

## Gregg Lake Watershed Septic Survey Results

**Septic Inventory.** Between July and December, 2019, a septic inventory was undertaken for properties identified as probably having waste systems within 250 feet of the Gregg Lake shoreline. Efforts were made to reach residents in person at home. Members of the GLA and the Gregg Lake Watershed Management Plan Committee conducted the interviews, generally in the vicinities of their own lake homes. Residents were assured that their responses would remain anonymous, and names and addresses were not connected with survey responses. Surveys and information were left at the door or mailed to most of those not reached at home. For those who were not reached or declined to answer the survey, as much information as possible was gleaned from the Town of Antrim’s online Property Cards.

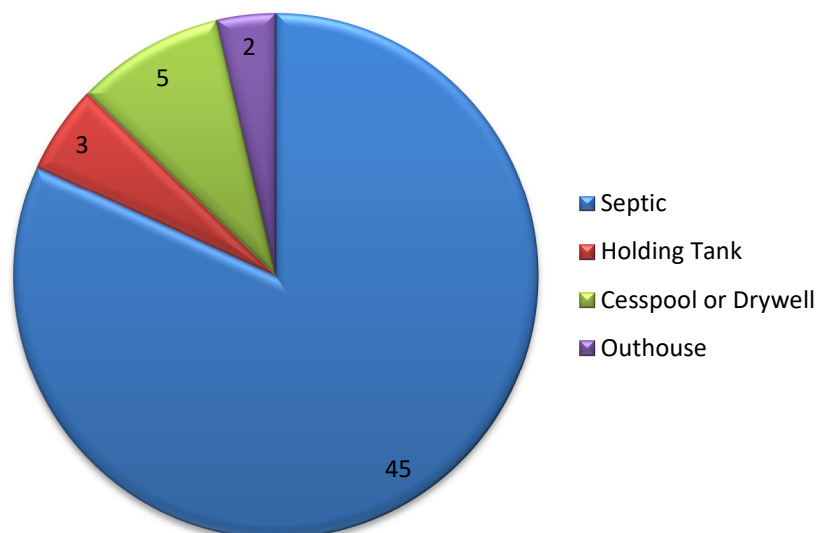
### Overview:

- 55 Properties were identified as probably having waste systems within 250 ft. of Gregg Lake.
- Septic inventory questionnaires were filled out for 42 properties (76%); the remainder were partially filled in from Property Cards or other local information.
- Not everyone answered all questions.
- Harbor Camp data was not included in the summary because all camp waste is pumped to two leach fields well over 250 feet from the lake.
- Some people had more than one system, e.g, for gray water vs sewage.
- One property with two equivalent houses was split into two, leaving a total of 55 properties with waste disposal systems within 250 ft. of lake.

### QUESTION 1: What form of wastewater disposal do you use?

**Table 1.** *Types of Waste Systems*

Waste System	Count	%
Septic	45	82
Holding Tank	3	5
Cesspool or Drywell	5	9
Composting Toilet	0	0
Outhouse	2	4
<b>Total</b>	<b>55</b>	<b>100</b>

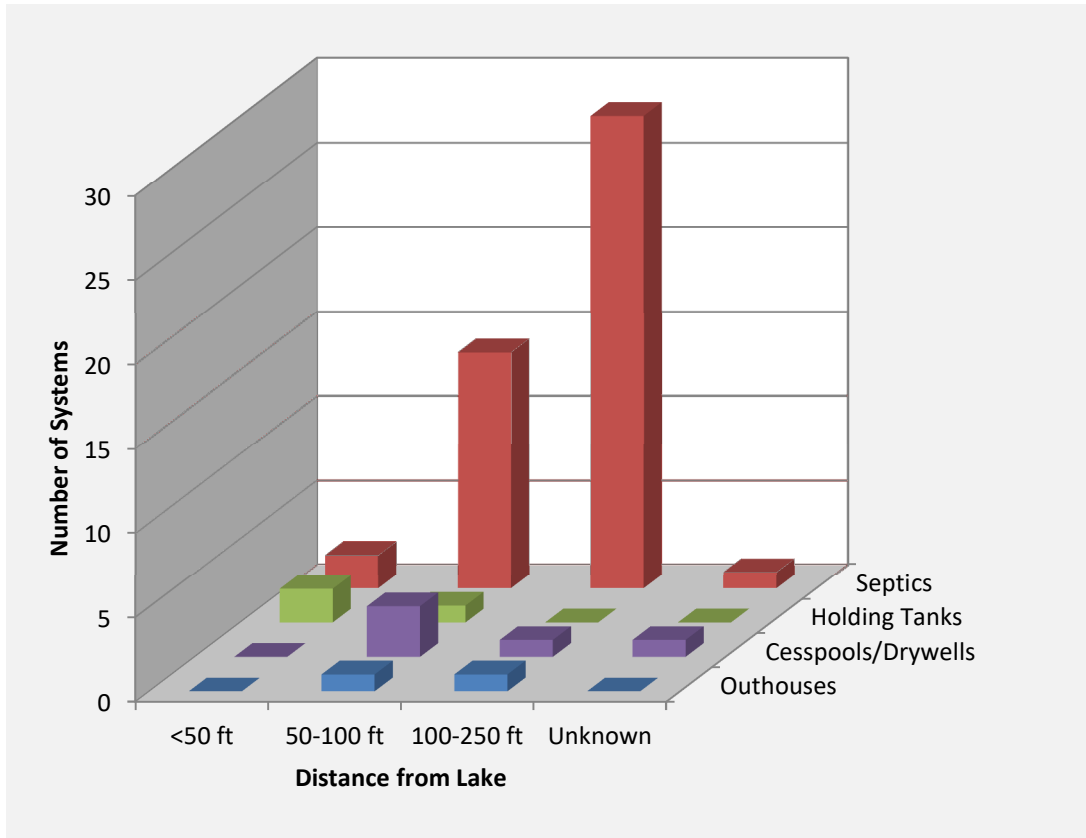


**Figure 1.** *Types of Waste Systems*

**QUESTION 2: Where is your septic (or other) system?**

**Table 2. Waste System Locations (Distance from Lake)**

Distance from Lake	All	Septics	Holding Tanks	Cesspools/Drywells	Outhouses
<50 ft	4	2	2	0	0
50-100 ft	19	14	1	3	1
100-250 ft	30	28	0	1	1
>250 ft	0	0	0	0	0
Unknown	2	1	0	1	0

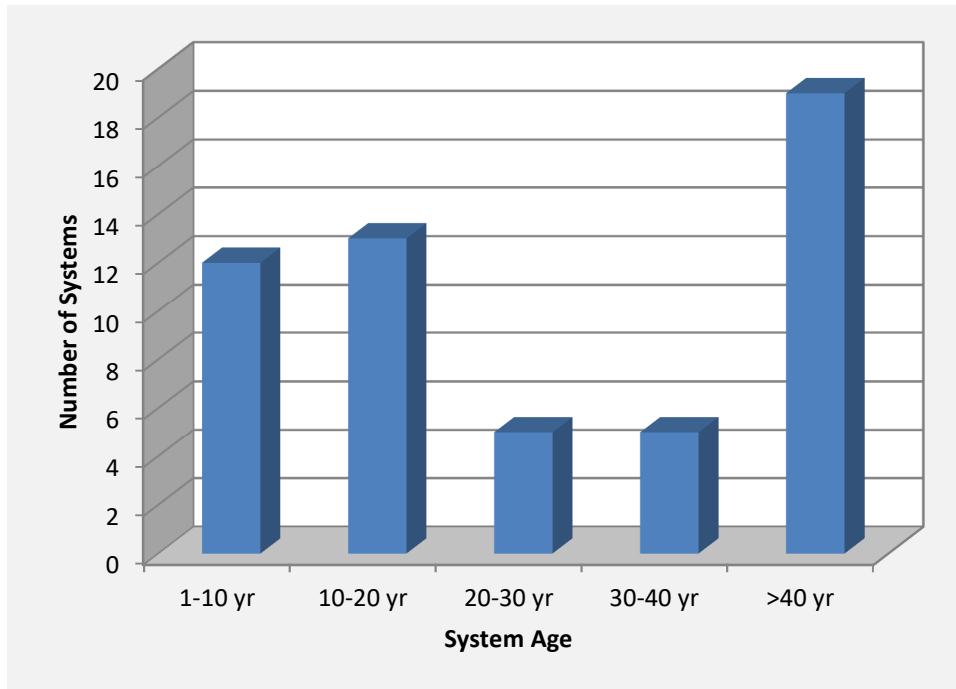


**Figure 2. Waste System Locations**

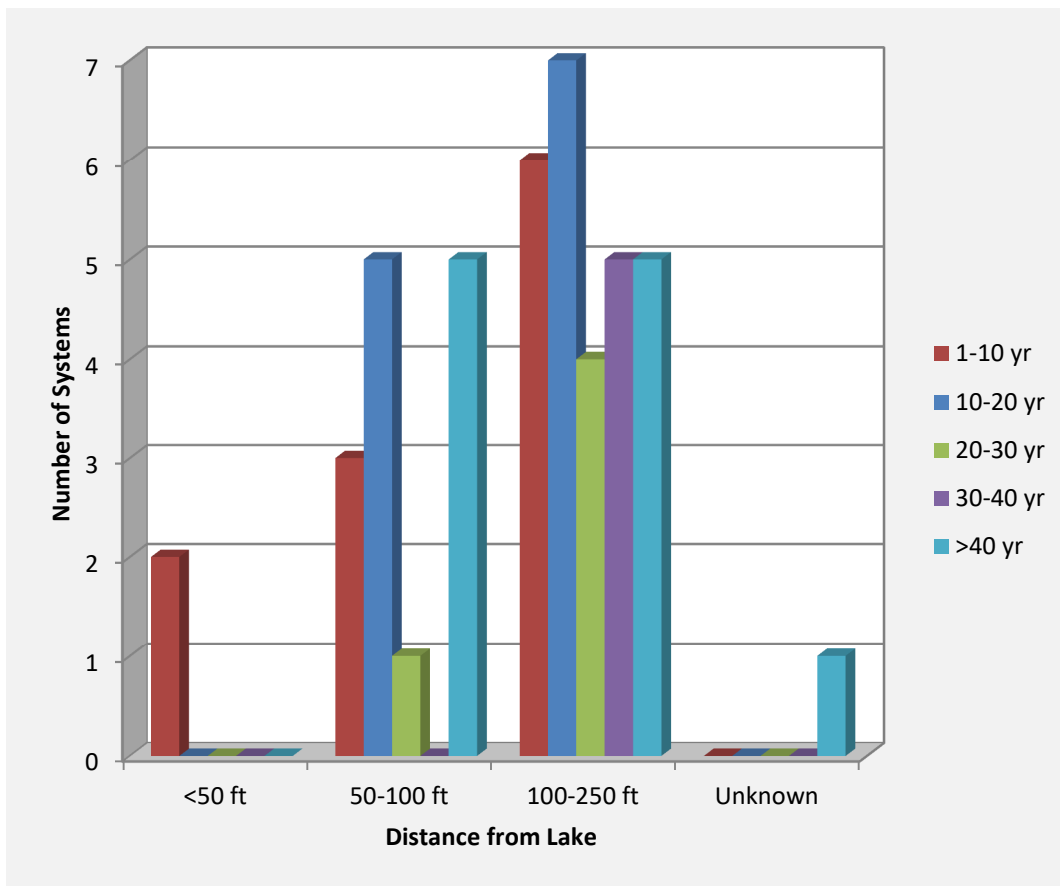
**QUESTION 3: How old is your septic system?**

**Table 3. Waste System Age**

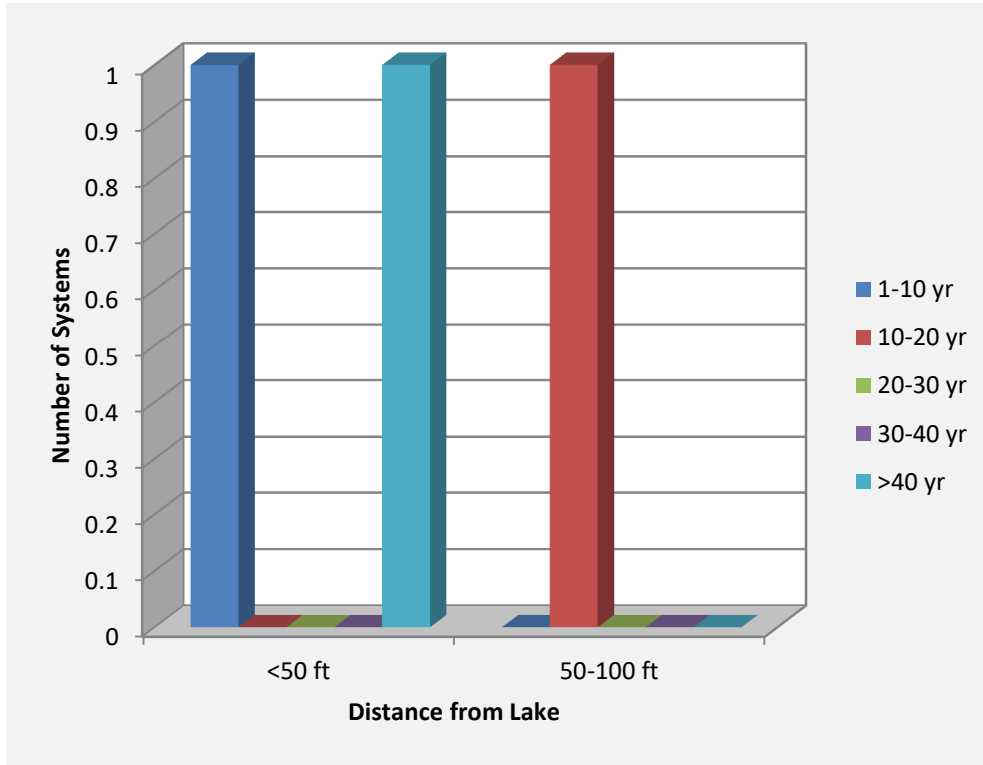
System Age	All Systems	Septics				Holding Tanks		Cesspools/Drywells			Outhouses	
	All Distances	<50 ft	50-100 ft	100-250 ft	Unk.	<50 ft	50-100 ft	50-100 ft	100-250 ft	Unk.	50-100 ft	100-250 ft
1-10 yr	12	2	3	6	0	1	0	0	0	0	0	0
10-20 yr	13	0	5	7	0	0	1	0	0	0	0	0
20-30 yr	5	0	1	4	0	0	0	0	0	0	0	0
30-40 yr	5	0	0	5	0	0	0	0	0	0	0	0
>40 yr	20	0	5	5	1	1	0	3	1	1	1	1



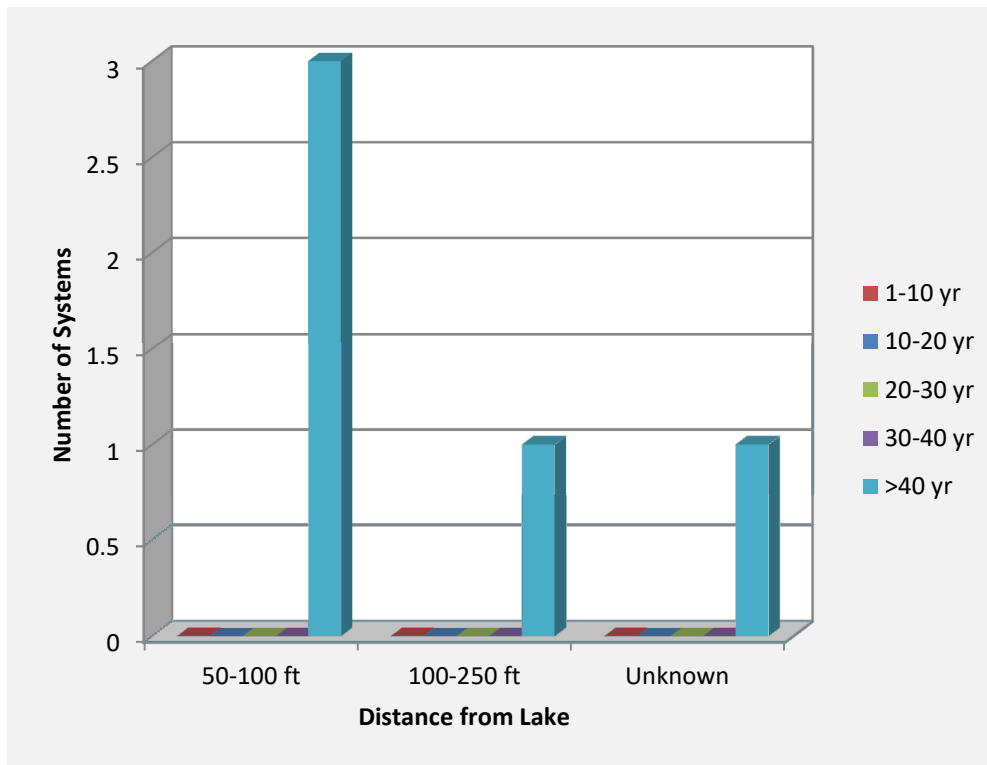
**Figure 3.1. Ages of All Waste Systems**



**Figure 3.2. Septic Systems—Age and Distance from Lake**



**Figure 3.3.** Holding Tanks—Age and Distance from Lake



**Figure 3.4.** Cesspools and Drywells—Age and Distance from Lake

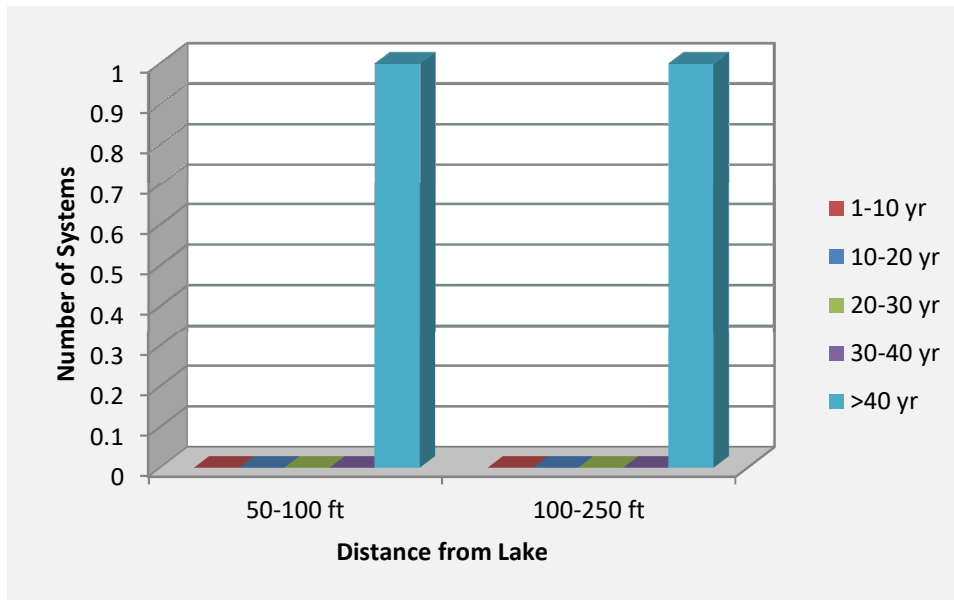


Figure 3.5. Outhouses—Age and Distance from Lake

QUESTION 4: When was your septic (or other) tank last pumped out?

Table 4. Date System Last Pumped

Last Pumped	Total	Septics	Tanks	Cesspools/Drywells
This year	7	4	3	0
Last year	6	6	0	0
2 years ago	4	4	0	0
3-5 years ago	5	5	0	0
> 5 years ago	15	13	0	2
Unknown	16	13	0	3

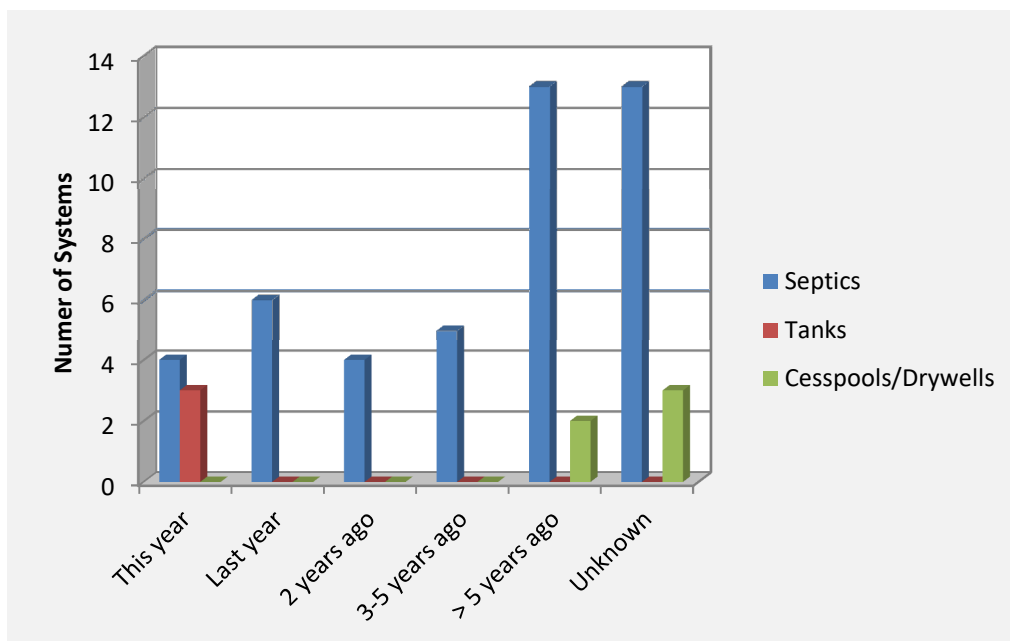
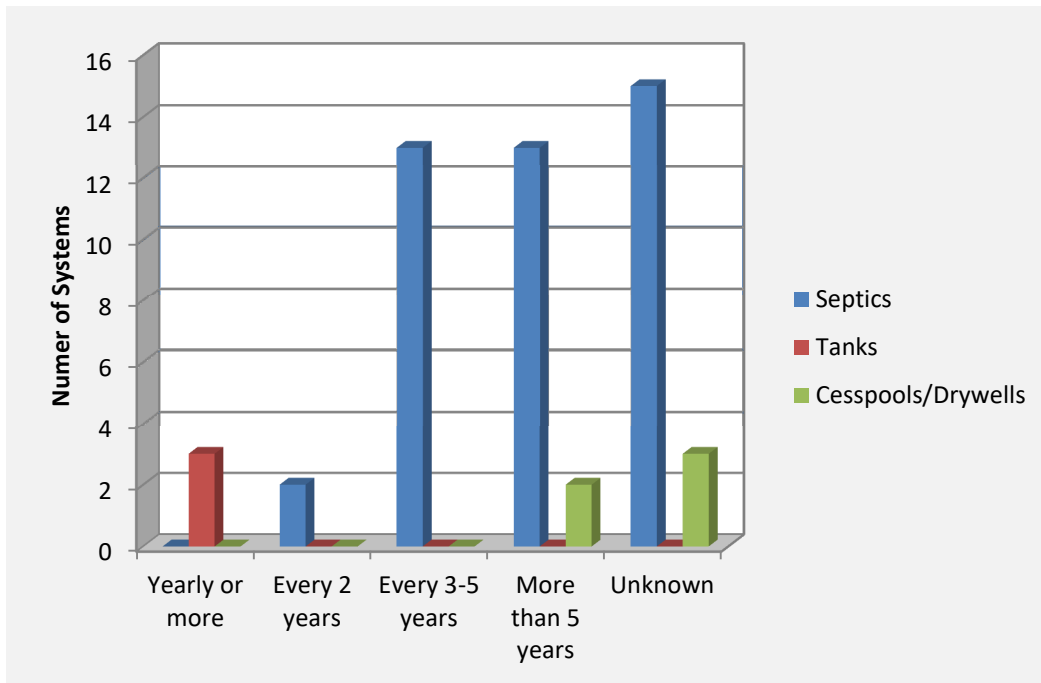


Figure 4. Date System Last Pumped

**QUESTION 5: How often do you normally get your system pumped?**

**Table 5. Normal Pumping Frequency**

Pumping Frequency	Total	Septics	Tanks	Cesspools/Drywells
Yearly or more	3	0	3	0
Every 2 years	2	2	0	0
Every 3-5 years	13	13	0	0
More than 5 years	15	13	0	2
Unknown	18	15	0	3



**Figure 5. Normal Pumping Frequency**

**QUESTION 6: Is this home used seasonally or all year?**

**Table 6. Residence Occupancy Time**

Occupancy Time	Total	Septics	Tanks	Cesspools/Drywells	Outhouses
2-4 months	41	32	3	4	2
6-8 months	5	4	0	1	0
All year	8	8	0	0	0

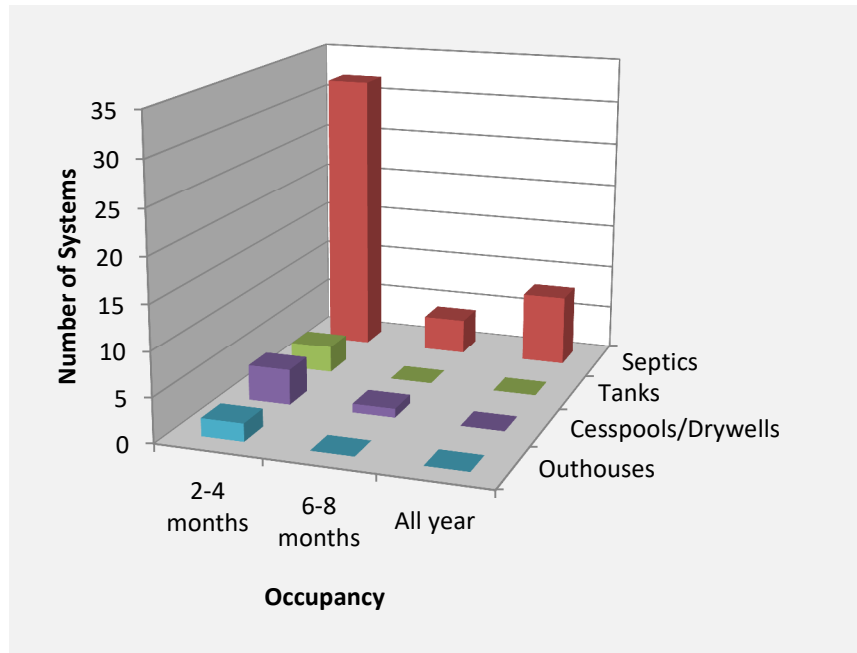


Figure 6. Waste System vs Occupancy Time of Residence

QUESTION 7: What is the average occupancy of this home when it is occupied?

Table 7. Average Number of Occupants

Average Occupancy	Total	Septics	Tanks	Cesspools/Drywells	Outhouses
1-2 people	29	24	2	1	2
2-4 people	14	12	0	2	0
4-6 people	2	2	0	0	0
>6 people	1	0	1	0	0

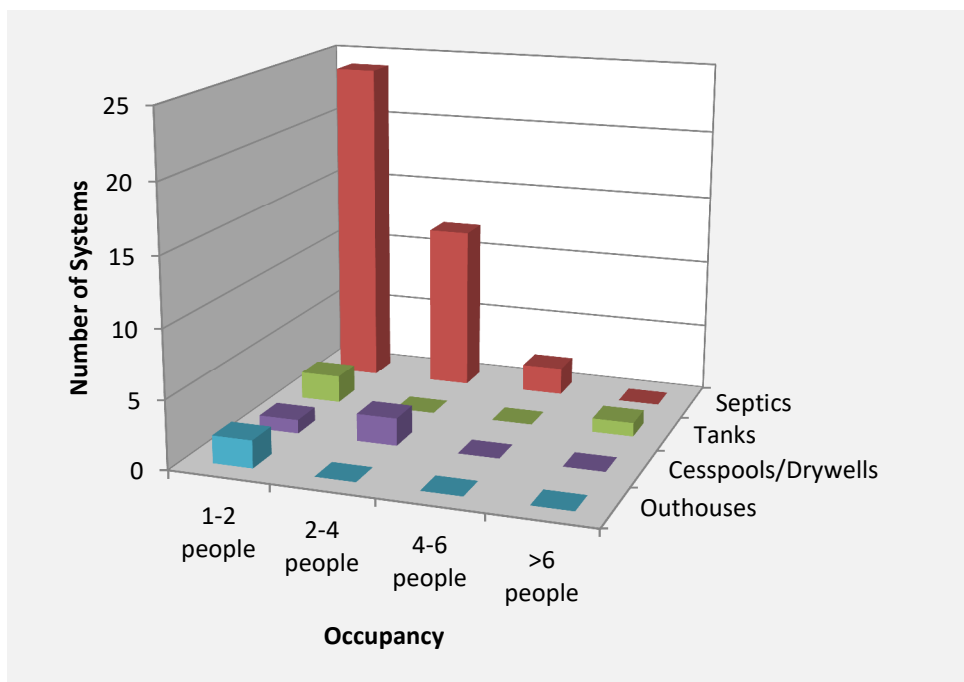


Figure 7. Waste System vs Average Number of Occupants

**QUESTION 8: Do you have any of the following?**

**Table 8. Appliances affecting septic system**

Appliances	Total	Septics	Tanks	Cesspools/Drywells	Outhouses
Garbage Disposal	2	2	0	0	0
Water Softener	1	1	0	0	0

**QUESTION 9: What fertilizers or pesticides do you use on your property?**

**Table 9. Fertilizer or Pesticide Use**

Fertilizers/Pesticides	Total	Septics	Tanks	Cesspools/Drywells	Outhouses
None	31	26	1	2	2
Other Responses:	5	4	1	0	0
Occasional treatment of house for ants None-except in and around foundation for ants No pesticides, use diatomaceous earth Lime on grass once Spray for ants around foundation Roundup on shrubbery at shore Sevin around buildings and swimming/boating areas for tick control Scotts +2 Grub x					

**QUESTIONS 10 & 11: Have you noticed major changes in the lake over the years? Do you have any additional comments?**

**Responses as written, sorted by topics:**

**Algae and Aquatic Plants**

- Green algae blooms
- More algae (3X)
- Increased algae
- More algae -- or just more aware of it
- More algae on some years, including this year.
- More algae (blooms)
- Algae clumps in shallows of the cove
- Increased globs of algae
- There are more balls of green algae--this is the first time seeing such big clouds of it, or haven't noticed before now
- Poorly constructed or perhaps non-existent septic systems on the lots surrounding the lake could certainly be at least a partial cause of algae blooms. So could the use of lawn fertilizers. Increased boating activity can stir up lake sediments in a largely shallow lake such as Gregg Lake. These suspended sediments can provide nutrients of algal growth.
- More algae, more aquatic plants
- Increased lake weed and green algae
- More plant growth
- A lot more weeds near shoreline



- More vegetation--aquatic plants in lake
- More vegetation in lake
- Increased watershed
- More weeds at northwest end
- More vegetation
- Beyond the town beach on the lake side there is a lot more/new growth of vegetation by the ditch where Brimstone Corner Road empties runoff into the lake
- Pickerelweed--more of it.
- Less milfoil--more lily pads
- Increase in aquatic plants

## **Fish**

- Fish are smaller this year. No more perch and haven't caught a pickerel in years. Fewer sunfish. You couldn't go fishing in past without catching a sunfish and some were big. No more catfish/hornpout. You used to catch many. Now you only catch bass and sometimes tiny perch. These observations are from fishing every year since 1953.
- Now we have two species of bass -- more bass. Large and smallmouth bass.
- No more schools of shiners now that largemouth bass are here. Fish are healthy, just don't get as big because of largemouth bass, which have only been around in recent years. Fish & Game said someone must have thrown them into the lake--they were not stocked. Talked with Fish & Game in '85 to ask about fish in the lake. F&G said they tried to stock trout back in 1940s but there wasn't enough oxygen. (Trout like to go down deep where it's cooler & need oxygen.) So maybe this lake has always had low oxygen in deep water.
- Fishing Derby--the irony is the lake is a good place to fish & then they fish out the lake--derby is an annual event that brings people to the lake--a concern
- Perch once were the predominant fish species, and now are much less prevalent
- Fewer pickerel.
- Largemouth bass are far more prevalent, and smallmouth less prevalent
- Reduction in fish--loons came and could be eating fish
- No more horn pouting!
- Does NH F&G survey the lake fish?

## **Amphibians, Birds, Other Animals**

- Less frogs and no more bats
- Frogs -- used to have so many they would keep you awake at night. Now only hear an occasional one or two.
- Fewer frogs
- Frog population has gone way down over the past 50 years, mostly over the past 30 years. Bull Frogs are now rare and Green Frogs much less common. Grass Frogs are OK.
- The frog and newt populations in the meadow appear to have decreased significantly. Some of this may be in sync with worldwide decreases in amphibian populations, but I expect that the higher water levels in the meadow may have contributed the population decline in Gregg Lake. The previously lower water levels that occurred prior to the dam renovation provided better habitat for amphibians because there was more emergent vegetation and better cover from predation of the amphibian eggs by fish. Deeper water allows freer range of predatory fish in a larger area of the meadow than there was previously. This is my own conjecture, based on anecdotal evidence. I remember the very loud chorus of green and bull frogs from the 70s and earlier. Things certainly are quieter at night now.
- A lot more salamanders
- The population of the red eft, those adorable little orange salamanders, has decreased very markedly since the 1950s and 60s. The adult phase of the red eft lives in the lake and perhaps the same changes that have affected the frog populations have affected the efts as well.
- Salamander population has gone down to low levels.
- More owls, less snakes

- Loons came. There were none until about 20 years ago
- More loons.
- Loons are now on lake
- Several herons frequent the lake and environs.
- Heron rookery at Lily Pond and on Harris Center/former Girl Scout land (beaver pond)?
- More geese and scat--two days ago saw 20 geese fly by house
- Don't see any raccoons
- More chipmunks this year-proliferation of acorns-more owls
- Turtles--there are a lot of them
- Leeches--hadn't seen leeches off their house for years or ever before

## **Boats**

- Fewer boats
- Fewer jet skis
- More boats on the lake
- New dam and new public beach which brought more motorboats to the lake, disturbing the peace
- A lot more boat traffic. (Came here in 1985)
- Less speed boats and jet skis
- Town does well with small amount of boats. Glad town didn't apply for a second boat parking area, which had been considered. Doesn't want to see another parking lot for boat trailers. State grant made the current boat parking area a state parking lot. The lake doesn't need more boats. Last 10 years was when the town considered adding a second parking area for boat trailers. That also would have relied on state funding and been located on Brimstone Road.
- No one keeping track of number of motorboats--need a boat census for the weekends.
- It seems to me that boat wakes are getting larger. I am more aware than ever of really large waves slamming into the shore. I worry about erosion, and it is not pleasant for paddling or swimming. I also have the impression that fast moving power boats are coming closer to the shore than they did 10 or 15 years ago. Coupled with larger wakes, it seems like that could be really bad for the shore and the shallows where the frogs, salamanders and fish nests are. Also, do these wakes churn up sediment and uproot aquatic plants in shallow areas? Gregg Lake is so narrow, it seems like there isn't enough room for the wakes to dissipate much at all before they reach the shore.

## **Lake Water Level**

- Lake is low due to putting boards in too late in season
- Lake lower this year (boards in late--boards for dam were put in late this year)
- Lake is lower this year. The town should bring the lake level up earlier in the spring--prefer a higher level--town should bring it up higher--Highway Dept manages lake level now--they let it down sooner in fall as well. They should wait until Columbus Day as they used to when Woody put in and took out the boards in the past.
- The increase in the lake level and the fact that there no longer is a winter drawdown has had significant changes to the lake ecology, particularly in the meadow where largely emergent vegetation has changed to a mix of emergent and submerged species. This in itself is not necessarily a bad thing, just a change. However, the lack of continued winter drawdown has allowed the proliferation of some water milfoil in the lake. Unless European water milfoil has taken over in recent years, the milfoil is a native species (last time I looked, which is now many years ago).
- Given the diminished seasonal draining of the lake, perhaps this has altered the ecology.
- Less variation in water level than in decades past
- Lake water level is lowered too soon every year. It is not possible for us to continue boating when we would like to.
- Lake level kept much higher than previously, haven't seen beach for years
- Lake level too high

## Public Beach

- New public beach was built.
- Remember when the new public beach was built. The lake was lower. 1966/65 lake was drained and new beach was built.
- Gregg Lake is one of the only lakes with a free beach. People come from all over and don't respect the lake. They leave trash and don't care about it. It's a weak link--Is the lake status tied to the original funding by the state-- i.e., tied to original funding for beach?
- Should the town restrict the beach to residents?
- Good improvements for dogs (waste bags, dog area on beach)
- Maybe adding a trash can by beach (suggestion)
- Lake host program has been helping protect lake from invasive aquatic species

## Development

- Some new houses built around the lake
- New houses around the lake and more docks maybe
- More housing rebuilds in recent years around the lake
- More development in the south cove end of the lake
- Potential lakefront land for subdivision for sale along Brimstone Corner Road (a concern)
- Some trees are cut along edges of the Harbor Camp with a road. Now you can see their cars and buildings when you couldn't before.
- Woods have grown up over years -- fewer fields. Holt's Hill now covered with trees.
- More cars than 50 years ago and fewer horses and buggies
- More car traffic on the roads
- Cars driving too fast around Gregg Lake Road, some flying by. Maybe center lines on the road would help.
- When we first came there was an outhouse behind barn, no running water and electricity
- I endorse the focus on septic systems, as many probably are poorly documented, not understood, and dysfunctional. Elimination of direct lake or open water discharges would seem logical. Septic systems in fractured bedrock geology can be problematic. Other improvements might be easy to achieve. I suspect that time has "upgraded" the dwellings on the lake, and that there is more ubiquitous use of washing machines and greater stress on the septic systems. Low use, and use of environmentally friendly detergents should be encouraged.
- After the discussion you led at the 2017 GLA meeting, we decided to have a real septic system installed on our property. We've hired Steve Jones (Antrim) and Chris Guida (from Fieldstone in Milford). We've had the initial testing done, and they should start digging sometime in the next few weeks. We felt it was the right thing to do for our precious lake.
- Plan to replace septic system in next 1 or 2 years
- Stop Antrim Wind!

## Silt, Sand

- Filling in of areas with silt from runoff
- A lot more people adding sand to beaches. They just dump it and don't seem to be doing it properly--not supposed to be doing this
- Catchment from Holt Hill Road is a concern
- Road runoff is the worst it's ever been. Since the "new" bridge was put in there has been a big change.
- Reduced clarity in lake

## Other

- A lot of fireworks in recent years around 4<sup>th</sup> of July
- People throw trash along the road
- Birches are mostly gone (forest succession)
- Water burning nose when swimming

- Boulders removed
- Not really noticed much change
- "Pond smell"
- Little things
- No, but have only been here one year
- No
- Yes



Funding for this project was provided in part by a Watershed Assistance Grant from the NH Department of Environmental Services with Clean Water Act Section 319 funds from the U.S. Environmental Protection Agency.