

Analysis of Environmental Data – Reading Questions 7

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Q1:

Population mean has no effect on the width of CIs as it is only the point from which we subtract and add the critical values.

Q2:

Standard deviation does affect the width of CIs. When the standard deviation increases the width of the graph increases.

Q3:

The true population size does not affect the width of CIs. Only the sample size

affects the width, with a larger sample size resulting in a narrow width and small sample sizes in wider width > unstable standard deviation.

Q4:

Sample size does affect the width of CIs. The bigger the sampling size the lower is the standard error and the more stable is the standard deviation > makes the graph skinnier.

Q5:

If we would sample a population of frogs to investigate their toe length, and we hypothetically repeat the sampling process many times, our estimates would converge around the true population value of their toe length, which we initially did not know (unknown population > too big). A CI of 95% would then tell us that after our hypothetical resampling, 95% of our resamples would contain the true value of their toe length.