Acid rain is a serious problem in Canada. In many cases, lakes become so acidified that they cannot support any significant fish life. One possible (and very costly!) solution is to try to mitigate the effects by dumping crushed limestone into the lakes. This will neutralize the acidity. The following is actual data from a study of such an intervention.

From enormous samples at other control lakes, it is reasonable to assume that under the acidic conditions the weight of individual fish of a particular age class is Normally distributed with a known mean μ of 3015 g and a known standard deviation σ of 392 g. One year after the addition of limestone, a sample of 22 fish was taken partway through the study and the weight of the individual fish was obtained. Here is the sorted data, in grams (g):

1595 1605 1634 2633 2864 2924 3035 3051 3293 3344 3381 3398 3421 3446 3514 3614 3694 3739 3756 3788 3898 3952

Several fish had abnormally low weights (below 2000 g). After further investigation it was discovered that these fish had ingested pieces of plastic from a litterbug's Styrofoam cup and could not properly digest food. So the study's method of analysis was to delete all values less than 2000 g. The values of $\bar{x}$ and s after deleting such values are $\bar{x} = 3407.6$ g and $s = 370.0$ g. Double-check these values.

Construct and interpret a 99% confidence interval for the mean weight of the fish after the lake is treated with limestone. Follow the Name-Check-Calculate-Interpret guidelines; clearly documenting each step. What do you conclude about the effectiveness of the treatment?