV) have supported 51 town and camp road construction projects on Long Pond and on Great Pond. Under these grants, 173 BMPs have been installed, including 108 on Great Pond. PCR reports have documented a reduction of 337 pounds of phosphorus loading annually, including a reduction of 163 pounds to Great Pond.

[7] Maine Audubon, 2016 Maine Loon Count Results. Online: https://www.lakesofmaine.org/loons.html

- **Youth Conservation Corps (YCC)** - Since 2009, four 319 implementation grants (Phases I-IV) have supported YCC projects on Long Pond and Great Pond. As a result, YCC has installed 483 BMPs, including 291 on Great Pond.
- **LakeSmart**- In response to documented changes in water quality in Great and Long ponds, BLA started a LakeSmart program. Since 2004, 359 shorefront properties have been evaluated and 145 LakeSmart awards have been distributed.
- **Land Conservation**- 7 Lakes Alliance has conserved 8,999 acres in the Belgrade Lakes and 30 Mile watersheds since its founding in 1988, including 1,038 acres in the Great Pond watershed. Land conservation is an important watershed management strategy because it protects sensitive headwater streams, riparian corridors and lake shorelines.
- **Invasive Aquatic Plants-** BLA has been on the forefront of addressing the Variable watermilfoil infestation through the Stop Milfoil Campaign since 2013, and by stopping additional invasive plants from entering or leaving the lake at boat ramps through the Courtesy Boat Inspection (CBI) Program. CBI inspectors prevented curly-leaf pondweed and Eurasian milfoil from entering the lakes on boats through this program.

BLA also hosts an annual meeting for its members in July of each year, and will be assisting with the development of the Great Pond Watershed-Based Management Plan in 2019.

SURVEY PURPOSE & METHODS

PURPOSE OF THE WATERSHED SURVEY

The primary purpose of the watershed survey is to:

- Identify and prioritize existing sources of polluted runoff, particularly soil erosion and stormwater runoff in the Great Pond watershed;
- Raise public awareness about the connection between land use and water quality and the impact of soil erosion on the water quality of Great Pond;
- Inspire people to become active watershed stewards by participating in watershed programs such as LakeSmart and the 7 Lakes Alliance's Youth Conservation Corps Program;
- Use the information gathered to help inform the development of a Watershed-Based Management Plan;
- Provide the basis to obtain funding to assist with addressing identified NPS sites;
- Provide recommendations to landowners so that they can voluntarily address NPS issues identified on their properties.

The purpose of the survey was NOT to point fingers at landowners with a documented NPS site, nor was it to seek enforcement action against landowners not in compliance with local ordinances. The Belgrade Lakes Association (BLA) hopes to be able to find ways to work cooperatively with landowners, road associations, and towns to protect and improve water quality.

All told, more than 50 watershed survey volunteers and technical leaders donning bright green T-shirts participated in the 2018 Great Pond Watershed Survey.

Local citizen participation was essential in completing the watershed survey and will be even more important in coming years. With the leadership of BLA and partners such as the 7 Lakes Alliance, Kennebec County Soil & Water Conservation District (KCSWCD), the towns of Belgrade, Smithfield and Rome, and the Maine DEP, there are ample opportunities for stewardship. The hope is that landowners will reflect on the results of the survey and the recommendations it provides, and use some of the recommended conservation measures to make improvements on their own properties. Everyone in the watershed has a stake in helping protect and improve the water quality of Great Pond.

SURVEY METHODS

The Great Pond watershed survey began on September 10, 2018 with the help of more than 50 volunteers from the Belgrade Lakes Association (BLA), local residents, and interested individuals from the nearby Belgrade Lakes watersheds. Trained technical staff from Ecological Instincts, 7 Lakes Alliance, BLA, Kennebec County Soil & Water Conservation District, McGrath Pond-Salmon Lake Association, and Maine DEP helped lead volunteers across twenty-one watershed survey areas (Figure 4). Prior to the survey, BLA sent out 1,578 letters with an accompanying informational handout to all of the property owners in the watershed. Thirty-eight properties were not included in the survey at the landowners' request.

Thirty-three volunteers were trained in survey techniques during a two-hour classroom workshop co-presented by Ecological Instincts and Dr. Peter Kallin on the morning of September 8, 2018 at the Belgrade town office. The survey commenced on September 10th with volunteers and technical leaders spreading out across the watershed to document sources of nonpoint source (NPS). Roads and road crossings, commercial and residential properties and beach/boat landing sites were assessed using digital cameras, GPS units, and watershed survey field survey forms (Appendix A). Volunteers were assigned to one or more of the twenty-one survey sectors (see Figure 4 and sector descriptions next page).

The Great Pond Watershed Planning Steering Committee met on August 3, 2018 to review maps and discuss survey objectives and logistics. Follow-up survey work was conducted between September 10 - October 19 to fully complete the survey. Individual meetings were scheduled with large landowners including the golf course, large commercial camps, and managers of large residential estates. Two days were spent surveying developed areas on Great Pond's many islands.

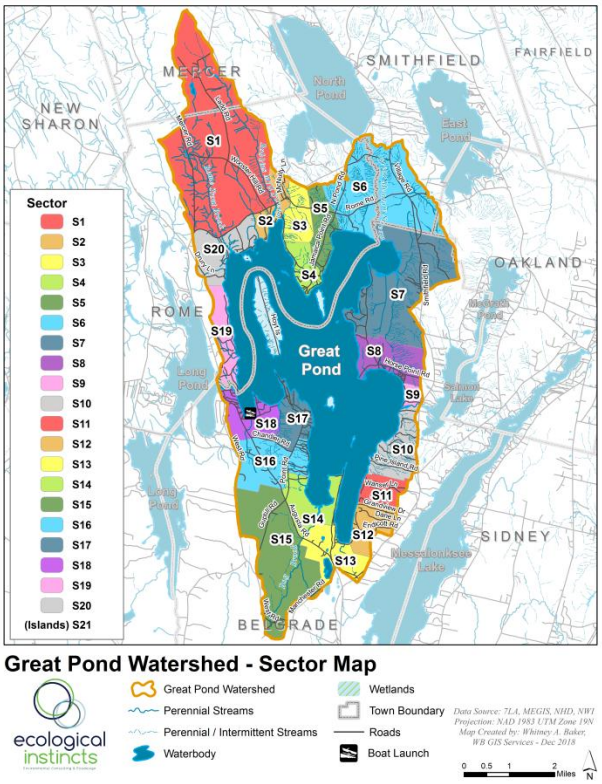


Figure 4. Map showing the seven designated survey sectors for the 2018 Great Pond Watershed Survey.

August 13, 2018

Dear Great Pond Watershed Landowner,

On September 10, 2018, the Belgrade Lakes Association (BLA) will be kicking off a survey of the Great Pond watershed. The survey will identify and prioritize sources of soil erosion and stormwater runoff on developed land in the watershed. While the majority of this work will be completed on the 10th, follow-up work may be needed through September 21st to visit all of the developed land in the watershed.

Great Pond is at risk for nuisance algal blooms due to excess phosphorus, and is on the State of Maine's list of impaired lakes due to declining water quality. The survey is a necessary step in the process of addressing the issue of internal phosphorus loading in Great Pond. The last survey of the Great Pond watershed was in 1999. Current information is needed about the condition of the watershed to help develop long-term planning strategies that will protect and improve lake water quality and assist local organizations with acquiring state and federal Clean Water Act funding.

Information gathered during the survey will not be used for enforcement purposes or require that a landowner make improvements. **Participation in the survey is voluntary**, and you do not need to be present at the time of the survey. We would like to include your land in this survey. However, **if you do not wish to participate, please call the Belgrade Lakes Association office** at (207) 512-5150, or email: info@BLAmaine.org **by September 5th to have your property removed from the survey list.**

The quality of our lakes affect us all with their recreational, social, and economic values. If we do not take immediate actions to prevent more phosphorus from entering the lake, then the water quality problems in Great Pond will continue to get worse. The cost of fixing a polluted lake is expensive, and can affect our local tax base and property values. We hope you will join in this effort by participating in the survey. For more information, visit the BLA website: www.belgradelakesassociation.org

Sincerely,

Lynn Matson
President, Belgrade Lakes Association

Copy of the landowner letter that was sent to 1,578 landowners in the Great Pond watershed in August 2018.

Sources of NPS pollution were identified within each of the twenty-one sectors. Potential solutions were recommended, rough estimates were made for the cost of labor and materials for improving the sites, and the overall impact to water quality and the level of technical assistance needed to complete the recommendations were also determined in the field for each site along with a photograph and GPS point. If there was not a direct connection from the potential source of NPS pollution to a ditch, stream, wetland or the lake, then the site was not documented on the field sheet (e.g., an eroding hillslope in which the soil did not leave the site). The BLA plans to send follow-up letters to all landowners with an identified watershed survey site. The letter will let them know the problem identified and recommendations for addressing the problem as well a list of options for helping complete the project.

Examples of volunteers documenting NPS sites in the Great Pond watershed.

Properties that did not meet the criteria of an NPS site (active erosion with a direct connection the waterbody), but were deemed worthy of some additional technical support to protect the lake were documented on a "LakeSmart Referral" field sheet. Examples of properties in this category may include sites with lots of lawn and no buffer, small buffers that need enhancing, shorelines with invasive plants, landowners that requested a LakeSmart visit or YCC assistance, and private boat launches. The BLA intends to follow-up with educational materials to these landowners and offer technical assistance where it is needed.

The data collected during the survey was entered into an Excel database and documented NPS sites were plotted on maps using Geographical Information Systems (GIS). Mapping coordinates were manually corrected if needed to account for poor satellite reception or human error in the field based on recorded address or tax map/lot number. A description of NPS sites, recommended actions, and associated costs are discussed in the next section.

GREAT POND WATERSHED SURVEY SECTORS

Survey sectors for the 2018 survey were divided into 21 sectors based on the sectors used in the 1999/2000 Great Pond Watershed Survey. The original survey utilized topographical maps to delineate the boundaries of each sector. Most of the sectors extend from the shoreline to the high point of the watershed, encompassing all land cover types. Sector 21 was added to the 2018 survey, which includes the islands. Sectors 1 and 15 are entirely in the upland and contain no shoreline. Sector 21 is an A brief description of each sector is provided below.

Sector 1- Sector 1 is located in the towns of Rome and Mercer in the northwest corner of the watershed. This sector includes Robbins Mill Stream from its headwaters to the north end of Great Pond, Ladd Pond, and Rome Trout Brook and associated wetlands. Agriculture, forestry and gravel mining are evident throughout this portion of the watershed, and concentrated on Mercer Rd. The southern boundary runs parallel to Route 225. Major roads in the sector include Mercer Rd., Rome Rd., Wooster Hill Rd., Ladd Rd., and Foss Hill Lane.

Sector 2- This sector is entirely within the Town of Rome, and is a narrow stretch of land which includes Rome Hollow and Coe Point on Great Pond. This sector includes the outlet of Robbins Mill Stream and adjacent wetlands on the shore of Great Pond, residential development on Nickerson Lane, Robbins Lane, Hillside Lane, Hoyts Lane, Hillside Lane, Fredrichs Lane, Crystal Springs Lane and North Bay Lane. The northwest boundary follows Rome Rd. (Rt. 225). Roads away from the shoreline include Windy Hill Lane, McNulty Lane and Knight Ct.

Sector 3- This sector is entirely within the Town of Rome. The northern boundary runs along the highlands south of Little North Pond to a point west of Foss Lane. Rome Rd. (Rt. 225) runs through the middle of the sector. The southern boundary is a straight line west from the peak of Mosher Hill to Great Pond. Shoreline development in this sector is concentrated on Crystal Springs Lane.

Sector 4- Entirely within the Town of Rome, this sector encompasses Jamaica Point. Its northern boundary is the southern boundary of sector 3. The western and southern boundaries are Great Pond. The eastern boundary starts from the peak of Mosher Hill and runs southeast to the shore, crossing Jamaica Point Rd. just south of Crane Lane. This area includes some large farms off Jamaica Point Rd. /Hathaway Lane, and dense shoreline residential development on Delisle Lane, Spring Lane, Golden Pond Lane, Bickford Lane, and Paris Lane.

Sector 5- This sector is entirely within the Town of Rome. The west boundary begins on the high ground above Little North Pond west of Foss Lane, and travels south to Rt. 225 near the junction with Foss Hill Lane. The boundary continues south to the peak of Mosher Hill, and southeast, crossing Jamaica Point Rd. south of Crane Lane. The east side of this sector includes the shoreline of Great Pond and north to the intersection of Rt. 225 and North Pond Rd. and back up to the northern edge of the watershed. This sector includes North and South Crane Lane, Jamaica Point Rd., Bear Springs Lane (and camp), Rt. 225, Foss Hill Lane and Monica Ridge. Development is concentrated along the shoreline and Rt. 225.

Sector 6- This sector is located in three towns (Rome, Smithfield and Oakland), and encompasses all of the undeveloped forestland and wetlands surrounding Great Meadow Stream, farmland, and clustered development along roadways. Major roads in this sector include Village Rd., Smithfield Rd., Pine Tree Camp Rd., and Warren Hill Rd.

Sector 7- This sector, entirely within the Town of Belgrade, begins at Great Meadow Stream at the Smithfield-Belgrade town line. The northern boundary is the town line, proceeding east and crossing Old Rt. 8 and Rt. 8 south of Varney Hill, to the high ground between Great Pond and McGrath Pond. The eastern boundary follows the heights south to the top of Howland Hill. From there, the boundary turns west and a little south to meet Rt. 8 (Smithfield Rd.) at the top of Bickford Hill and onto the southern boundary, which runs due west to the lake, crossing Horse Point Rd. north of Fire Rd. H-10. This sector contains a large freshwater wetland complex sandwiched between the uplands bordering Rt. 8, and the shoreland development off Horse Point Rd. Historical forestry activities are evident from aerial photos, and active gravel mines are located in this sector on Horse Point Rd. Shoreline development is concentrated on Pine Beach Rd., Julie's Way, Stony Point Rd., Sunset Shores Lane and Horse Point Rd. out to Snake Point. Camp Bomazeen is located in this sector.

Sector 8- This sector is entirely within the Town of Belgrade and includes the shoreline along Hatch Cove west of Rt. 8. Major roads in this sector include Horse Point Rd., Merryweather Lane, Stevens Rd. and Oralark Lane. This sector includes large patches of undeveloped forest, farmland, and residential development as well as a gravel pit. Numerous private gravel roads servicing shoreline development lead to the lake off Horse Point Rd.

Sector 9- This sector is entirely within the Town of Belgrade, and includes the east shore of Hatch Cove. The southern boundary is located north of Damren Rd. to the northern end of Snug Harbor Rd. Snug Harbor Rd. and Gleason Shore Rd. are the two primary roads servicing residential development at the shoreline. The southern boundary is the stream from Salmon Lake to Great Pond.

Sector 10- This sector is entirely within the Town of Belgrade. It begins at the stream from Salmon Lake to Great Pond and proceeds south encompassing Hemlock Point, roughly paralleling the west side of Rt. 8 (Smithfield Rd.). The southern boundary is located between Island Rd. and Hemlock Point Rd. to the south. Major roads in this sector are private, and run perpendicular to the shoreline servicing shoreline development. These roads include: Damren Rd, Hatch Cove Rd., Hall Farm Rd., Loon Call Dr., Parkhill Point Rd., Wilder Rd., and Island Rd. Numerous small perennial streams flow across the landscape to the lake in this sector.

Sector 11- This sector, located entirely within the Town of Belgrade, is located on the southeast shore of Great Pond. The northern boundary is located north of Wanser Lane, and the southern boundary is located between Cyr Lane and Grandview Drive (to the south). Long private gravel roads in this sector run perpendicular to the lake and include Hemlock Point Rd. (a.k.a. Fire Rd. 0.11), Wanser Lane, and Cyr Rd. Aerial photos indicate recent forestry activity in a large area of land between Wanser Lane and Cyr Lane, beginning approximately 300 ft. from the shoreline.

Sector 12- This sector is located in the Town of Belgrade and includes the southeast shore of Pinkham's Cove. The northern boundary is located between Cyr Rd. (Sector 11 to the north) and Grandview Drive. The area is relatively forested, with some areas of forestry between Dane Lane and Endicott Rd. Shoreline development is concentrated on Burton Woods Rd., Dane Lane, Endicott Rod., Gables End, and Grandview Drive.

Sector 13- This sector is entirely within the Town of Belgrade, and includes the south and southwest side of Pinkham's Cove, west to the Rt. 27 (Augusta Rd.)/Austin Bog Brook stream crossing, south to Rt. 135 (Manchester Rd.) south of Hamilton Pond (a kettle pond), and east to Rt. 8 (Oakland Rd.), and then north to Great Pond at Pinkham's Cove Rd. This sector also includes a portion of the Pine Grove Cemetery, large commercial gravel pits, and the Colby-Marston Preserve. Shoreline development is concentrated on Pinkham's Cove Rd., Foster Point Rd., Pickerel Drive, and Bass Lane.

Sector 14- This sector is located entirely within the Town of Belgrade, and includes the western shore of Pinkham's Cove. The northern boundary is located on the north edge of farm fields on the north side of Lord Drive. The boundary runs south on the west side of Point Rd., and then heads southeast along Rt. 27 to Bog Brook, follows Bog Brook north and then east to Perch Rd., and includes the entire length of Foster Point Rd. A large portion of this sector is the Austin Bog on the south end of the lake. Roads in this sector include Foster Point Rd., Lord Lane, Perch Rd., Point Rd., Tabert Lane, Togue Rd., Tommy's Way, and Rt. 27.

Sector 15- Sector 15 is located in the Town of Belgrade and is one of only two sectors outside of the immediate shoreline of Great Pond. This sector includes the headwaters of Bog Brook on the southwest corner of the watershed. The western boundary roughly follows West Rd., north from Minot Hill Rd. to just north of Timber Point Rd. This area includes several small farms and evidence of recent forestry activity, especially off Guptill Rd.

Sector 16- This sector is located in the Town of Belgrade. This narrow section of land runs east from the boundary with West Rd. to Great Pond, and includes a portion of Rt. 27, Guptill Rd. Castle Island Rd., and the south end of the Belgrade Lakes Golf Course. Shoreline development is serviced by numerous private roads that run perpendicular to the shore including: Golden Pond Rd., Costello Dr., Degen Lane, Boyd Rd., Sunrise Circle, Tallwood Landing, Rough Lane, and Cardinal Lane. A large area of undeveloped forestland lies between Costello Drive and Degen Lane.

Sector 17- This sector is located in the Town of Belgrade and includes Long Point. The southern boundary begins at the lake north of Cardinal Lane, heads west to Point Rd., then south to Chandler Rd., following Chandler Rd. to the stream crossing, and back north to the lake, just east of Sahagian Rd. (Sector 18. Roads in this sector service the shoreline of Point Rd., including: Jessie Pond Lane, McHugh Lane, Markland Lane, Alfond Lane, Whiting Rd., Frailich Lane, Cajun Lane, Carr Lane, Echo Point Rd., Woodland Camp Rd. (and Woodland Camps), and Striper Lane. This area also includes Chester Thwing Rd. and Camp Runoia.

Sector 18- This sector includes the south end of Great Pond in the Town of Belgrade, including commercial development in Belgrade Lakes Village along Rt. 27, Hersom Point, the public boat launch, the Belgrade Lakes Golf Course, Great Pond Marina, and the Center for All Seasons. The northern boundary is the Mill Stream, which flows from Great Pond into Long Pond. Roads in this sector include Abena Shores Rd., Bluebird Lane, Boatway Lane, Cranberry Lane, Dern Lane, Hersom Rd., Hulin Rd., Kingfisher Rd., Main St., Marina Drive, Peninsula Park, Point Rd., Red, Oaks Lodge Rd., Rupus Lane, Sahagian Rd., School St. and West Rd.

Sector 19- This sector is located in Rome and Belgrade and includes the land north of the Mill Stream road crossing on Rt. 27 in Belgrade, to the northern end of Mountain Drive, which runs parallel to the lake. Other roads in this sector include Dry Point Drive, Goodridge Drive, Homestead Drive, Lake Drive, Mountain View Drive, South Mountain View Drive, and Windover Drive.

Sector 20- This sector is located in Rome on the northwest corner of the watershed from just south of Drury Lane on the south end, north to Rome Rd. (Rt. 225), and east along the Great Pond shoreline to the boundary with Sector 1, east of Taconnet Lane. This sector includes the outlet of Rome Trout Brook, agricultural land off Lupine and Starbird Lanes, and shoreline development off Starbird Lane, Taconnet Lane, Bradley Lane, Genesea Lane and Marsh Lane, as well as Lambert and Drury Lane to the south. The commercial parking area that services Joyce Island/Camp Taconnet is located in this sector.

Sector 21- Sector 21 includes all of the islands in Great Pond including: Joyce, Hoyt's, Crooked, Chute's, Indian, Blueberry, Oak, and Pine Islands.

WATERSHED SURVEY RESULTS

SUMMARY OF SURVEY FINDINGS

Volunteers and technical staff identified 237 sites across the watershed that are currently, or have the potential to negatively affect the water quality of Great Pond (Appendix C). The greatest number of sites were on the east shore of the lake (48%), with sector 12 having the greatest number of total sites (16 sites). There were no documented sites in two of the survey sectors (Sectors 6 and 15). Some key conclusions from the survey include:

A total of 237 NPS pollution sites were documented in the Great Pond watershed.

- **Everyone has a stake in improving water quality**. That's because NPS sites were identified across eleven different land use types throughout the watershed. The residential and commercial landowners, road associations, as well as state and town officials will all need to work together to reduce the impact that NPS pollution has on the water quality of Great Pond.

- **Residential Development:** In rural lake watersheds, residential development is typically located along the shoreline serviced by both major roadways and private gravel roads. Great Pond is no exception, with dense residential development (year-round and seasonal) along the shoreline. The number of NPS sites stemming from residential development far exceeds any other land-use type surveyed in the watershed (62%). High- (11 sites) and medium-impact sites (57 sites) should be considered high priority for lake protection. Low-impact residential sites make up the majority of the documented sites (79 sites) and could more easily be addressed by landowners with assistance of programs such as the BLA LakeSmart program and the 7 Lakes Alliance YCC program to provide guidance to landowners about designing and installing Best Management Practices (BMPs), including establishing or adding to existing shoreline buffers, building rain gardens, mulching bare soil, and installing roof dripline trenches.

Lack of shoreline vegetation and bare soil near the shoreline creates erosion problems that allow nutrients and sediments to get to the lake.

  Many of the other documented problems such as trails and paths, and boat and beach access are associated with residential development, making the total impact from residential development higher than what is reflected in the summary statistics.

- **Beach, Boat Access & Trails & Paths:** Easy access to our lakes is an important consideration for shoreland residents and recreational enthusiasts alike. However, the soil in these areas can become compacted as a result of vehicle and foot traffic over many years and can

result in a direct route for soil erosion to get into the lake. Combined, shoreline access issues including trails and paths leading to the beach, and beach and boat access sites on Great Pond account for 13% of all documented NPS sites (30 sites), 9 of which ranked either high or medium-impact. Many of these sites are located on residential properties.

- **Driveways & Private Roads:** In rural watersheds, development is typically focused along major roads servicing residential homes. Cumulatively, poorly maintained gravel driveways and private roads, culverts, road shoulders and build-up of winter sand can have a significant impact on water quality if not well maintained. Combined, driveways and private-road sites account for another 14% of survey sites (20 driveway sites, 15 private-road sites) including 25 high- or medium-impact sites.

Driveway erosion can result in significant delivery of nutrients and sediments to Great Pond.

- **Commercial Development:** Commercial development often contains larger areas of impervious surfaces (e.g., roads, buildings, parking lots, etc.), as well as a more intensive use (e.g., greater foot and vehicle traffic). Therefore, commercial properties have a greater potential for stormwater runoff and erosion if not managed properly. A total of 10 commercial sites were documented across the watershed. Three of these were located near Belgrade Lakes Village, one at a gravel pit, and the remainder are associated with commercial camps.

- **State and Towns Roads:** Town road sites were documented at six locations including four in the Town of Belgrade, and one in Rome. The four state road sites are associated with Rt. 225 and/or Castle Island Road.

- **Other (Municipal/Public & Construction):** Municipal/public sites include the Rome public beach, Belgrade public beach and two sites associated with the road to the state-owned public boat launch. These sites are medium or low impact. NPS pollution caused by construction was documented at two residential sites where either roof runoff or surface erosion was actively occurring. Follow-up visits should be conducted over the next year to ensure that the problems have been resolved following completion of the construction.

Survey results are presented in more detail below. Survey data is provided in Appendix C.

RESULTS GREAT POND WATERSHED

A total of 237 NPS sites were documented in the Great Pond watershed across 11 different land-use types (Figures 5 & 6). (Note: residential homes and driveways were documented separately in the field for tracking purposes.) The number of residential properties far outweighed the other land-use types. Similarly, many other sites associated with trails/paths, boat/beach access and construction are also located on residential properties.

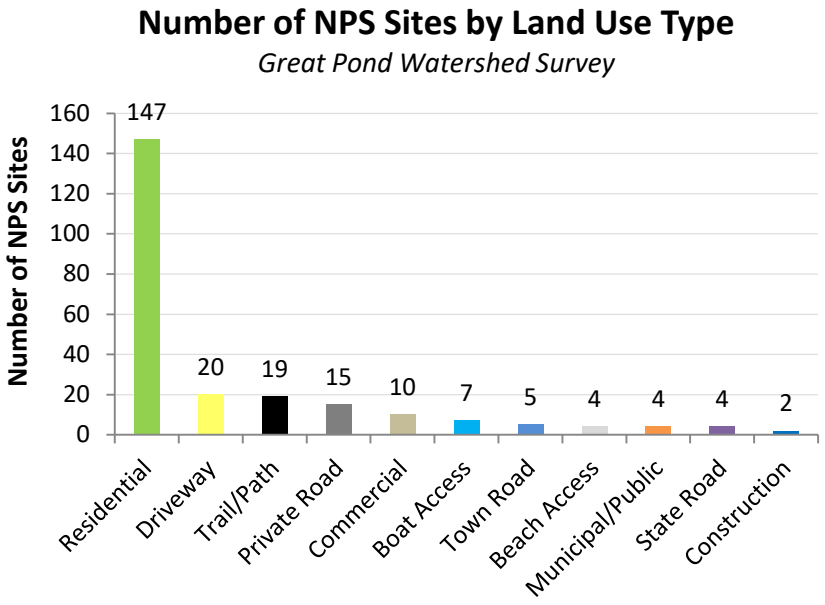


Figure 5. NPS sites in the Great Pond watershed by land-use type.

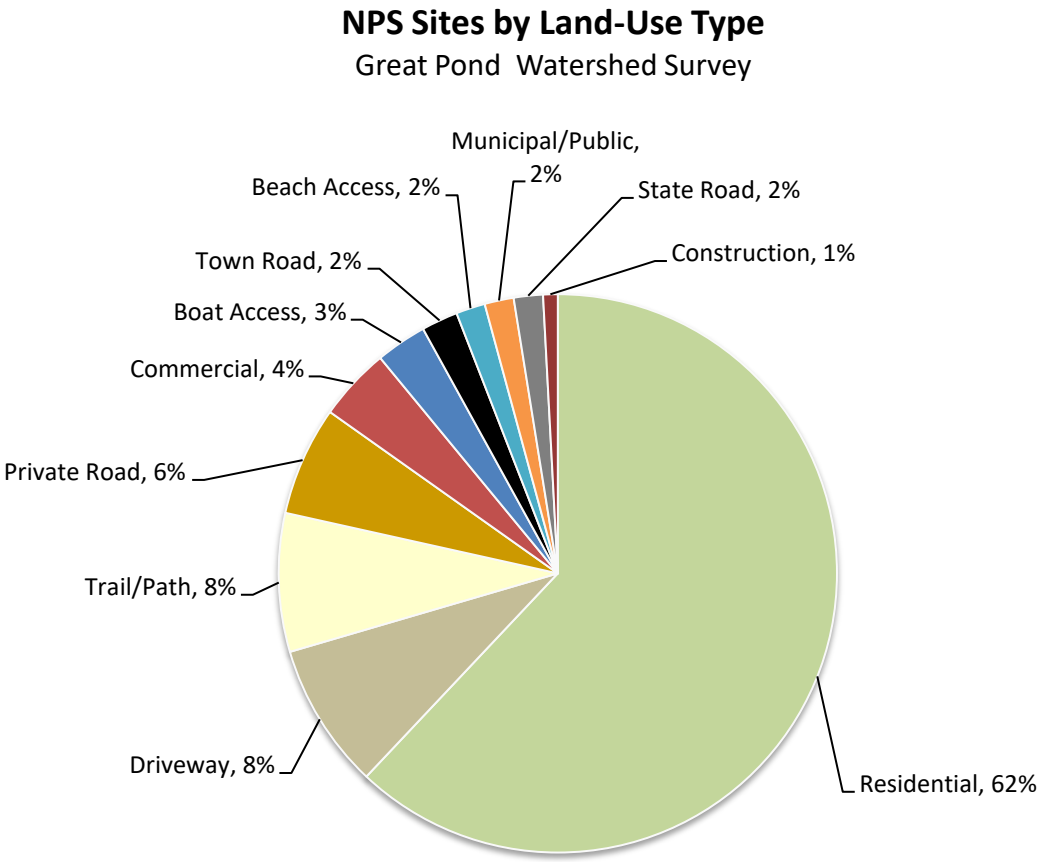


Figure 6. Percentage of NPS sites in the Great Pond watershed by land-use type.

Geographically, NPS sites were fairly well distributed (mostly along the shoreline) across the watershed. Several sites outside of the immediate shoreline were located on state/town roads and stream crossings, especially on the north end of the watershed near Rome Trout Brook and Robbins Mill Stream (Figures 7 & 8).

The greatest number of sites were documented in Sector 18 (Belgrade Lakes Village/Commercial District), followed by two sectors with dense shoreline development on the east shore of the lake (Sectors 12 & 9) (Figure 7). While density of residential development appears to be a primary factor in the number of sites per sector, this was not always the case. Sector 19 (Mountain Drive) contains many shoreline residences, but many of these are certified LakeSmart properties and therefore, landowners had already addressed many of the common culprits that affect lake water quality.

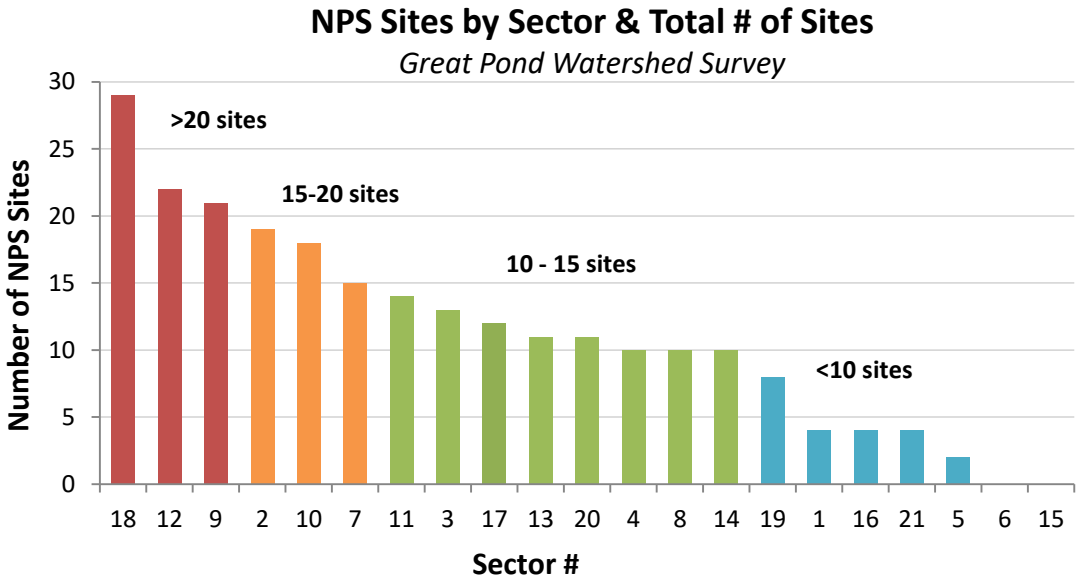


Figure 7. Breakdown of NPS sites by sector across the Great Pond watershed.

A survey of the lakes' islands resulted in documented NPS sites on four of the islands (Hoyt, Indian, Pine Island, and Oak). Several other NPS sites associated with island sites were also documented, including roads, parking areas, or boat access that provide access to the island from the shore. In general, single-family camps or homes showed little impact to water quality, whereas larger commercial camps or multi-unit summer camps needed improvement to protect water quality. Assessment of the effects of human waste should be considered.

Steep banks on the shores of Pine Island have resulted in years of soil erosion (left); access by boaters to undeveloped islands can result in shoreline erosion, as seen on Oak Island (right).

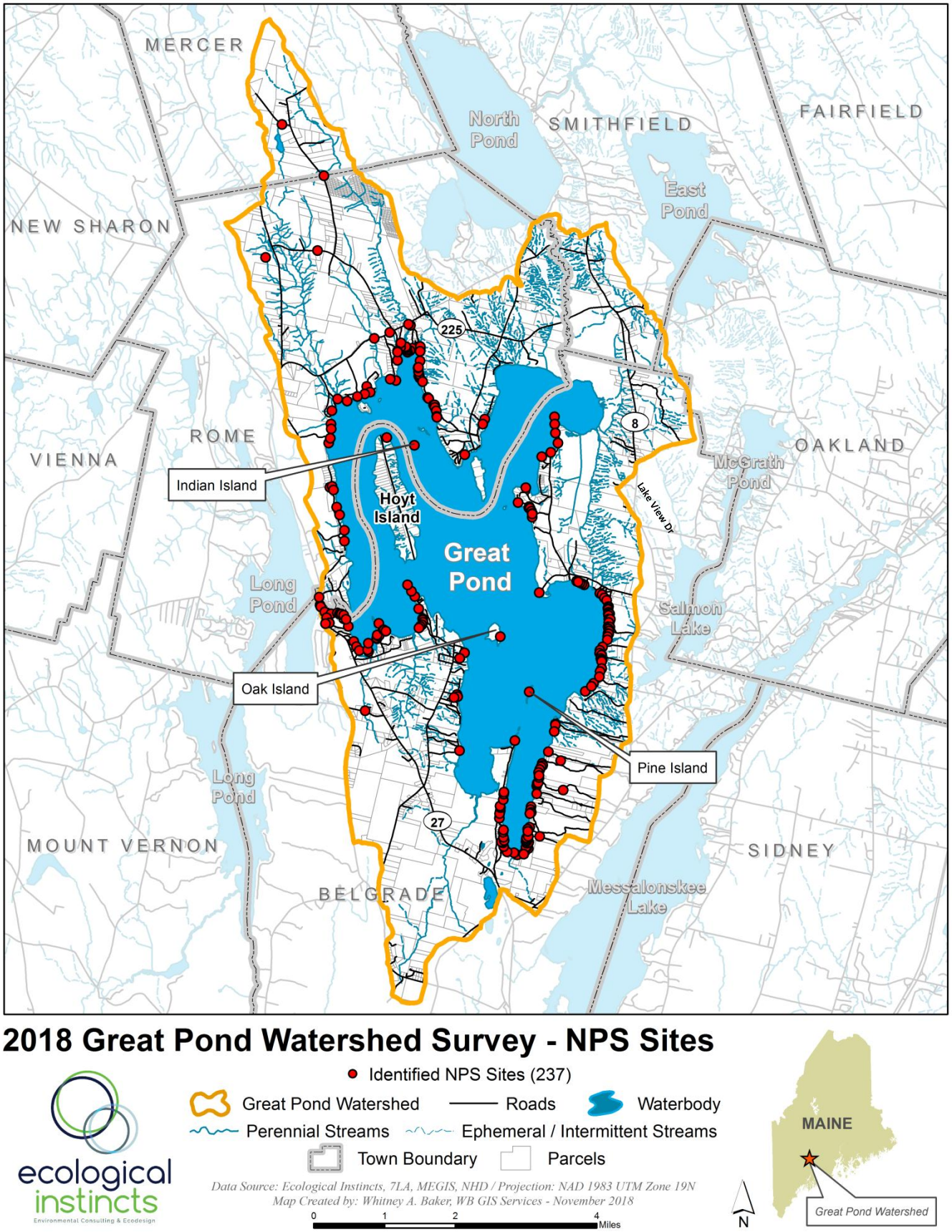


Figure 8. Map of NPS sites in the Great Pond watershed.

Impact of NPS Sites: The impact that documented NPS sites may have on the water quality of Great Pond was determined in the field based on the proximity to a waterbody and the magnitude of the problem. Factors such as slope, soil type, amount of eroding soil, and buffer size were also considered. A closer look at the estimated impact of these sites shows that while there were a total of 237 sites documented, only 25 ranked high-impact compared to 95 medium- and 116 low-impact sites (Table 3). Residential NPS sites had the greatest number of high-, medium-, and low-impact sites, accounting for 62% of all sites, and 68% of the low-impact sites.

Table 3. Summary of NPS sites in the Great Pond watershed by land use and impact.

Land Use	High Impact	Medium Impact	Low Impact	Unknown	Total	% of Total
Residential	11	57	79	0	147	62%
Driveway	5	10	5	0	20	8%
Trail/Path	1	5	13	0	19	8%
Private Road	3	7	5	0	15	6%
Commercial	2	5	3	0	10	4%
Boat Access	0	3	3	1	7	3%
Town Road	2	2	1	0	5	2%
Beach Access	0	0	4	0	4	2%
Municipal/Public	0	3	1	0	4	2%
State Road	1	2	1	0	4	2%
Construction	0	1	1	0	2	1%
TOTAL	**25**	**95**	**116**	**1**	**237**	**100%**

Examples of residential NPS sites: a) Shoreline erosion caused by removal of native vegetation on a residential site in Sector7 (above); and b) A compacted and eroding path to the lake in Sector 11 (right).

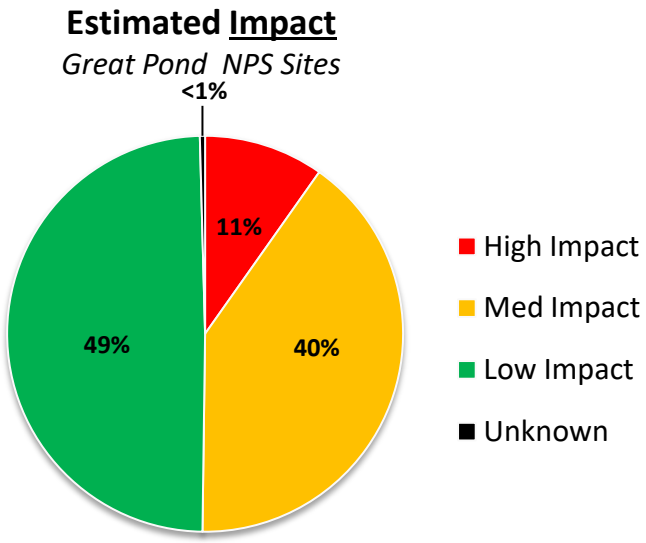


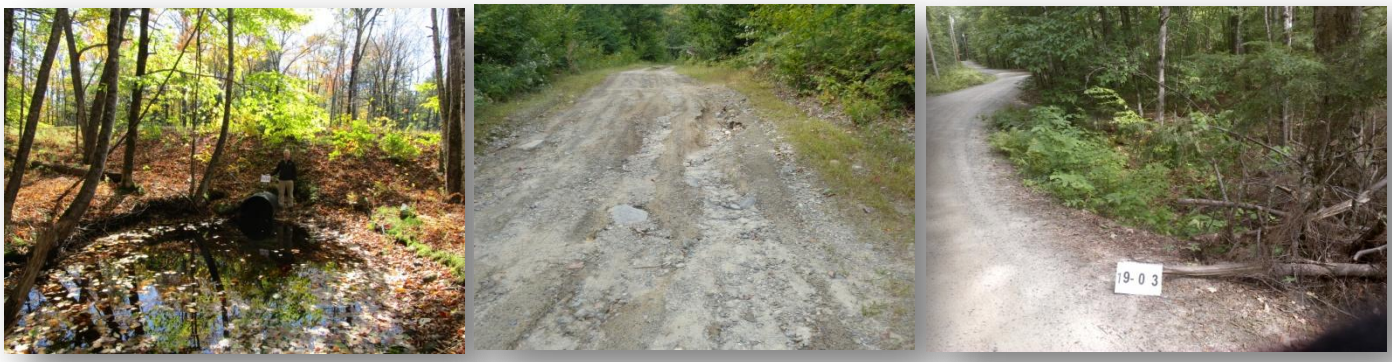
Figure 9. Estimated impact of NPS sites in the Great Pond watershed.

Low-impact sites are those with limited transport of soil off-site.

Medium-impact sites exhibit sediment transportation off-site, but the erosion does not reach high magnitude.

High-impact sites are those with large areas of significant erosion and direct flow to water.

Examples of residential sites ranked high (left), medium (middle), and low (right) impact.



Examples of road sites ranked high (left), medium (middle), and low (right) impact.

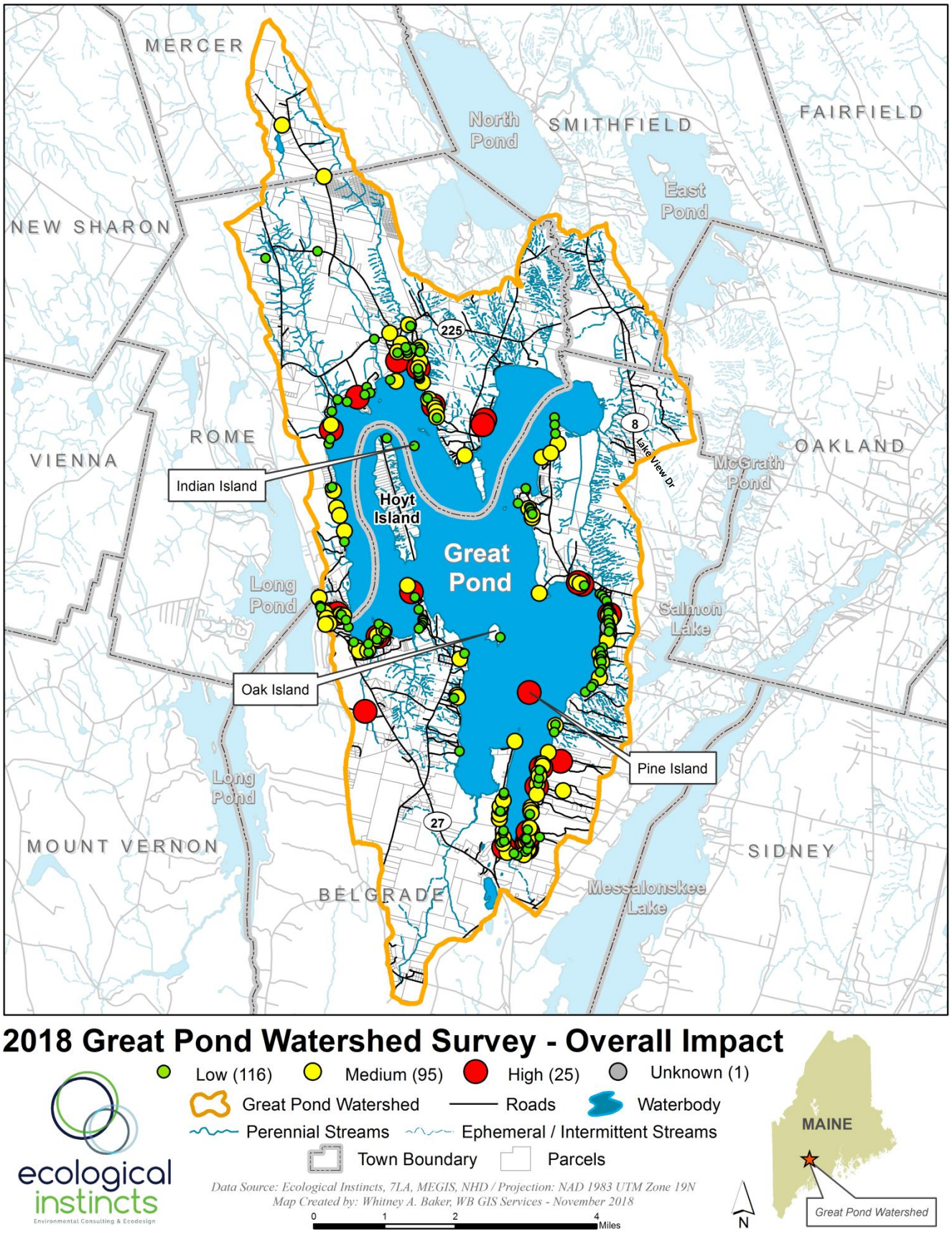
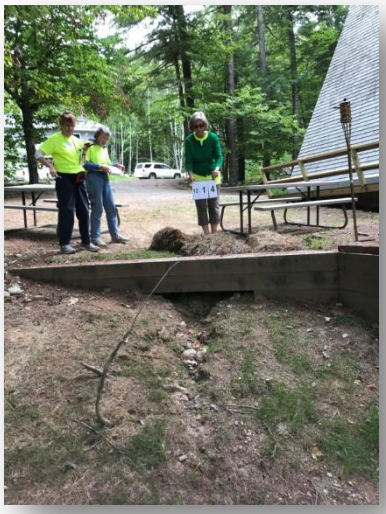


Figure 10. Map of NPS sites in the Great Pond watershed by impact ranked low to high.

The majority of sites ranked medium- or low-impact (89%), while only 11% of sites are ranked high-impact. A boat access site in Sector 9 was ranked unknown for impact and requires follow-up. High-impact sites were primarily associated with residential properties (44%), driveways (20%) and roads (24%- state, town and private). Maps showing NPS results by sector, land-use type and impact are presented in Appendix C.



Example of a high-impact residential site in Sector 12.

Residential: One hundred forty seven (147) residential sites were documented in the Great Pond watershed, representing 62% of the total documented sites. Common problems include bare soil, surface erosion, roof runoff, unstable access to the shoreline, and lack of shoreline vegetation to filter and prevent runoff from getting to the lake. While the majority of residential sites were ranked low-impact (79 of the 147 sites), the cumulative impact of these sites, combined with the 57 medium- and 11 high-impact sites undoubtedly results in a significant load of phosphorus making its way to the lake. Geographically, the greatest number of residential sites were documented on the east shore of the lake (Figure 11).

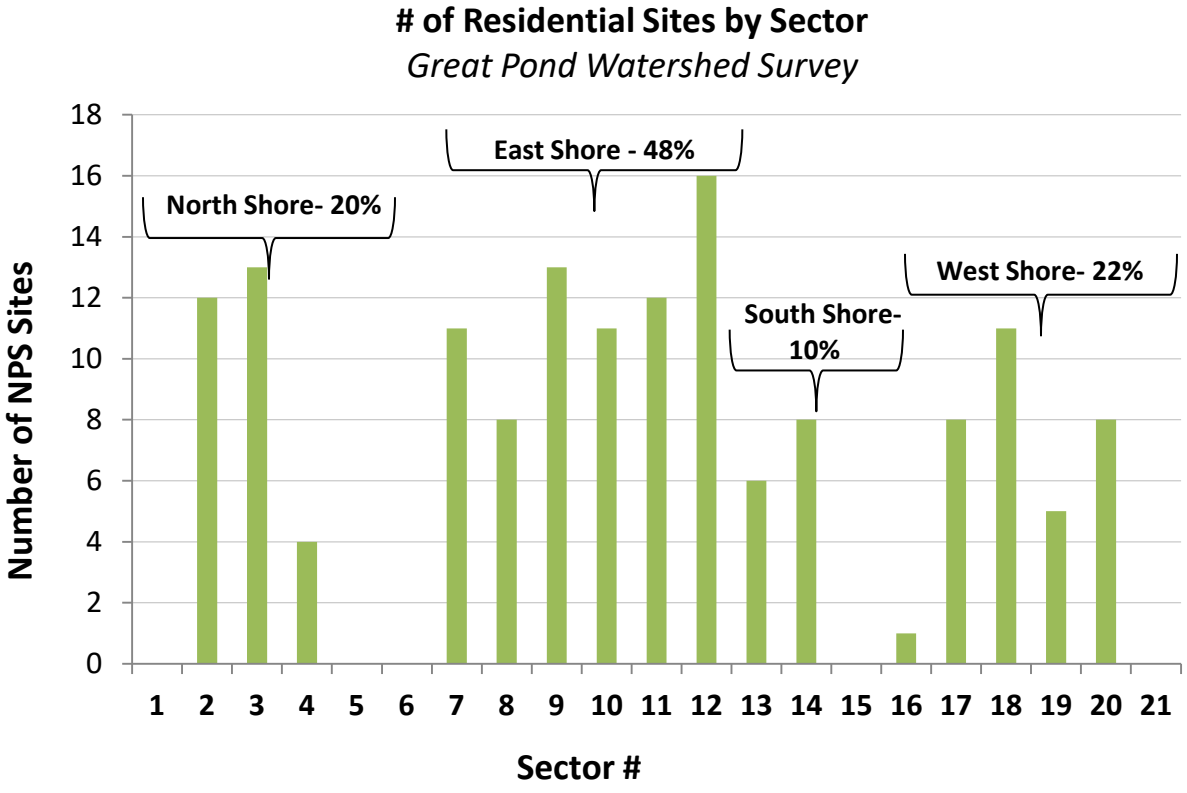


Figure 11. Residential NPS sites by geographic region in the Great Pond watershed.

Driveways: Driveways provide conduits for water to travel during rain storms, and if not properly built or maintained, or with proper runoff controls, can result in surface erosion, carrying nutrients and sediment to the nearest ditch, stream or directly to the lake. Driveways often lead directly to a house on the shoreline, are unpaved (gravel), run perpendicular to the lake, and create a straight path for runoff to flow into the lake.

- Gravel driveway sites account for 20 of the 237 documented NPS sites across the watershed including 13 medium-impact, five (5) low-impact, and two (2) high-impact sites.
- All of the driveway sites are associated with residential development. Four (4) of the sites are located on Burton Woods Rd in Sector 2., two (2) on Hathaway Ln. in Sector 4, and the remainder spread across the south and west shore.

Example of a high-impact driveway site on Nickerson Lane in Sector 2.

Roads: Road sites generally have larger erosion problems, which in turn result in a more significant impact on the water quality of the lake, and can be more costly than other fixes. A total of 24 road sites were documented in the watershed including private, town and state roads. Three private-road site, two town-road sites, and one state-road site ranked high-impact. These sites should be prioritized for remediation in the near future.

- **Private-road** sites made up the majority of documented road sites (15 sites), or 63% of all road sites. Common problems associated with private roads include surface erosion (resurfacing needed), plow/grader berms, ditch erosion, and unstable, clogged and/or undersized culverts.

Example of a high-impact private-road site in Sector 17.

- Five (5) **town-road** sites were documented in the watershed. Each of the sites resulted in flow of nutrients and sediments into a stream that connects to Great Pond. The majority of these sites are located in Belgrade, and two of these are ranked high-impact. Problems with town road sites are a result of unstable, clogged culverts, direct discharge to the stream (need turnouts and retention/detention basins), and unstable road shoulders.
- Three of the four (4) **state-road** sites are located on Rt. 225, and the fourth is located at the Castle Island stream crossing. Problems at these sites include winter sand build-up, road shoulder erosion, stream bank erosion, invasive plants, and unstable and/or undersized culverts.

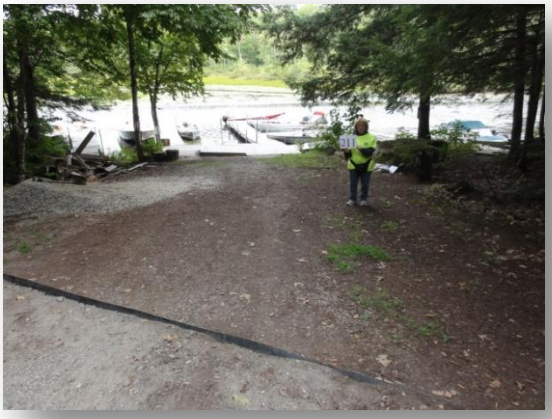
Trails/Paths: Trails and paths make up the third-greatest number of NPS sites, with 19 sites documented in the Great Pond watershed. These sites are associated primarily with residential properties to access the shoreline, docks, boats, or camp sites. Erosion on paths are exacerbated by continuous foot traffic, bare soil and moderate to steep slopes. Trails and paths without runoff diverters, infiltration steps or erosion control mulch will continue to carry runoff into the lake.

- While the majority of these sites were ranked low impact (13), another six sites were ranked either medium- (5) or high-impact (1) and should be prioritized for remediation.
- Four (4) trail/path sites were documented on Snug Harbor Rd., and two (2) sites are located on islands (Indian, Hoyt's).

An old walkway requires retrofitting to prevent soil erosion from getting to the lake on Togue Road in Sector 14.

Commercial: A total of ten (10) commercial NPS sites were documented during the survey. These sites were associated with gravel operation, camp grounds, a church, marina, and a parking lot.

- Two of the commercial sites ranked high-impact, five (5) medium-impact, and three (3) low-impact. The majority of problems were associated with surface erosion as a result of bare soil, roof runoff, and inadequate shoreline vegetation. Clogged culverts were documented at two of the sites.



A rubber-razor needs repair to hold back soil at this commercial camp in Sector 2.

Boat & Beach Access: In addition to trails and paths that lead to the lake, and additional seven (7) boat-access and four (4) beach-access sites were documented in the watershed. The majority of these were located on residential properties on the east shore of the lake around Hatch Cove (Sectors 7-10). There were no high-impact boat or beach-access sites, and the majority of these sites were ranked low impact (7 of the 11 sites). Some of the sites were the result of surface erosion on roads/driveways that access these areas.

Example of a low-impact beach-access site in Sector 8.

Cost of NPS Sites: Recommendations were made for improving each site, along with the estimated cost of labor and materials for all 237 sites. Only 16 of these sites are estimated to incur a high cost (over $2,500), while the remainder of sites were split between low- (less than $500, 120 sites) and medium-cost ($500- $2,500, 99 sites) (Figure 12). Residential, state-road and commercial sites had the greatest number of high-cost sites (3 each). Residential sites had the greatest number of medium- (58) and low-cost (86) sites. The number of high-cost sites is slightly lower than the number of high-impact sites indicating that several of the high-impact sites are either low or medium cost. These should be prioritized for remediation. Because a high percentage of residential sites are low impact, they are also low cost. This is reflected in the map in Figure 13 (green circles).

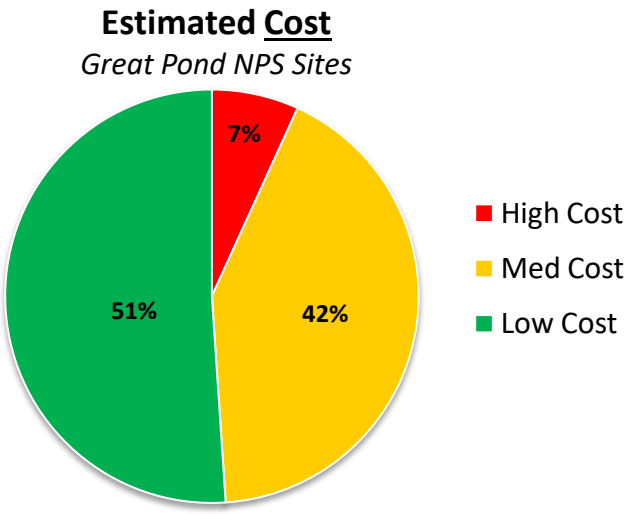


Figure 12. Estimated cost of NPS sites in the Great Pond watershed.

Low-cost sites were estimated to cost less than $500.

Medium-cost sites range from $500 to $2,500.

High-cost refers to sites estimated to cost more than $2,500.

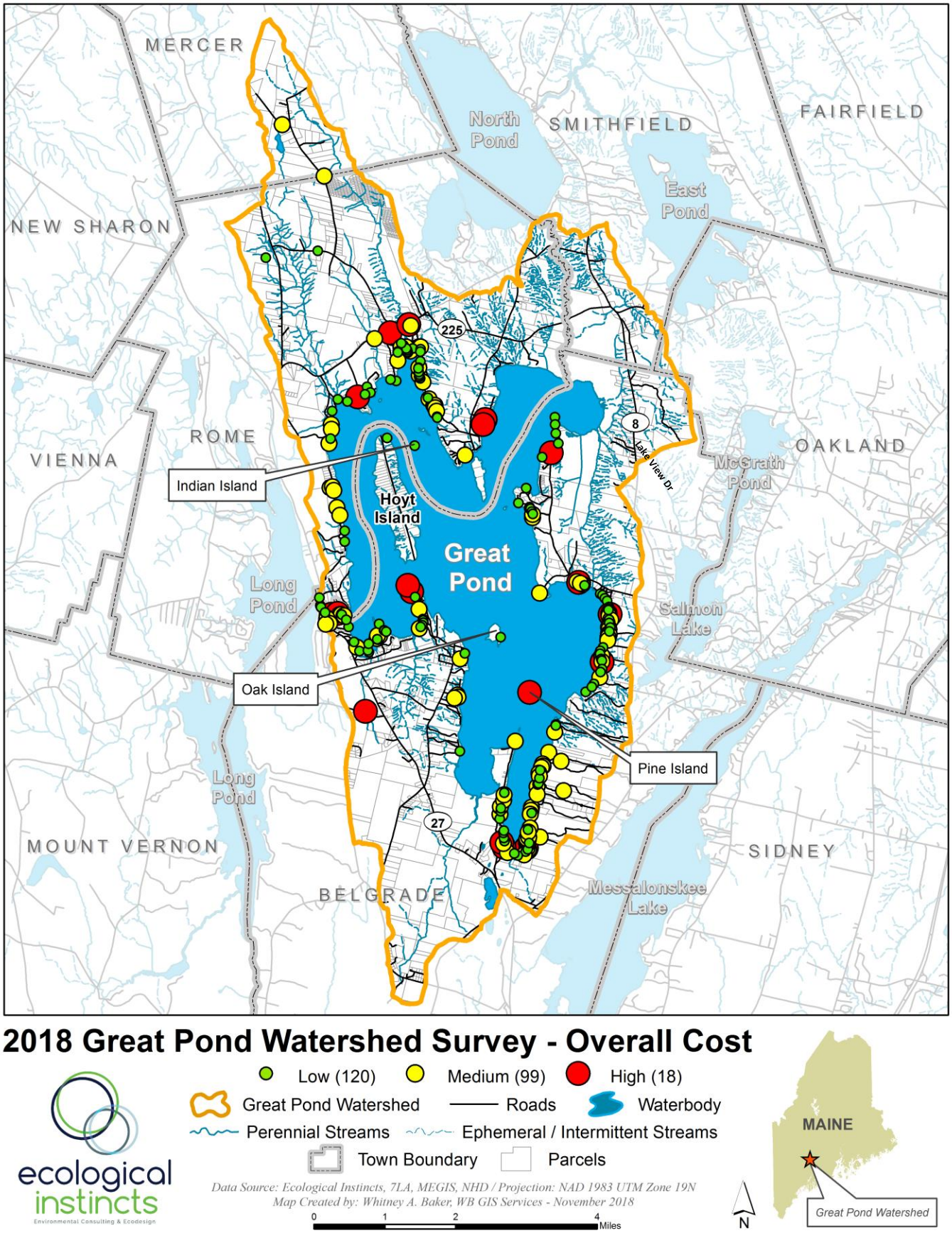


Figure 13. Location and cost of NPS sites in the Great Pond watershed.

SECTOR OVERVIEW (See Appendix B for sector specific results maps.)

Sector 1

A total of four (4) NPS sites were documented in this sector including two (2) private road sites, a driveway, a commercial property and a beach access site. Sites in Sector 1 make up just 2% of the total number of sites across the watershed. Two of the sites were ranked medium-impact, and two were ranked low-impact. Sector 1 is located away from the shoreline of Great Pond on the northwest corner of the watershed.

An eroding private road site on Homestead Rd. in Sector 1. New surface material, runoff diverters and ditches are needed.

Sector 2

A total of 19 sites were documented in Sector 2, including 12 residential sites, three (3) state road sites (Rt. 225), a town road (Crystal Spring Rd.), driveway, commercial (boat access), and municipal/public site (Rome Public Beach). Only one of the sites ranked high-impact (driveway on Nickerson Ln.), while nine (9) sites ranked medium-impact, and nine (9) ranked low-impact.

The Rome town beach in Sector 2.

Sector 3

Sector 3 had a total of 13 documented NPS sites, or 6% of the total sites. All 13 sites are located on residential properties on Crystal Springs Ln. Nine (9) of the 13 sites were ranked low-impact, compared to three (3) medium-, and one (1) high-impact site on this road. The majority of problems are related to bare soil or inadequate shoreline vegetation, and can easily be remedied by covering bare soil with erosion control mulch, and adding vegetation to the shoreline.

Shoreline erosion in Sector 3 due to lack of vegetation. Roots from woody vegetation help stabilize shorelines.

Sector 4

Sector 4 was dominated by residential NPS sites (4 sites) and driveways (3 sites), followed by trail/paths (2 sites), and one private road site (2 sites). Six (6) of the sites are located on Hathaway Ln., including two of the driveways, the private road site and two trail/path sites. Other sites are located on Delisle Ln., York Ln. and Golden Pond. Seven (7) sites ranked low-impact, two (2) medium-impact, and one (1) high-impact.

Driveway runoff in Sector 4 on Hathaway Lane.

Sector 5

Sector 5 includes two (2) private road sites, which include long stretches of road and ditches on North and South Crane Ln. in Rome. Both sites ranked high impact and high cost. Upgrades are needed to enlarge the ditches, replace a culvert, and stabilize the inlets/outlets of the culverts with rock rip rap. Twelve residential sites on North and South Crane Ln. were listed for a LakeSmart referral. These were sites that did not meet the criteria for an NPS site, but would benefit from additional shoreline buffers, or education around lawns, fertilizer or pesticide use.

Steep, eroding banks along the shoreline, seen here in Sector 7, can result in significant deposits of soil and nutrients in the lake.

Sector 6

There were no documented sites in Sector 6. This area has limited development due to the large area of wetlands associated with Great Meadow Stream.

Sector 7

A total of 15 sites were documented in Sector 7. These include 11 residential sites, and one (1) each boat access, commercial (Camp Bomazeen), construction (residential) and trail/path. Nine (9) of the sites were ranked low-impact, and six (6) medium-impact. The majority of sites are located on Horsepoint Rd and Pine Beach Rd. All of the sites on Pine Beach Rd. are residential.

The addition of a vegetated buffer at this residential property in Sector 8 would prevent soil from washing into the lake.

Sector 8

A total of 10 NPS sites were documented in Sector 8, including eight (8) residential sites on seven different roads that access the shoreline, and one private road site (Merryweather Rd.). Five (5) of the sites ranked low-impact, three (3) medium-impact, and two (2) low-impact. Soils in this sector are sandy and slopes are moderate to flat. Bare soil and unstable shoreline access are the major problems at these sites.

A high-impact driveway site in Sector 9 leads directly to the lake.

Sector 9

Sector 9 had the third-greatest number of NPS sites (21) behind Sectors 12 and 18. The majority of these sites are located on residential properties (13), followed by trails/paths (4), beach and boat access (3) and a driveway site. All 21 sites are located on either Snug Harbor Rd. (15 sites) or Gleason Shore Rd. (6 sties). 10 sites were ranked low-impact, nine (9) medium-impact, one (1) high-impact, and one (1) ranked unknown (boat access on Snug Harbor Rd. The high-impact site is associated with a private driveway on Snug Harbor Rd.

Sector 10

A total of 18 sites were documented in Sector 10, including 11 residential sites, four (4) boat and beach access sites, two (2) commercial properties, and one (1) private road. 13 sites ranked low-impact, and five (5) ranked medium-impact. There were no high-impact sites. The majority of sites are located on Hatch Cove Rd. (11 sites), as well as multiple sites on Hill Farm Rd. and Pine Island Rd. Similar to other sectors, the problems associated with many of the residential sites include bare soil and inadequate shoreline vegetation.

Maintaining and adding vegetation along the shoreline in Sector 10 will reduce runoff to the lake,

Sector 11

A total of 14 NPS sites were documented in Sector 11. This includes 12 residential sites, and private road site (Cyr Rd.), and a trail/path. All but one site located on Hemlock Point Rd. are located on either Cyr Rd. or Wanser Ln. on the southeast shore of Great Pond.

Trails & paths become compacted and deliver sediment directly to the lake.

Sector 12

Sector 12 had the second-greatest number of NPS sites (22) behind Sector 18, and the greatest number of high-impact sites among all the sectors (5). The majority of these sites were located on residential properties (16) on Burton Woods Rd., Endicott Rd. or Gables End, or associated with driveways (4), a private road (1) and a trail/path (1) on one of these roads.

Sector 13

Sector 13 contains 13 NPS sites. Six (6) of these are on residential properties. An additional five sites are located on private road sites (2), driveways (2) and boat access (1). All of the sites are located on Pinkham's Cove Rd. and Pickerel Ln. The majority of sites were ranked low-impact (6), followed by medium-impact (4), and high-impact (1). The high-impact site is associated with a driveway on Pickerel Ln.

Roof runoff and lack of shoreline vegetation at this Sector 12 property has resulted in ongoing soil erosion.

Sector 14

A total of 10 sites were documented in Sector 14, including eight (8) residential sites, a driveway site and a trail/path site. Half of the sites, including the driveway, are located on Foster's Point Rd. Bare soil, roof runoff erosion and dog waste were the main problems identified. Six (6) sites were ranked medium-impact, and the remaining four (4) sites ranked low-impact. There were no high-impact sites.

Sector 15

There were no sites documented in Sector 15. This sector is located outside of the immediate shoreline and includes the wetlands associated with Bog Brook.

Sector 16

A total of four (4) NPS sites were documented in Sector 16. These include two (2) driveway sites (Cardinal Ln. and Rough Ln.), one (1) residential, and one (1) state road site at the Castle Island Rd. stream crossing. The road site was the only high-impact site.

A large scour pool at the outlet of the Castle Island culvert in Sector 16.

Sector 17

A total of 12 NPS sites were documented in Sector 17. These include multiple residential properties on Woodland Camp Rd., Carr Ln., driveway sites on McHugh Ln. and Markland Ln., as well as a private road site and construction site on Woodland Camp Rd. Nine (9) of the sites ranked low-impact, two (2) medium-impact, and one (1) high-impact (private road).

Bare soil on a residential property in Sector 17 has resulted in sheet erosion.

Sector 18

Sector 18, located in the Village District, had the greatest number of sites among all 21 sectors, with a total of 29 sites. The sites were spread across numerous land-use categories, including residential (11), town road (4), trail/path (4), municipal/public (3), commercial (3), private road (2), and driveway (2). The majority of these sites ranked medium-impact (14), followed by low-impact (12), and high-impact (3). Two of the three high-impact sites are located on town road sites on Hulin Rd. The third site is a trail/path site at a residential property on Abena Shores Rd.

A detention basin is needed to collect and settle out sediment washing off Hulin Rd. in Sector

Sector 19

A total of eight (8) sites were documented in Sector 19, including five (5) residential sites, a driveway site, a private road site, and a trail/path site. With the exception of the driveway on Homestead Drive, all other sites are located on Mountain Drive. While many of the residential properties on Mountain Drive are LakeSmart, the sites that were documented could benefit from joining their neighbors in planting shoreline buffers and covering bare soil with erosion control mulch. Five (5) sites in this sector ranked medium-impact, while three (3) ranked low-impact.

Large areas of bare soil near the water's edge and lack of adequate buffer in Sector 19.

Sector 20

A total of 11 sites were documented in Sector 20, including eight (8) residential sites, a commercial site, a private road site (Starbird Ln.) and trail/path site. Residential sites were documented on Lambert Ln. (including a potential septic issue), Drury Ln., Marsh Ln. and Starbird Ln. Two (2) sites ranked high-impact, one (1) medium-impact, and eight (8) low-impact.

Improvements are needed at a commercial parking lot in Sector 20 to prevent sediment from getting into the lake.

Sector 21

NPS sites were documented on Hoyt's, Indian, Pine Island and Oak Island. Problems were mostly associated with beach/boat access or trails/paths. Pine Island had multiple sites including a large stretch of eroding shoreline, and erosion associated with trails/paths, tent platforms, beach access, etc. Future planning for Great Pond should include the potential effects of septic systems and other types of waste systems (e.g. cesspools, outhouses, etc.) on the water quality of Great Pond.

NPS sites were documented on Hoyt's Island (top left), Indian Island (top right), Oak Island (bottom left), and Pine Island (bottom right).

RESIDENTIAL AREAS

Problem: BARE SOIL, SURFACE EROSION, INADEQUATE SHORELINE VEGETATION
Solution: Control runoff from impervious surfaces. Use erosion control mulch in areas with exposed soil, and plant vegetation along the shoreline to stabilize banks and filter runoff. Consider planting vegetation before using rip rap, or use a combination of both, minimize lawn area, and add dripline trenches to roof driplines.

Sector 13: Site 3

Erosion control mulch & vegetative planting
(Photo: AWWA)

Vegetated buffers filter out pollutants
(Photo: Maine DEP)

Problem: UNSTABLE BEACH & BOAT ACCESS
Solution: Stabilize eroding shorelines by planting a vegetated buffer consisting of a combination of native plants and erosion control mulch, or install a rain garden. The roots from these plants will stabilize the shoreline, filter pollutants running off the land, and provide habitat for wildlife. Alternatively, just let the shoreline naturalize by not mowing a wide strip along the shoreline.

Sector 3: Site 3

Allow the shoreline to naturalize by not mowing right to the edge
(Photo: Maine DEP)

Gather neighbors to plant a buffer of flowering shrubs that attract butterflies and provide color year-round
(Photo: J. Jespersen)

Residential Areas Continued…

Problem: UNSTABLE TRAILS & PATHS & ERODING ROOF DRIPLINES

Solution: Retrofit trails and paths so that they are well defined, narrow (<3 ft), and winding. Install water bars or infiltration steps on steeper slopes to divert or infiltrate runoff, and mulch all bare soil areas.

Sector 7: Site 3

Dripline trench & erosion control mulch (Photo: AWWA)

Infiltration steps protect steep slopes w/foot traffic

DRIVEWAYS & ROADS

Problem: MODERATE TO SEVERE SURFACE EROSION ON DRIVEWAYS

Solution: Re-grade, reshape and/or crown driveways; add new surface material; install runoff diverters such as rubber razors or water bars; maintain and repair existing rubber razors or other driveway runoff diverter annually and after large storm events.

Sector 17: Site 1

Rubber razors direct water off driveways and into vegetation

Resurfacing driveways with hard-packing, cohesive surface material prevents erosion

Problem: ROAD EROSION, UNSTABLE OR UNDERSIZED CULVERTS
Solution: Reshape and regrade gravel roads, add new surface material, install ditching where needed, and line ditches with rock and vegetate for stability. Replace failing, plugged, crushed or undersized culverts, and stabilize inlets/outlets with rip rap; add runoff diverters; clean up winter sand.

Sector 18: Site 18

Reshape gravel roads, add new surface material and install runoff diverters

Replace undersized and perched culverts, remove clogs, armor inlets/outlets and install plunge pools

CONSTRUCTION SITES

Problem: ROOF RUNOFF EROSION, SURFACE EROSION, BARE SOIL
Solution: Install temporary Best Management Practices (BMPs) before construction begins to prevent delivery of sediment to the lake. These may include erosion control mulch berms, hay bales or silt fences. Permanent BMPs must be installed following construction to stabilize all bare soil areas. This includes installing a healthy buffer of vegetation along the shoreline, and vegetating or mulching all bare soil.

Sector 7: Site 8

Install temporary BMPs such as an erosion control mulch berm prior to beginning construction (Photo: Maine DEP)

Install permanent BMPs once construction is complete including seed/ haying bare soil and installing vegetation on the shoreline (Photo: Maine DEP)

SUMMARY & NEXT STEPS

SUMMARY

The 2018 Great Pond watershed survey identified 237 individual nonpoint source (NPS) pollution sites. The survey focused on all developed land (with permitted access) that drains to or has the potential to drain to the lake, carrying stormwater and other pollutants of concern. Survey results indicate that a significant portion of NPS sites are located on residential properties, mostly associated with lack of native vegetation on the shoreline to filter pollutants. This does not account for all beach and boat access sites, driveways, or trails and paths located on residential properties, or the private gravel roads that provide access to these homes and camps.

Example of an excellent buffer on Great Pond (Hoyt's Island).

The cumulative effect of these sites plus the sites located on commercial and public properties as well as roads (private, town, and state) result in the excess phosphorus being delivered to Great Pond. With leadership from the BLA's LakeSmart Program and help from the 7 Lakes Alliance Youth Conservation Corps (YCC) and the watershed towns, landowners can be better informed about the impact that their property has on these lakes and have access to the right tools to address these problems.

Follow-up work is needed to meet with state and town officials, road and homeowner associations, large summer camps to discuss next steps and potential funding opportunities. Partnerships with the local USDA/Farm Service Agency may be needed to build relationships with agricultural landowners in the watershed.

PRIORITIZING NPS SITES

Preliminary prioritization of the 237 survey sites has begun with feedback from the watershed survey technical leaders and from key steering committee members at the November 30, 2018 watershed planning steering committee meeting at the Maine Lakes Resource Center (MLRC) in Belgrade on November 30, 2018 (Table 4). Further prioritization and specific recommendations for these sites will be included in 2019 as part of the development of the Great Pond Watershed-Based Management Plan.

Initial prioritization was completed by sorting the sites by impact and cost and again by land use and cost to assist with choosing sites that will have the greatest impact for the least cost, sites that had a high likelihood of being completed, and sites with good educational value.

Table 4. Prioritized list of NPS sites in the Great Pond watershed.

Location	Notes
Sector/Site Specific Priorities	
Sector 1	In order of priority: 1-03 (private road drains to stream), 1-01 (address unstable slopes, commercial site), 1-02 (spring site visit on Wooster Hill Rd.)
Sector 4	Sites 4-04 and 4-05 (Hathaway Ln.) are linked. Camp road is causing erosion in the driveway; 4-10 (eroded driveway and willing landowner on Golden Pond)
Sector 5	North and South Crane Ln. (private roads need ditching, culvert improvements and resurfacing)
Sector 9	9-14 (boat ramp on Snug Harbor Rd.)
Sector 11	11-03 (residential, construction, boat access on Cyr Ln.), 11-11 (Residential site on Wanser Ln.), 11-08 (Residential site on Wanser Ln.)
Sector `12	12-07 (stream); 12-05 (driveway affecting 12-06), 12-21 (significant erosion)
Sector 13	Site 13-5 (Pickerel Ln. driveway, high-impact)
Sector 20	Review original design plans for existing BMPs at Taconnet Parking Lot and develop new plans to address runoff
Sector 21	Steep eroding bank and multiple NPS issues stemming from walkways, roofs and tent platforms on Pine Island. Good YCC project.
General Follow-up Priorities	
Town Sites	Prepare a list of NPS sites and send to the towns for their annual budget planning (town beaches and roads)
Private Roads	Conduct spring site visits to roads with known issues in spring that did not make the NPS list (e.g. Wilder Rd.)
Gravel Pits	Set up a meeting with gravel pit operators as part of WBMP
Summer Camps	Meet with camp owners/managers to review survey results and discuss next steps; meet with Camp Runoia to walk site; road management plan for Camp Bomazeen
Village District	Host meeting with business to discuss survey results and possible funding opportunities
Residential Neighborhoods	Target residential neighborhoods with multiple sites for greater reach and impact (e.g. Crystal Springs Association- meet to review results and discuss next steps toward LakeSmart certification, Horsepoint Rd., Pine Beach Rd.); target high impact residential sites in Phase I restoration efforts
Septic Systems	Include septic systems/waste management planning to determine impacts on water quality (e.g. old system at Liberty Camp, cesspools on islands, etc.)
LakeSmart	Follow-up with 88 landowners on LakeSmart referral form with educational materials on buffers and runoff; reach out to 10 landowners with existing LakeSmart sites with NPS issue.
Water Quality Testing	Collect water quality samples at stream outlet at Site 8-6 to assess for phosphorus inputs and need for mitigation

** Unless noted, sites are not in order of priority.*

NEXT STEPS - WHERE DO WE GO FROM HERE?

Improving the NPS sites identified during the watershed survey will require efforts by state and local municipal officials, BLA and its partners, including 7 Lakes Alliance, the towns of Belgrade and Rome, commercial businesses, individual landowners, and road and homeowner associations. Developing a plan for addressing these sites should be a high priority for the BLA and watershed towns. A Watershed-Based Management Plan (WBMP) is needed to ensure that high- and medium-impact sites are addressed within a reasonable timeframe, and that a plan is developed for the many low-impact residential sites across the watershed. The plan will also help to identify potential funding sources and identify the roles and responsibilities of partners and local stakeholders. Action steps in the Great Pond WBMP may include:

1. Presenting the results of the survey to the public, distributing summaries of the survey results to key stakeholders, and posting copies of the survey report on the BLA, 7 Lakes Alliance, and town websites;
2. Sending letters to all property owners with a documented NPS site, giving them guidance and recommendations for addressing the problems;
3. Setting up meetings with state and town officials to review survey results and to develop a schedule for addressing these sites;
4. Developing a detailed funding and implementation plan and schedule;
5. Submitting a 319 grant in 2019 to address some of the high-priority NPS sites and to fund YCC for shoreline properties;
6. Identifying potential LakeSmart properties and developing a strategic outreach strategy to address the numerous low-impact shoreline sites.

In addition to the actions identified by the steering committee, there are many things that individual landowners, commercial-camp owners, and municipal officials can start doing now to help with this effort.

Individual Landowners

- If you have a documented NPS site on your property, contact the BLA today for advice about how to get started.
- Become LakeSmart! Join together with your neighbors to certify your property through the BLA's successful LakeSmart program by establishing best practices on your properties. Call the BLA LakeSmart Coordinator today at (207) 512-5150 to get started!
- Replace portions of your lawn with a rain garden, buffer strip or let naturalize to filter pollutants before they reach the lake.

Remember – the long-term health of Great Pond depends on you! Help protect and improve the water quality of our lakes for future generations!

- Install native vegetation along the shoreline to stabilize the soil, improve wildlife habitat and help keep shoreline areas shaded and cool.
- Stop mowing and raking your shoreline and other parts of your property to bare soil. Let lawn and raked areas revert back to natural vegetation. Deep shrub and tree roots help hold the soil in place and help prevent erosion.
- Avoid exposing bare soil. Seed and mulch bare areas. Use erosion control mulch.
- Manually remove invasive terrestrial plants that are growing on the shoreline. Contact the Kennebec County Soil & Water Conservation District for advice on managing these plants.
- Never use herbicides or pesticides in the shoreland zone unless you have a permit.
- Avoid using fertilizer within 250 ft. of the lake, and always get a soil test before applying fertilizer outside the shoreland zone to determine the correct application rate.
- Read "Permitting ABCs" (below) and call your local Code Enforcement Officer and Maine DEP before starting any cutting or soil disturbance projects.
- Maintain septic systems properly. Pump septic tanks (every 2 to 3 years for year-round residences; 4-5 years if seasonal) and upgrade marginal systems or old systems (>20 years).
- Support BLA and the 7 Lakes Alliance by becoming a member, and get involved with their programs and activities, including annual meetings, LakeSmart, Youth Conservation Corps, and other workshops.

Commercial Property Owners & Summer Youth Camps

- Incorporate environmental education into summer planning activities to educate campers about soil erosion and its affect on the lakes. Consider conducting a stewardship event to plant buffers and spread mulch to involve campers and sponsors.
- Work with the 7 Lakes Alliance to line up free labor and technical assistance to address NPS sites through the Youth Conservation Corps.
- Work with BLA to become LakeSmart-certified. Clean lakes are good for business!

Municipal Officials

- Conduct regular maintenance on town roads in the watershed, and address the town road and public park sites identified in this survey.
- Enforce shoreland zoning and other ordinances to ensure the long-term protection of Great Pond.
- Participate in and support long-term watershed management projects by serving on watershed committees, serving as a sponsor for grant applications and setting aside funding for long-term water quality monitoring and lake protection projects.
- Promote education and training for road crews, code enforcement officers, selectmen, planning board members and other decision makers.

CONSERVATION PRACTICES FOR HOMEOWNERS

After reading this report or requesting a LakeSmart evaluation, you probably have a general idea about how to make your property more lake-friendly. However, making the leap from concept to construction may be a challenge.

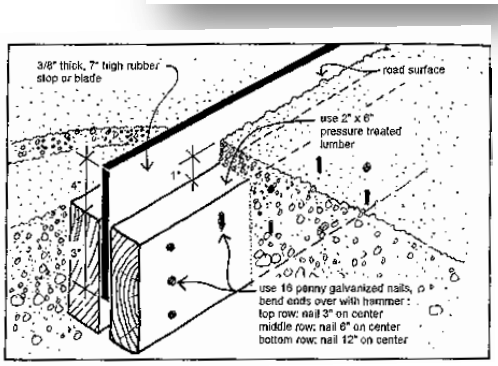
Fact sheets are available to help you install conservation practices on your property. Download at: https://www.pwd.org/publications

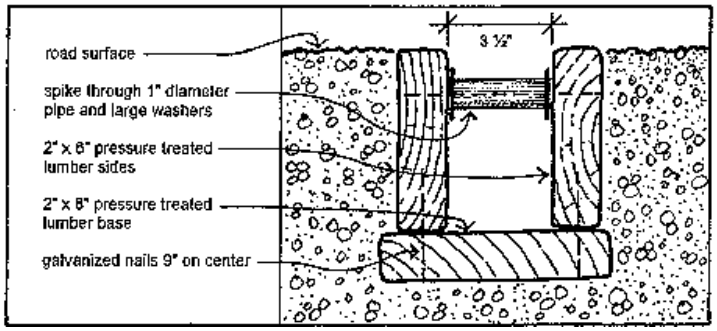
A series of fact sheets are available that answer many common how-to questions about installing Best Management Practices (BMPs). The fact sheets profile 20 common conservation practices and include detailed instructions, diagrams and color photos about installation and maintenance. The series includes the following:

Construction BMPs	Native Plant Lists	Rain Gardens
Dripline Trench	Open-Top Culverts	Rubber Razors
Drywells	Paths and Walkways	Shoreline Riprap
Erosion Control Mix	Permitting	Turnouts
Infiltration Steps (2)	Pervious Pathways	Waterbars
Infiltration Trench	Planting & Maintaining Buffers	Selecting Plants for Shade (3)
Live Staking	Rain Barrels	Selecting Plants for Sun (3)

Each one is tailored to different site conditions (e.g., full sun and dry soils). The lists include plant descriptions from the DEP's *Buffer Handbook* and small color photos of each plant to make plant selection easier. Below are a few examples of Best Management Practices (BMPs), including how to install a rubber razor and open top culvert- both of which are used for getting water off of gravel roads and driveways. A drywell is useful for collecting runoff from gutters. Similarly, a gravel dripline trench can be used on homes that do not have gutters. These are typically 18 - 24" wide and slightly longer than the roof.

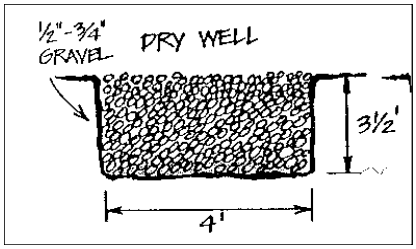
Rubber Razor Blade: Use this structure in a gravel driveway or camp road. It can be plowed over only if the plow operator is aware of its presence and lifts the plow blade slightly. Place it at a 30 degree angle to the road edge and direct the outlet toward a stable vegetated area.





Open Top Culvert: Use this structure in a gravel driveway or camp road that does not get plowed in the winter. Place it at a 30 degree angle to the road edge and point the outlet into stable vegetation. Remove leaves and debris as needed.

Drywell: Use a drywell to collect runoff from roof gutter downspouts. Drywells can be covered with sod, or left exposed for easy access and cleanout. Drywells and infiltration trenches work best in sandy or gravelly soils.



PERMITTING ABC'S

Protection of Maine's watersheds is ensured through the goodwill of lake residents and through laws and ordinances created and enforced by the State of Maine and local municipalities. The following laws and ordinances require permits for activities adjacent to wetlands and waterbodies.

Shoreland Zoning Law - Construction, clearing of vegetation and soil movement within 250 feet of lakes, ponds, and many wetlands, and within 75 feet of most streams, falls under the Shoreland Zoning Act, which is administered by the Town through the Code Enforcement Officer and the Planning Board.

Natural Resources Protection Act (NRPA) - Soil disturbance & other activities within 75 feet of the lakeshore or stream also fall under the NRPA, which is administered by the Maine DEP.

Contact the Maine DEP and Town Code Enforcement Officer if you have any plans to construct, expand or relocate a structure, clear vegetation, create a new path or driveway, stabilize a shoreline or otherwise disturb the soil on your property. Even if projects are planned with the intent of enhancing the environment, contact the DEP and the town to be sure.

HOW TO APPLY FOR A PERMIT BY RULE WITH THE MAINE DEP

To ensure that permits for small projects are processed swiftly, the DEP has established a streamlined permit process called **Permit by Rule**. These one-page forms (shown here) are simple to fill out and allow the DEP to quickly review the project.

- Fill out a notification form before starting any work. Forms are available from your town code enforcement officer, Maine DEP offices, or online at

http://www.state.me.us/dep/land/nrpa/pbrform.pdf.

- The permit will be reviewed by DEP within 14 days. If you do not hear from DEP in 14 days, you can assume your permit is approved and you can proceed with work on the project.
- Follow all standards required for the specific permitted activities to keep soil erosion to a minimum. It is important that you obtain a copy of the standards so you will be familiar with the law's requirements.

CONTACT INFORMATION

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Web: www.7lakesalliance.org

Kennebec County Soil & Water Conservation District
Dale Finseth, Executive Director
21 Enterprise Drive Augusta, ME 04
(207) 622-7847 x 3 or dale@kcswcd.org ~ Web: kcswcd.org

Maine Lakes Society ~ LakeSmart Program
Susan Gallo, Executive Director
137 Main Street, Belgrade Lakes, ME 04918
Phone: (207) 495-2301 ~ Web: http://mainelakessociety.org

Maine Department of Environmental Protection
17 State House Station, Augusta, Maine 04333
Toll Free in Maine (800) 452-1942 **or** (207) 287-7688
Web: http://www.maine.gov/dep/land/watershed/index.html

PUBLICATIONS & OTHER RESOURCES

A Guide to Forming Road Associations. Maine DEP. July 2014. DEPLW-1071. 21 pgs. http://www.maine.gov/dep/land/watershed/road_assoc_guide_2014%207-24-14.pdf

Conservation Practices for Homeowners. Portland Water District and Maine DEP. Conservation Fact Sheet Series. https://www.pwd.org/publications

Contractors Certified in Erosion Control Practices. Maine DEP. http://www.maine.gov/dep/land/training/ccec.html

Environmental Fact Sheets, Brochures, and Posters. Portland Water District. https://www.pwd.org/publications

Gravel Road Maintenance Manual: A Guide for Landowners on Camp and Other Gravel Roads. Kennebec County SWCD and Maine DEP. April 2016. http://www.maine.gov/dep/land/watershed/camp/road/gravel_road_manual.pdf

LakeSmart Tips. Maine Lakes Society. http://mainelakessociety.org/lakesmart-2/lakesmart-tips

Maine Shoreland Zoning—A Handbook for Shoreland Owners. Maine DEP. 2008. DEPLW0674-D08. 37 pgs. http://www.maine.gov/dep/land/slz/citizenguide.pdf

The Lake Book: A Handbook for Lake Protection. Maine Lakes Society. 61 pp. http://mainelakessociety.org/resources/the-lake-book

Town of Belgrade, Maine Website. https://www.townofbelgrade.com

Town of Rome, Maine Website. https://www.romemaine.com

APPENDICES

APPENDIX A: WATERSHED SURVEY FIELD DATA SHEET

Final Site #_____ Checked by _____ Date _____

2018 Great Pond Watershed Survey

REMINDER: Only write up if there is likely transport of sediment or phosphorus into the lake.

Sector & Site_____ Date_____ Surveyor Initials _____ Time_____

Location *(house #, road, utility pole #)* _____

Building Color _____ Landowner Name _____

Tax Map & Lot _____ Talked to Landowner? _____

Flow into Lake via (check ONE): ❒ Directly into Lake ❒ Stream ❒ Ditch ❒ Minimal Vegetation

Note: If flow does not make it into lake, do not fill out a form. It would not be considered a site.

GPS Coordinates in **UTM**

(no degrees or decimal points)

0						

Land Use/Activity (Circle ONE)	**Description of Problems** Circle ALL that apply	
State Road*	**Surface Erosion**	**Soil**
Town Road*	Slight	Bare
Private Road*	Moderate	Uncovered Pile
Driveway*	Severe	Delta in Stream/Lake
Residential	**Culvert**	Winter Sand
Commercial	Unstable Inlet / Outlet	**Roof Runoff Erosion**
Municipal / Public	Clogged	**Shoreline**
Beach Access	Crushed / Broken	Undercut
Boat Access*	Undersized	Lack of Shoreline Vegetation
Trail or Path	**Ditch**	Inadequate Shoreline Vegetation
Logging	Slight Erosion	Erosion
Agriculture	Moderate Erosion	Unstable Access
Construction Site	Severe Erosion	**Agriculture**
OTHER:	Bank Failure	Livestock Access to Waterbody
Potential Septic Issue	Undersized	Tilled Eroding Fields
Fertilizer Use in SLZ	**Road Shoulder Erosion**	Manure Washing off Site
Hazardous Materials	Slight	**OTHER:**
** Is it: paved, gravel or other/unknown?*	Moderate	Invasive Plants on Shoreline
	Severe	
	Roadside Plow/Grader Berm	

Slope: ❒ Flat ❒ Moderate ❒ Steep **Size of Area Exposed or Eroded** (length & width): _____

Site is linked to another: Cause of Site # _____ Result of Site # _____

Recommendations		
Culvert	**Roads / Driveways**	**Paths & Trails**
Armor Inlet/Outlet	Remove Grader/Plow Berms	Define Foot Path
Remove Clog	Build Up	Stabilize Foot Path
Replace	Add New Surface Material	Infiltration Steps
Enlarge	• Gravel	Install Runoff Diverter (waterbar)
Lengthen	• Blue Stone Gravel	Erosion Control Mulch
Install Culvert	• Pavement	**Roof Runoff**
Install Plunge Pool (I/O)	Reshape (Crown)	Infiltration Trench @ roof dripline
Ditch	Vegetate Shoulder	Drywell @ gutter downspout
Vegetate	Install Catch Basin	Rain Barrel
Armor with Stone	Install Detention Basin	**Other**
Reshape Ditch	Install Runoff Diverters	Install Runoff Diverter (waterbar)
Install Turnouts	• Broad-based Dip	Mulch / Erosion Control Mix
Install Ditch	• Open Top Culvert	Rain Garden
Install Check Dams	• Rubber Razor	Infiltration Trench
Remove debris/sediment	• Waterbar	Water Retention Swales
Install Sediment Pools	**Construction Site**	Rip Rap
Other Suggestions:	Mulch	**Vegetation**
Remove invasive plants	Silt Fence / EC Berms	Establish Buffer
	Seed / Hay	Add to/Extend Buffer
	Check Dams	No Raking
		Reseed bare soil & thinning grass

Impact: Circle one choice in each column, add the three selected numbers together, and then circle the site's corresponding impact rating (high, medium, or low).

Type of Erosion	Area	Buffers and Other Filters
Gully - **3**	Large - **3**	No filter, all channelized direct flow into lake or stream - **3**
Rill - **2**	Medium - **2**	Some buffer or filtering, but visible signs of concentrated flow and/or sediment movement through buffer and into lake - **2**
Sheet - **1**	Small - **1**	Significant buffer or filtering* - **1**

IMPACT

High: 8-9 pts

Med: 6-7 pts

Low: 3-5 pts

** Confirm there is likely sediment/runoff delivery. If not, do not write up as a site.*

Cost to Fix

High:	Greater than $2,500
Medium:	$500-$2,500
Low:	Less than $500

Technical Level to Install

High:	Site requires engineered design
Medium:	Technical person should visit site & make recommendations
Low:	Property owner can accomplish with reference materials

Certified LakeSmart Property? ❒ Yes ❒ No **Potential YCC Project?** ❒ Yes ❒ No ❒ Maybe

APPENDIX B: SECTOR SPECIFIC WATERSHED MAPS

Legend

Great Pond Watershed Survey - Identified NPS Sites

Type of Land Use Problem & Impact Level

2018 Great Pond Watershed Survey - Sector 1 Sites

Great Pond Watershed — Roads — Town Boundary — Parcels

Perennial Streams — Ephemeral / Intermittent Streams

Site icons represent the type of NPS problem and level of impact identified at each site. Red = High Impact, Yellow = Medium Impact, and Green = Low Impact. Please refer to the legend at the beginning of this map packet for a full list of icons.

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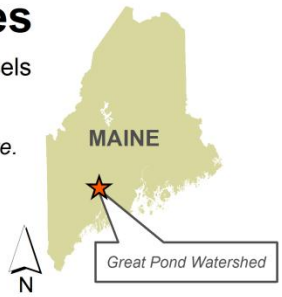
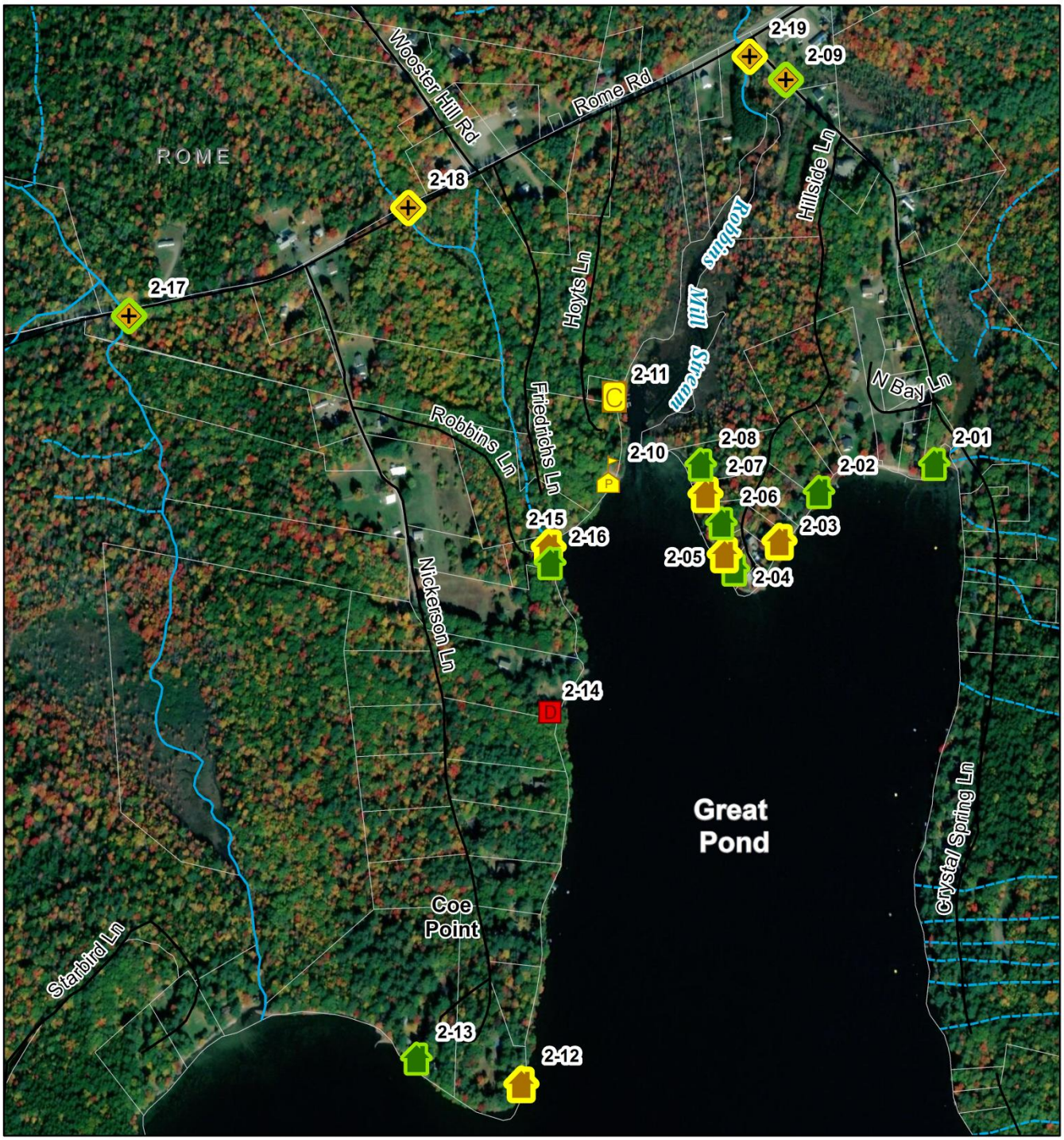
0 250 500 1,000 Feet

Source: Ecological Instincts, 7LA, MEGIS, NHD / Projection: NAD 1983 UTM Zone 19N / Map Created by: Whitney A. Baker, WB GIS Services - Nov. 2018
Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community





2018 Great Pond Watershed Survey - Sector 2 Sites

Great Pond Watershed — Roads — Town Boundary — Parcels

Perennial Streams — Ephemeral / Intermittent Streams

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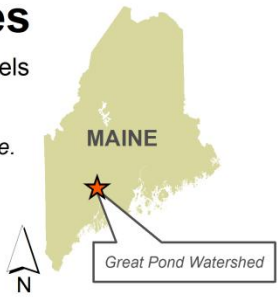
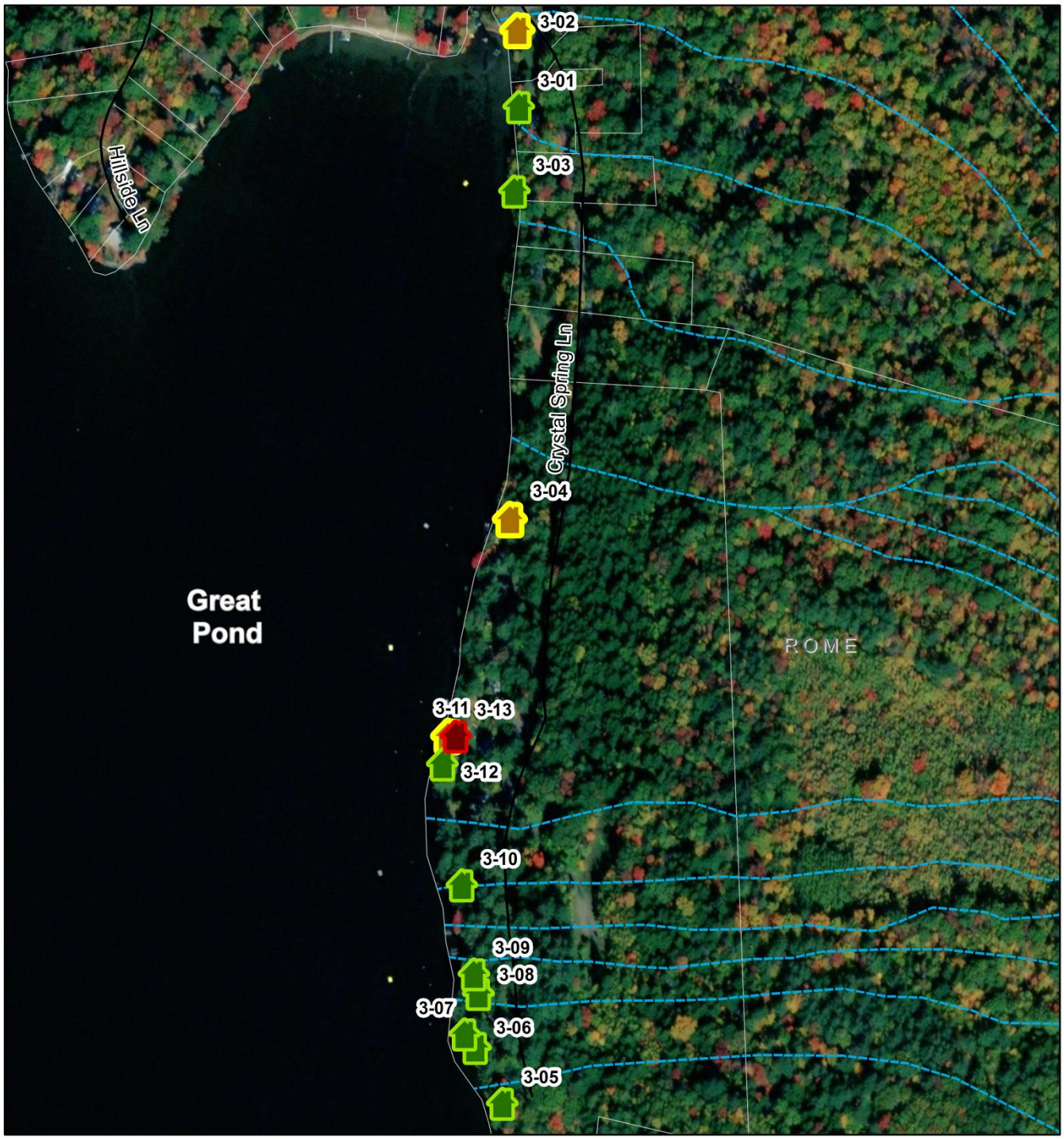
0 100 200 400 Feet

Source: Ecological Instincts, 7LA, MEGIS, NHD / Projection: NAD 1983 UTM Zone 19N / Map Created by: Whitney A. Baker, WB GIS Services - Nov. 2018
Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community





2018 Great Pond Watershed Survey - Sector 3 Sites

Great Pond Watershed — Roads — Town Boundary — Parcels

Perennial Streams — Ephemeral / Intermittent Streams

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0 50 100 200 Feet

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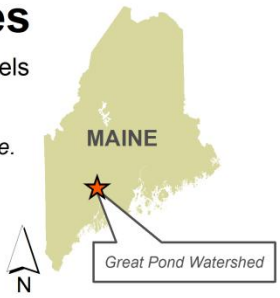
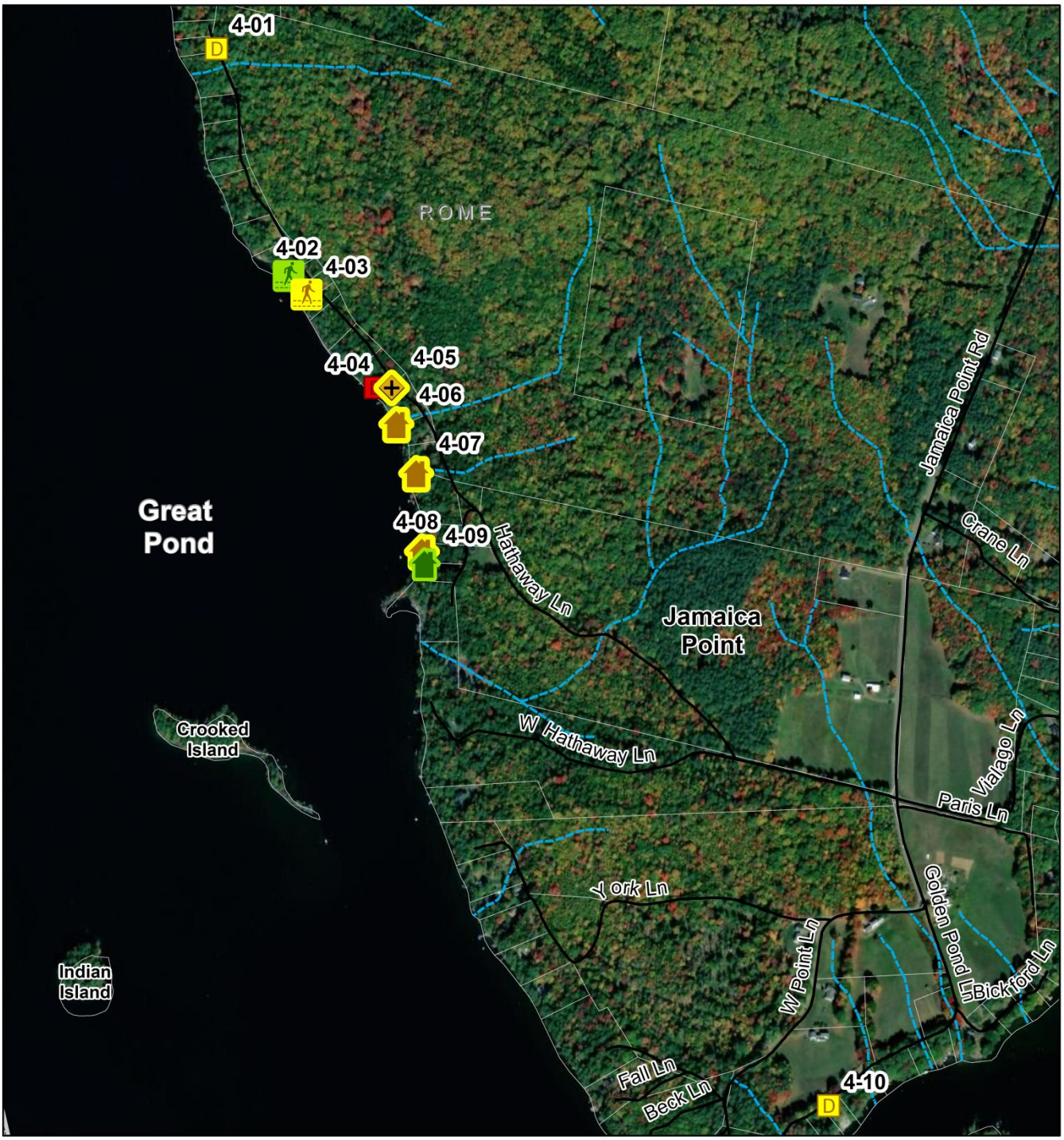
Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community





2018 Great Pond Watershed Survey - Sector 4 Sites

Great Pond Watershed — Roads — Town Boundary — Parcels

Perennial Streams — Ephemeral / Intermittent Streams

Site icons represent the type of NPS problem and level of impact identified at each site. Red = High Impact, Yellow = Medium Impact, and Green = Low Impact. Please refer to the legend at the beginning of this map packet for a full list of icons.

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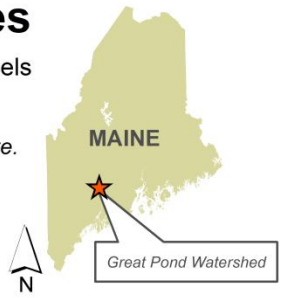
0 150 300 600 Feet

Source: Ecological Instincts, 7LA, MEGIS, NHD / Projection: NAD 1983 UTM Zone 19N / Map Created by: Whitney A. Baker, WB GIS Services - Nov. 2018
Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community



2018 Great Pond Watershed Survey - Sector 5

Great Pond Watershed — Roads — Town Boundary — Parcels

Perennial Streams — Ephemeral / Intermittent Streams

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Red = High Impact, Yellow = Medium Impact, and Green = Low Impact.
Please refer to the legend at the beginning of this map packet
for a full list of icons.**

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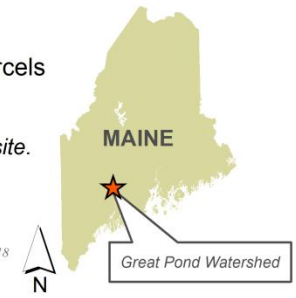
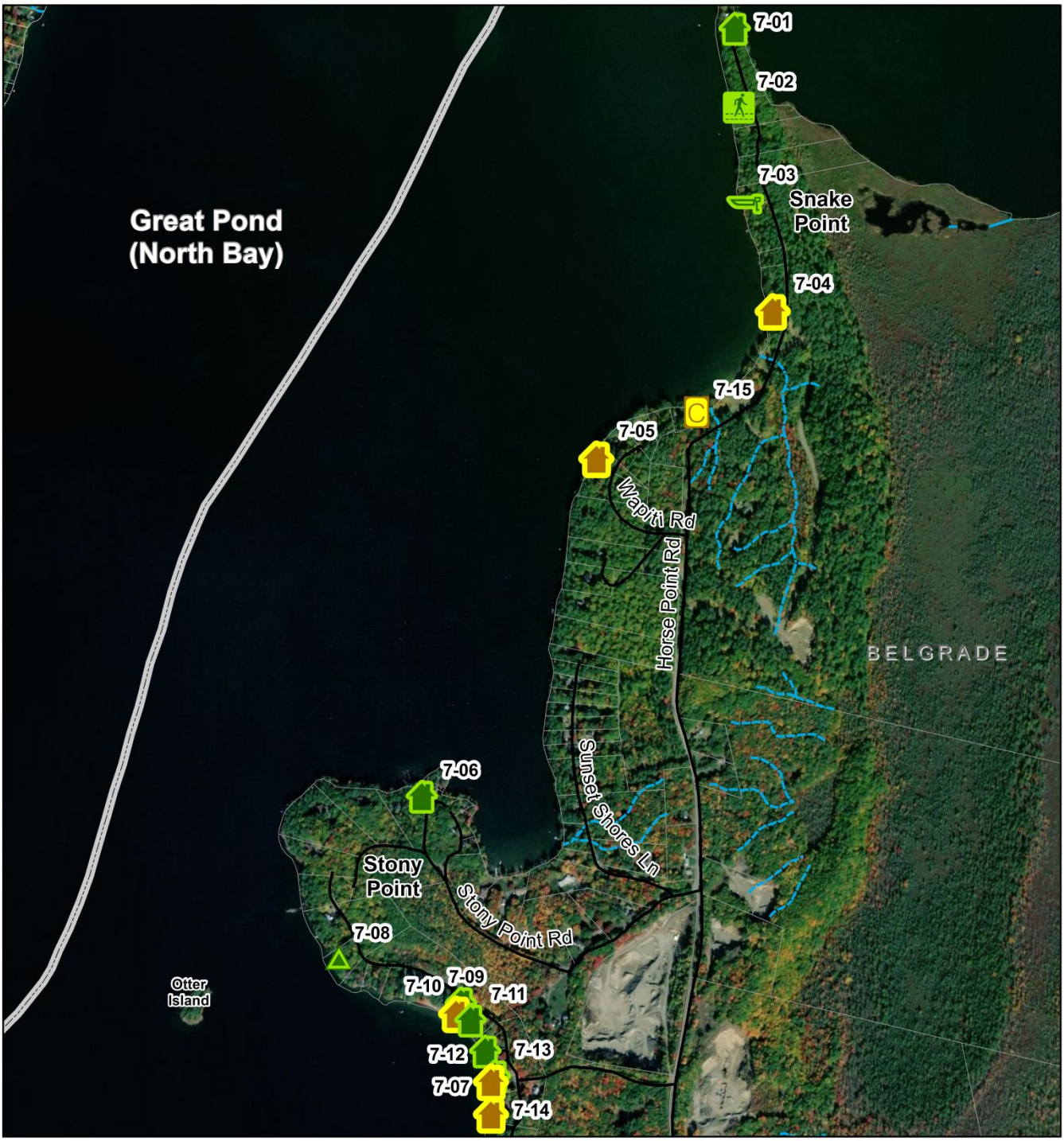
0 20 40 80 Feet

Source: Ecological Instincts, 7LA, MEGIS, NHD / Projection: NAD 1983 UTM Zone 19N / Map Created by: Whitney A. Baker, WB GIS Services - Nov. 2018
Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community





2018 Great Pond Watershed Survey - Sector 7 Sites

Great Pond Watershed — Roads — Town Boundary — Parcels

Perennial Streams — Ephemeral / Intermittent Streams

Site icons represent the type of NPS problem and level of impact identified at each site. Red = High Impact, Yellow = Medium Impact, and Green = Low Impact. Please refer to the legend at the beginning of this map packet for a full list of icons.

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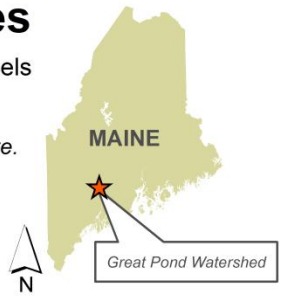
0 150 300 600 Feet

Source: Ecological Instincts, 7LA, MEGIS, NHD / Projection: NAD 1983 UTM Zone 19N / Map Created by: Whitney A. Baker, WB GIS Services - Nov. 2018
Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community



2018 Great Pond Watershed Survey - Sector 8 Sites

Great Pond Watershed — Roads — Town Boundary — Parcels

Perennial Streams — Ephemeral / Intermittent Streams

Site icons represent the type of NPS problem and level of impact identified at each site. Red = High Impact, Yellow = Medium Impact, and Green = Low Impact. Please refer to the legend at the beginning of this map packet for a full list of icons.

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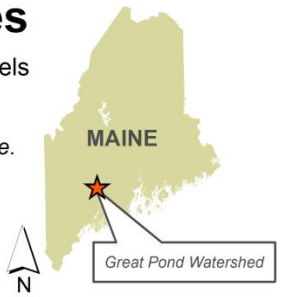
0 125 250 500 Feet

Source: Ecological Instincts, 7LA, MEGIS, NHD / Projection: NAD 1983 UTM Zone 19N / Map Created by: Whitney A. Baker, WB GIS Services - Nov. 2018
Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community



2018 Great Pond Watershed Survey - Sector 9 Sites

Great Pond Watershed — Roads — Town Boundary — Parcels

Perennial Streams — Ephemeral / Intermittent Streams

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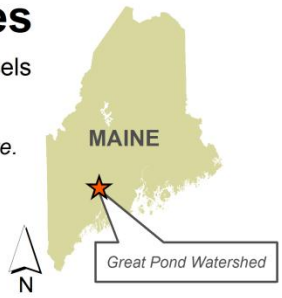
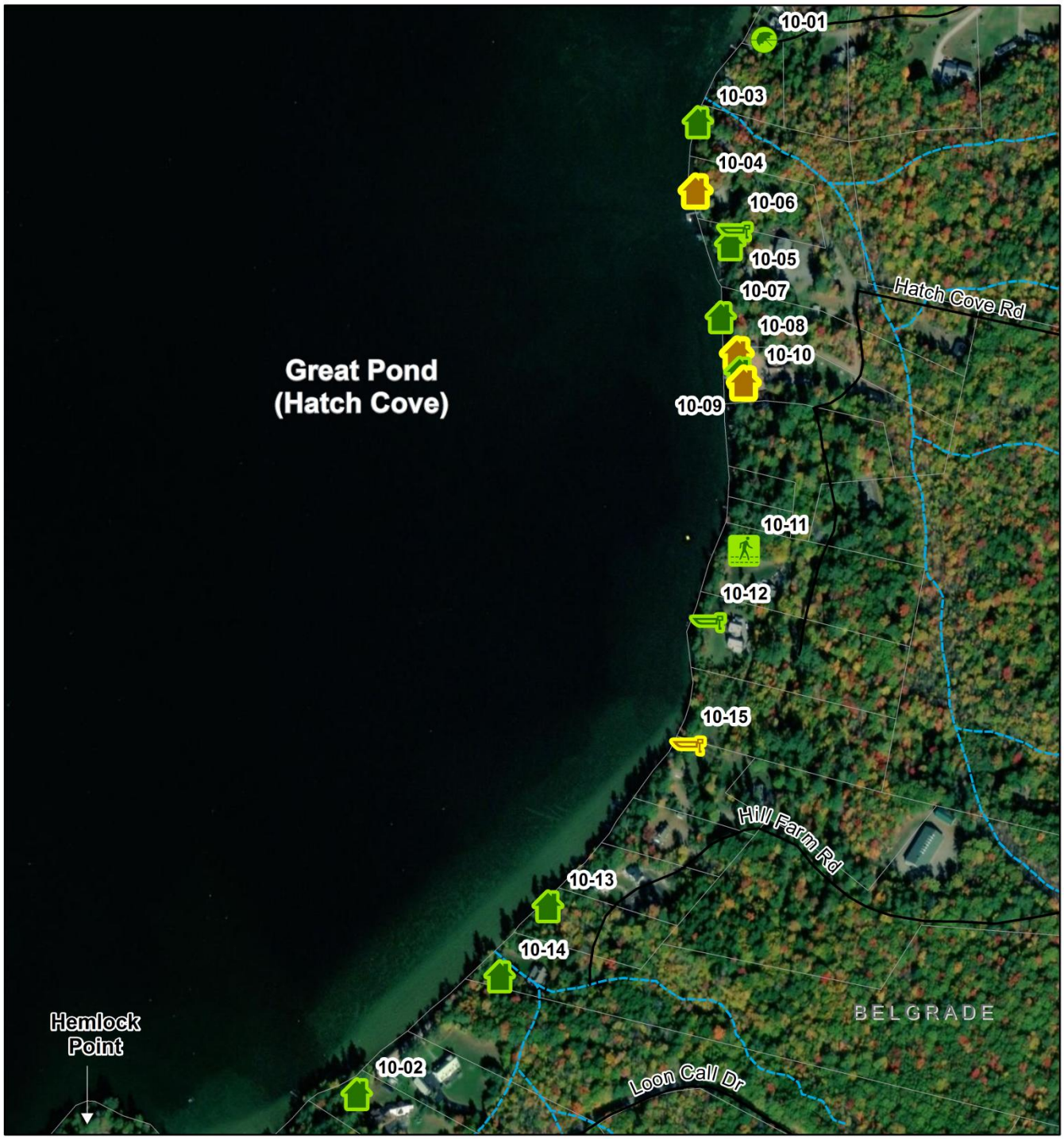
0 50 100 200 Feet

Source: Ecological Instincts, 7LA, MEGIS, NHD / Projection: NAD 1983 UTM Zone 19N / Map Created by: Whitney A. Baker, WB GIS Services - Nov. 2018
Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community





2018 Great Pond Watershed Survey - Sector 10 (North)

Great Pond Watershed — Roads — Town Boundary — Parcels

Perennial Streams — Ephemeral / Intermittent Streams

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Please refer to the legend at the beginning of this map packet
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0 75 150 300 Feet

Source: Ecological Instincts, 7LA, MEGIS, NHD / Projection: NAD 1983 UTM Zone 19N / Map Created by: Whitney A. Baker, WB GIS Services - Nov. 2018
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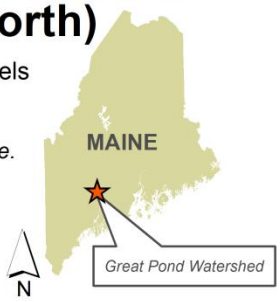

2018 Great Pond Watershed Survey - Sector 10 (South)

Great Pond Watershed — Roads — Town Boundary — Parcels

Perennial Streams — Ephemeral / Intermittent Streams

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0 50 100 200 Feet

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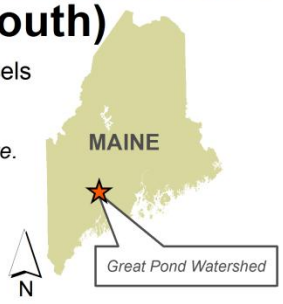

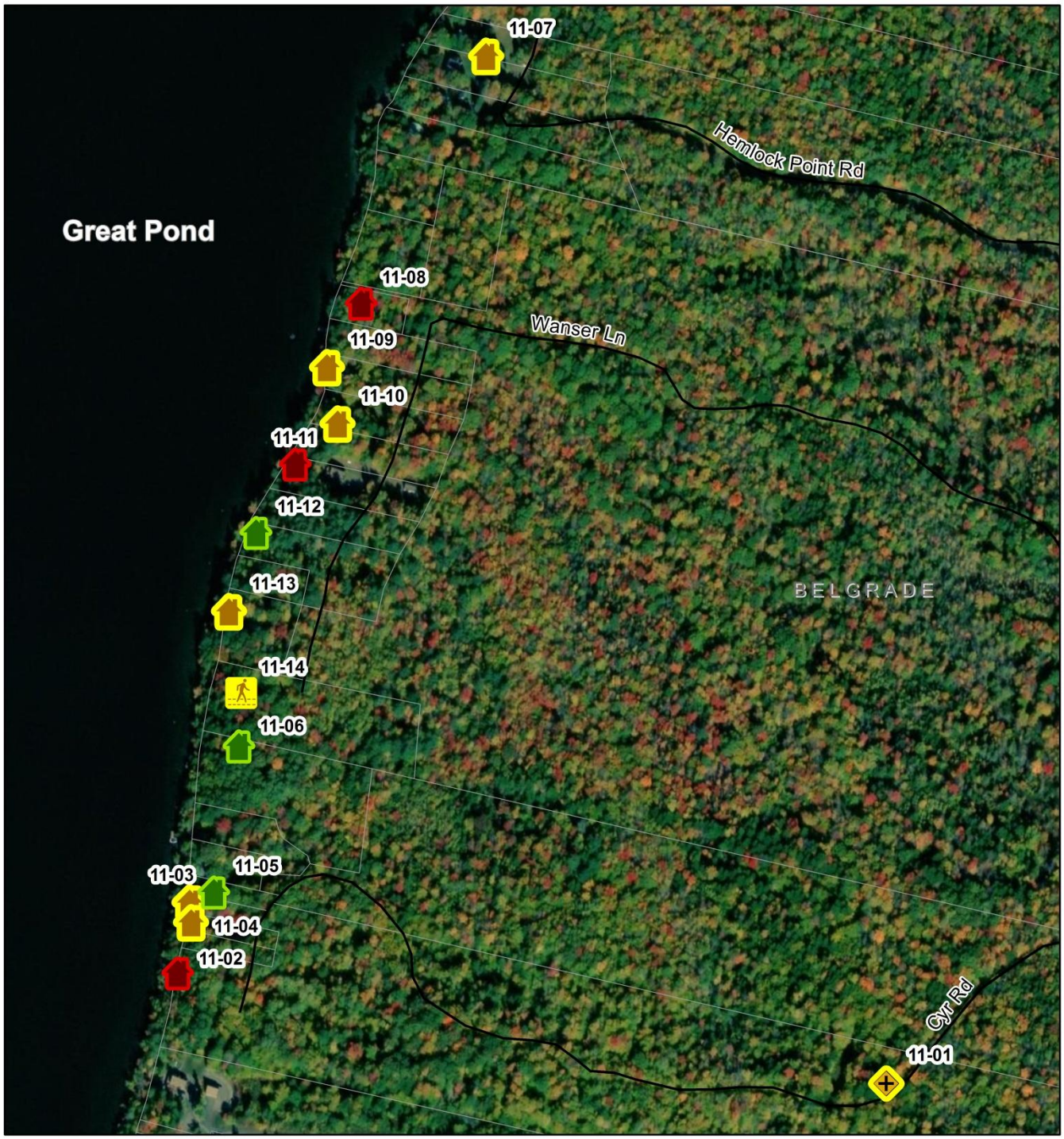

2018 Great Pond Watershed Survey - Sector 11 Sites

Great Pond Watershed — Roads — Town Boundary — Parcels

Perennial Streams — Ephemeral / Intermittent Streams

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0 75 150 300 Feet

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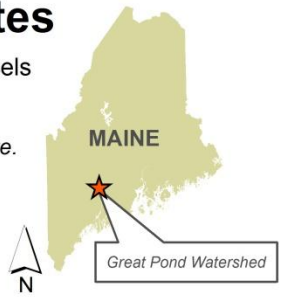
Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community



2018 Great Pond Watershed Survey - Sector 12 (North)

Great Pond Watershed — Roads — Town Boundary — Parcels

Perennial Streams — Ephemeral / Intermittent Streams

Site icons represent the type of NPS problem and level of impact identified at each site. Red = High Impact, Yellow = Medium Impact, and Green = Low Impact. Please refer to the legend at the beginning of this map packet for a full list of icons.

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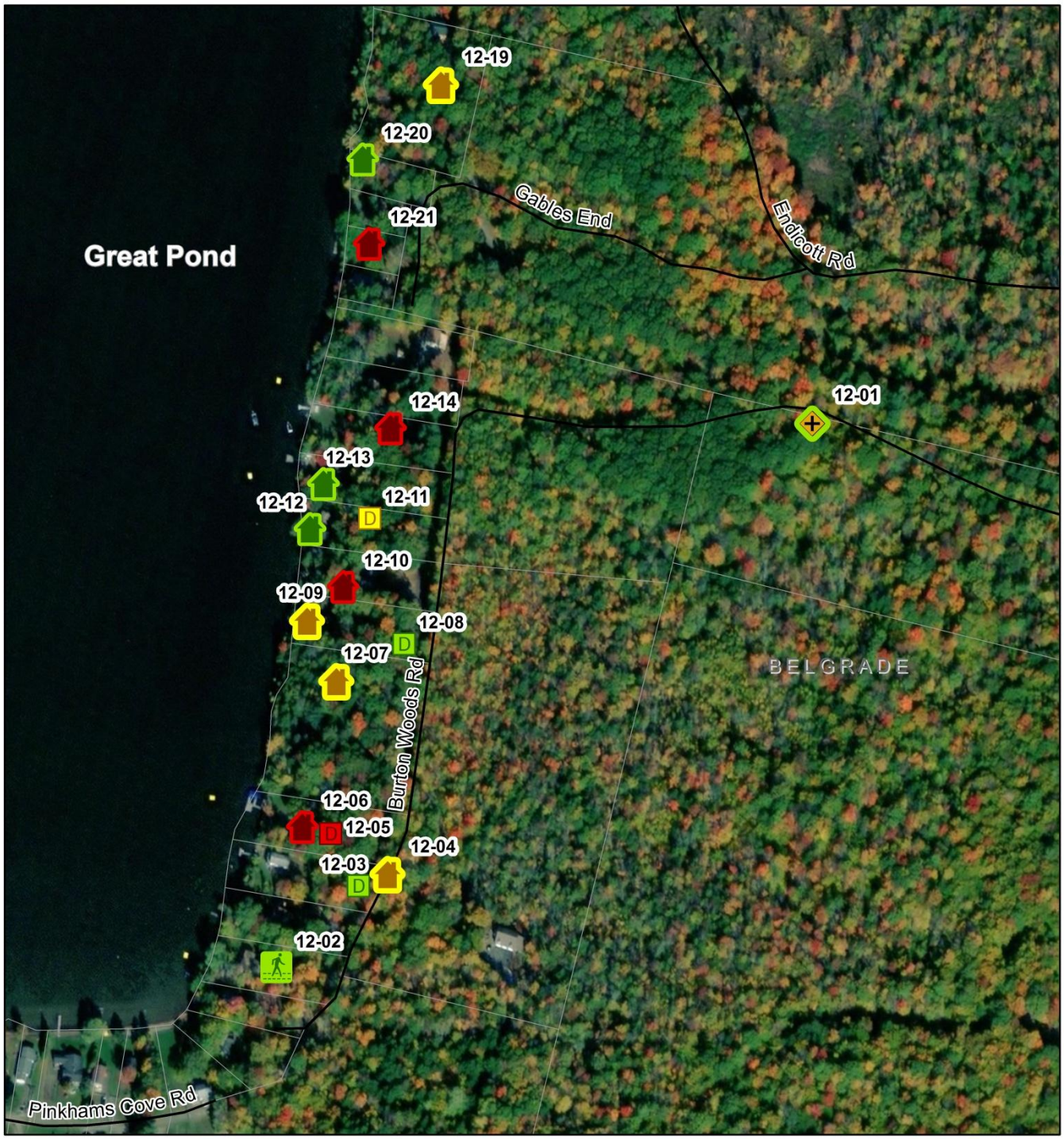
0 50 100 200 Feet

Source: Ecological Instincts, 7LA, MEGIS, NHD / Projection: NAD 1983 UTM Zone 19N / Map Created by: Whitney A. Baker, WB GIS Services - Nov. 2018
Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community



2018 Great Pond Watershed Survey - Sector 12 (South)

Great Pond Watershed — Roads — Town Boundary — Parcels

Perennial Streams — Ephemeral / Intermittent Streams

Site icons represent the type of NPS problem and level of impact identified at each site. Red = High Impact, Yellow = Medium Impact, and Green = Low Impact. Please refer to the legend at the beginning of this map packet for a full list of icons.

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0 50 100 200 Feet

Source: Ecological Instincts, 7LA, MEGIS, NHD / Projection: NAD 1983 UTM Zone 19N / Map Created by: Whitney A. Baker, WB GIS Services - Nov. 2018
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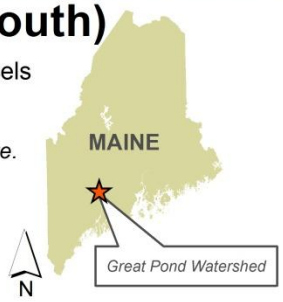

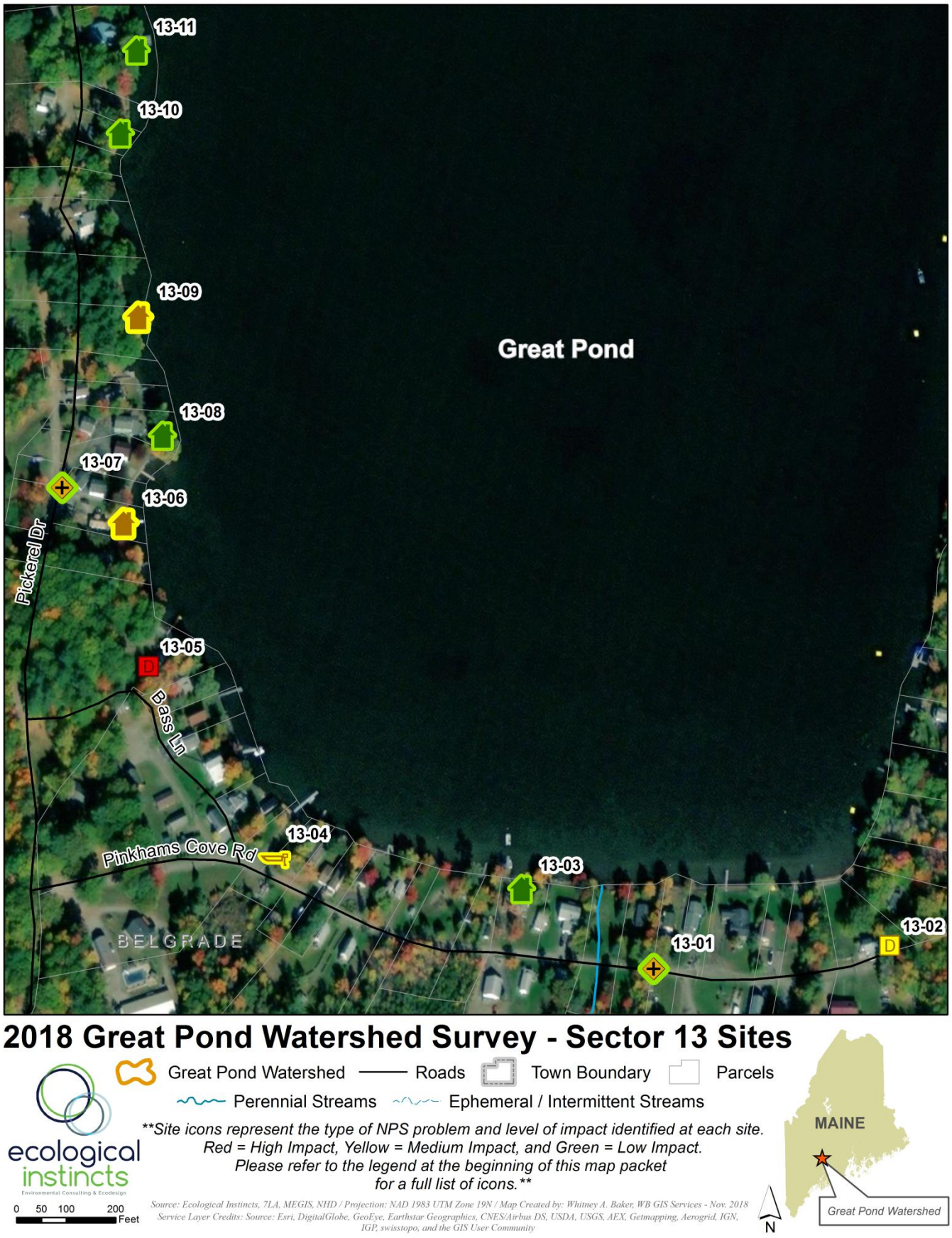

2018 Great Pond Watershed Survey - Sector 13 Sites

Great Pond Watershed — Roads — Town Boundary — Parcels

Perennial Streams — Ephemeral / Intermittent Streams

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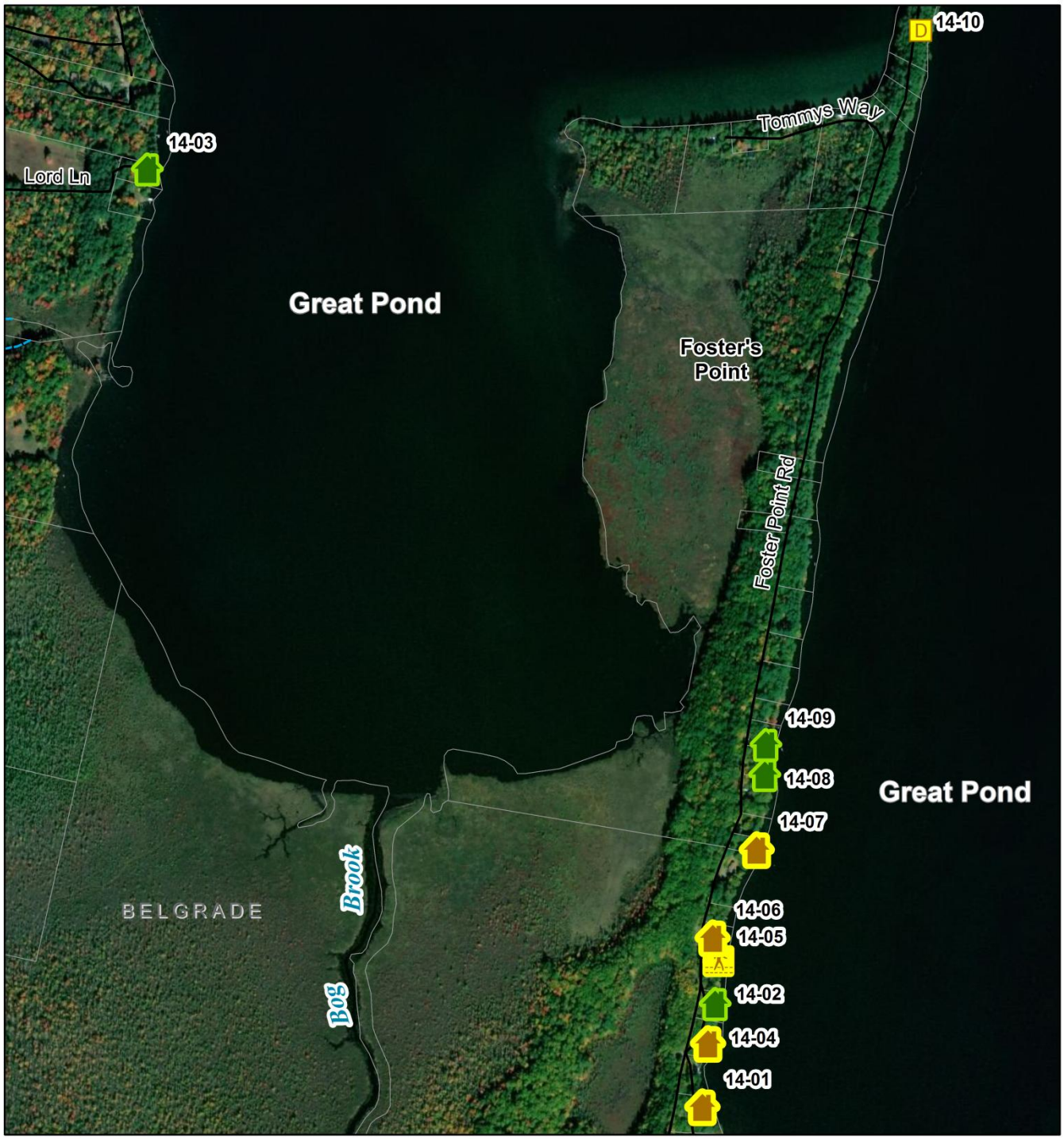
0 50 100 200 Feet

Source: Ecological Instincts, 7LA, MEGIS, NHD / Projection: NAD 1983 UTM Zone 19N / Map Created by: Whitney A. Baker, WB GIS Services - Nov. 2018
Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community



2018 Great Pond Watershed Survey - Sector 14 Sites

Great Pond Watershed — Roads — Town Boundary — Parcels

Perennial Streams — Ephemeral / Intermittent Streams

Site icons represent the type of NPS problem and level of impact identified at each site. Red = High Impact, Yellow = Medium Impact, and Green = Low Impact. Please refer to the legend at the beginning of this map packet for a full list of icons.

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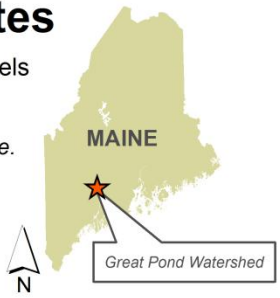
0 150 300 600 Feet

Source: Ecological Instincts, 7LA, MEGIS, NHD / Projection: NAD 1983 UTM Zone 19N / Map Created by: Whitney A. Baker, WB GIS Services - Nov. 2018
Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community



2018 Great Pond Watershed Survey - Sector 16 Sites

Great Pond Watershed — Roads — Town Boundary — Parcels

Perennial Streams — Ephemeral / Intermittent Streams

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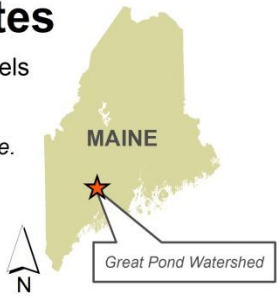

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2018 Great Pond Watershed Survey - Sector 17 Sites

Great Pond Watershed — Roads — Town Boundary — Parcels

Perennial Streams — Ephemeral / Intermittent Streams

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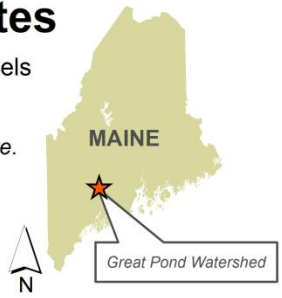

2018 Great Pond Watershed Survey - Sector 18 (East)

Great Pond Watershed — Roads — Town Boundary — Parcels

Perennial Streams — Ephemeral / Intermittent Streams

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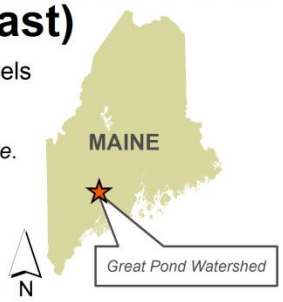

2018 Great Pond Watershed Survey - Sector 18 (West)

Great Pond Watershed — Roads — Town Boundary — Parcels

Perennial Streams — Ephemeral / Intermittent Streams

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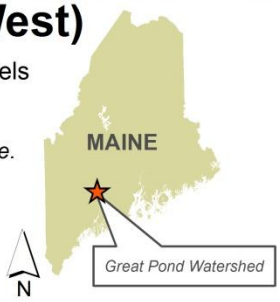

2018 Great Pond Watershed Survey - Sector 19 Sites

Great Pond Watershed — Roads — Town Boundary — Parcels

Perennial Streams — Ephemeral / Intermittent Streams

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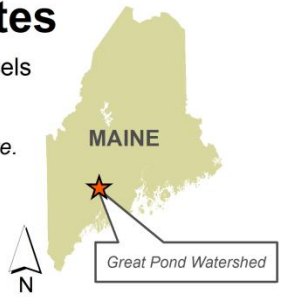

2018 Great Pond Watershed Survey - Sector 20 Sites

Great Pond Watershed — Roads — Town Boundary — Parcels

Perennial Streams — Ephemeral / Intermittent Streams

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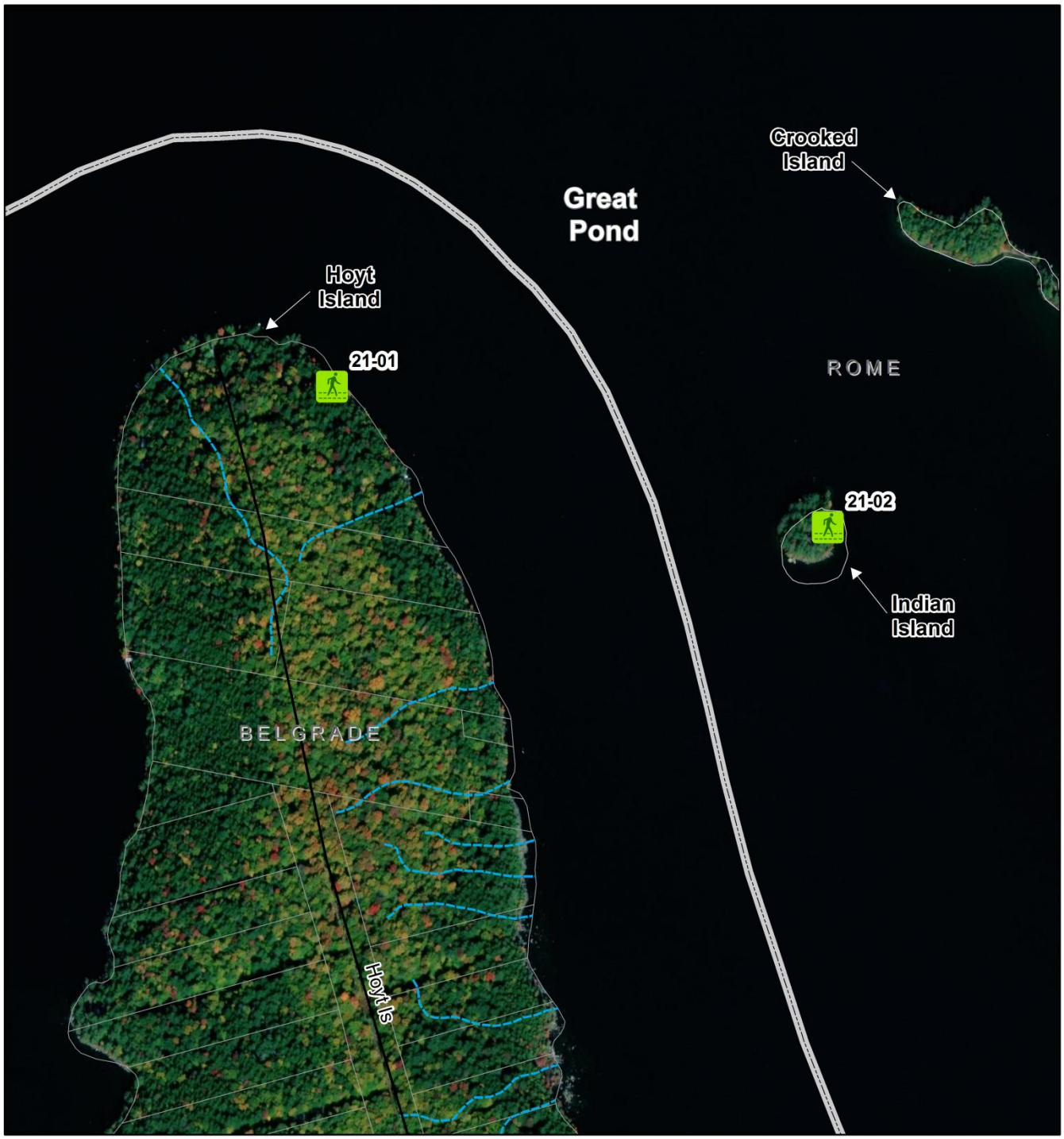

2018 Great Pond Watershed Survey - Sector 21 North (Islands)

Great Pond Watershed — Roads — Town Boundary — Parcels

Perennial Streams — Ephemeral / Intermittent Streams

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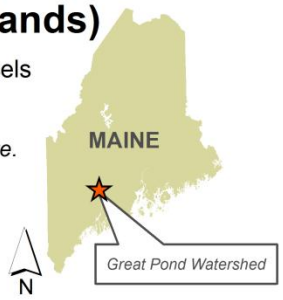

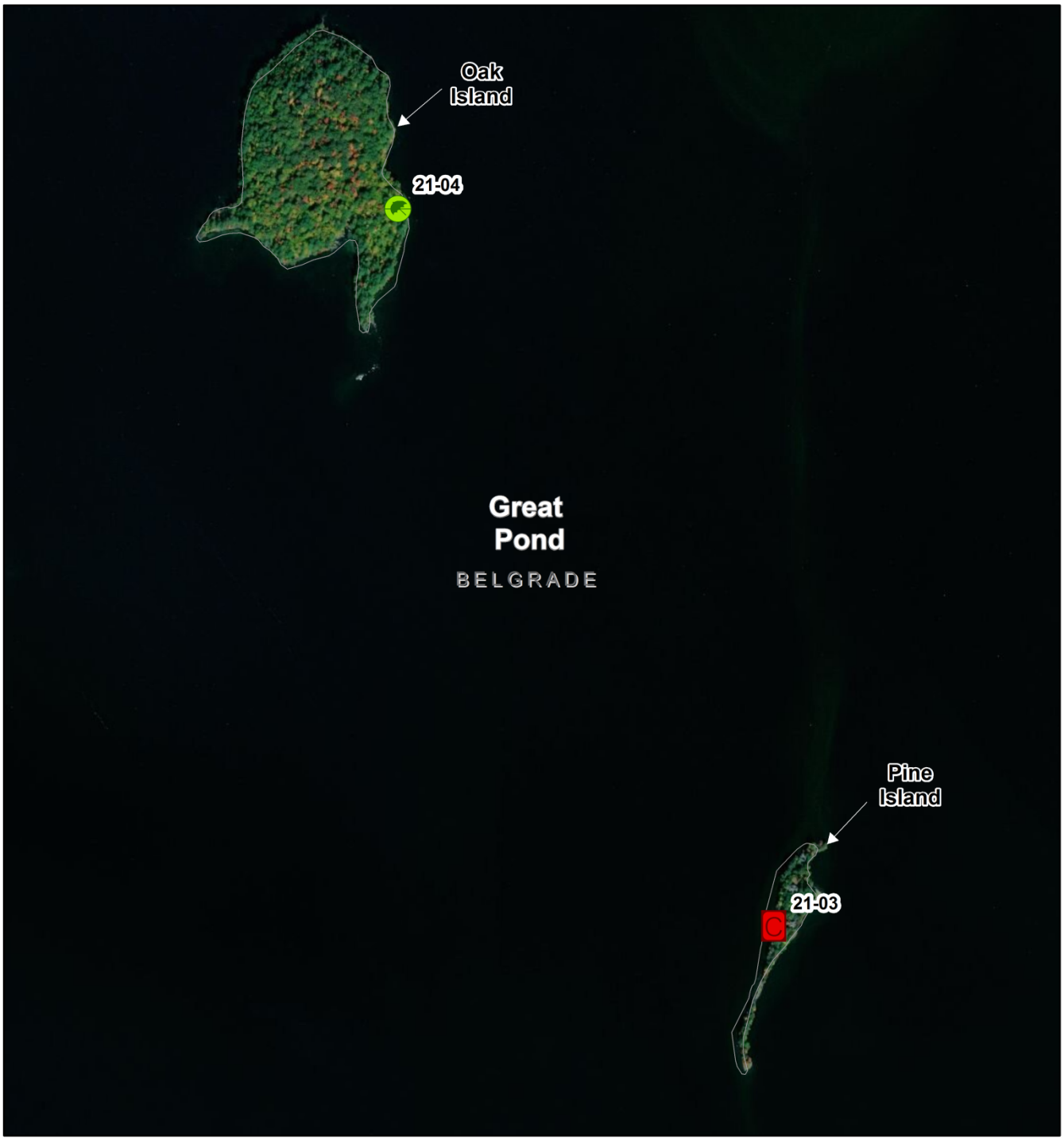

2018 Great Pond Watershed Survey - Sector 21 South (Islands)

Great Pond Watershed — Roads — Town Boundary — Parcels

Perennial Streams — Ephemeral / Intermittent Streams

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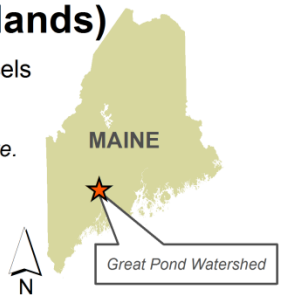

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APPENDIX C: LIST OF GREAT POND NPS SITES

Site	Location	Flow into lake via	Land Use	Problems	Slope	Size of Exposed/ Eroded Area	Recommendations	Impact	Cost	Technical Level
1-01	Gravel Road	not determined	Commercial; Gravel Pit or Logging (Log Yard); Construction	Surface Erosion - Moderate; Soil - Bare	Moderate	100x50+	Seed/hay	Low	Low	Low
1-02	Wooster Hill Road (CMP 516)	Ditch, Minimal Vegetation	Driveway; New construction	Culvert - Unstable inlet/outlet, undersized (too high?); Soil - bare	Flat		Culvert - Enlarge, and/or lower height; Roads/Driveways - Reshape (crown) vegetate shoulder; Construction site - Silt Fence/EC Berms	Low	Low	Low
1-03	Camp road	Stream	Private Road	Surface Erosion - moderate; road Shoulder Erosion - Slight; Roadside Plow/Grader Berm	Moderate	Entire road	Ditch - install turnouts; Roads/Driveways - Remove Grader/plow berms; add new surface material: gravel; Reshape (Crown); Install Runoff Diverters: broad-based dip	Med	Med	Med
1-04	Homestead Road, intersection with private drive, realtor's sign	Stream	Private Road	Surface Erosion - Severe	Steep	50x15	Ditch- Install ditch; Roads/Driveways - Add new surface material: gravel; reshape (crown); Other - Install runoff diverter (waterbar)	Med	Med	Med
2-01	71 Crystal Spring Lane	Minimal vegetation	Residential	Surface Erosion - slight; Soil - bare; Shoreline - Undercut, Inadequate shoreline vegetation, erosion	Moderate	50x10	Paths & Trails - Stabilize foot path; Roof Runoff - Infiltration trench at roof dripline; Other - Mulch/ECM, Rip rap; Vegetation - Add to/extend buffer, no raking, reseed bare soil & thinning grass	Low	Med	Med
2-02	56 Hillside Lane	Directly into lake	Residential	Surface Erosion - slight; Soil - Bare; Shoreline - Inadequate shoreline vegetation, erosion	Moderate	5x6	Other - Mulch/ECM; Vegetation - Add to/extend buffer, reseed bare soil & thinning grass	Low	Low	Low
2-03	74 Hillside Lane	Directly into lake	Residential	Surface erosion- moderate; Soil - bare; Shoreline - Inadequate shoreline vegetation, erosion	Moderate	50x15	Paths & Trails - Define foot path, infiltration steps; Mulch/ECM; Vegetation - Add to/extend buffer, no raking, reseed bare soil & thinning grass (nothing grew)	Med	Med	Med

APPENDIX C: LIST OF GREAT POND NPS SITES

Site	Location	Flow into lake via	Land Use	Problems	Slope	Size of Exposed/ Eroded Area	Recommendations	Impact	Cost	Technical Level
2-04	75 Hillside Lane	Minimal vegetation	Residential	Surface erosion - Slight; Soil - bare; Roof runoff erosion; Shoreline - inadequate shoreline vegetation, erosion	Moderate	12x3	Roof runoff - infiltration trench at roof dripline; Other - Mulch/ECM; Vegetation - add to/extend buffer, no raking	Low	Low	Low
2-05	71 Hillside Lane	Directly into lake	Residential	Surface erosion - moderate; Soil - bare; Shoreline - undercut, lack of shoreline vegetation, erosion	Moderate	30x30	Other - Mulch/ECM, rip rap; Vegetation - establish buffer, no raking, reseed bare soil & thinning grass	Med	Low	Low
2-06	67 Hillside Lane	Minimal vegetation	Residential	Surface erosion - slight; Soil - Uncovered pile; Roof runoff erosion; Shoreline - erosion (back of camp)	Flat	20x8	Roof runoff - infiltration trench at roof dripline (dripline edge); Other - Mulch/ECM (cover dirt pile)	Low	Low	Low
2-07	65 Hillside Lane	Minimal vegetation	Residential	Surface Erosion - slight; Soil - bare; Shoreline - Undercut, Inadequate shoreline vegetation, erosion	Moderate	10x10; shoreline 2x40	Paths & Trails - Define foot path, infiltration steps, ECM; Other - Mulch/ECM, Rip Rap; Vegetation - Establish Buffer	Med	Low	Low
2-08	57 Hillside Lane	Minimal vegetation	Residential	Surface erosion - slight; Roof Runoff Erosion	Flat	2x100	Roof Runoff - Infiltration trench at roof dripline; Other - Mulch/ECM, Rain garden; Vegetation - No raking?	Low	Med	Med
2-09	200 Feet from Rome Rd on Crystal Spring Lane	Stream	Town Road	Culvert - Unstable Inlet/Outlet	Steep	10x10	Culvert - Armor inlet/outlet	Low	Med	Med
2-10	Rome Public Beach	Directly into lake	Municipal/ Public; Beach Access	Surface erosion - slight; Soil - Bare; Shoreline - erosion; Other - Invasive plants on shoreline (multiflora rose)	Moderate	5x10, 20x30	Other - Mulch/ECM; Vegetation - Add to/extend buffer, reseed bare soil & thinning grass (too dry)	Med	Med	Low

APPENDIX C: LIST OF GREAT POND NPS SITES

Site	Location	Flow into lake via	Land Use	Problems	Slope	Size of Exposed/ Eroded Area	Recommendations	Impact	Cost	Technical Level
2-11	Hoyt Island Camps Public Docks	Minimal vegetation	Commercial; Boat Access (not a launch, docks only)	Surface erosion - slight; Soil - Bare	Moderate	30x20	Roads/Driveways - Add new surface material (finish crushed rock project??), rubber razor (already exists); Other - Maintain/clean out rubber razor, Mulch/ECM	Med	Low	Low
2-12	124 Nickerson Lane	Directly into lake	Residential	Surface erosion - moderate; Soil - bare; Shoreline - inadequate shoreline vegetation, erosion	Moderate	10x30 inter-mittent	Roof runoff - roof dripline, gutter downspout; Other - Rip rap; Vegetation - Add to/extend buffer (will it grow?)	Med	Low	Low
2-13	Nickerson Lane	Directly into lake	Residential	Surface Erosion - slight; Soil - bare; Shoreline - Inadequate shoreline vegetation	Moderate	10x10	Paths & Trails - ECM; Roof runoff - Infiltration at roof dripline; Other - Mulch/ECM (cover bare soil, paths); Vegetation - Add to/extend buffer	Low	Low	Low
2-14	64 Nickerson Lane	Minimal vegetation	Driveway (gravel)	Ditch - Moderate erosion; Road Shoulder Erosion - Slight; Soil - Bare	Moderate	300	Ditch - Reshape ditch (too V, could be U), install check dams, install sediment pools (at the end of the ditch towards the water)	High	Med	High
2-15	40 Robbins Lane	Directly into lake	Residential	Shoreline - Undercut	Moderate	2x6	Other - Rip rap	Med	Low	Low
2-16	42 Robbins Lane	Directly into lake	Residential	Shoreline - Inadequate shoreline vegetation, erosion	Moderate	8x2	Other - Rip rap; Vegetation - Add to/extend buffer (access to water?)	Low	Low	Low
2-17	Rome Road #13 Pole	Minimal vegetation	State Road	Surface erosion - Slight; Ditch - Slight erosion; Soil - Bare, Delta in Stream, winter sand; Shoreline - erosion (stream); Other - Invasive plants (near road, stream; knot weed)	Moderate	25x2	Ditch - Armor with stone, install check dams; Other Suggestions - Remove invasive plants	Low	Med	Med

APPENDIX C: LIST OF GREAT POND NPS SITES

Site	Location	Flow into lake via	Land Use	Problems	Slope	Size of Exposed/ Eroded Area	Recommendations	Impact	Cost	Technical Level
2-18	Perennial Stream between Nickerson and Frederick's Lane	Stream	State Road	Culvert - Undersized; Road Shoulder Erosion - Moderate; Soil - Winter sand	Steep	35x15; both sides of road	Culvert - Enlarge, lengthen; Ditch - Vegetate, armor with stone; Roads/Driveways - Vegetate Shoulder	Med	High	High
2-19	Rte 225, Rome Road, Corner of Crystal Springs & Robbins Mill Stream	Stream	State Road	Surface Erosion - Moderate; Soil - bare (sand), winter sand	Flat	20x40	Roads/Driveways - Add new surface material: gravel, blue stone gravel, Install Detention wall, Install runoff diverters	Med	High ?	High
3-01	83 Crystal Spring Lane	Directly into lake	Residential	Surface erosion - Slight; Soil - Bare; Shoreline - Lack of Shoreline vegetation, erosion, unstable access	Moderate	10x5	Other - Mulch/ECM, rip rap; Vegetation - Add to/extend buffer (access), reseed bare soil & thinning grass	Low	Low	Low
3-02	76 Crystal Spring Lane	Directly into lake	Residential: beach access, boat access	Surface erosion - moderate; Soil - bare; Shoreline - Lack of shoreline vegetation, erosion	Moderate	60x15	Roads/Driveways - Add new surface material: gravel, install runoff diverters: open to culvert; Vegetation - Extend buffer	Med	Med	Med
3-03	93 Crystal Spring Lane	Directly into lake	Residential	Surface erosion - moderate; Soil - bare; Shoreline - Lack of shoreline vegetation, erosion, erosion, unstable access (behind dock)	Steep	12x10	Other - Mulch/ECM, rip rap; Vegetation - Add to/extend buffer	Low	Low	Low
3-04	125 Crystal Spring Lane	Directly into lake	Residential	Surface erosion - Moderate; Soil - Bare; Shoreline - Undercut, inadequate shoreline vegetation (will anything grow? Slight berm), erosion	Steep	20x3 east side, shoreline 8x6, west side 15x15	Paths & Trails - ECM; Roof Runoff - Infiltration trench at roof dripline; Other - Mulch/ECM, rip rap; Vegetation - add to/extend buffer?	Med	Low	Low: Med
3-05	175 Crystal Spring Lane	Directly into lake	Residential	Surface Erosion - Moderate; Shoreline - Inadequate Shoreline vegetation, erosion	Steep	10x4	Other - Mulch/ECM, Rip rap; Vegetation - Add to/extend buffer (will it grow?)	Low	Low	Low

APPENDIX C: LIST OF GREAT POND NPS SITES

Site	Location	Flow into lake via	Land Use	Problems	Slope	Size of Exposed/ Eroded Area	Recommendations	Impact	Cost	Technical Level
3-06	171 Crystal Spring Lane	Directly into lake	Residential	Surface erosion - slight; Soil - Bare; Shoreline - Inadequate shoreline vegetation, erosion; Other - Invasive plants on shoreline (knotweed)	Steep	35x4	Other - Mulch/ECM, rip rap; Vegetation - Add to buffer	Low	Low	Low
3-07	169 Crystal Spring Lane	Directly into lake	Residential	Soil - Bare; Shoreline - Inadequate Shoreline Vegetation, erosion	Steep	7x5	Other - Rip rap; Vegetation - Add to/extend buffer	Low	Low	Low
3-08	Culvert/perennial stream between 165 & 187 Crystal Spring Lane	Directly into lake	Residential	Surface Erosion - Slight; Ditch - Slight erosion; Soil - bare	Moderate	20x5	Culvert - Install Plunge Pool (I/O): Armor with stone	Low	Med	Med
3-09	163 Crystal Spring Lane	Directly into lake	Residential	Surface Erosion - Slight; Soil - Bare	Steep	4x10	Other - Mulch/ECM; Vegetation - Add to/Extend Buffer	Low	Low	Low
3-10	157 Crystal Spring Lane	Minimal vegetation	Residential	Soil - Bare; Shoreline - Inadequate Shoreline Vegetation, erosion	Moderate	15x4	Other - Mulch/ECM, rip rap; Vegetation - Add to/extend buffer	Low	Low	Low
3-11	145 Crystal Spring Lane	Directly into lake	Residential: Beach access	Surface Erosion - Moderate; Soil - Bare (sand beach rills); Shoreline - Erosion; Other - Invasive plants on shoreline (knotweed, 50% of frontage)	Moderate	8x4	Other Suggestions - Remove invasive plants; Other - Mulch/ECM (under temp deck); Vegetation - Add to/Extend buffer	Med	Low	Low
3-12	141 Crystal Spring Lane	Directly into lake	Residential	Surface erosion - slight; Soil - Bare; Shoreline - Erosion	Steep	15x6 (wider steps as well)	Other - Mulch/ECM; Vegetation - Establish buffered (on west side of dock stairs), reseed bare soil and thinning grass	Low	Low	Low
3-13	Between 133 & 135 Crystal Spring Lane	Stream	Residential	Shoreline - Undercut, erosion	Moderate	40x3	Ditch - Armor with stone: rip rap (stream banks)	High	Med	Med

APPENDIX C: LIST OF GREAT POND NPS SITES

Site	Location	Flow into lake via	Land Use	Problems	Slope	Size of Exposed/ Eroded Area	Recommendations	Impact	Cost	Technical Level
4-01	200 Hathaway Lane	Directly into lake	Driveway (gravel); Trail or Path	Surface erosion - Slight; Soil - bare	Moderate	3x10	Roads/Driveways - Install Runoff diverters: Rubber razor (needs another one); Paths & Trails - Stabilize foot path	Med	Med	Med
4-02	174 Hathaway Lane	Directly into lake	Trail or Path (Residential)	Surface erosion - Slight; Soil - bare; Shoreline - Inadequate Shoreline vegetation	Moderate	10x5	Paths & Trails - Stabilize Foot Path; Vegetation - add to/extend buffer	Low	Low	Low
4-03	166 Hathaway Lane	Directly into lake	Trail or Path (Residential)	Surface erosion - moderate; Soil - bare; Shoreline - Lack of Shoreline vegetation	Moderate	30x12	Paths & Trails - Install runoff diverter (waterbar); Vegetation - Establish buffer	Med	Med	Med
4-04	148 Hathaway Lane	Directly into lake	Driveway (gravel), residential	Surface erosion - Severe; Soil - Bare; Shoreline - Inadequate shoreline vegetation	Moderate	100x15	Roads/Driveways - Reshape (crown), install runoff diverters	High	Med	Med
4-05	Hathaway Lane running into #148	Directly into lake	Private Road	Surface erosion - moderate; Soil - bare	Moderate	150x15	Roads/Driveways - Build up, add new surface material, Install runoff diverters: broad-based dip	Med	Med	Med
4-06	132 Hathaway Lane	Directly into lake	Residential	Surface erosion - slight; Soil - bare; Shoreline - Lack of shoreline vegetation	Moderate	Large areas	Other - Mulch/ECM; Vegetation - Establish buffer, reseed bare soil & thinning grass	Med	Med	Med
4-07	3 Delisle Lane	Directly into lake	Residential: Driveway	Surface erosion - moderate; Soil - bare; Shoreline - Inadequate shoreline vegetation	Moderate	75x15	Roads/Driveways - Add new surface material, install runoff diverters	Med	Med	Med
4-08	15 Delisle Lane	Directly into lake	Residential	Soil - Bare	Flat	40x90	Other - Mulch/ECM	Med	Low	Low
4-09	78 York Lane	Directly into lake	Residential	Soil - Bare	Flat	15x15	Other - Mulch/ECM	Low	Low	Low
4-10	134 Golden Pond	Directly into lake	Driveway	Surface erosion - slight	Moderate	50x12	Roads/Driveways - Add new surface material: Blue stone gravel, Reshape (crown), Install runoff diverters	Med	Med	Med

APPENDIX C: LIST OF GREAT POND NPS SITES

Site	Location	Flow into lake via	Land Use	Problems	Slope	Size of Exposed/ Eroded Area	Recommendations	Impact	Cost	Technical Level
5-01	North Crane Ln	Ditch	Private road (gravel)	Ditch erosion	Flat	2000x3	Enlarge ditch, armor culvert inlet/outlet, replace rusted culverts	High	High	High
5-02	South Crane Ln	Ditch	Private road (gravel)	Ditch erosion	Flat	600x3	Enlarge ditch, armor culvert inlet/outlets	High	High	Med
7-01	764 Horse Point Rd.	Directly into lake	Residential (shoreline)	Surface erosion - slight; Soil - bare; Shoreline - erosion	Moderate	4x5	Other Suggestions - Armor with stone or vegetate; Other - Mulch/ECM, Rip Rap; Vegetation - Add to/extend buffer	Low	Low	Low
7-02	742 Horse Point Rd.	Directly into lake	Trail or Path; Beach Access	Soil - bare; Shoreline - Lack of shoreline vegetation	Moderate	30x20	Paths & Trails - Define foot path, stabilize foot path; Other - Mulch/ECM; Vegetation - Add to/extend buffer	Low	Low	Low
7-03	716 Horse Point Rd.	Directly into lake	Boat Access (old, used for docks & kayaks)	Surface erosion - slight; Soil - bare; Shoreline - erosion	Moderate	10x20	Roads & Driveways - Add new surface material: blue stone gravel, Install Runoff Diverters: Rubber Razor	Low	Low	Med
7-04	686 Horse Point Rd.	Directly into lake	Residential	Surface erosion - slight; Soil - bare	Moderate	40x15	Paths & Trails - Erosion control mulch	Med	Low	Low
7-05	7 Pearl Drive	Directly into lake	Residential	Surface erosion - slight; Soil - bare (some); Shoreline - Lack of shoreline vegetation	Moderate	30x25	Other - Mulch/ECM; Vegetation - Establish buffer (allow vegetation to grow up), reseed bare soil & thinning grass	Med	Low	Med
7-06	13 Julie's Way	Directly into lake	Residential	Surface erosion - slight; Soil - bare	Flat	10x10	Paths & Trails - Define foot path, erosion control mulch; Vegetation - establish buffer	Low	Low	Low
7-07	13 S. Pine Beach Rd.	Directly into lake	Residential	Surface erosion - slight; Soil - bare; Shoreline - erosion	Steep	6x10	Ditch - Vegetate; Other Suggestions - Retaining wall and cover bare soil; Roads/Driveways - Install Runoff diverters: rubber razor; Paths & Trails - Erosion control mulch; Other - Install runoff diverter (waterbar)	Med	Med	Med

APPENDIX C: LIST OF GREAT POND NPS SITES

Site	Location	Flow into lake via	Land Use	Problems	Slope	Size of Exposed/ Eroded Area	Recommendations	Impact	Cost	Technical Level
7-08	104 Pine Beach Road	Directly into lake	Construction site (Residential)	Roof runoff erosion	Flat	5x15	Roof Runoff- Infiltration trench at roof driplines; Other - Add to/extend buffer, reseed bare soil and thinning grass	Low	Low	Low
7-09	78 Pine Beach Road	Directly into lake	Residential	Surface erosion - slight; Soil - bare; Shoreline - erosion	Flat	20x15	Other - Install runoff diverter (waterbar), mulch/ECM	Low	Low	Low
7-10	72 Pine Beach Road	Directly into lake	Residential	Surface erosion - slight; Soil - bare; Shoreline - erosion	Flat	30x10	Paths & Trails - Erosion control mulch; Roof runoff - Drywell at gutter downspout; Other - Install runoff diverter (waterbar), Mulch/ECM; Vegetation - no raking	Med	Low	Low
7-11	66 Pine Beach Road	Directly into lake	Residential	Surface erosion - slight; Soil - Bare; Shoreline - Lack of shoreline vegetation	Flat	20x60	Paths & Trails - Define foot path; Roof runoff - Infiltration Trench at roof dripline; Other - Mulch/ECM; Vegetation - establish buffer	Low	Low	Low
7-12	54 Pine Beach Road	Directly into lake	Residential	Surface erosion - slight; Soil - bare; Shoreline - Lack of shoreline vegetation	Moderate	10x5	Other: Mulch/ECM or reseed bare soil & thinning grass; Vegetation - Add to/extend buffer	Low	Low	Low
7-13	48 Pine Beach Road	Minimal Vegetation	Residential	Surface erosion - moderate; Soil - Bare; Roof runoff erosion (contributing); Other - Driveway runoff causing erosion near shoreline	Moderate	10x10	Roof Runoff - Infiltration Trench at roof dripline back of house; Other - Mulch/ECM, rain garden (at base ditch); Vegetation - Reseed bare soil and thinning grass	Low	Low	Med
7-14	44 Pine Beach Road	Directly into lake	Residential	Surface erosion - slight; Soil - bare; Roof runoff erosion; Shoreline - Inadequate shoreline vegetation	Steep	30x20	Paths & Trails - Infiltration steps; Roof Runoff - Infiltration trench at roof dripline, drywell at gutter downspout; Other - Mulch/ECM; Vegetation - Add to/extend buffer, No raking	Med	Med	Med

APPENDIX C: LIST OF GREAT POND NPS SITES

Site	Location	Flow into lake via	Land Use	Problems	Slope	Size of Exposed/ Eroded Area	Recommendations	Impact	Cost	Technical Level
7-15	Camp Bomazeen-656 Horse Point Road	Directly into lake	Commercial	Surface erosion - Moderate; Soil - Bare, uncovered pile; Roof runoff erosion; Shoreline - Inadequate shoreline vegetation, unstable access; Other- lots of unused poorly maintained roads on steep slopes are eroding.	Steep	Multiple Areas across large parcel	Roads & Driveways - Add new surface material: blue stone gravel, Reshape (crown), Install Runoff Diverters: Rubber Razor; Paths & Trails: Erosion Control Mulch; Roof Runoff: Infiltration Trench @ roof dripline; Vegetation: Add to/extend buffer, No Raking; Reseed bare soil & thinning areas; Other- Develop a Road Management Plan to minimize the effects of unused and poorly maintained roads, revegetate underused roads and vegetate or create narrow walking paths with ECM.	Med	High	Med
8-01	109 Merryweather Rd.	Minimal Vegetation	Private road, gravel	Surface erosion - moderate; soil bare	Steep	150x20	Roads/Driveways - Add new surface material: gravel, reshape (crown), Install runoff diverters: broad-based dip or rubber razor; Paths & Trails - Infiltration steps, install runoff diverter (waterbar), erosion control mulch (add to lower road); Other - Mulch/ECM (on paths)	Med	Med	Med
8-02	9 & 10 Homeward Way	Directly into lake	Residential	Surface erosion - moderate; soil bare; Shoreline - Erosion, Unstable access	Moderate	60x16	Paths & Trails - Define foot path (access); Vegetation - Establish buffer; Other Suggestions - Install retaining structure to retain soil	Med	Med	Med
8-03	17 Harvey Way	Directly into lake	Residential	Surface erosion - slight; Soil - bare; Roof runoff erosion	Flat	15x5	Paths & trails - install runoff diverter (waterbar), ECM; Roof Runoff - Infiltration trench at roof dripline, drywell at gutter downspout; Other suggestions - Install retention areas in front of dock storage area	Low	Low	Low

APPENDIX C: LIST OF GREAT POND NPS SITES

Site	Location	Flow into lake via	Land Use	Problems	Slope	Size of Exposed/ Eroded Area	Recommendations	Impact	Cost	Technical Level
8-04	19 Harvey Way	Directly into lake	Residential	Surface erosion - moderate; Soil - bare; Roof runoff erosion	Moderate	100x20	Roof runoff - Drywell at gutter downspout; Other Suggestions - Retaining device along high water beach, mulch common areas	High	Med	Med
8-05	12 Johns Way	Directly into lake	Residential	Surface erosion - moderate; soil - bare; Shoreline - Inadequate shoreline vegetation, erosion, unstable access	Moderate	150x10	Paths & Trails - Infiltration steps (access area, 1-2 steps); Other Suggestions - Stabilize edge of cut bank with retainer device at top high water mark on beach	Med	Med	Med
8-06	12 Johns Way in part	Directly into lake	Residential: starts at culvert on Horse Point Road	Other: Eroding stream channel at beach	Flat	20 linear feet along drainage	Other Suggestions - Stabilize eroding banks and create outlet w/ overflow	High	High	High
8-07	26 Brook Drive	Directly into lake	Residential	Surface erosion - Slight; Soil - bare; Shoreline- Erosion, unstable access	Flat	10x5	Paths & Trails - Infiltration steps; Other - Mulch/ECM; Vegetation - Reseed bare soil & thinning grass	Low	Low	Low
8-08	Withers Way	Directly into lake	Residential	Surface erosion - slight; Soil - bare; Shoreline - Lack of shoreline vegetation, erosion; Other - Invasive plants on shoreline over large sandy beach	Flat	40x30	Paths & Trails - Define foot path; Other - Rain garden; Vegetation - Establish buffer; Other Suggestions - Install sand retaining structure and vegetate behind first trees	Low	Low	Low
8-09	13 Dragonfly Lane	Directly into lake	Residential (multi unit)	Surface erosion - slight; Soil - bare; Shoreline - Unstable access	Flat	5x5 (x2)	Paths & Trails - Infiltration steps, ECM; Other Suggestions - 4"x4" across beach accesses	Low	Low	Low
8-10	25 Speckle Drive	Directly into lake	Beach Access: Residential	Surface erosion - slight; Soil - bare; Shoreline - Lack of shoreline vegetation, erosion, unstable access	Moderate	10x5	Paths & Trails - waterbar; Vegetation - Establish buffer; Other suggestions - replace rotten timber to hold soil and vegetate berm	Low	Low	Low
9-01	140 Snug Harbor Road	Directly into lake	Trail or path	Surface erosion - Moderate	Moderate	10x2	Paths & Trails - Infiltration steps, install runoff diverter (waterbar), ECM	Low	Low	Med

APPENDIX C: LIST OF GREAT POND NPS SITES

Site	Location	Flow into lake via	Land Use	Problems	Slope	Size of Exposed/ Eroded Area	Recommendations	Impact	Cost	Technical Level
9-02	134 Snug Harbor Road	Directly into lake	Beach access	Soil - Bare; Shoreline - Inadequate shoreline vegetation, erosion	Moderate	5x10	Construction site - mulch; Other - Rip rap; Vegetation - Add to/extend buffer	Low	Low	Low
9-03	130 Snug Harbor Road	Directly into lake	Trail or path	Surface erosion - moderate; Soil - bare; Shoreline - Erosion	Moderate	10x15	Paths & Trails - Infiltration steps, ECM; Other - Mulch/ECM	Low	Low	Low
9-04	122 Snug Harbor Road	Directly into lake	Trail or path	Soil - Bare; Shoreline - Lack of shoreline vegetation, erosion	Moderate	20x20	Paths & Trails - stabilize foot path, infiltration steps; Other - Mulch/ECM, Rip rap; Vegetation - Establish buffer, no raking	Low	Med	Med
9-05	122 Snug Harbor Road	Directly into lake	Residential	Surface erosion - Moderate; Soil - Bare; Shoreline - Undercut, lack of shoreline vegetation, inadequate shoreline vegetation, erosion, unstable access	Moderate	20x30	Paths & Trails - Define foot path; Other - Mulch/ECM, rain garden, rip rap; Vegetation - establish buffer	Med	Med	Med
9-06	120 Snug Harbor Road	Directly into lake	Trail or path	Surface erosion - Moderate; Soil - Bare; Shoreline - Undercut, lack of shoreline vegetation, inadequate shoreline vegetation, erosion	Moderate	75x30	Roads/Driveways - Add new surface material: Blue stone gravel; Paths & Trails - ECM; Other - Mulch/ECM, rain garden, rip rap; Vegetation - Establish buffer, no raking	Med	Med	Med
9-07	120 Snug Harbor Road	Directly into lake	Driveway	Surface erosion - moderate; Soil - bare	Moderate	100x50	Ditch - Remove debris/sediment; Roads/Driveways - Add new surface material: Gravel, Blue Stone Gravel; vegetate shoulder, install runoff diverters: rubber razor and waterbar; Paths & Trails - ECM; Other - Infiltration trench; Vegetation - Add to/extend buffer	High	High	Med

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Site	Location	Flow into lake via	Land Use	Problems	Slope	Size of Exposed/ Eroded Area	Recommendations	Impact	Cost	Technical Level
9-08	116 Snug Harbor Road	Directly into lake	Residential	Surface erosion - moderate; soil - bare; Shoreline - undercut, lack of shoreline vegetation	Moderate	20x20	Paths & Trails - Define foot path; Other - Mulch/ECM, rain garden, rip rap; Vegetation - establish buffer	Med	Med	Med
9-09	106-3 Snug Harbor Road	Directly into lake	Residential	Soil - bare; Shoreline - erosion	Moderate	25x10	Other - Mulch/ECM, rip rap	Low	Low	Low
9-10	94-4 Snug Harbor Road	Directly into lake	Residential	Soil - bare; Shoreline - undercut, erosion	Moderate	20x20	Paths & Trails - Define foot path, infiltration steps; Other - Mulch/ECM, rip rap	Low	Low	Low
9-11	94-6 Snug Harbor Road	Directly into lake	Residential	Soil - bare; Shoreline - erosion	Moderate	20x10	Paths & Trails - Infiltration steps, ECM; Other - Mulch/ECM; Vegetation - Establish buffer	Med	Med	Med
9-12	90 Snug Harbor Road	Directly into lake	Residential: Trail or Path	Soil - bare; Shoreline - erosion	Flat	10x10	Other - Mulch/ECM, rip rap; Vegetation - Add to/extend buffer	Low	Low	Med
9-13	90 Snug Harbor Road	Directly into lake	Residential: Beach Access	Soil - bare; Shoreline - undercut, erosion	Flat	5x20	Other - Mulch/ECM, rip rap; Vegetation - Establish buffer	Low	Low	Low
9-14	80 Snug Harbor Road	Directly into lake	Boat access (concrete)	Shoreline - erosion	Moderate	6x20	Technical Person to visit site and make recommendations	Unknown	Med	Med

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Site	Location	Flow into lake via	Land Use	Problems	Slope	Size of Exposed/ Eroded Area	Recommendations	Impact	Cost	Technical Level
9-15	80 Snug Harbor Road	Directly into lake	Residential	Soil - Bare; Shoreline - Inadequate shoreline vegetation, erosion	Flat	25x15	Other - Mulch/ECM, rip rap; Vegetation - establish buffer (?)	Low	Low	Low
9-16	11 Gleason Shore Road	Directly into lake	Residential	Soil - Bare	Moderate	50x30	Paths & Trails - Define foot path, ECM; Other - Mulch/ECM	Med	Med	Low
9-17	13 Gleason Shore Road	Directly into lake	Residential	Soil - bare; Shoreline - erosion	Moderate	30x15	Paths & Trails - Install runoff diverter (waterbar), ECM; Other- Mulch/ECM; Vegetation - Add to/extend buffer	Low	Low	Low
9-18	23 Gleason Shore Road	Directly into lake	Residential	Soil - bare; Shoreline - Undercut, lack of shoreline vegetation, inadequate shoreline vegetation, erosion	Moderate	10x10	Paths & Trails - Define foot path, ECM; Other - Mulch/ECM, rain garden; Vegetation - Establish buffer	Med	Med	Med
9-19	23 Gleason Shore Road	Directly into lake	Residential	Soil - Bare; Shoreline - Inadequate shoreline vegetation, erosion, unstable access	Moderate	30x15	Paths & Trails - Define foot path, infiltration steps, ECM; Other - Mulch/ECM, rain garden; Vegetation - Add to/extend buffer	Med	Med	High
9-20	35 Gleason Shore Road	Directly into lake	Residential	Surface erosion - slight; Other - Steep grass slope that flows over concrete into water/lake	Steep	20x30	Paths & Trails - Install runoff diverter; Other - Rain garden, water retention swales; Vegetation - add to/extend buffer	Med	Med	Low

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Site	Location	Flow into lake via	Land Use	Problems	Slope	Size of Exposed/ Eroded Area	Recommendations	Impact	Cost	Technical Level
9-21	43 Gleason Shore Road	Directly into lake	Boat access	Surface erosion - moderate; Soil - bare; Shoreline - Lack of shoreline vegetation, erosion	Steep	50x15	Roads/Driveways - Add new surface material: Gravel; Install runoff diverts: Rubber razor; Other - Mulch/ECM, Water retention swales; Vegetation - Add to/extend buffer	Med	Med	Med
10-01	83 Damren Road	Directly into lake	Beach Access (Residential)	Soil - Bare; Shoreline - Lack of shoreline vegetation, inadequate shoreline vegetation	Flat	10x10	Other - Mulch/ECM; Vegetation - Add to/extend buffer	Low	Low	Low
10-02	129 Loon Call Drive	Directly into lake	Residential	Soil - Bare; Other - Lots of concrete blocks	Flat	5x10	Paths & Trails - ECM; Other - Mulch/ECM; Other Suggestions - Remove large stones, put from flagstone & mulch	Low	Low	Low
10-03	79a Hatch Cove Road	Directly into lake	Residential	Shoreline - Undercut	Moderate	5x5	Other - Rip rap	Low	Low	High
10-04	75 Hatch Cove Road	Directly into lake	Residential	Surface erosion - moderate; Soil - bare; Other - Artificial grass at shoreline 15'x25'	Moderate	15x15	Roads & Driveways - Add new surface material: gravel; Other - Fill crevices more between granite block shoreline wall	Med	Low	Low
10-05	79 Hatch Cove Road	Directly into lake	Residential	Shoreline - Undercut	Flat	20x20	Other - Rip rap	Low	Med	Med
10-06	79 Hatch Cove Road	Directly into lake	Boat Access	Soil - Bare; Surface Erosion-Slight; Shoreline - Inadequate shoreline vegetation, erosion	Moderate	50x50	Other - Mulch/ECM, infiltration trench; Vegetation - Add to/extend buffer	Low	Med	Med
10-07	87 Hatch Cove Road	Directly into lake	Residential	Soil - Bare; Shoreline - Inadequate shoreline vegetation, erosion	Moderate	20x30	Other - Mulch/ECM, infiltration trench; Vegetation - Add to/extend buffer	Low	Low	Low
10-08	93 Hatch Cove Road	Directly into lake	Residential	Soil - Bare; Shoreline - Lack of shoreline vegetation	Moderate	10x20	Other - Mulch/ECM, infiltration trench; Vegetation - Add to/extend buffer	Med	Low	Low
10-09	93 Hatch Cove Road	Directly into lake	Residential	Surface erosion - moderate; Soil - bare; Shoreline - lack of shoreline vegetation	Moderate	5x10	Other - Mulch/ECM, rip rap; Vegetation - add to/extend buffer	Low	Med	Med

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Site	Location	Flow into lake via	Land Use	Problems	Slope	Size of Exposed/ Eroded Area	Recommendations	Impact	Cost	Technical Level
10-10	93 Hatch Cove Road	Directly into lake	Residential	Surface erosion - slight; Soil - bare; Shoreline - lack of shoreline vegetation	Moderate	10x200	Other - Mulch/ECM; Vegetation - Establish buffer, add to/extend buffer	Med	High	Med
10-11	121 Hatch Cove Road	Directly into lake	Trail or Patch (Dock)	Surface erosion - slight; Soil - bare; Shoreline - Inadequate shoreline vegetation	Moderate	10x10	Paths & Trails - ECM	Low	Low	Low
10-12	125 Hatch Cove Road	Directly into lake	Boat access (some gravel)	Surface erosion - slight; Soil - bare	Moderate	5x10	Roads & Driveways - Add new surface material: gravel; Other - Mulch/ECM	Low	Low	Low
10-13	115 Hill Farm Road	Directly into lake	Residential: Boat access (wood)	Surface erosion - slight; Soil - bare	Moderate	10x15	Roads & Driveways - Add new surface material: gravel; Other - Mulch/ECM	Low	Low	Low
10-14	123 Hill Farm Road	Directly into lake	Residential	Soil - Bare; Shoreline - Lack of shoreline vegetation, erosion	Moderate	10x10	Other - Mulch/ECM; Vegetation - Add to/extend buffer	Low	Low	Low
10-15	0 Hatch Cove Road	Directly into lake	Boat Access	Soil - Bare	Moderate	15x60	Roads & Driveways - Add new surface material: gravel; Other - Mulch/ECM	Med	Med	Low
10-16	Pine Island Road	Directly into lake	Commercial	Soil - Bare	Steep	10x10	Other - Mulch/ECM, Rain garden, water retention swales, rip rap; Vegetation - Establish buffer	Low	Low	Low
10-17	Pine Island Road	Directly into lake	Commercial	Soil - Bare; Shoreline - Lack of shoreline vegetation, inadequate shoreline vegetation	Moderate	15x15	Vegetation: Establish buffer	Med	Low	Low
10-18	234 Pine Island Road	Directly into lake	Residential	Soil - Bare; Shoreline - undercut, lack of shoreline vegetation	Steep	10x15	Other - Mulch/ECM, Rip rap	Low	Med	Med
11-01	Cyr Road	Ditch	Private road (road association)	Ditch - Moderate erosion (water from top of hill to culvert unchecked and down to diversion)	Steep	100x6	Culvert - Install plunge pool (I/O); Ditch - Install check dams; Roads/Driveways - Reshape (crown)	Med	Med	Med

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Site	Location	Flow into lake via	Land Use	Problems	Slope	Size of Exposed/ Eroded Area	Recommendations	Impact	Cost	Technical Level
11-02	571 Cyr Road	Directly into lake	Residential	Surface erosion - Severe; Roof runoff erosion	Moderate	100x20	Roads/Driveways - Install runoff diverters: waterbar to base of drive; Paths & Trails - Define foot path, stabilize foot path, infiltration steps, install runoff diverter (waterbar), ECM; Roof Runoff- Infiltration Trench @ roof dripline; Other - Mulch/ECM	High	Med	Med
11-03	555 Cyr Road	Directly into lake	Residential: Construction Site, Boat Access	Surface erosion - Moderate; Shoreline - Undercut, lack of vegetation (by boat launch), erosion	Moderate	100x4	Paths & Trails - Define foot path, ECM (by shore); Other - Install runoff diverter (waterbar); Vegetation - Reseed bare soil & thinning grass	Med	Low	Med
11-04	559 Cyr Road	Directly into lake	Residential	Roof Runoff Erosion (some, most diverted into the woods plus mulch); Shoreline - Lack of shoreline vegetation, erosion	Flat	10x12	Roof runoff- Infiltration trench at roof dripline; Other - Mulch/ECM; Vegetation - Establish buffer, no raking	Med	Low	Low
11-05	551 Cyr Road	Minimal vegetation	Residential	Surface erosion - slight; Roof runoff erosion (small area by side steps but straight to lake)	Moderate	5x2	Paths & Trails - Define foot path (well worn by side of house), install runoff diverter (waterbar), ECM; Roof Runoff - Infiltration trench at roof dripline	Low	Low	Low
11-06	539 Cyr Road	Directly into lake	Residential; trail or path	Roof Runoff Erosion; Shoreline - Erosion (on path), Unstable access (by dock)	Moderate	1 spotty	Paths & Trails - Stabilize foot path, install runoff diverter (waterbar), ECM; Other - Install runoff diverter (by water), Mulch/ECM	Low	Low	Low
11-07	272 Hemlock Point Road	Directly into lake	Residential	Surface erosion - moderate; Soil - bare; Shoreline - erosion (sheet)	Flat	50x30	Paths & Trails - Define foot path; Roof runoff (to woods; Other - Mulch/ECM, Rain garden (at lake and by side yard); Vegetation - Add to/extend buffer, no raking, reseed bare soil and thinning grass	Med	Med	Med

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Site	Location	Flow into lake via	Land Use	Problems	Slope	Size of Exposed/ Eroded Area	Recommendations	Impact	Cost	Technical Level
11-08	303 Wanser Lane	Directly into lake	Residential	Surface erosion - moderate (rills); Soil - bare (from drive, picnic table); Roof runoff erosion	Moderate	200 to 6 at shore	Paths & Trails - Define foot path, infiltration steps, install runoff diverter (waterbar), ECM; Roof runoff - Infiltration trench at roof dripline; Other - Install runoff diverter (waterbar); Vegetation - Establish buffer (no buffer)	High	Med	Med
11-09	311 Wanser Lane	Minimal vegetation	Residential	Surface erosion - Moderate; Roof runoff erosion; Shoreline - Lack of shoreline vegetation, erosion	Steep	75x15	Roof Runoff - Infiltration trench at roof dripline, drywell at gutter downspout; Vegetation - Establish buffer	Med	Med	Med
11-10	315 Wanser Lane	Stream	Residential	Surface Erosion - slight (on back side), moderate (behind wood to stream; Soil - Bare (on paths toward lake); Shoreline - Inadequate shoreline vegetation, erosion (base)	Flat	40x3, 3x6	Paths & Trails - Stabilize foot path (specifically behind house), install runoff diverter (waterbar), erosion control mulch; Roof runoff - Drywell at gutter downspout (extend or drywell); Vegetation - Add to/extend buffer	Med	Med	Med
11-11	321 Wanser Lane	Directly into lake	Residential	Surface erosion - Moderate (sheet and small rill from house to lake); Soil - bare (almost a road to the lake); Shoreline - Inadequate shoreline vegetation	Steep	150x10	Roads/Driveways - Install Runoff Diverters: Open top culvert (lawn across), rubber razor; Paths & Trails - install runoff diverter (waterbar); Other - Install runoff diverter (waterbar), Rain garden (where drain comes out), infiltration trench; Vegetation - Establish buffer	High	Med	Med
11-12	333 Wanser Lane	Stream	Residential	Surface erosion - slight (rill); Shoreline - Erosion, unstable access	Moderate	4x12	Paths & Trails - Define foot path, stabilize foot path; Roof runoff - Drywell at gutter downspout (extend gutters to woods); Other - Mulch/ECM; Vegetation - Add to/extend buffer	Low	Low	Low - Med

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Site	Location	Flow into lake via	Land Use	Problems	Slope	Size of Exposed/ Eroded Area	Recommendations	Impact	Cost	Technical Level
11-13	341 Wanser Lane	Directly into lake (some); Minimal vegetation (some)	Residential	Surface erosion - sheet erosion down path; Soil - Bare (on paths, to door to lake, starts at dive and spots all down to ferns and lake); Shoreline - Inadequate shoreline vegetation (cutting), erosion (within 10 feet)	Steep	30x 10 (shorefront), 10' each (paths), So. 6x20	Paths & Trails - Define foot path, infiltration steps (by backdoor and north lake path), ECM; Roof runoff - Drywell at gutter downspout (extend south side); Other - Install Runoff Diverter (repair); Vegetation - add to/extend buffer (close to lake)	Med	Med	Med
11-14	347 Wanser Lane	Directly into lake	Trail or Path	Surface Erosion - Moderate (path to lake), Soil - Bare (path); Shoreline - Unstable access (could use work)	Steep	100x6 (path)	Paths & Trails - Define foot path, stabilize foot path, infiltration steps (***), install runoff diverter (waterbar), ECM; Other - Mulch/ECM	Med	Med	Med
12-01	Burton Woods Road	Ditch	Private road	Surface erosion - Slight; Culvert - clogged (left side)	Moderate		Culvert - Remove clog; Other Suggestions - Remove leaves, debris	Low	Med	Med
12-02	201 Burton Woods Road	Minimal vegetation	Trail or Path (Residential)	Surface erosion - slight; Soil - Bare (path from parking)	Steep	36x5	Paths & Trails - Infiltration steps (needs crushed rock), ECM	Low	Low	Low
12-03	195 Burton Woods Road (driveway)	Minimal vegetation	Driveway: gravel	Surface erosion - moderate; Roof runoff erosion	Steep	6x3	Roads/Driveways - Install runoff diverters, rubber razor (need to repair)	Low	Low	Low
12-04	195 Burton Woods Road	Directly into lake	Residential	Roof runoff erosion	Steep	25x15	Roof Runoff - Infiltration trench at roof dripline; Other - Install runoff diverter (waterbar), Mulch/ECM, water retention swales, rip rap; Vegetation - Establish buffer	Med	Med	Med
12-05	189 Burton Woods Road	Directly into lake	Driveway	Surface erosion - severe	Moderate		Roads/Driveways - Install runoff diverters: Broad-based dip, Open top culvert, Rubber razor, waterbar	High	Med	Med
12-06	189 Burton Woods Road	Directly to lake	Residential	Surface erosion - severe; Roof runoff erosion; Shoreline - Lack of shoreline vegetation	Moderate		Paths & Trails - Define foot path, install runoff diverter (waterbar), Roof runoff - Infiltration trench at roof dripline, rain barrel (full gutter, no vegetation); Other - Mulch/ECM	High	High	High

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Site	Location	Flow into lake via	Land Use	Problems	Slope	Size of Exposed/ Eroded Area	Recommendations	Impact	Cost	Technical Level
12-07	187 Burton Woods Road	Directly to lake	Residential	Shoreline - Undercut, Lack of shoreline vegetation, erosion, unstable access; Other - Large stream coming through woods - erosion in outlet	Steep	12x5	Other - Mulch/ECM, rip rap; Vegetation - establish buffer	Med	Med	Med
12-08	173 Burton Woods Road	Minimal vegetation	Driveway	Surface erosion - slight	Steep	100 sf	Roads/Driveways - Install runoff diverters: open top culvert or rubber razor	Low	Low	Low
12-09	173 Burton Woods Road	Directly to lake	Residential	Shoreline - Undercut, lack of shoreline vegetation, erosion	Steep	30x10	Other - ECM, rip rap; Vegetation - Establish buffer, no raking, reseed bare soil & thinning grass	Med	Med	Med
12-10	169 Burton Woods Road	Directly to lake (over lawn??)	Residential	Surface erosion - Severe (from base of driveway and stairs, runs down lawn to lake)	Steep	100 sf	Paths & Trails - Define foot path, infiltration steps, install runoff diverter (waterbar), ECM; Other - Rain garden, water retention swales; Vegetation - Establish buffer	High	Med	Med
12-11	164 Burton Woods Road	Minimal vegetation	Driveway	Surface erosion - severe	Steep	200 feet	Roads/Driveways - Add new surface material: gravel, install runoff diverters	Med	Med	Med
12-12	164 Burton Woods Road	Directly into lake	Residential	Roof runoff erosion (damage to gutters); Shoreline - Lack of shoreline vegetation, erosion (by dock)	Moderate	30x30	Roof runoff - Infiltration trench at roof dripline, drywell at gutter downspout; Other - Mulch/ECM, Rain garden; Vegetation - establish buffer	Low	Med	Low
12-13	163 Burton Woods Road	Directly into lake	Residential	Roof Runoff erosion (drainage from house 10' from water); Shoreline	Flat	10x50	Roof runoff - downspout not attached, questioned water runoff front house (under), rain garden (not sure), water retention swales (not sure)	Low	Med	Med
12-14	161 Burton Woods Road	Minimal vegetation	Residential: Construction site	Surface erosion - severe (lakeside side yard below drive - under water bar to yard); Roof runoff erosion (roof along drive runoff)	Steep	100	Roof runoff (A Frame); Construction site (work in progress)	High	Med	Med

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Site	Location	Flow into lake via	Land Use	Problems	Slope	Size of Exposed/ Eroded Area	Recommendations	Impact	Cost	Technical Level
12-15	206 Endicott Road	Directly into lake	Residential; trail or path	Surface erosion - Moderate; Shoreline - Inadequate shoreline vegetation, erosion, unstable access	Moderate	3x5	Roads/Driveways - Install runoff diverters: rubber razor, waterbar (at base of dive into yard; Paths and Trails - Define foot path, infiltration steps (repair by water), ECM; Other - Mulch/ECM (next to stairs and by water); Vegetation - Establish buffer, add to/extend buffer, no raking	Med	Med	Med
12-16	198 Endicott Road	Directly into lake	Residential	Surface erosion - Moderate (rill & sheet); Roof runoff erosion; Shoreline - Undercut, Inadequate shoreline vegetation, erosion	Moderate	50x40	Paths & Trails - Define foot path; Roof runoff - Drywell at gutter downspout; Other - Mulch/ECM, rip rap (in ditch); Vegetation - Establish buffer	Med	Med	Med
12-17	190 Endicott Road	Directly into lake	Residential: Driveway	Surface erosion - Moderate; Roof runoff erosion (driveway to lawn to lake)	Moderate	50x10	Roads/Driveways - Install runoff diverters: waterbar	Med	Low	Med
12-18	188 Endicott Road	Directly into lake	Residential	Surface erosion - slight; Shoreline - undercut, inadequate shoreline vegetation, erosion	Moderate	30x5	Other - rip rap, repair water retention bare on shoreline; Vegetation - add to/extend buffer	Low	Med	Med
12-19	0 Gables End	Ditch, Minimal Veg	Residential	Surface erosion - Moderate (goes into wood to lake), Roof runoff erosion (both side and under porch	Moderate	6x1	Roof runoff - infiltration trench at roof dripline, drywell at gutter downspout	Med	Med	Med
12-20	31 Gables End	Minimal vegetation	Residential	Surface erosion - slight; soil - bare	Steep	30x10	Other - Rain garden; Vegetation - Add to/extend buffer	Low	Low	Med
12-21	35 Gables End	Minimal vegetation	Residential	Surface erosion - severe; Roof runoff erosion; Other - from side doors downhill toward water, bare roots no soil	Steep	40x15	Paths & Trails - Define foot path, infiltration steps, ECM; Roof runoff - drywell at gutter downspout	High	Med	Med
12-22	242 Grandview Drive	Minimal vegetation	Residential	Surface erosion - slight (sheet, side yard down lawn to lake)	Steep	40x12	Paths & Trails - Define foot path, install runoff diverter (waterbar) on lawn; Other - Rain garden	Med	Med	Med

APPENDIX C: LIST OF GREAT POND NPS SITES

Site	Location	Flow into lake via	Land Use	Problems	Slope	Size of Exposed/ Eroded Area	Recommendations	Impact	Cost	Technical Level
13-01	Pinkham's Cove Road between 140 + 134	Stream	Private Road	Surface erosion - moderate; Culvert - Unstable Outlet; Ditch - Moderate erosion	Flat	20x2	Culvert - Armor outlet; Ditch - armor with stone, reshape ditch; Other Suggestions - check roadway site at spring time to aide suggestions	Low	Low	Med
13-02	172 Pinkham's Cove Road	Stream	Driveway	Surface erosion - moderate; Culvert - Unstable outlet; Soil -bare	Moderate	20x30	Culvert - Armor outlet; Roads/Driveways - Install runoff diverters; Vegetation - establish buffer at shorefront, no raking at shorefront	Med	Med	Med
13-03	116 Pinkham's Cove Road	Directly into lake	Residential	Surface erosion - moderate; Shoreline - Lack of shoreline vegetation, erosion	Flat	40x10	Vegetation - Establish buffer	Low	Low	Low
13-04	Pinkham's Cove Road between 36-025 & 36-026	Directly into lake	Boat access	Surface erosion - moderate; Road shoulder erosion - moderate at boat launch; Soil - bare	Flat	100x10	Roads/Driveways - Boat launch, Install runoff diverters; Other Suggestions - Stabilize bank at launch site, rip rap	Med	Med	Low
13-05	11 Pickerel Lane	Directly into lake	Driveway	Surface erosion - moderate; Road shoulder erosion - moderate	Moderate	200x8	Roads/Driveways - Add new surface material, reshape (crown), install runoff diverters: rubber razors (rehab & lengthen & stabilize razor drainage outlet); Other Suggestions: Define parking area and divert at bottom of parking area	High	High	Med
13-06	29 Pickerel Lane	Directly into lake	Residential	Shoreline - Undercut, Lack of shoreline vegetation	Steep	100x5	Other - Rip rap; Vegetation - Establish buffer; Other suggestions - terrace parking	Med	Med	Med
13-07	Between 29-31 Pickerel Lane	Directly into lake	Private Road	Surface erosion - slight	Flat	150x30	Other Suggestions - cut down berm at telephone pole 19, Hyper elevate road away from lake, berm at driveway 31-029	Low	High	High
13-08	35 Pickerel Lane	Directly into lake	Residential	Surface erosion - slight; Soil - bare; Roof runoff erosion	Moderate	20x5	Roof runoff - Drywell at gutter downspout; Other - rain garden; Vegetation - establish buffer	Low	Low	Low

APPENDIX C: LIST OF GREAT POND NPS SITES

Site	Location	Flow into lake via	Land Use	Problems	Slope	Size of Exposed/ Eroded Area	Recommendations	Impact	Cost	Technical Level
13-09	43 Pickerel Lane	Directly into lake	Residential	Surface erosion - moderate; Soil - bare	Moderate	30x75	Paths & Trails - Redo runoff diverter (waterbar), ECM; Vegetation - Establish buffer	Med	Low	Low
13-10	59 Pickerel Lane	Directly into lake	Residential	Surface erosion - moderate; Soil - bare	Moderate	12x40	Paths & Trails - stabilize foot path, ECM; Other - Mulch/ECM Vegetation - Establish buffer	Low	Low	Low
13-11	65 Pickerel Lane	Directly into lake	Residential	Surface erosion - moderate	Moderate	15x15	Paths & Trails - Install runoff diverter (waterbar); Other - Infiltration Trench; Other suggestions - Dispense minimal phosphate-free fertilizer, keep it on and in the green	Low	Low	Low
14-01	16 Tabert Lane	Directly into lake	Residential	Surface erosion - moderate; Soil - bare; Roof runoff erosion	Moderate	100x30	Roads/Driveways - Install runoff diverters: rubber razor; Paths & Trails - Define foot path, ECM; Roof runoff - extend trench at roof dripline; Other - Mulch/ECM (sitting area), rain garden; Vegetation - establish buffer	Med	Low	Low
14-02	9 Perch Road	Directly into lake	Residential	Surface erosion - moderate; Soil - bare	Flat	30x45	Paths & Trails - ECM; Other - Mulch/ECM; Vegetation - Add to/extend buffer, no raking	Low	Low	Low
14-03	92 Lord Lane	Directly into lake	Residential	Surface erosion - slight; Soil - bare	Flat	30x15	Paths & Trails - Define foot path, ECM; Other - Mulch/ECM; Vegetation - Establish buffer, no raking, reseed bare soil & thinning grass; Other Suggestions - ECM or pea stone Fire pit site	Low	Low	Low
14-04	5 Perch Road	Directly into lake	Residential; Construction Site; Trail or Path	Surface erosion - moderate; Soil - bare	Moderate	See Note	Path & Trails - Define foot path, stabilize foot path, install runoff diverter (waterbar), ECM; Other - Mulch/ECM;	Med	Med	Low
14-05	2 Togue Road	Directly into lake	Trail or Path (Residential)	Surface erosion - moderate; Soil - bare	Steep	15x12	Paths & Trails - Define foot path (keep dog on it); ECM; Other - Mulch/ECM, Install runoff diverter at kayak and seating area; Other suggestions - Pick up dog waste	Med	Low	Low

APPENDIX C: LIST OF GREAT POND NPS SITES

Site	Location	Flow into lake via	Land Use	Problems	Slope	Size of Exposed/ Eroded Area	Recommendations	Impact	Cost	Technical Level
14-06	225 Fosters Point Road	Directly into lake	Residential	Surface erosion - moderate; Soil - bare	Moderate	30x30	Paths & Trails - Stabilize foot path, ECM; Other - Mulch/ECM; Vegetation - Add to/extend buffer (on banking); no raking (allow naturalize)	Med	Med	Low
14-07	243 Fosters Point Road	Directly into lake	Residential	Soil - Bare; Other - dog waste	Flat	12x100	Paths & trails - Define foot path, ECM; Other - Mulch/ECM; Vegetation - Add to/extend buffer, no raking	Med	Med	Low
14-08	261 Fosters Point Road	Directly into lake	Residential	Surface erosion - slight; Soil - bare	Moderate	15x6	Paths & Trails - stabilize foot path, ECM; Other - Rip rap; Vegetation - add to/extend buffer, no raking	Low	Med	Med
14-09	267 Fosters Point Road	Directly into lake	Residential	Surface erosion - moderate; Soil - bare	Flat	60x12	Paths & Trails - ECM; Other - Mulch/ECM; Vegetation - Add to/extend buffer	Low	Low	Low
14-10	420 Fosters Point Road	Directly into lake	Driveway: gravel	Surface erosion - moderate	Steep	15x60	Roads/Driveways - add new surface material: blue stone gravel, Install detention basin (at end), Install runoff diverters: rubber razor	Med	Med	Med
16-01	44 Cardinal Lane	Directly into lake	Driveway	Surface erosion - moderate; Shoreline - Lack of shoreline vegetation	Moderate	600x12	Ditch - Install ditch; Roads/Driveways - Remove grader/plow berms, add new surface material: blue stone gravel, reshape (crown), install runoff diverters: rubber razor; Vegetation: establish buffer, add to/extend buffer	Med	Med-High	Med
16-02	20 Rough Lane	Directly into lake	Residential: Driveway	Surface erosion - slight; Soil - bare; Roof runoff erosion; Shoreline - Lack of shoreline vegetation	Moderate	45x25, driveway 100x12	Roads/Driveways - Build up, Add new surface material: blue stone gravel, reshape (crown), install runoff diverters; Paths & trails - Define foot path; Roof runoff - Infiltration trench at roof dripline, rain barrel; Other - Mulch/ECM, infiltration trench; Vegetation - establish buffer	Med	Med	Med

APPENDIX C: LIST OF GREAT POND NPS SITES

Site	Location	Flow into lake via	Land Use	Problems	Slope	Size of Exposed/ Eroded Area	Recommendations	Impact	Cost	Technical Level
16-03	22 Rough Lane	Ditch	Driveway	Surface erosion - moderate	Moderate	200x12	Roads/Driveways - Remove grade/plow berms, build up, add new surface material: blue stone gravel, reshape (crown), install runoff diverters	Low	Med	Med
16-04	Castle Island Rd Stream Crossing	Stream	State Road	Culvert- Unstable outlet, undersized; Road Shoulder Erosion- Slight (upstream stream bank covered in road sand); Other- Stream bank erosion (downstream around culvert outlet and along RH side).	Moderate	80 x 3	Culvert- Armor culvert inlet/outlet, enlarge	High	High	High
17-01	32 McHugh Lane	Directly into lake	Driveway	Surface erosion - Slight; Soil - Bare; Shoreline - Lack of shoreline vegetation	Moderate	40x8	Roads/Driveways - Add new surface material: blue stone gravel, Install runoff diverters: rubber razor; Paths & Trails - Define foot path, infiltration steps (?), Install runoff diverter (waterbar), ECM; Vegetation - Establish buffer, add to/extend buffer	Low	Low	Low
17-02	34 Markland Lane	Stream	Driveway	Surface erosion - Slight; Ditch - undersized; Road Shoulder Erosion - Slight	Flat	100 yards	Ditch - Install ditch; Roads/Driveways - Remover grader/plow berms, build up, add new surface material: blue stone gravel	Med	Med	Med
17-03	290 Woodland Camp Road	Directly into lake	Residential	Surface erosion - slight; Soil - Bare; Roof runoff erosion	Flat	35x75	Paths & Trails - Define foot path, infiltration steps (side of bldg), ECM; Roof runoff - Infiltration Trench at roof dripline, rain barrel; Other - Mulch/ECM, infiltration trench, rip rap (near storm drain)	Low	Low-Med	Low
17-04	216 Woodland Camp Road (pier on lake)	Directly into lake	Residential	Surface erosion - slight; Soil - bare; Shoreline - Undercut, lack of shoreline vegetation, erosion	Flat	100x20	Other - Rip rap; Vegetation - Add to/extend buffer, reseed bare soil & thinning grass; Other Suggestions - Fill in holes in causeway (3)	Low	Med	Med

APPENDIX C: LIST OF GREAT POND NPS SITES

Site	Location	Flow into lake via	Land Use	Problems	Slope	Size of Exposed/ Eroded Area	Recommendations	Impact	Cost	Technical Level
17-05	156 Woodland Camp Road	Directly into lake	Residential	Surface erosion - slight; Soil - Bare; Shoreline - erosion	Flat	30x10	Other - Mulch/ECM, rip rap; Vegetation - No raking	Low	Low	Low
17-06	143 + 148 Woodland Camp Road	Minimal vegetation	Residential	Surface erosion - slight; Soil - Bare; Shoreline - erosion	Flat	50x30 bare soil; 90 shoreline	Paths & Trails - Define foot path, ECM; Other - Rip rap - Vegetation - Establish buffer, no raking	Low	Low	Low
17-07	142 Woodland Camp Road	Directly into lake	Residential	Surface erosion - Moderate; Shoreline - undercut, erosion	Moderate	25x6	Other - Rip rap; Vegetation - Reseed bare soil & thinning grass	Low	Low	Low
17-08	128 Chester Thwing Road	Directly into lake	Residential	Soil - Bare	Flat	25x25	Paths & Trails - Define foot path; Vegetation - Establish buffer, no raking	Low	Low	Low
17-09	19 Carr Lane	Directly into lake	Residential	Other - New construction, no silt fence	Flat	5x20	Paths & Trails - Define foot path, stabilize foot path; Construction Site - Silt fence/ EC Berms	Low	Low	Low
17-10	21 Carr Lane	Directly into lake	Residential	Surface erosion - slight; Shoreline - erosion	Moderate	50x5	Other - Rip rap	Low	Med	Low
17-11	310 Woodland Camp Rd.	Directly into lake	Private Road (gravel)	Road Shoulder Erosion: Moderate; Shoreline: Undercut; Other: Long exposed gravel road close to water	Flat	300x12 (road); 300x4 (shore)	Roads/Driveways- Add New Surface Material (Blue stone gravel), reshape (crown); Other Suggestions: Rip rap along shoreline at edge of road where needed.	High	High	Med
17-12	310 Woodland Camp Rd.	Directly into lake	Construction site (residential)	Surface erosion- slight; Soil- bare; Roof Runoff Erosion; Shoreline- Inadequate shoreline vegetation; Other: Drainage across property needs extra attention due to location of house on narrow spit of land in order to prevent runoff to water and into house.	Moderate	70x 20 (x2)	Infiltrate Roof Runoff; Vegetation: Add to/extend buffer; Other Suggestions: Stabilize area around house, add berm around perimeter of property, and add drainage to shed water away from house.	Med	High	Med

APPENDIX C: LIST OF GREAT POND NPS SITES

Site	Location	Flow into lake via	Land Use	Problems	Slope	Size of Exposed/ Eroded Area	Recommendations	Impact	Cost	Technical Level
18-01	157 Main St.	Stream	Commercial	Surface erosion - slight; Soil - bare; Shoreline - Lack of shoreline vegetation	Flat	30x75	Vegetation - establish buffer (consider berm), reseed bare soil & thinning grass	Low	Low	Low
18-02	145 Main St.	Stream	Residential	Surface erosion - slight; Soil - bare	Moderate	5x3	Roads/Driveways - Build up (berm from driveway to shed), install catch basin (from Village Inn driveway), Waterbar (EC Berm	Low	Low	Low
18-03	107 Main St.	Directly into lake	Residential	Surface erosion - moderate; Shoreline - Lack of shoreline vegetation, erosion	Flat	20x2	Other - Rip rap (prefer vegetation); Vegetation - Establish buffer	Med	Low	Low
18-04	Town Road - Hulin Road - Across from Pole 21-5	Stream	Town Road	Road Shoulder Erosion - Moderate; Soil - Winter sand;	Flat	20x40	Roads/Driveways - Install detention basin; Other Suggestions - Remove winter sand from site, not dump next to stream; cloud out catch basin	High	High	Med-High
18-05	Culvert Off Hulin Road, next to garage	Stream	Town Road	Culvert - Clogged; Road Should Erosion - moderate; Soil - Winter sand; Other: Road material washed straight to stream	Moderate	200x5	Culvert - Remove clog; Roads/Driveways - Stabilize shoulder, install detention basin; Other Suggestions - Redesign retention basin	High	High	High
18-06	Corner of Kingfisher & Hulin	Stream	Private Road: gravel	Surface erosion - moderate; Roadside Plow/Grader Berm	Moderate	75x12	Roads/Driveways - Remove grader/plow berms, build up, install runoff diverters: rubber razor	Med	Med	Low
18-07	8 Kingfisher Road	Stream	Driveway	Surface erosion - moderate	Flat	75x20	Roads/Driveways - Add new surface material; Roof Runoff - infiltration trench at roof dripline, drywell at gutter downspout	Med	Med	Low
18-08	8 Kingfisher Road	Stream	Trail or Path; Residential	Surface erosion - moderate; Soil - Bare	Steep	60x6	Paths & Trails - Infiltration Steps; Roof runoff - Infiltration trench at roof dripline; Other - Mulch/ECM	Low	Low	Low
18-09	18 Red Oaks Lodge Road	Stream	Trail or Path; Residential	Surface erosion - slight; Soil - bare; Roof runoff erosion; Shoreline - Lack of shoreline vegetation	Moderate	150x10	Paths & Trails - Stabilize foot path, infiltration steps, ECM (lower level); Vegetation - Establish buffer	Med	Med	Med

APPENDIX C: LIST OF GREAT POND NPS SITES

Site	Location	Flow into lake via	Land Use	Problems	Slope	Size of Exposed/ Eroded Area	Recommendations	Impact	Cost	Technical Level
18-10	44 Abena Shores Road	Directly into lake	Residential	Shoreline - Undercut, lack of shoreline vegetation, erosion	Flat	10x3	Vegetation - establish buffer	Low	Low	Low
18-11	48 Abena Shores Road	Directly into lake	Driveway (gravel)	Surface erosion - moderate	Moderate	100x10	Roads/Driveways - Build Up, Add new surface material: blue stone gravel, install runoff diverters: rubber razor	Med	Med	Med
18-12	Abena Shores (next to 48, no house)	Minimal Vegetation	Trail or Path; Residential	Surface erosion - moderate, sever; Soil - bare	Steep	125x10	Roads/Driveways - Install runoff diverters: waterbar; Paths & Trails - Define foot path, install runoff diverter (waterbar), ECM	High	Med	Med
18-13	Abena Shores at Hersom Road	Directly into lake	Private Road	Surface Erosion - Severe; Roadside plow/Grader berm	Moderate	200x4	Roads/Driveways - remover grader/plow berms; Ditch - install turnouts	Med	Med	Med
18-14	60 Abena Shores Road	Directly into lake	Residential	Surface erosion - moderate; Soil - Bare	Moderate	40x6	Paths & Trails - ECM; Other Suggestions - Limit ATV use	Med	Med	Low
18-15	89 Abena Shores Road	Directly into lake	Residential	Surface erosion - slight; Soil - bare; Roof runoff erosion	Flat	30x15	Paths & Trails - ECM at shoreline; Roof Runoff - Infiltration trench	Low	Low	Low
18-16	48 Red Oak Lodge Road	Directly into lake	Residential	Surface erosion- slight; Soil - Bare; Shoreline - inadequate shoreline vegetation, erosion	Moderate	75x10	Culvert - remove clog (at edge of driveway); Other - Mulch/ECM, Rain garden (at culvert outlet next to driveway); Vegetation - Add to/extend buffer; Other Suggestions: If erosion resulting from dock storage, consider other location	Low	Low	Low
18-17	13 Dern Lane	Directly into lake	Residential	Surface Erosion - Slight; Soil - bare; Shoreline - inadequate shoreline vegetation, erosion	Flat	30x10	Roads/Driveways - Build up (add berm to driveway front edge); Other - Install runoff diverter (waterbar); Roof runoff - repair downspout outlet pipe; Vegetation - Reseed bare soil & thinning grass	Low	Low	Low

APPENDIX C: LIST OF GREAT POND NPS SITES

Site	Location	Flow into lake via	Land Use	Problems	Slope	Size of Exposed/ Eroded Area	Recommendations	Impact	Cost	Technical Level
18-18	67 Main St.	Stream	Commercial (church parking lot)	Surface erosion - moderate; Culvert - Clogged	Flat	100x50	Culvert - Remove clog, enlarge, install plunge pool (enlarge); Roads/Driveways - Add new surface material: Blue stone gravel	Med	Med	Med
18-19	43 Main St. (SEE NOTE)	Stream	Town Road	Road Shoulder Erosion - Moderate	Moderate	100x10	Ditch - Install turnouts; Roads/Driveways - Reshape (crown), Vegetate shoulder (stabilize)	Med	Med	Med
18-20	1203 West Road (SEE NOTE)	Stream	Town Road	Road Shoulder Erosion - Moderate	Moderate	250x10	Roads/Driveways - Build up, stabilize shoulder	Med	Med	Med
18-21	14 Rupus Lane	Directly into lake	Trail or Path (Residential)	Surface erosion- Moderate (path)	Moderate	50x5	Paths & Trails - Clean out runoff diverter, ECM; Roof runoff - Infiltration trench at roof dripline	Low	Low	Low
18-22	1 Center Drive	Directly into lake	Municipal/Public	Surface erosion - Moderate; Shoreline - Unstable access	Moderate	12x12	Roads/Driveways - Install runoff diverters; Paths & Trails - Stabilize foot path, ECM; Other - Rain garden, Infiltration trench	Med	Med	Med
18-23	23 Marina Drive	Directly into lake	Commercial	Surface erosion - Moderate; Shoreline - Unstable access	Flat	20x10	Paths & Trails - Install runoff diverter (waterbar); Vegetation - Reseed bare soil & thinning grass, install beach (?)	Med	Low	Low
18-24	7 Cranberry Lane	Directly into lake	Residential	Surface erosion - slight; Soil - Bare; Roof runoff erosion	Moderate	20x15	Roof runoff - Infiltration trench at roof dripline; Other - Mulch/ECM; Vegetation - reseed bare soil & thinning grass	Low	Low	Low
18-25	22 Hersom Road	Directly into lake	Residential	Surface erosion - slight; Soil - Bare; Roof runoff erosion	Moderate	30x20	Paths & Trails - Infiltration steps (retrofit existing); Roof runoff - Infiltration trench at roof dripline; Other - Mulch/ECM	Med	Low	Low
18-26	26 Hersom Road	Directly into lake	Residential	Surface erosion - slight, moderate; Soil - Bare; Shoreline - Inadequate shoreline vegetation, erosion	Steep	15x8	Paths & Trails - Infiltration steps; Other - Mulch/ECM, rain garden; Vegetation - Establish buffer	Low	Low	Low

APPENDIX C: LIST OF GREAT POND NPS SITES

Site	Location	Flow into lake via	Land Use	Problems	Slope	Size of Exposed/ Eroded Area	Recommendations	Impact	Cost	Technical Level
18-27	0 Boatway Lane	Stream	Municipal/Public	Surface erosion - slight; Soil - bare; Shoreline - Inadequate shoreline vegetation	Moderate	30x8	Roads/Driveways - Add new surface material; Vegetation - add to/extend buffer	Low	Low	Low
18-28	Boat House Way (Boat ready area)	Directly into lake	Municipal/Public	Road Shoulder Erosion - Moderate	Flat	35x6	Roads/Driveways - Build up, add new surface material	Med	Low	Low
18-29	36 Boatway Lane	Directly into lake	Residential	Surface erosion - slight; Soil - bare	Moderate	10x3	Paths & Trails - Install runoff diverter (waterbar), ECM (at dock); Roof runoff - Infiltration trench at roof dripline	Low	Low	Low
19-01	59 Homestead Drive	Directly into lake	Driveway (paved)	Surface erosion - Moderate; Shoreline - Inadequate shoreline vegetation	Moderate	10x40	Roads/Driveways - Vegetate shoulder; Vegetation - add to/extend buffer; Other Suggestions - Add crush stone aprons at runoff points	Med	Low	Low
19-02	22 South Mountain Drive	Minimal Vegetation	Residential	Surface erosion - Slight; Soil - Bare	Flat	35x15	Other - Mulch/ECM or Vegetation: Reseed bare soil & thinning grass	Low	Low	Low
19-03	Mountain Drive, Between UP #32 & #33	Ditch	Private Road	Culvert - Unstable outlet, clogged, undersized	Moderate	20' culvert	Culvert - Armor inlet/outlet, replace (with 18" culvert), enlarge	Low	Med	Med
19-04	279 Mountain Drive	Minimal Vegetation	Trail or Path (camp site)	Surface erosion - slight; Soil - Bare	Moderate	200x20	Paths & Trails - Stabilize foot path, ECM	Low	Med	Low
19-05	261 Mountain Drive	Directly into lake	Residential	Surface erosion - Slight; Soil - Bare; Shoreline - Lack of shoreline vegetation	Moderate	40x80	Vegetation - establish buffer	Med	Med	Low
19-06	209 Mountain Drive	Minimal Vegetation	Residential	Surface erosion - Slight; Soil - Bare; Shoreline - Inadequate shoreline vegetation	Moderate	30x10	Roads/Driveways - Install runoff diverters: rubber razor; Vegetation - extend buffer	Med	Med	Med
19-07	187 Mountain Drive	Directly into lake	Residential	Surface erosion - moderate; Soil - bare; Shoreline - lack of shoreline vegetation	Steep	80x20	Other - Install runoff diverter (waterbar), mulch/ECM; Vegetation - establish buffer	Med	Med	Low

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Site	Location	Flow into lake via	Land Use	Problems	Slope	Size of Exposed/ Eroded Area	Recommendations	Impact	Cost	Technical Level
19-08	143 Mountain Drive	Directly into lake	Residential	Surface erosion - moderate; Soil - bare; Shoreline - Lack of shoreline vegetation	Steep	100x10	Paths & Trails - Stabilize foot path, install runoff diverter (waterbar)	Med	Low	Low
20-01	16 Lambert Lane	Directly into lake	Residential: Potential septic issue	Surface erosion - Moderate	Moderate	35x4; 12x4	Paths & Trails - Define foot path, stabilize foot path, install runoff diverter (waterbar)	Low	Med	Med
20-02	16 Lambert Lane	Directly into lake (through buffer)	Residential	Surface erosion - slight; Culvert (through driveway) - Unstable inlet/outlet; Roof runoff erosion	Moderate	30x2; 20x2; 10x2; 10x2; 10x2	Culvert - Armor inlet/outlet; Roof runoff - Infiltration trench at roof dripline	Low	Low	Low
20-03	288 Drury Lane	Directly into lake; Stream	Residential: Driveway/Parking (#4)	Surface erosion - Moderate; Soil - bare (#2); Roof Runoff (#1); Shoreline (#3)	Moderate	#1 -18x2; #2 - 40x10; #3 - 30x2, 40x2; #4 - 60x40	Roads/ Driveways - Install runoff diverters: rubber razor, waterbar (or gentle berm); Roof runoff - Infiltration trench at roof dripline; Other - Mulch/ECM	Med	Med	Med
20-04	Next door to 288 Drury Lane	Directly into lake; Stream	Residential: Driveway (#3)	Surface erosion - moderate (#2-3); Culvert (#4) - Unstable inlet/outlet; Soil (#2) - bare; Roof runoff erosion (#1)	Moderate	#1 - 35x2, 15x2; #2 - 60x4; #3 - 125x20; #4 60x40	Culvert - Armor inlet/outlet (#4); Roads/Driveways - Install runoff diverters (#3): Rubber razor; Roof runoff (#1) - Infiltration trench at roof dripline; Other - Mulch/ECM (#1)	High	Med	Med
20-05	108 Marsh Lane	Directly into lake	Residential	Shoreline - undercut, erosion	Flat	20x8	Paths & Trails - Rip rap (existing rip rap needs to replace 20' long)	Low	Low	Low
20-06	120 Marsh Lane	Directly into lake	Residential: Construction site	Soil - bare	Flat	18x12	Other - Mulch/ECM	Low	Low	Low
20-07	Starbird Lane	Ditch?	Private Road	Culvert - Unstable inlet/outlet, undersized	Flat		Culvert - Armor inlet/outlet, replace, enlarge	Low	Low	Low
20-08	Starbird Lane	Directly into lake	Residential	Surface erosion - slight; Soil - bare	Moderate	20x6	Paths & Trails - Stabilize foot path, ECM	Low	Low	Low

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Site	Location	Flow into lake via	Land Use	Problems	Slope	Size of Exposed/ Eroded Area	Recommendations	Impact	Cost	Technical Level
20-09	129 Starbird Lane	Minimal Vegetation	Residential	Surface erosion - slight	Moderate	8x2, 24x2	Other - Gravel spreader, some gravel in place needs more	Low	Low	Low
20-10	Taconnet Parking Lot	Directly into lake	Commercial	Culvert/Swale - Clogged	Moderate		Other Suggestions - Sediment basin and swale in place but need to be cleaned out; drainage pit is higher than swale	High	High	High
20-11	8 Camp Relief Lane	Directly into lake	Trail or Path	Surface erosion - slight (#1); Soil - bare (#2)	Moderate	#1 - 50x3, #2 - 40x30	Paths & Trails - ECM	Low	Low	Low
21-01	12 Hoyt Island	Directly into lake	Trail or Path	Surface erosion - slight; Soil - bare	Flat	20x8	Paths & Trails - ECM	Low	Low	Low
21-02	Indian Island	Directly into lake	Trail or Path : Boat access	Surface erosion - moderate; Soil -bare; Roof runoff erosion (first building contributes to water on trail); Shoreline - erosion	Steep	40x5	Paths & Trails - Infiltration steps (or terrace), Install runoff diverter (waterbar), ECM (on trail and by dock on slope); Roof runoff - infiltration trench at roof dripline	Low	Low	Low
21-03	Pine Island Camp - Pine Island	Directly into lake	Commercial: Beach Access - Trail or path	Surface erosion - Moderate, severe; Soil - bare; Roof runoff erosion; Shoreline - Undercut, erosion, unstable access	Moderate	Multiple eroded areas over large area (See photos)	Paths & Trails - stabilize foot path, infiltration steps, ECM; Roof runoff - Infiltration trench at roof dripline, drywell at gutter downspout; Other - Install runoff diverter (waterbar), Mulch/ECM, Infiltration trench, rip rap; Vegetation - Establish buffer (shoreline retaining rip rap needed w. shore)	High	High	High
21-04	Oak Island	Directly into lake	Beach Access	Surface erosion - moderate; Soil - bare; Shoreline - undercut, erosion	Moderate	20x10	Stabilize foot path	Low	Low	Low