

QAQC of the CINP ASSP 1994 - 2018 CPUE data

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Load libraries

Load data and add columns necessary for QAQC:

Time and Mistnetting Effort

Graphical check of App_sunset

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This graph shows the time of apparent sunset for netting sessions each month. The range and timing for that time of year is as we would expect. Thus we conclude that the suncalc function was used effectively to get the sunset times associated with each mistnetting session.

Graphical check of Std_ending

Plotted by month

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This graph shows the time of standard ending (5.3 hours after sunset) for netting sessions each month. The range and timing for these ending track with sunset time as we would expect.

Summarize net_open and net_close

This is not a perfect way to summarize net open and close times because the “summarize” function doesn’t recognize times across midnight here. But, by looking at the median and mean, we can tell that net open and close times are usually what we would expect, with a few late/early nights thrown in.

Total mistnetting minutes per session

Here we visualize the total number of minutes calculated for each netting session. We want to check that minutes were added correctly across multiple open/close sessions and also that minutes were added accurately across midnight. It looks like minutes were not added accurately across midnight on four occasions (the outliers)

Total mistnetting standard minutes per session

from start until end or standard ending, whichever came first

Here we visualise the total number of minutes for the standardized session (from net open to net close or standard ending [5.3 hours after sunset] whichever came first). The standardized minutes cut out the erroneous minute

calculations, as hoped. Also the max number of standardized minutes is 317, which makes sense as the maximum amount of time between sunset and 5.3 hours after.

Compare min vs. min_std for each session

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This plot of minutes vs. standardized minutes (before the 5.3 hour standardized ending). Blue line = slope of 1. Here we can make sure that minutes standardized is always equal or less than total minutes and total number of standardized minutes isn't >317, indicating that the 5.3 hour cutoff was applied.

ASSP

Histogram of total ASSP caught per session

This graph and summary stats show the distribution of total numbers of ASSP caught per session.

Histogram of total ASSP caught per standardized session

This graph and summary stats show the distribution of total numbers of ASSP caught before standard ending or net close, whichever came first. This distribution is more constrained than the one above, which is what we would expect with the standard ending cutoff.

comparison of ASSP vs ASSPstd

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This plot of total number of ASSP vs. total number of ASSP before the standard ending. Blue line = slope of 1. Here we double check that the standardized number of ASSP is always equal to or less than the total number.

CPUE

visualization of CPUE per session

This graph and summary stats show the distribution of catch-per-unit-effort (ASSP/min).

visualization of CPUE per standardized session

This graph and summary stats show the distribution of standardized catch-per-unit-effort (ASSPstd/min_std). This distribution is more constrained than the one above, which is what we would expect with the standard ending cutoff.

comparison of CPUE vs CPUEstd

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This graph explores the correlation between CPUE and CPUE std. Blue line = slope of 1. As expected, the correlation is often 1:1, but with variation as the number of ASSP caught and number of mistnetting minutes were both effected by the standard ending cutoff but not always in a proportional way. The three outliers on the upper

righthand side of the graph were checked to make sure the data was accurate. Sure enough, these were nights with high numbers of ASSP caught, but no errors in the data