



Town of Oak Bluffs, Massachusetts  
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Martha's Vineyard Commission

Re: Lagoon Ridge Development

Nitrogen loading is a big issue! Excess nitrogen entering our coastal ponds degrades the health of our ponds including Lagoon Pond. Nitrogen promotes the growth of plants. Single celled plants known as phytoplankton, when conditions are right experiences massive population growth (blooms). These blooms can be dense enough to discolor the water and blocks sun light from reaching the bottom. Much of the nitrogen entering the ponds is from our own septic systems.

Over the past couple of decades Lagoon Pond has experienced an annual bloom of a species named *Prorocentrum* each June. *Prorocentrum* has been linked to juvenile quahogs to "fail to thrive" stunting their growth and in some cases mortality. This has been documented and results from a 2002 MVC study was presented at the Milford Aquaculture Seminar in early 2003. A summary of the presentation was published (Wilcox and Grunden in *Journal of Shellfish Research* volume 22, number 1 June 2003).

In the past 4-5 years we have seen another phytoplankton species (*Cochlodinium*) bloom in mid-August and linger on into September. This species has been associated with bay scallop mortality in Long Island Sound.

There are other species of phytoplankton that can cause human health issues such as "red tide" that can result in paralytic shellfish poison.

When these blooms occurs the sun light does not penetrate through the water column to the bottom. This is one of the reasons we are seeing a decline in one of the most biodiverse habitats – our eelgrass meadows. Currently the eelgrass in Lagoon Pond fringes the shoreline and is in relatively shallow water. If the light doesn't reach the plants it cannot photosynthesize and can die.

Tisbury and Oak Bluffs have created a joint committee to make recommendations to address the excess nitrogen load and improve the health of the pond. The MVC has been a part of this committee. The MVC has been monitoring the health of the pond since at least 1995 and has documented its decline. The Massachusetts eelgrass mapping of Lagoon Pond clearly shows the decline of the eelgrass meadows.

The MVC should be proud of their efforts to reach a "net zero" limit for nitrogen effluent, but the regulation/policy isn't there yet. The MVC has a difficult decision to make regarding the Lagoon Ridge Development. I understand the applicant has agreed to build a small sewage treatment plant to handle some of the sewerage that these homes will create. This is at

least a step forward. I would encourage the MVC to adopt a no net nitrogen policy for future developments.

IF this development is allowed I would ask that there is, at least, language in the approval to force the operation and maintenance of their treatment plant on this development so as they cannot walk away from this commitment. Also that the testing to ensure the plant is working properly be made available to the public – either the town Wastewater Department or the Board of Health. There needs to be checks and balances to ensure the effective operation of their sewage plant.

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