

128,500 homes on cape cod with lot size over 5000. Sq ft. (CCC #)

57% of cape cod homes use fertilizer ( CCC#)

73,245 homes use fertilizer

4,300,000 pounds of fertilizer purchased by home owners (CCC #)

4,300,000 divided by 72,250 = 59.52 pound of fertilizer applied to homes annually (CCC #)

30% is a average of percent Nitrogen in lawn fertilizer ( checked bags in retail store)

30% of 59.52 lbs. of fertilizer used = 17.86 pounds of nitrogen applied by cape cod homes.

5000 square foot lot was the area calculated to get total lot number.

17.86 divided by 5000 sq. ft. or 5 = 2.98 lbs. of nitrogen applied per 1000 sq.ft. by cape homes

Refer to the U. Mass BMP pg. 16 Table #6 “ typical nitrogen rate range for common cool-season lawn grasses” ranges are between 2-4 lbs. per 1000 sq.ft. per season. ( note rate for fine fescues are 0-2 lbs. per 1000 sq.ft. this is locally know as Cape Cod lawn, (and we can assume no one is applying fertilizer to this style of lawn.) The calculations above show the estimated use today is within that range.

2 to 4 recommended, calculations show 2.98

Special Note: the above calculations are done using Cape Cod Commissions estimated numbers, (CCC#). It has been expressed that the amount of fertilizer used is much too high. Scotts Lawn Care Products offered another set of numbers that puts the amount of fertilizer used by homeowners at 420,000 lbs. purchased on Cape Cod by homeowners. Using the same extrapolation as above with Scotts numbers you arrive at 5.82 Lbs. of fertilizer per home, times 30% = 1.75 lbs. of N per home, Divide that by 5 ( lot size 5000 sq. ft.) = .35 lbs. of N per 1000 sq.ft.

.35 is well below the U. Mass use chart. Let's be fair and say both are correct, add 2.98 to .35 =3.33 N/1000sq.ft. The average of both numbers is 1.67 N / 1000 sq.ft. Right in middle if use chart.

The next exercise is taking the estimated pounds of nitrogen applied and going backwards to get an estimated number of nitrogen that leaches into our estuaries.

Using Cape Cod Commissions numbers:

2.98 Lbs. of Nitrogen applied per 1000 sq. ft.

20% leaching rate of nitrogen NOTE; University of Cornell number is 10% leaching rate for nitrogen.

Use 20% leaching,

20% of 2.98 = .60 lb per 1000 sq.ft. N leaching

.60 times 5 to get 5000 sq.ft. lot amount = 3.00 lbs. per lot leaching of N

3.00 lbs. per lot times 73,245. Homes that use fertilizer = 219,735 lbs. of nitrogen leaching from lawn fertilizer.

NOTE: If use Cornell University leaching of 10% total pounds of leaching is 109,867.50

Here is where I need help.

What will 219,735 lbs. of nitrogen leaching into are estuaries calculate into Parts Per Million across the acreage of Cape Cod?

Is 219,735 lbs. of Nitrogen leaching from lawn equal to the estimated 7% ( some say 15%) of the total load of Nitrogen in our estuaries?

What is the effect of 219,735 lbs. of Nitrogen leaching from 9,598,446,000. Sq. Ft. ( square feet of Cape Cod) which equals 0.000029 of a lb. per square foot?

Furthermore: refer to: Standing Committee on Gov. Regs. Minutes of 9/11/13 page 5

The presentation given on Sept. 11 2013 by Cape Cod Commission uses conflicting numbers to achieve a number of Nitrogen load. First they refer to 6 million pounds used annually, a combination of home owners and commercial use, the proposed regulations are addressing the 4.3 million pounds attributed to home owners. Paragraph 2; states 10 lbs. of Nitrogen per homeowner contributes to groundwater, I used their numbers and showed that the correct number is 3.00 lbs. of N per homeowner. A 50% reduction in this number would be 1.49 lbs. N per 1000 sq.ft. a number below the recommended standards of U Mass BMP , and could result in lawn degradation and problems like run off and no uptake of natural Nitrogen by an established lawn.

Respectively Submitted for discussion purpose: by Leo Cakounes Harwich Representative.