

Compare to Daisuke's Results

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Initial Comparison (to Daisuke's Compiled Results)

Daisuke's results used 444 WBIC_YEARS. Our results, which included years after Daisuke's, had 683 WBIC_YEARS, but this was reduced to 655 WBIC_YEARS when "invalid" estimates were excluded. Our results shared 411 WBIC_YEARS with Daisuke's results. Of the 33 WBIC_YEARS in Daisuke's results that were not in our results, 3 were not in our file of PEs, 0 were not in our original file of raw data from the FMDB, 17 were not in our prepped file of raw data from the FMDB, and 13 were excluded because we considered the results to be invalid. A review of the data prepper log suggests that all of the WBIC_YEARS removed during data prepping occurred when the data were restricted to fish captured with fyke nets in the spring. Table 1 shows the reasons why we excluded the 13 WBIC_YEARS in Daisuke's results that were not in our results.

Table 1: Frequency of WBIC_YEARS in Daisuke's analysis that were excluded from our results by the reason we considered the results to be invalid.

reason	Freq
n<30	6
numAges<5	1
Age gaps issue	6

WBIC_YEARS in Daisuke's results that were not in our results are listed below.

WBIC_YEARS in Daisuke's results for which we do not have a PE.

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[1] "1543300_1993" "2350500_2012" "2914800_1999"
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WBIC_YEARS in Daisuke's results that were excluded in our prepping the FMDB file.

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[1] "378400_1999" "716800_2006" "968800_2006" "995200_2005"
[5] "1469100_2003" "1579900_2007" "1591100_2006" "1631900_2009"
[9] "1631900_2012" "2106800_2012" "2271600_2011" "2316100_2003"
[13] "2316100_2011" "2393200_2012" "2435700_2002" "2865000_1997"
[17] "2949200_2005"
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WBIC_YEARS in Daisuke's results that we considered invalid.

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[1] "995000_2012" "1544700_1990" "1597600_1997" "1612200_2007"
[5] "2098000_2010" "2382300_2010" "2641000_2011" "2654500_1991"
[9] "2654500_1997" "2661100_2012" "2678100_2004" "2678100_2010"
[13] "2734200_1993"
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Computation Results

Comparisons of our results to Daisuke's results for B, P, and P/B are in Figure 1, Figure 2, and Figure 3, respectively. Correlations between our and Daisuke's estimates are not as strong as I would have expected given that they originated from the same data (however, see the next section).

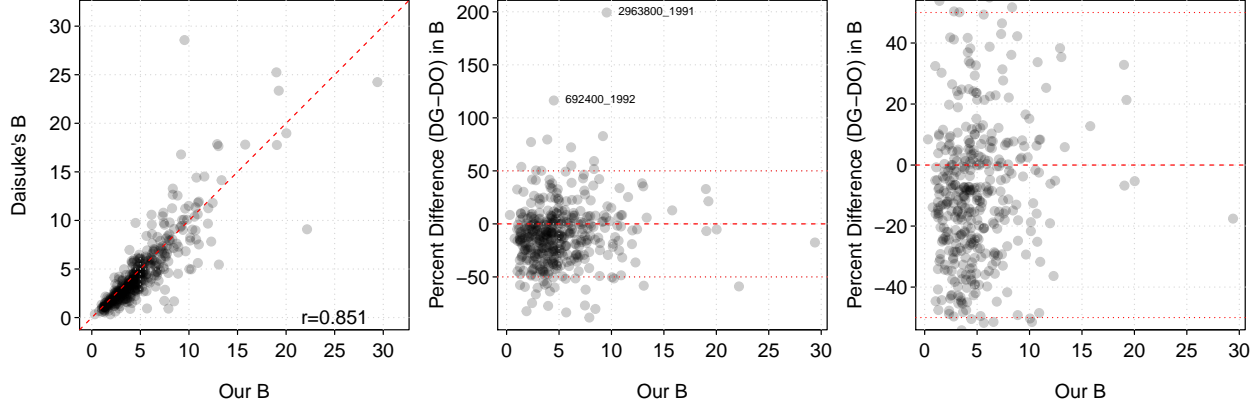


Figure 1: Daisuke's B (LEFT) and the percentage difference in B (MIDDLE and RIGHT) versus our B. Values that are more than 100% different are marked on the middle plot.

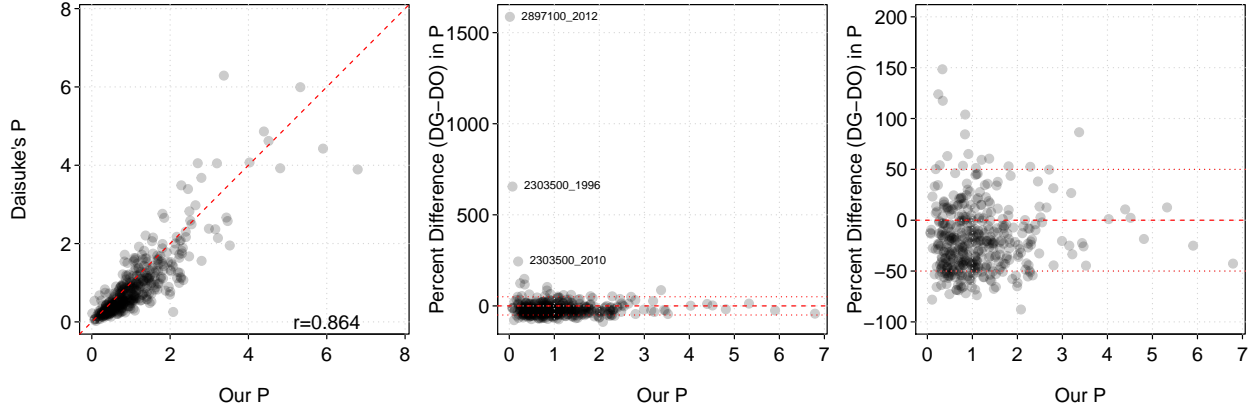


Figure 2: Daisuke's P (LEFT) and the percentage difference in P (MIDDLE and RIGHT) versus our P. Values that are more than 200% different are marked on the middle plot.

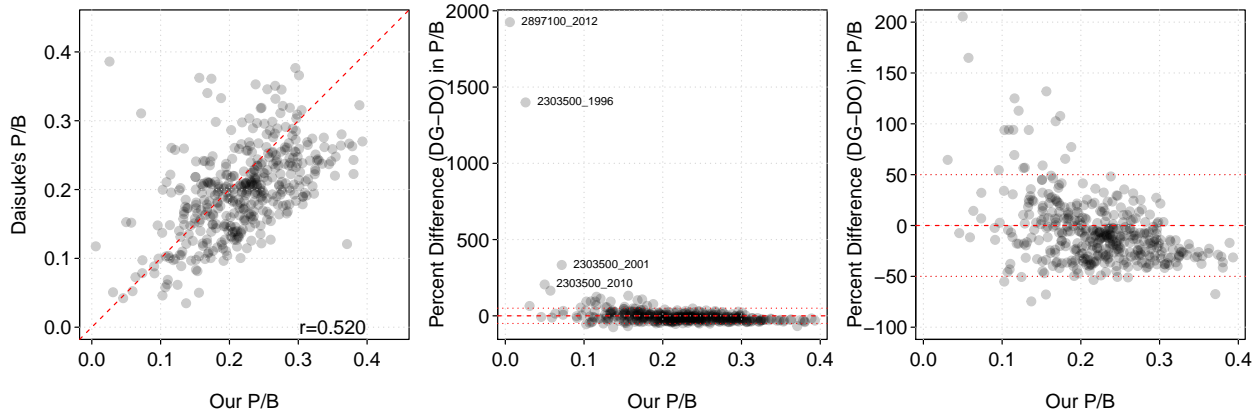


Figure 3: Daisuke's P (LEFT) and the percentage difference in P/B (MIDDLE and RIGHT) versus our P/B. Values that are more than 200% different are marked on the middle plot.

WBIC_YEARS for which our and Daisuke's B estimates were very different:

	wbic_year	B.DO	B.DG	pdiffB
24	692400_1992	4.503441	9.744144	116.3710
408	2963800_1991	9.543585	28.567052	199.3325

WBIC_YEARS for which our and Daisuke's P estimates were very different:

	wbic_year	P.DO	P.DG	pdiffP
224	2303500_1996	0.07128913	0.5382757	655.0600
226	2303500_2010	0.19712871	0.6779036	243.8888
380	2897100_2012	0.01283656	0.2165350	1586.8608

WBIC_YEARS for which our and Daisuke's P/B estimates were very different:

	wbic_year	PB.DO	PB.DG	pdiffPB
224	2303500_1996	0.025744563	0.3859967	1399.3329
225	2303500_2001	0.071683675	0.3107017	333.4344
226	2303500_2010	0.049975732	0.1526625	205.4732
380	2897100_2012	0.005800889	0.1175159	1925.8256

“Raw” Data Comparison

PEs

The PEs were the same for 411 WBIC_YEARS in common between our and Daisuke's analysis. **Thus, it does not appear that differences in PEs would explain the differences between our's and Daisuke's estimates of P and B.**

Lake Size

Lake size was exactly the same for 88.9% and within 1% of each other for 98.1% of the 216 WBICs in common between our and Daisuke's results (Figure 4). Our lake sizes for the four large differences in Figure 4 match what is available in the online lake app. None of the four large differences in lake sizes matched with any of the problematic P, B, or P/B estimates identified above. **Thus, it does not appear that these differences in lake size data will explain (to any great extent) the differences between our and Daisuke's estimates of P and B.**

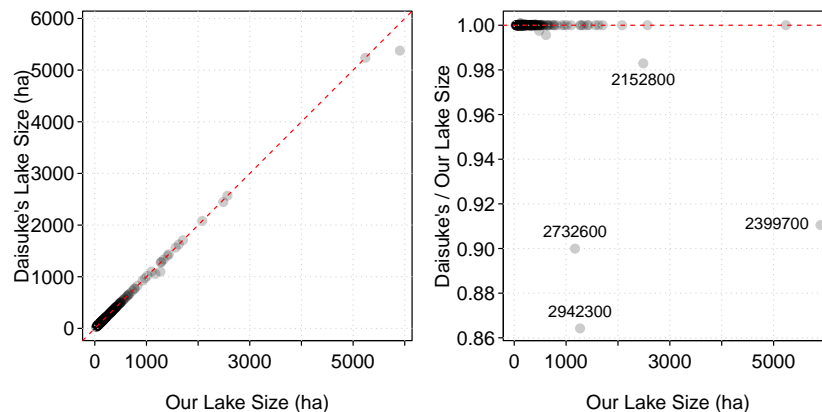


Figure 4: Daisuke's lake size (LEFT) and the ratio between Daisuke's and our lake sizes (RIGHT) versus lake size in our analysis. WBICs for which the difference was more than 1% are marked.

Weight-Length Relationships

We do not have access to Daisuke’s weight-length relationship results. However, we computed the weight-length relationship for 350 WBIC_YEARs available in what appears to be his weight-length data (were stricted to only WBIC_YEAR regressions that we considered valid). Of these, 99.7% were within 1% of each other for $\log(a)$, 99.7% were within 1% of each other for b , 99.1% were within 1% of each other for n , and 99.7% were within 1% of each other for r^2 (Figure 5). Note that one of the most different regression results was from 2013, which was not used in Daisuke’s analysis. None of the most different regression results matched with any of the problematic P, B, or P/B estimates identified above. **Thus, it does not appear that the actual weight-length relationships explain the difference between our and Daisuke’s P and B estimates** (this assumes that Daisuke’s weight-length relationships are the same as what we calculated here). However, **we could have used the weight-length relationships differently than he did**. For example, we may have used a different decision ladder to decide to use a weight-length regression other than the one for the specific WBIC_YEAR than Daisuke did (and we had regressions by lake class rather than region as Daisuke did). Or, Daisuke may have used the weight-length relationship to compute mean weight from mean length, rather than predicting weight for individual fish and then computing mean weight-at-age as we did.

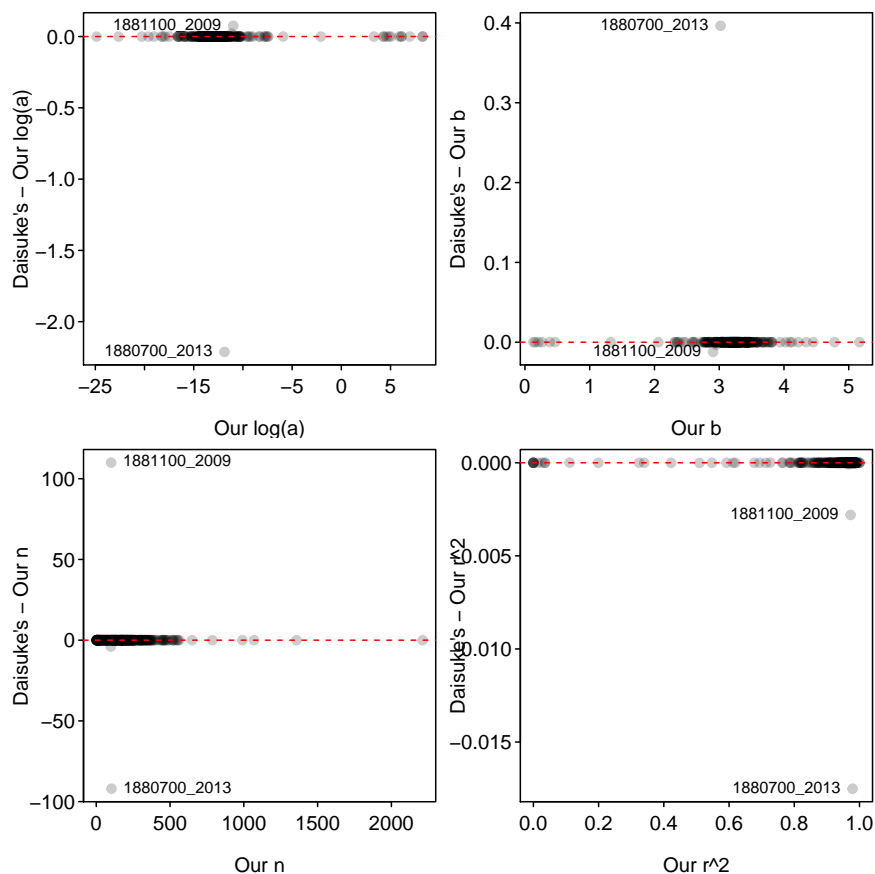


Figure 5: Differences in Daisuke’s and our weight-length regression results versus our weight-length regression results for four summary statistics.

Age-Length Data

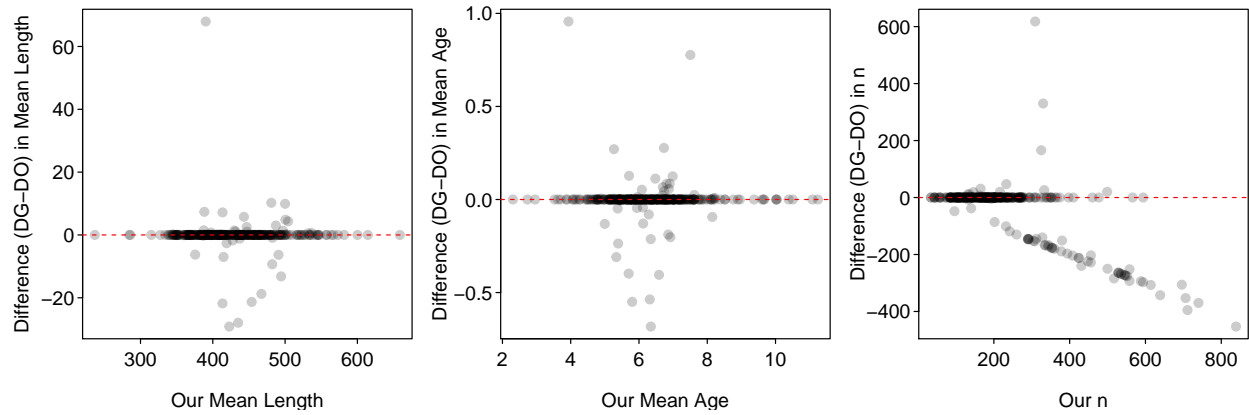


Figure 6: Differences in summaries of Daisuke's and our length-age data versus our summaries for three summary statistics.

Length Data in FMDB

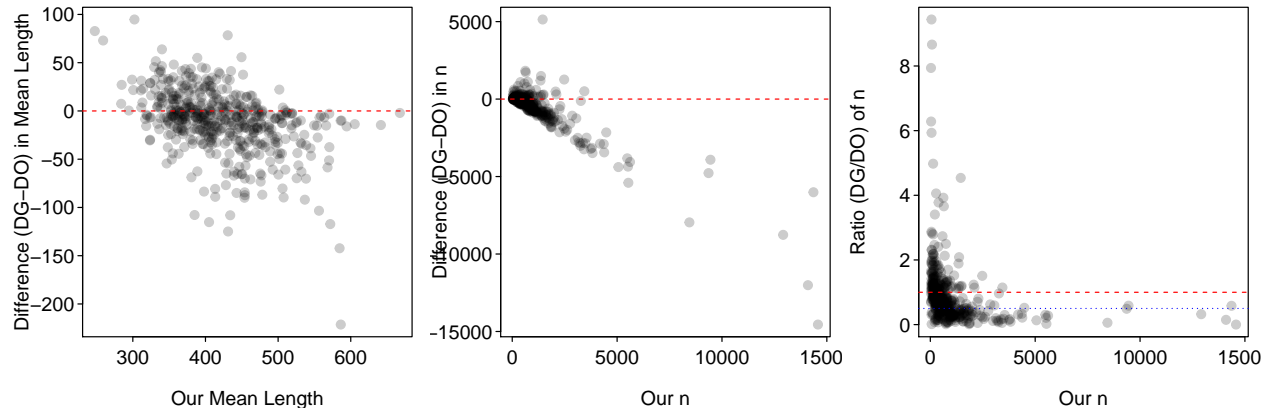


Figure 7: Differences in summaries of Daisuke's and our length data versus our summaries for three summary statistics.