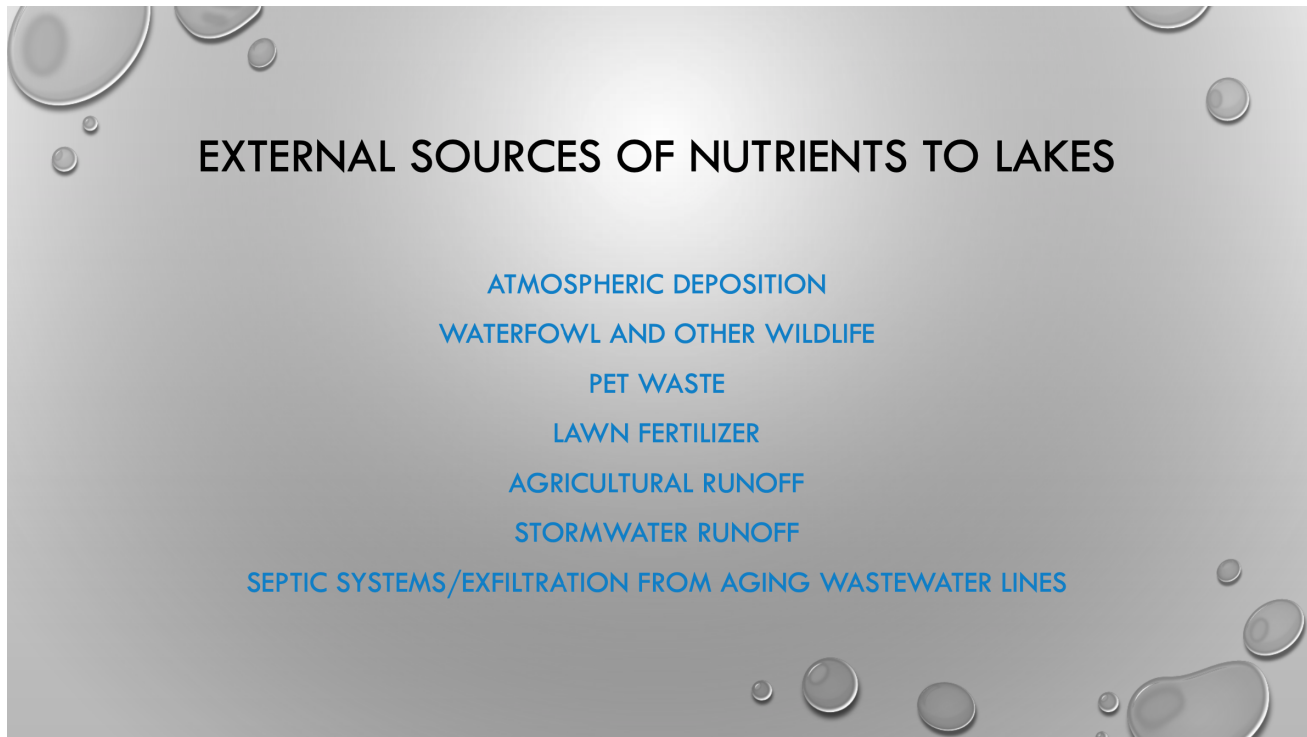


White Lake Nutrient Sources

Slide from a July 2018 presentation to the White Lake TAC:



Of these sources, the Town's responsibilities lie with:

- stormwater runoff and land use--A stormwater assessment was completed with a grant administered by the Lumber River COG, and one of the deliverables was a draft stormwater ordinance for the Town. The COG has also been working with the Town on a State-mandated update to their Comprehensive Plan. NC DOT would also seem to have responsibilities for the two drainage ditches on the eastern side of the lake.
- maintaining their wastewater collection system--The Town has a two-phase \$5 M+ grant-funded program for system renewal and replacement. Another noteworthy recent action was taking over the water and wastewater systems in the largest campground at the lake; an engineering assessment conducted as part of that project found several exfiltration-related issues to resolve, as well as replacing the pump station.
- pet waste and lawn fertilizers--These items are the responsibility of property owners; according to State law, fertilizer bans cannot be implemented, so the Town can only communicate fertilizer best practices.

What about the other external sources of nutrients?

- atmospheric deposition--Rainfall sampling indicates that this is a major source of nitrogen to White Lake, as rainfall on the lake surface is the primary source of water to the lake. This region of North Carolina is now a nitrogen deposition hot spot. At times, there is also phosphorus found in the rain, but there has been no atmospheric monitoring of this nutrient to determine whether there have been increases over time. This source of nutrients has not been recognized previously (at White Lake, although it has in coastal NC estuaries) and management will be challenging, to say the least.
- waterfowl and other wildlife--Winter waterfowl counts have documented substantial numbers of roosting seagulls (5,000 to 7,000), while the resident Canada goose population is 50-70. There have been no detectible increases in lake nutrients that could be attributed to this source, and seagull management would be impractical. There are signs posted around the lake reminding lakeshore users to not feed any birds. Canada goose management would be possible (it was done at Bay Tree Lake, for example) but it is not something that the Town is directly responsible for.

What about internal sources of nutrients?

- sediments are a nutrient storehouse, particularly for phosphorus--Sediment resuspension can supply nutrients to the water column, where they can be utilized by algae; resuspension is due to wind and wave action, and boating activities. Boating use which “stirs up the lake bottom” has been a concern as far back as the 1950s, as mats of algae and vegetation washing up on the shoreline have created smelly and unsightly conditions; what has changed in recent years is the size and type of boat used in the lake. Sampling in the sediment plume behind a wave board boat last fall found elevated levels of both phosphorus and nitrogen. How can we utilize this information? Boating regulations are not the Town’s responsibility, but this is a source of nutrients that can be controlled with a change in behavior.