

Here is a description of key issues and concerns for your home-owner's association to think about/consider:

Your lake receives water, sediment, nutrients and other non-point source pollution (NPSP), e.g., oil from roads, herbicides from applications to yards and highway areas, etc., from the land area upstream and from the adjacent land around the lake, especially lawns and flower beds which drain into the lake and that get fertilizer and other agricultural chemicals applied to them. As a general principle, the more natural vegetation any lake has around it and above it, especially within the upper watershed drainage-ways that deliver water to the lake, the less NPSP the upper watershed will deliver to your lake. The less natural vegetation, the poorer the land management and the more land is developed above your lake, the more NPSP it will receive that in turn will degrade your lake's water quality.

If the lake was designed to serve primarily as a water and sediment control basin, then it was intended to function as a NPSP abatement feature and trapping NPSP and temporary storage of storm-water runoff are its purposes. If it were designed as a recreational facility, then all of the NPSP you are seeing delivered to the lake is an unfortunate result of poor land management and/or development in the watershed above it. I suspect that the county required some kind of effort to control sediment when your development was approved and astute developers know that they can put in a water and sediment control structure; meet the erosion and sediment control ordinance of the county and seed it down and make it look nice, then turn around and market the development as having a lake knowing full well that it will eventually fill-up with sediment.

But that would take many years and by the time the water quality and depth become a concern they would have already completed the development, sold all of the units and washed their hands of the annual maintenance and future issues.

Whatever, the situation with your lake, you all are currently confronted with sediment and nutrient delivery that is degrading the water quality and possibly the volume of water that can be stored within it. Things to consider:

- 1) Assess what the home-owners adjacent to the lake are doing with respect to NPSP, especially mowing and fertilization practices; If they are removing their grass clippings and disposing of them, then they are also likely over-fertilizing to make up for the nutrients and soil structure degrading effects of removing the clippings. Work to get them to mulch mow and simply monitor soil pH. As long as the pH is close to neutral they don't need to add chemical nutrients unless soil tests call for them. By mulch mowing they will naturally recycle the nutrients and build soil structure without risking the loss of chemical fertilizer applications.

- 2) Assess where the sediment being delivered to your lake is coming from (this usually takes having someone who is knowledgeable walk the main drainage-way and associated pathways for water to flow from above your lake to the lake to visually inspect the stream-banks, culverts and other possible in-stream and adjacent lands sources (blown-out stream-banks, degrading stream channels, construction sites, denuded highway slopes, failing culverts, etc.); Work with the county and private land owners above you to correct any deficiencies that are causing NPSP to be delivered to your lake.

3) Also assess whether or not any best management practices (BMPs) and/or low-impact development practices (LID), such as silt fences at construction sites or water, rain-gardens, sediment and debris basins, etc. are in place to prevent or diminish NPSP; if any are in place, determine whether or not they are temporary or permanent and check to make sure that they are functioning properly. If there aren't any in place, then look to see what the needs are and if there are places for the needed controls (BMPs) to be retro-fitted into the landscape. Work with the county and private land owners to get needed BMPs/LID practices funded through grants and implemented.

4) Work with the county to make sure that the potential impacts of new development on your lake are considered and taken into account so as to avoid making things worse in your lake. Specifically, as new development projects are implemented in the watershed above your lake make sure that BMPs and LID practices are designed into the development processes and also make sure that county oversight pays careful attention to the details. Poorly implemented practices and/or poor oversight will result in more NPSP.

5) As a general principle, the more developed the upper watershed, the more run-off there will be after every significant rainfall event and the more likely that NPSP to your lake will be increased.

I hope that this is helpful.

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