

# Report suggests nitrogen limits for bay

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**D**o you have an opinion on how much nitrogen ought to be flowing into Pleasant Bay?

Well, if perchance you do, you have until Oct. 20 to express it to the Massachusetts Department of Environmental Protection. The Massachusetts Estuaries Project has already given their official views, in the form of maximum kilograms per day for 17 ponds, coves and salt water rivers in Pleasant Bay and those will soon have a tad more legal force behind them.

"I suspect people will have questions," noted Carole Ridley, coordinator for the Pleasant Bay Alliance. A public hearing has been set for Sept. 21 in Orleans.

"It's a complicated estuary system with a lot of issues. There won't be any definitive answers yet," she continued. "But anyone who is interested in the issue of nitrogen loading and the extent of it or the health of the Pleasant Bay system should certainly attend."

The draft total maximum daily load, TMDL's in official parlance, for 17 subsections of Pleasant Bay are listed in the draft report for Pleasant Bay, which can be found at [www.oceanscience.net/estuaries](http://www.oceanscience.net/estuaries) or the Pleasant Bay Alliance website; [www.pleasantbay.org](http://www.pleasantbay.org). Copies of the technical report, which contains most of the same information, are also available at most local public libraries.

"This is a draft TMDL report and we're looking to get input from local officials and advocates on the proposed TMDL's ... then it goes to EPA for review," said Ed Coletta, spokesman for the state Department of Environmental Protection.

The EPA will OK the final targeted nitrogen loads, which measure nutrient pollution into the different coves. Eventually, the towns involved, Orleans, Chatham, Harwich and also Brewster, which is in the watershed though not adjacent to Pleasant Bay, will have to comply with a reduction of septic system waste of about 52 percent, much higher in some locales, to meet water quality standards. The goal is to bring back eelgrass beds, benthic sea life and healthy oxygen levels to places like Pah Wah Pond, Meetinghouse Pond, Pochet Neck and elsewhere within the system.

"We look to local advocates and officials to come up with a plan to address nitrogen," Coletta said. "It's more open ended. But obviously we want to see it done as soon as possible. This has been a six-year project and we're doing 86 to 89 embayments along the coast so it's a long term project."

The Alliance keeps the ball rolling.

"The Alliance will convene a discussion group of representatives of the four communities to discuss ways to coordinate each town's wastewater planning process as this is a watershed wide issue," Ridley said. "Chatham is moving forward with their plan. Harwich is moving along."

## The problem

Nitrogen is a plant food and too much of it leads to algae blooms, which suck up the dissolved oxygen and cloud up the water, cutting light to the sea bottom. The Estuaries Project, with considerable help from mathematical models devised by the School of Marine Science and Technology at University of Massachusetts at Dartmouth, has determined the level of nitrogen input to the bays that will allow them to reach the target level where relatively diverse and lush sea flora and fauna will thrive.

The models incorporate everything from rainfall, to sea currents, to the amount of fertilizer the four local golf courses are applying to the rough versus the fairways.

Pleasant Bay empties into the Atlantic through the cut opposite Chatham Harbor. The farther away from this point, the worse the water quality was, in Meetinghouse, Lonnie's, Arey's, Pah Wah and Quanset ponds. Pochet Creek, thanks to the Salt Marsh, Little Pleasant Bay, Pleasant Bay and the Chatham Harbor area, were better.

There are three prime sources for nitrogen in the Pleasant Bay watershed: septic systems (41.7 percent); land use/fertilizers etc. (18 percent); and rain and snowfall (40 percent). Not much can be done about rain or snow so the focus is on reducing septic wastes.

### **The numbers**

The suggested necessary reductions in the major sites are as follows; Meetinghouse Pond - 83 percent; The River (upper) - 37 percent; The River (lower) - 37 percent; Lonnie's Pond - 33 percent; Arey's Pond - 30 percent; Namequoit River - 38 percent; Paw Wah Pond - 61 percent; Pochet Neck - 51 percent; Little Pleasant Bay - 28 percent; Quanset Pond - 39 percent; Round Cove - 30 percent; Muddy Creek (upper) - 54 percent; Muddy Creek (lower) - 75 percent; Pleasant Bay - 25 percent; Ryder Cove - 54 percent; Frost Fish Creek - 76 percent; Crows Pond - zero; Bassing Harbor - zero; and Chatham Harbor - zero.

Those reductions include both septic and land (fertilizer) input. Since land usage is more difficult to control, the focus will be on reducing septic input, most likely by building regional or local sewer systems.

Submit written comments to the Massachusetts Department of Environmental Protection, Division of Watershed Management, 627 Main St. 2nd floor, Worcester, MA, 01608 Attn: Michael Ackerman or e-mail [Michael.Ackerman@statema.us](mailto:Michael.Ackerman@statema.us). Refer in letter to report number MA 96 TMDL 12.