1a

per capita harvest = 450 pounds. I got 282.4, I used a ratio estimator

standard error = 44 24.36

95% confidence interval = (362, 539). (244, 330) Also, I use qnorm for all of my CI's based on Thompson 3.1 ( weird estimators dont have an obvious other candidate)

1b

58,109 pounds.

standard error = 5,682

95% confidence interval = (46,634, 69,585) Again, I use qnorm (46,972,69 246)

1c

ratio estimation = 53,652 , standard error of 5,012 I got 4628 based on pg 103 in notes. I get 5012 if I dont divide by mbar^2.

regression estimation = 54,230, standard error of 5,058

2

985 otters

standard error =74

95% confidence interval = (837, 1,132). (961,1008) based on qnorm

3

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Cost Allocation Stratum 1 | Cost Allocation Stratum 2 | Cost Allocation Stratum 3 | Total cost |
| Equal allocation | $ 28,870.55 | $ 36,088.19 | $ 50,523.46 | $ 115,482.20 |
| Proportional Allocation | $ 35,999.95 | $ 17,499.98 | $ 52,499.93 | $ 105,999.86 |
| Optimal Allocation (Equal Costs) | $ 18,635.27 | $ 13,588.22 | $ 67,941.09 | $ 100,164.58 |
| Optimal Allocation (Unequal Costs) | $ 22,403.89 | $ 14,611.51 | $ 61,744.90 | $ 98,760.30 |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Cost Allocation Stratum 1 | Cost Allocation Stratum 2 | Cost Allocation Stratum 3 | Total cost |
| Equal allocation | 1444 | 1444 | 1444 | 4331 |
| Proportional Allocation | 1800 | 700 | 1500 | 4000 |
| Optimal Allocation (Equal Costs) | 932 | 544 | 1941 | 3416 |
| Optimal Allocation (Unequal Costs) | 1120 | 584 | 1764 | 3469 |

Each of my allocations are lower since I used Range/3 based on the idea that most data fall with in 3sigma of the mean. Also, I think I get your numbers when I use sigma = range and a qt with one degree of freedom. Is that right?

4

43.5 I got 8.705 inches... Are you estimating something other than the average height per seedling?

standard error =124.5 3.84 inches - This is a nasty calculation and I could have made a mistake

95% confidence interval = (104.9, 796.0). (1.18, 16.23)

5b

The average number of sick days is 1.93

standard error of 6.81 I got 0.0578 based on pg 106 in the notes

6

From page 121 in the notes we are given that

So the standard error would be

And the confidence interval would be

Let the margin of error be called “d”

Square both sides

Divide both sides by

Add to both sides

Multiply both sides by n

Solve for n