Chantel Wetzel - NOAA Federal <chantel.wetzel@noaa.gov>

Length column in MRFSS

13 messages

Chantel Wetzel - NOAA Federal <Chantel.Wetzel@noaa.gov> Thu, Sep 24, 2020 at 12:56 PM
To: John Edward Budrick <John.Budrick@wildlife.ca.gov>, Alison D Whitman <alison.d.whitman@state.or.us>, Brian Langseth - NOAA Federal <brian.langseth@noaa.gov>, Jason Cope - NOAA Federal <jason.cope@noaa.gov>

Hi John and Ali,

I was just digging through the MRFSS data that each of you provided and I have a couple of questions.

1. There is a length column (LNGTH in CA data) and there is a total length column (T_LEN in CA data). Which one should we be using?

2. In these two columns there are a mixture of length entries which have decimals and some without. I know that sometimes the lengths were imputed which would account for the decimals. In the past I have removed these lengths since they did not reflect actual fish measurements. Do each of you agree with that decision?

3. California - There is a flag ("LEN_FLAG") to indicate what type of measurement is but the California codes are a bit cryptic (blanks, 0, c, f, t) where 't' seems to consistently corresponds with round length measurements and the blank entry is a bit of a mix. I can definitely figure out a way to filter these data by decimal vs. round length measurement but I want to double check before I do this.

Thanks,

Chantel Wetzel, PhD

Pronouns: she/her (what does that mean?)

Fishery Resource Analysis and Monitoring Division
Northwest Fisheries Science Center
National Marine Fisheries Service
National Oceanic and Atmospheric Administration
Office: 206.302.1753

Budrick, John@Wildlife <John.Budrick@wildlife.ca.gov> Thu, Sep 24, 2020 at 1:29 PM
To: Chantel Wetzel - NOAA Federal <Chantel.Wetzel@noaa.gov>, Alison D Whitman <alison.d.whitman@state.or.us>, Brian Langseth - NOAA Federal <brian.langseth@noaa.gov>, Jason Cope - NOAA Federal <jason.cope@noaa.gov>

Fork length vs total length. Just depends on which you are working with in the rest of the data set. You will see some lengths are in decimals as a result of conversions between them when only one was collected.

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Sent: Thursday, September 24, 2020 12:56 PM
To: Budrick, John@Wildlife <John.Budrick@wildlife.ca.gov>; Alison D Whitman <alison.d.whitman@state.or.us>; Brian Langseth - NOAA Federal <brian.langseth@noaa.gov>; Jason Cope - NOAA Federal <jason.cope@noaa.gov>
Subject: Length column in MRFSS

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Budrick, John@Wildlife <John.Budrick@wildlife.ca.gov> Thu, Sep 24, 2020 at 1:31 PM
To: Chantel Wetzel - NOAA Federal <Chantel.Wetzel@noaa.gov>

Being that the decimals reflect conversions from length to length, which is a one to one relationship vs weight to length which is a one to many, I would retain the lengths and just round consistently in the units you want to use ie total vs. fork length.

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Subject: Length column in MRFSS

Warning: This email originated from outside of CDFW and should be treated with extra caution.

Hi John and Ali,

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Budrick, John@Wildlife <John.Budrick@wildlife.ca.gov> Thu, Sep 24, 2020 at 1:32 PM
To: Chantel Wetzel - NOAA Federal <Chantel.Wetzel@noaa.gov>, Alison D Whitman <alison.d.whitman@state.or.us>, Brian Langseth - NOAA Federal <brian.langseth@noaa.gov>, Jason Cope - NOAA Federal <jason.cope@noaa.gov>

The last item on the flag is just indicating when conversions were made and the nomenclature changed over time. Its messy. I played around trying to decipher their exact meaning and asked Jason Edwards about them, but he did not have much definitive information. It is evident that the conversion is from length to length and the lengths should be usable. If they were conversions from weights, I would chuck them.

From: Chantel Wetzel - NOAA Federal <Chantel.Wetzel@noaa.gov>
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To: Budrick, John@Wildlife <John.Budrick@wildlife.ca.gov>; Alison D Whitman <alison.d.whitman@state.or.us>; Brian Langseth - NOAA Federal <brian.langseth@noaa.gov>; Jason Cope - NOAA Federal <jason.cope@noaa.gov>
Subject: Length column in MRFSS

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Hi John and Ali,

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Chantel Wetzel - NOAA Federal <Chantel.Wetzel@noaa.gov> Thu, Sep 24, 2020 at 1:51 PM
To: "Budrick, John@Wildlife" <John.Budrick@wildlife.ca.gov>
Cc: Alison D Whitman <alison.d.whitman@state.or.us>, Brian Langseth - NOAA Federal <brian.langseth@noaa.gov>, Jason Cope - NOAA Federal <jason.cope@noaa.gov>

John -

Thanks for the guidance. I have been primarily working with the copper data today and was surprised to see a difference between the total and fork length since their tails are fanned. I definitely do see the change in the recording of the flag column over time and it also appears that the default fork vs. length measurement changed over time as well (e.g. in Oregon fork lengths were the measured value at the end of the timeseries but the total length was the default in the early years). I will move forward using the total length column and just round off any lengths in the column that appear to be conversions with the assumption that the conversions do not create a meaningful bias in the data.

Chantel Wetzel, PhD

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Budrick, John@Wildlife <John.Budrick@wildlife.ca.gov> Thu, Sep 24, 2020 at 2:12 PM
To: Chantel Wetzel - NOAA Federal <Chantel.Wetzel@noaa.gov>
Cc: Alison D Whitman <alison.d.whitman@state.or.us>, Brian Langseth - NOAA Federal <brian.langseth@noaa.gov>, Jason Cope - NOAA Federal <jason.cope@noaa.gov>

I wouldn't expect a large difference between fork and total length other than the potential for measurements to have been made with a tail that was not fully fanned at the time. There is potential measurement error of as much as 3-5 mm in repeated measurements at fork length. The potential for measurement error is higher for total length based on orientation with the potential for dipping or tipping the tail resulting in longer lengths. It is likely stable than fork length, which is what we measure to these days. Measurement error is even higher when rigor mortis sets in and the jaw is stuck open, only to be buckled and folded back into "position" by a busy sampler before being measured, then there is more extreme measurement error.

If there is a difference in total vs. fork length, I would think the units of the growth rate would be a consideration. Consistency between data sources seems important, so that might be the overriding consideration. I just wanted to lay out some of the considerations given years of measuring fish while working my way through grad school. Fork length seems preferable if we have a choice.

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Jason Cope - NOAA Federal <jason.cope@noaa.gov> Thu, Sep 24, 2020 at 2:28 PM
To: "Budrick, John@Wildlife" <John.Budrick@wildlife.ca.gov>
Cc: Chantel Wetzel - NOAA Federal <Chantel.Wetzel@noaa.gov>, Alison D Whitman <alison.d.whitman@state.or.us>, Brian Langseth - NOAA Federal <brian.langseth@noaa.gov>

Most of the growth curves I think have been done using TL, so we'll likely target that.
But as you said John, we need to be consistent across assessment inputs. We need all inputs to be or based on the same measure.

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Jason M. Cope, Ph.D.
Research Fishery Biologist
Fishery Resource Analysis and Monitoring Division
Northwest Fisheries Science Center
2725 Montlake Blvd. East
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NOAA FISHERIES

Alison D Whitman <Alison.D.Whitman@state.or.us> Thu, Sep 24, 2020 at 2:28 PM
To: "Budrick, John@Wildlife" <John.Budrick@wildlife.ca.gov>, Chantel Wetzel - NOAA Federal <Chantel.Wetzel@noaa.gov>
Cc: Brian Langseth - NOAA Federal <brian.langseth@noaa.gov>, Jason Cope - NOAA Federal <jason.cope@noaa.gov>

Hi guys,

Sorry to jump in on the conversation late, but I had a couple of items to weigh in on.

First- I agree with John that fork length would be preferable, as it is the least likely to have large measurement errors based on field sampling but also because tails can be damaged in fishing, which would of course impact a total length measurement.

Second, I included several flags of my own in the Oregon data to identify lengths, total lengths, and weights that are imputed. I also found the MRFSS flag to be confusing, so I created my own! It just uses the number of decimals as a cutoff for imputed vs measured values based on the units of measurement and typical field practices. You'll find an explanation in the metadata tab in the Oregon MRFSS Bio spreadsheet. This should allow you to filter out any imputed values that you don't want.

Cheers,

Ali

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Jason Cope - NOAA Federal <jason.cope@noaa.gov> Thu, Sep 24, 2020 at 2:29 PM
To: Alison D Whitman <Alison.D.Whitman@state.or.us>
Cc: "Budrick, John@Wildlife" <John.Budrick@wildlife.ca.gov>, Chantel Wetzel - NOAA Federal <Chantel.Wetzel@noaa.gov>, Brian Langseth - NOAA Federal <brian.langseth@noaa.gov>

Ali-- are your growth curves based on FL?
Is so, that is what we'll want to use in the OR for sure.

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Jason M. Cope, Ph.D.
Research Fishery Biologist
Fishery Resource Analysis and Monitoring Division
Northwest Fisheries Science Center

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Alison D Whitman <Alison.D.Whitman@state.or.us> Thu, Sep 24, 2020 at 2:34 PM
To: Jason Cope - NOAA Federal <jason.cope@noaa.gov>
Cc: "Budrick, John@Wildlife" <John.Budrick@wildlife.ca.gov>, Chantel Wetzel - NOAA Federal <Chantel.Wetzel@noaa.gov>, Brian Langseth - NOAA Federal <brian.langseth@noaa.gov>

Yeah, unfortunately, I think we use both. A quick look at the two maturity reports - I see that copper uses fork length, but quillback appears to be total. No explanation is given as to why each of those was selected.

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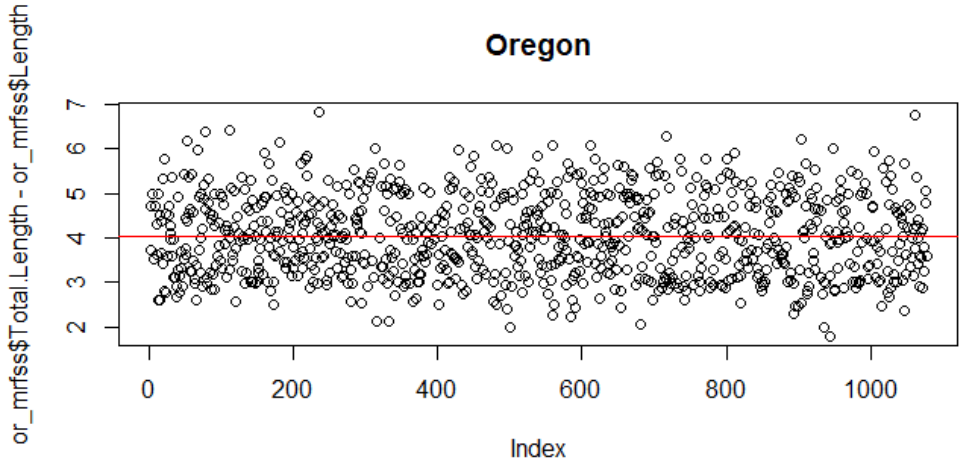
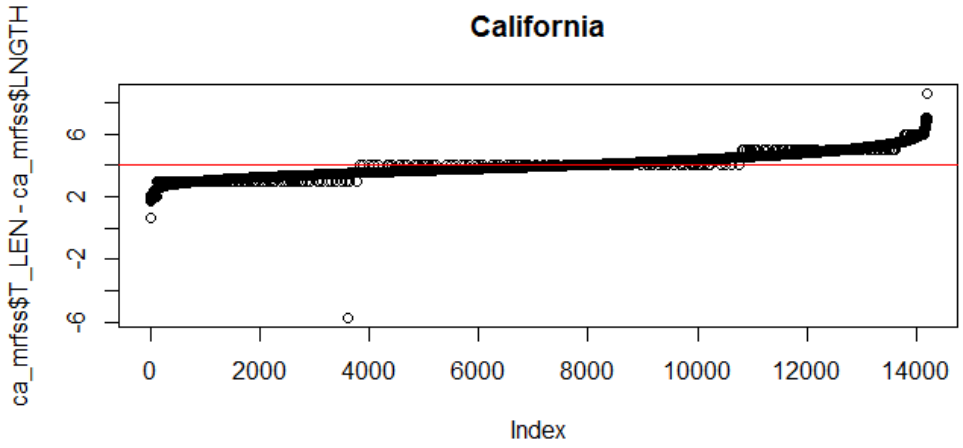
Chantel Wetzel - NOAA Federal <Chantel.Wetzel@noaa.gov> Thu, Sep 24, 2020 at 3:15 PM
To: Alison D Whitman <Alison.D.Whitman@state.or.us>
Cc: Jason Cope - NOAA Federal <jason.cope@noaa.gov>, "Budrick, John@Wildlife" <John.Budrick@wildlife.ca.gov>, Brian Langseth - NOAA Federal <brian.langseth@noaa.gov>

This has been very helpful. I started looking at filtering out decimal lengths but as I think John hinted at the protocols seemed to have changed over time. Using Ali's super helpful columns indicating measured or computed for either the total or fork length would result in the whole removal of either the early or late years data. That did not seem ideal. The average difference between total and fork length looks similar for both states (~4mm), even if the pattern if difference don't look similar (see attached figure for copper from the mrfss only data).

Based on your guy's suggestion, I will try to switch to fork lengths if I can create reasonable consistency across data sets.

Thank you,





Chantel Wetzel, PhD

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Brian Langseth - NOAA Federal <brian.langseth@noaa.gov> Fri, Oct 2, 2020 at 2:20 PM
To: Chantel Wetzel - NOAA Federal <Chantel.Wetzel@noaa.gov>

Chantel,
MRFSS Oregon Quillback has more measured fork lengths, and the difference between fork and total is also around 4mm. Also, I noticed that there are some fish with measured fork and measured total lengths (quillback has 53) so if we really had to, we could use those to inform a conversion (though Id much rather not do that).

Thus, I agree, lets go with fork length, but we may need to revisit based on what the other measurements are as you state in your read_mrfss code.

Brian

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--
Brian Langseth
Mathematical Research Statistician
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Seattle, WA 98112

Chantel Wetzel - NOAA Federal <Chantel.Wetzel@noaa.gov> Fri, Oct 2, 2020 at 2:39 PM
To: Brian Langseth - NOAA Federal <brian.langseth@noaa.gov>

Sounds good. I am so completely over this mrfss data. I am eager to see the answer to your question earlier about the sub region and districts. I am looking now at the mrfss catches that John provided and I have no clue what any of these columns mean... Ugh.

Chantel Wetzel, PhD

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