Paper Plots V6

Brett Stacy

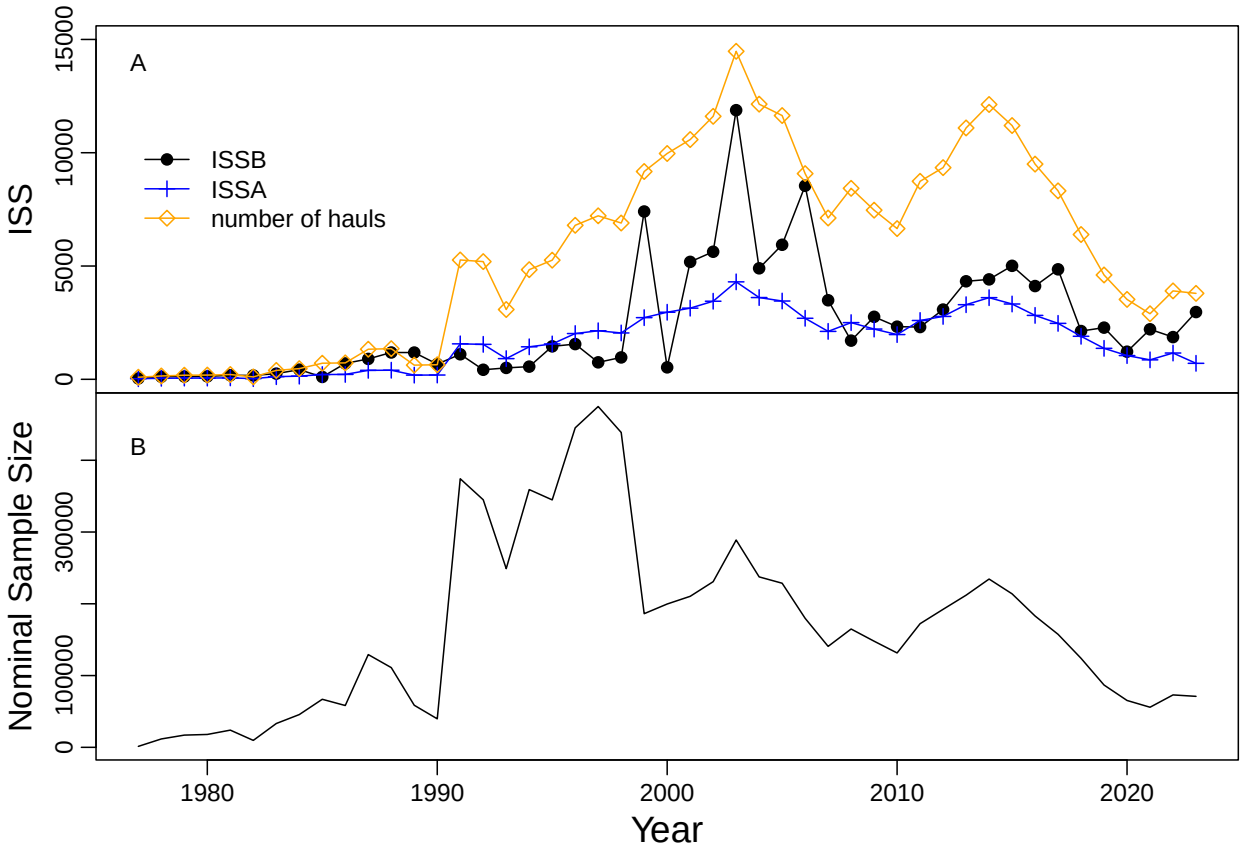
Introduction

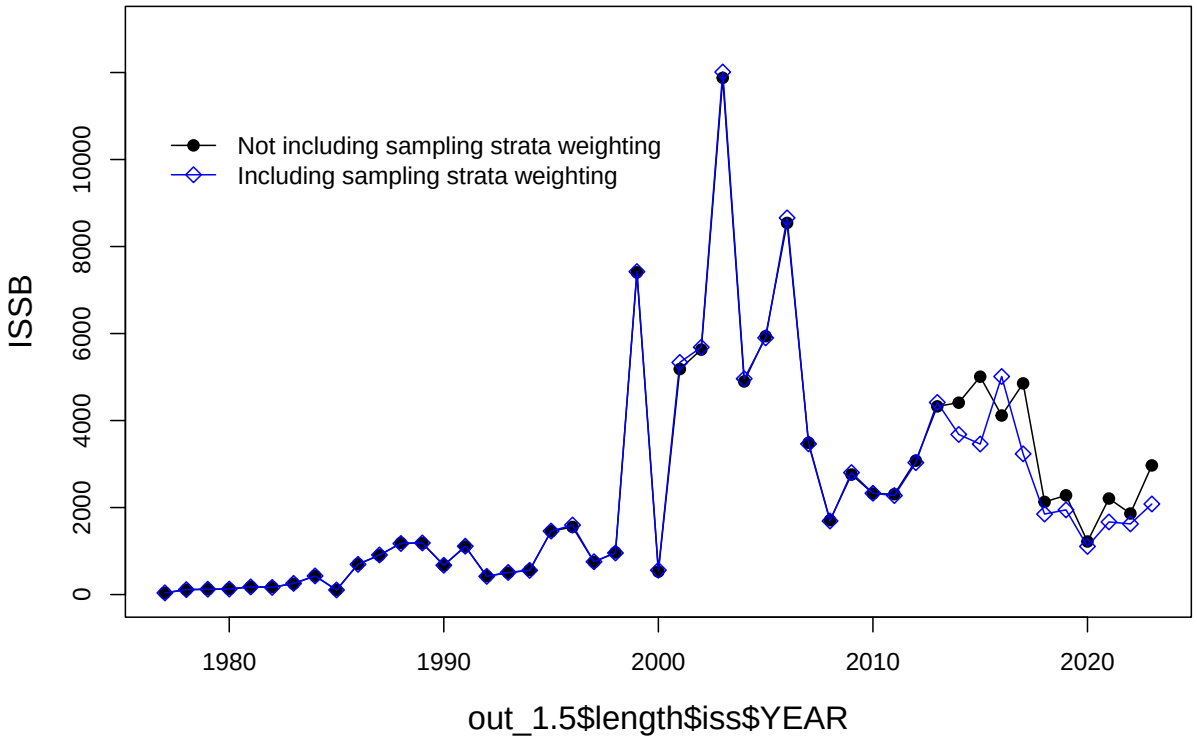
Plots for paper:

Data

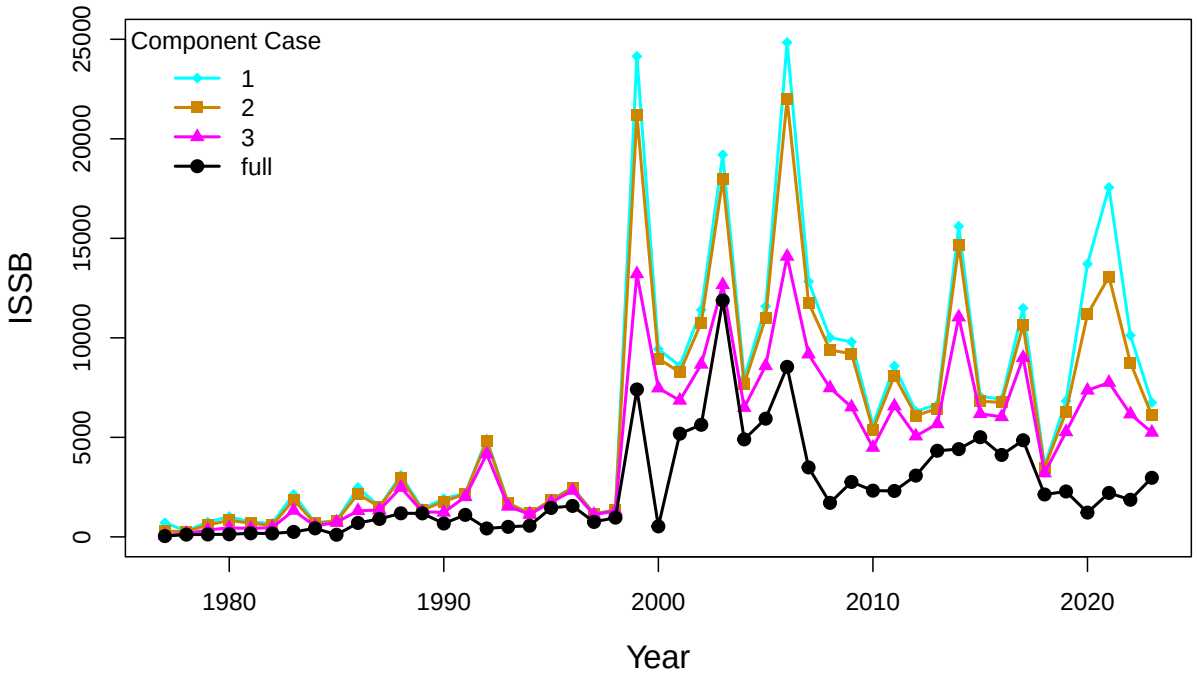
ISSB Results

*** Time series 2 panel**

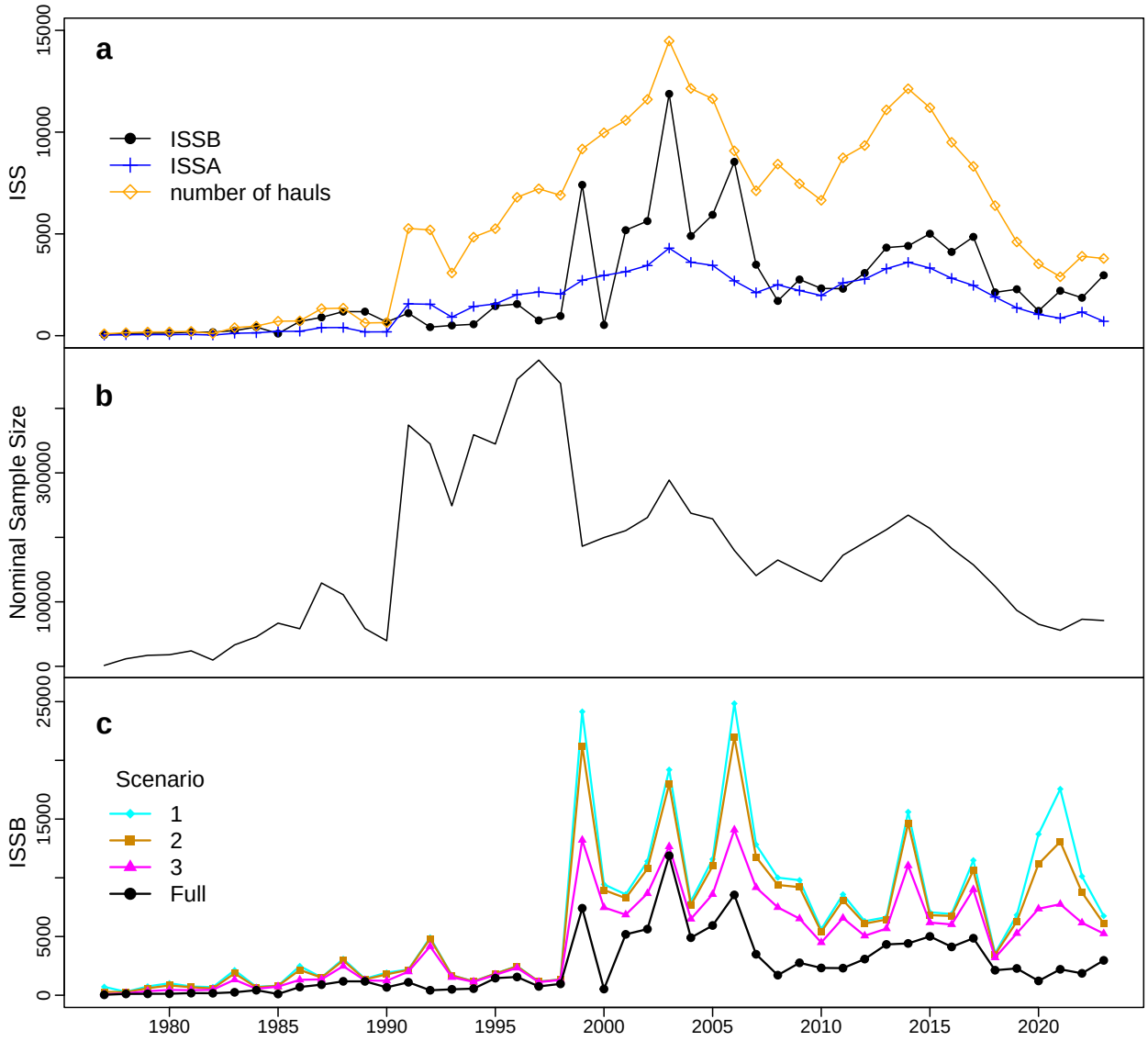



Not including sampling strata weighting
Including sampling strata weighting
lSSB
0
2000
4000
6000
8000
10000
1980
1990
2000
2010
2020
out_1.5$length$iss$YEAR

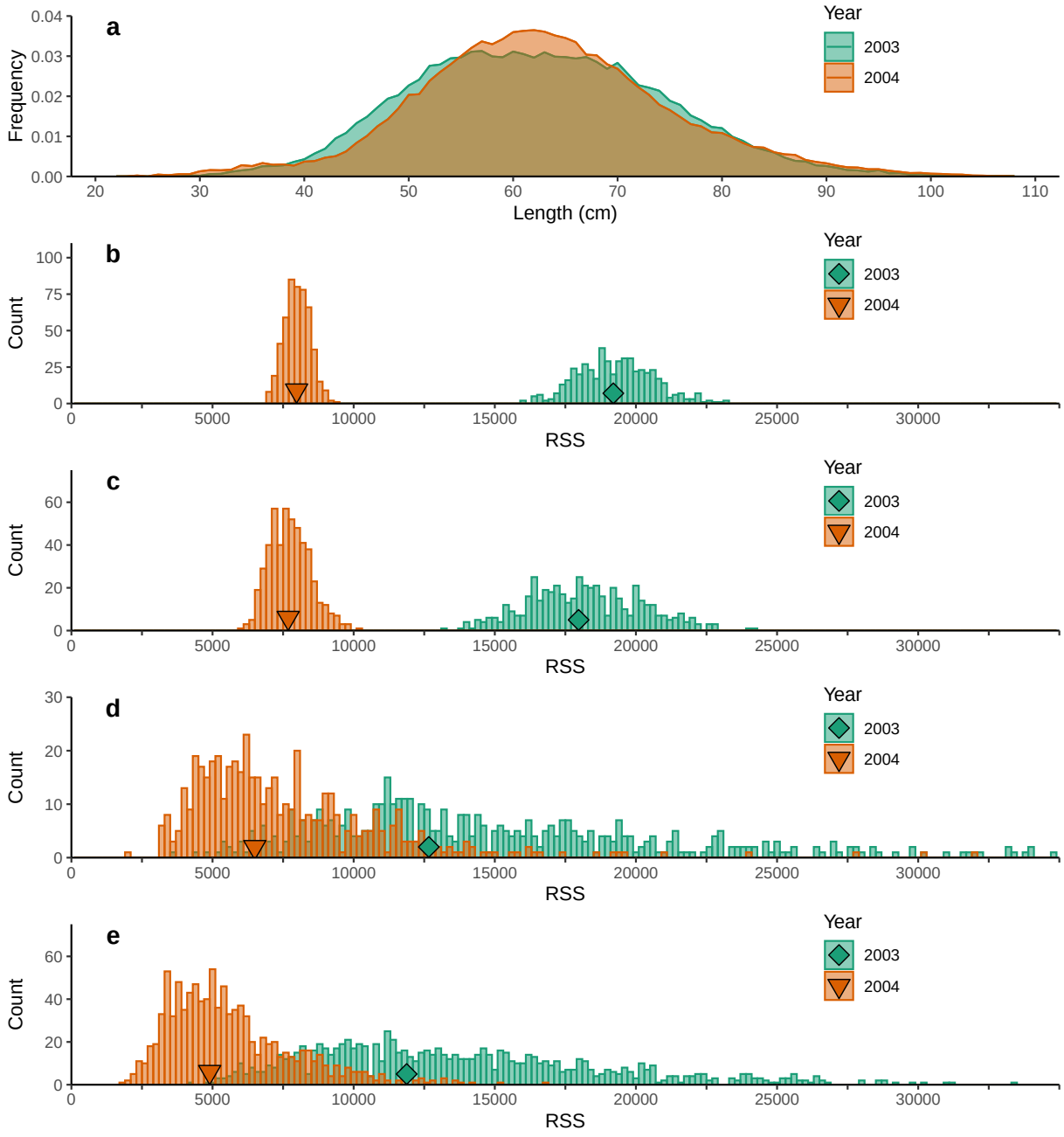
*** Time seris components**


Component Case
1
2
3
full
ISSB
0
5000
10000
15000
20000
25000
1980
1990
2000
2010
2020
Year

*** TOGETHER**

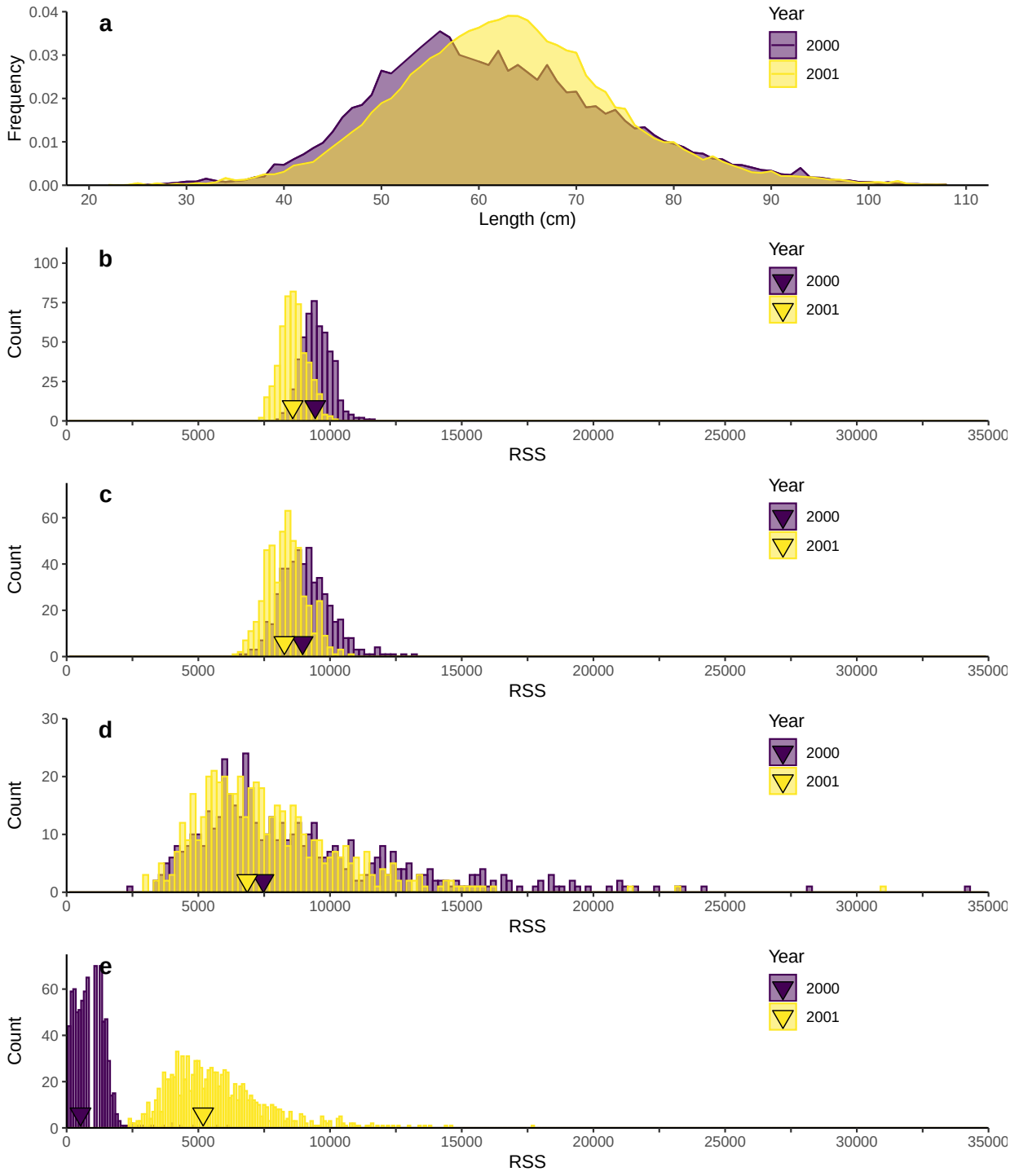

a
ISS
ISSB
ISSA
number of hauls
0
5000
10000
15000
b
Nominal Sample Size
100000
300000
c
ISSB
Scenario
1
2
3
Full
0
5000
15000
25000
1980
1985
1990
1995
2000
2005
2010
2015
2020

*** 2003 & 2004 Histograms**

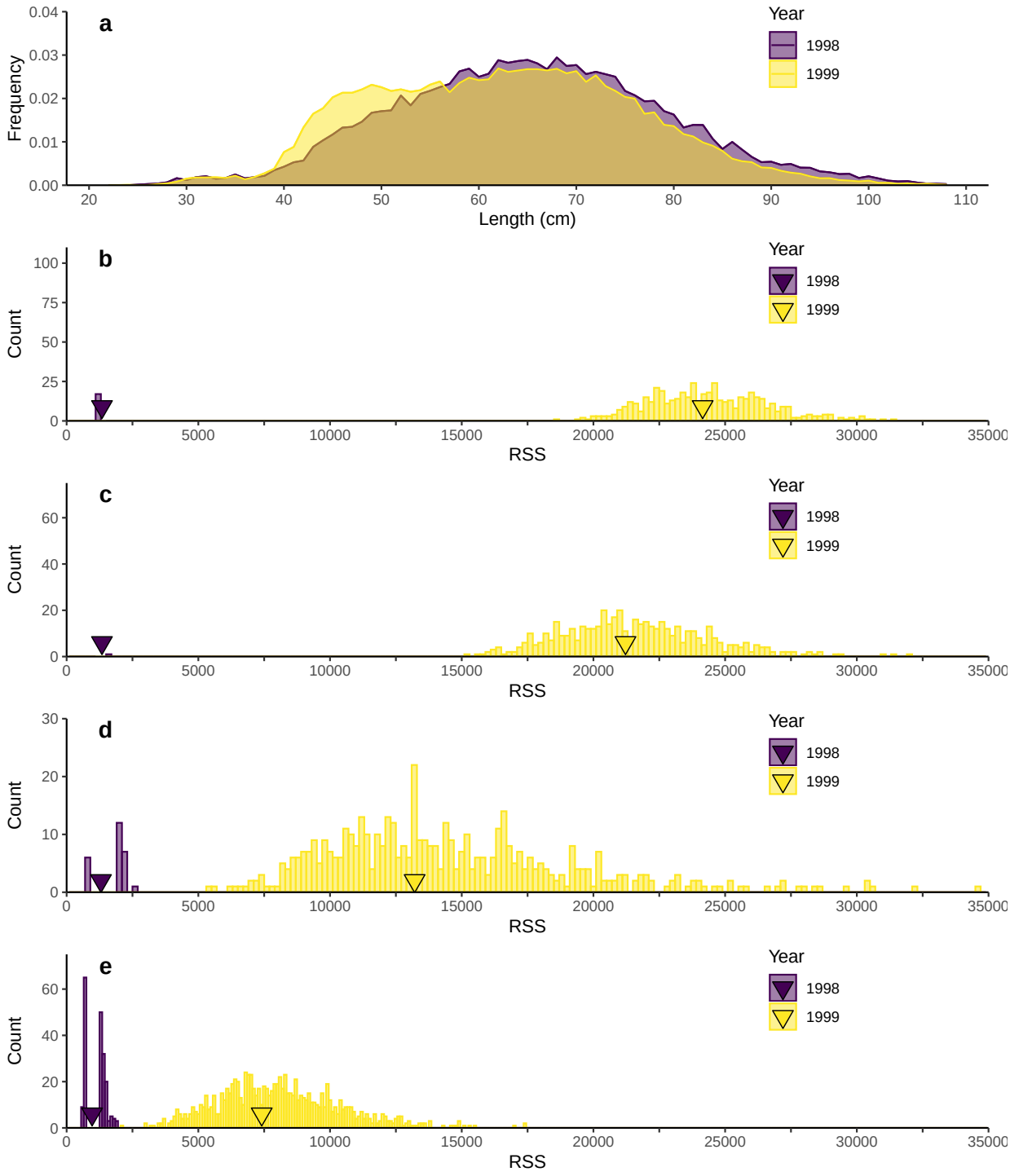


The comparison shows that fish in 2003 were less similar in length compared to 2004. 2003 corresponds to a higher ISS even though the sample rate was the same and the number of hauls and nominal sample size were comparable. More of the fish sampled in 2003 were required for characterizing the underlying multinomial sampling distribution compared to 2004 because more lengths were represented at a higher rate in 2003 (shorter, wider distribution). This is reflected in the RSS (ref figure).

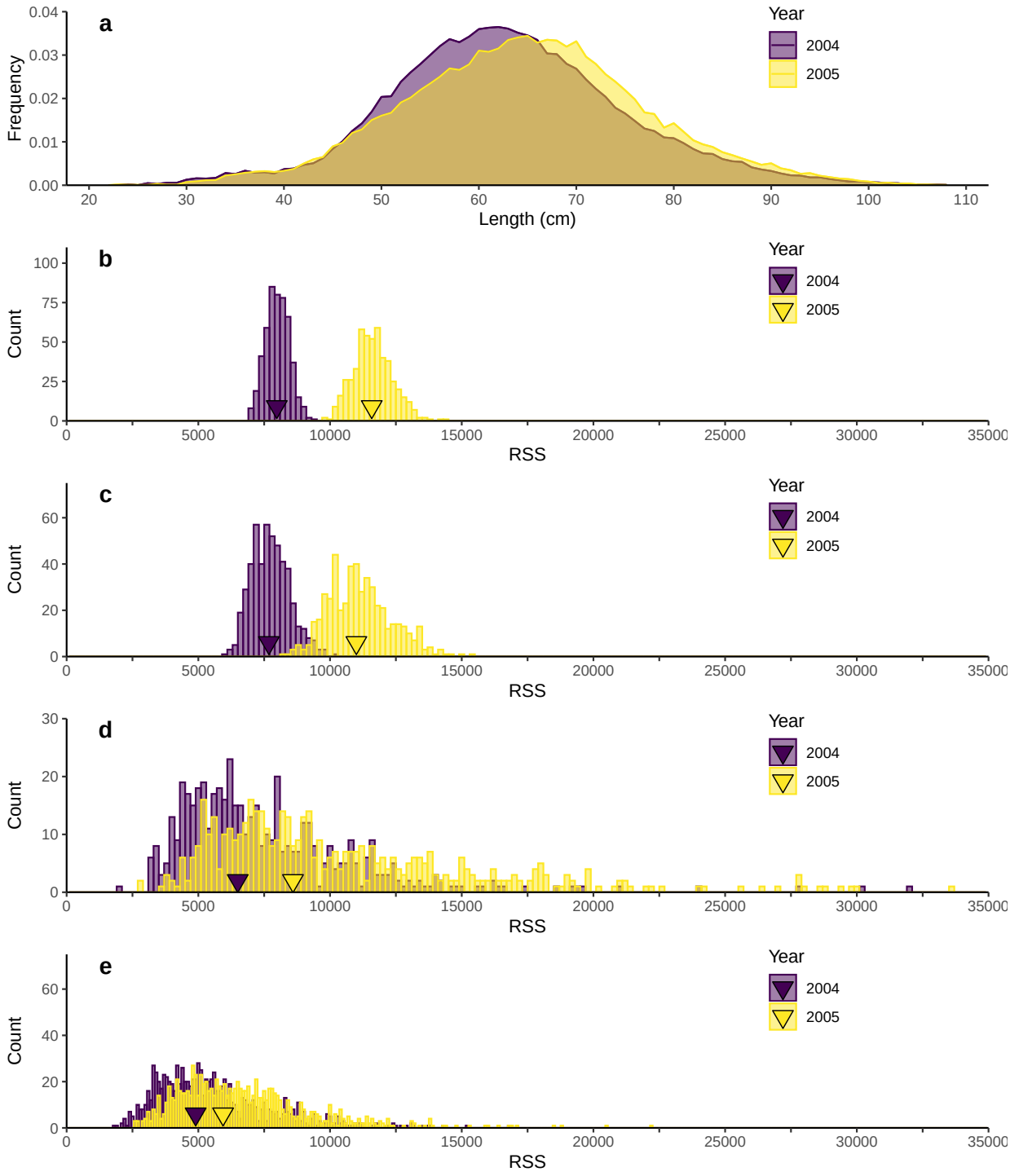
* 2000 & 2001 Histograms



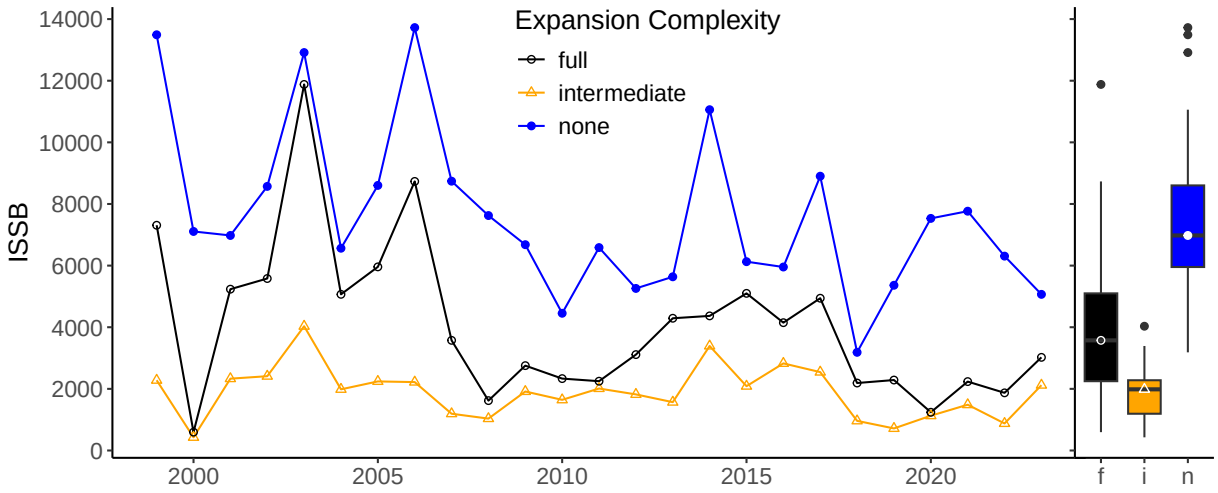
*** 1998 & 1999 Histograms**



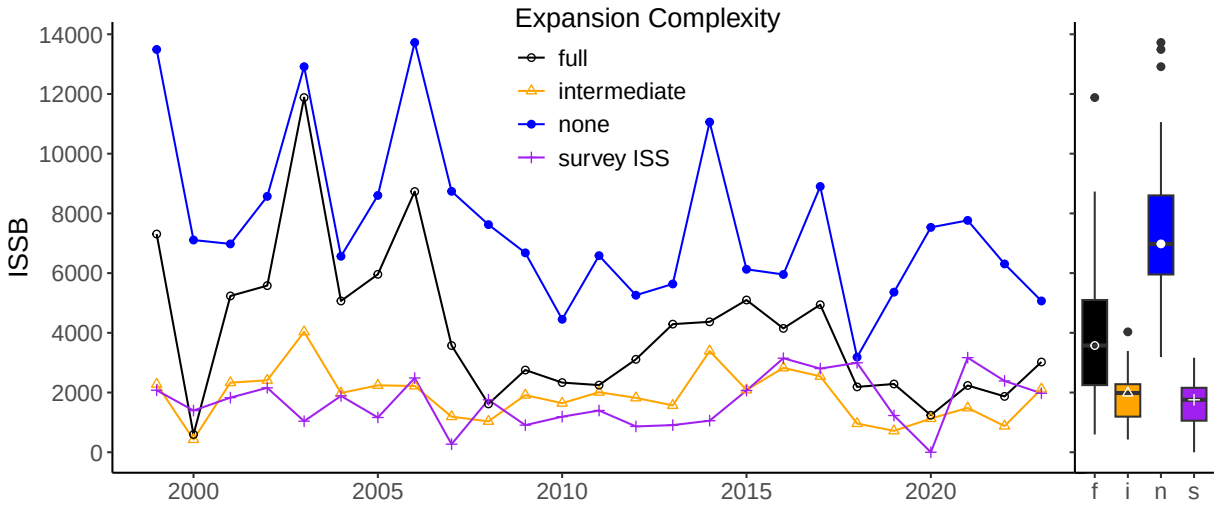
*** 2004 & 2005 Histograms**



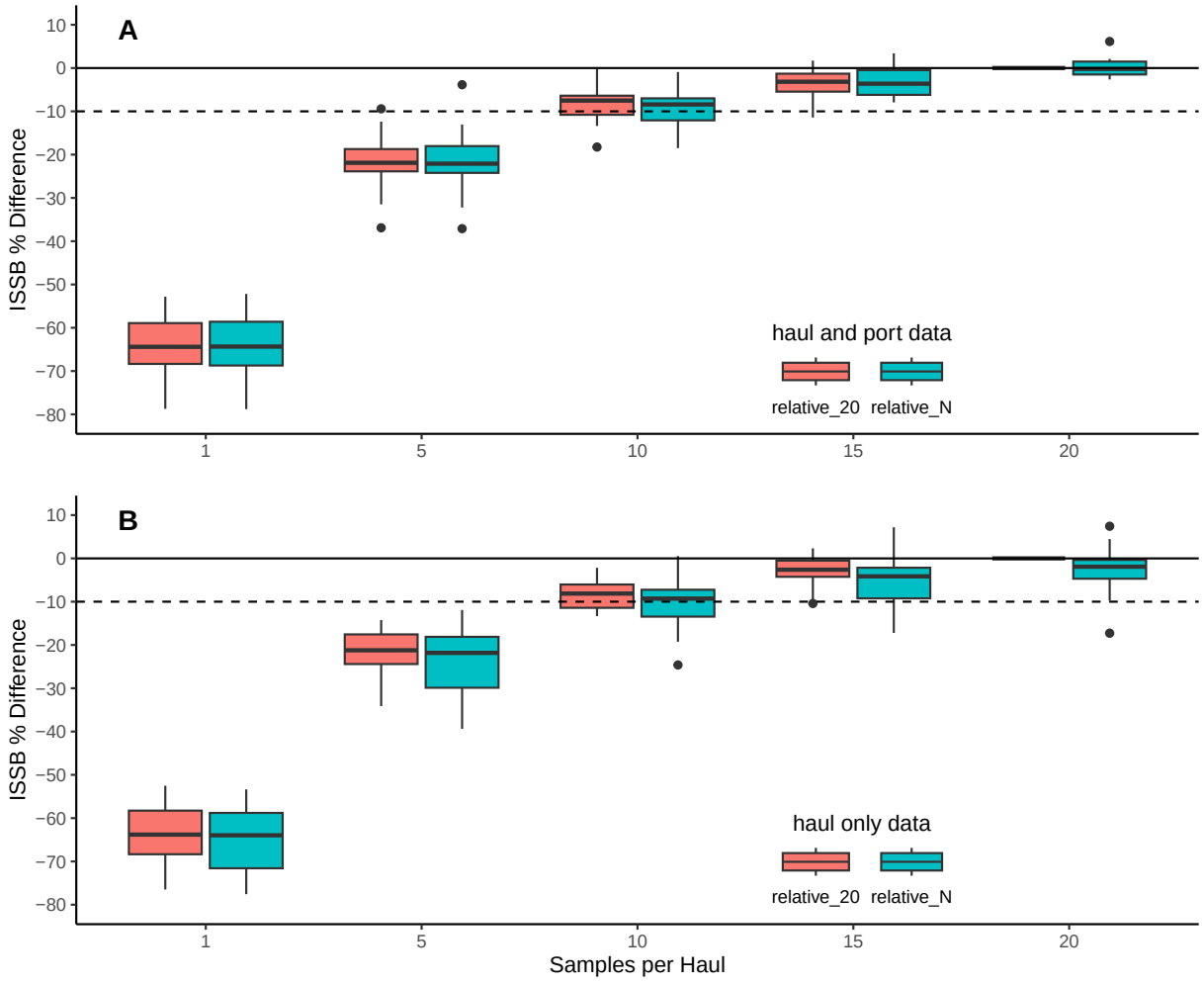
*** Time series Expansion NEW**


Expansion Complexity
full
intermediate
none
ISSB
14000
12000
10000
8000
6000
4000
2000
0
2000
2005
2010
2015
2020
f
i
n

Time series Expansion WITH SURVEY ISS



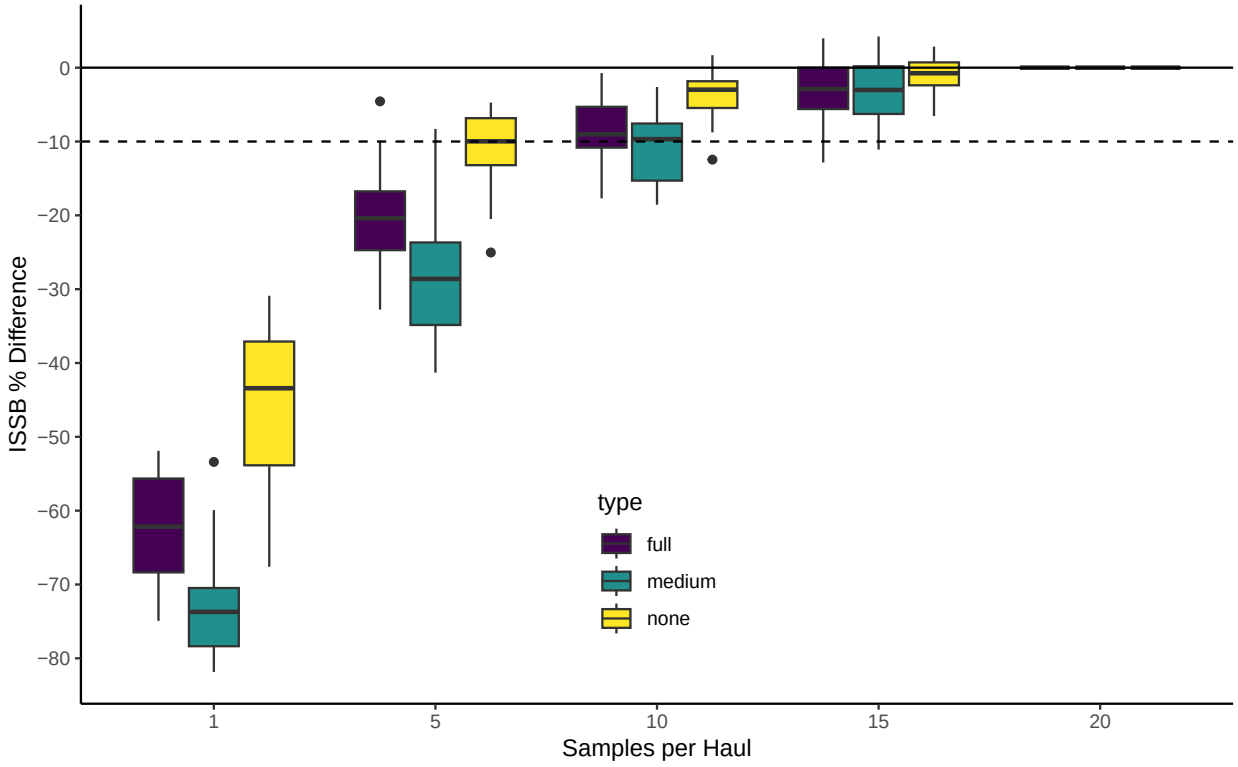
* Reduce Samples


A
B
ISSB % Difference
Samples per Haul
haul and port data
haul only data
relative_20
relative_N
10
0
−10
−20
−30
−40
−50
−60
−70
−80
1
5
10
15
20

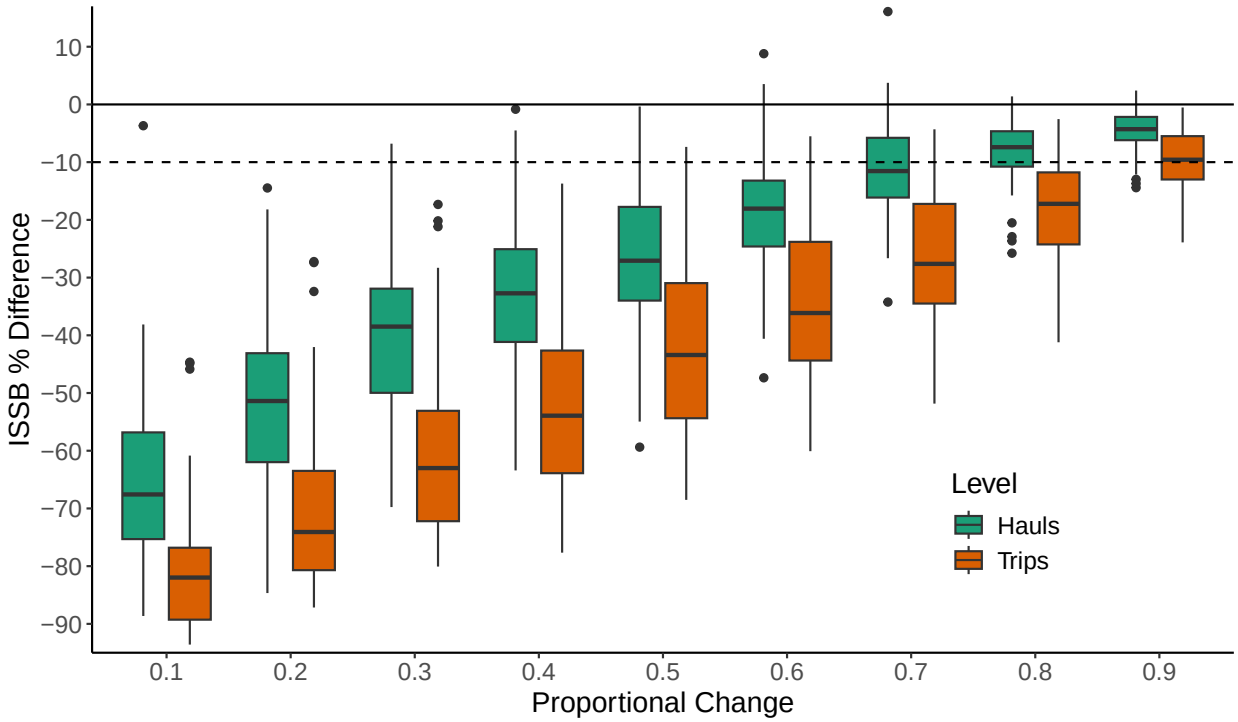
for above. “the median percent difference in ISSB increased with increasing sample size using the full data set (A) and only the haul data (B) over the period 1999-2023. There was no appreciable change in the percent difference when only using the haul data. There was also very little difference comparing the percent difference relative to the baseline ISSB or relative to applying the sample reduction routine at a sampling rate of 20. This verifies that the results are comparable for the following scenarios: comparisons to the baseline or comparisons to just using hauls with a sampling rate that never exceeds 20. The most conservative scenario is assuming a future sampling where high sampling rates from port samples are not available and the haul sampling rate is allowed to be below 20 but not exceed it. Comparisons relative to this scenario are the most relevant, conservative, scenario available to evaluate the impact of reducing observer haul sampling rate on composition data precision for future years. If the sampling rate behavior continues on average at least as good as it has done for the period 1999:2023 (which it is scheduled to do), we can expect the loss of precision not to exceed these values. (Assuming fishing trip and haul characteristics are comparable on average, also likely expected).

* Samples VS Expantion. intra-relative

Make sure to say in the paper: Methods: Unlike changing the number of hauls or trips (static quality of the data), the stock assessor has discression over changing the expansion method. IF they change it, they will change it for past and present data, not change it based on blocks of time or something like that. SO, these scenarios demonstrate what we can expect to see in near future years IF we decrease the sample size, ASSUMING the expansion complexity will change. For example, IF the expansion complexity will change, what will be the expected loss of precision if we reduce the sample size from 20 to 10. REMEMBER, these scenarios are relative to the N=20 case for each expansion complexity case.



*** Haul and TRIP Decrease w/o replacement**



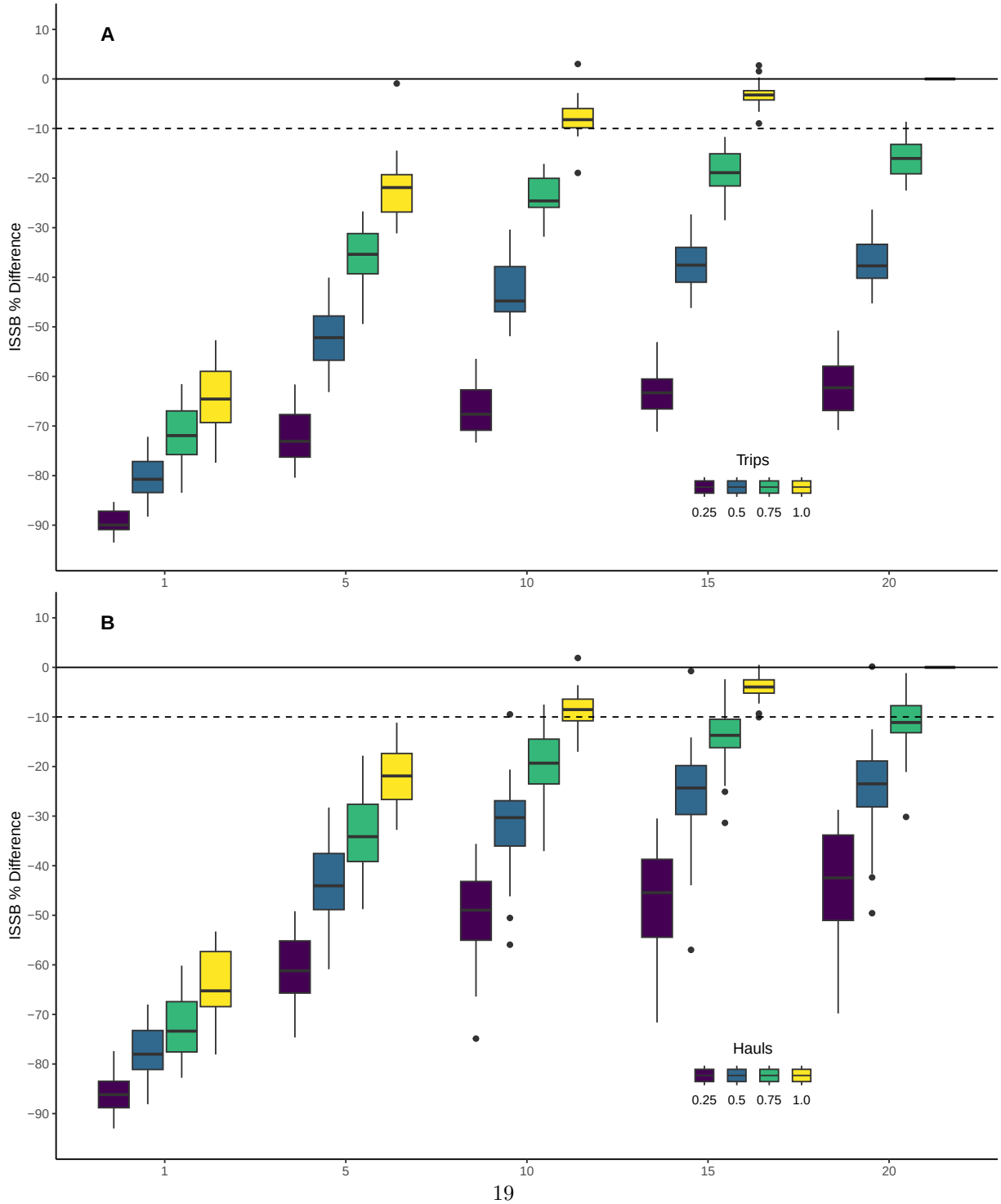
Samples VS Haul/Trip

DATA: Samples VS Haul. Replace=TRUE, including 1.0

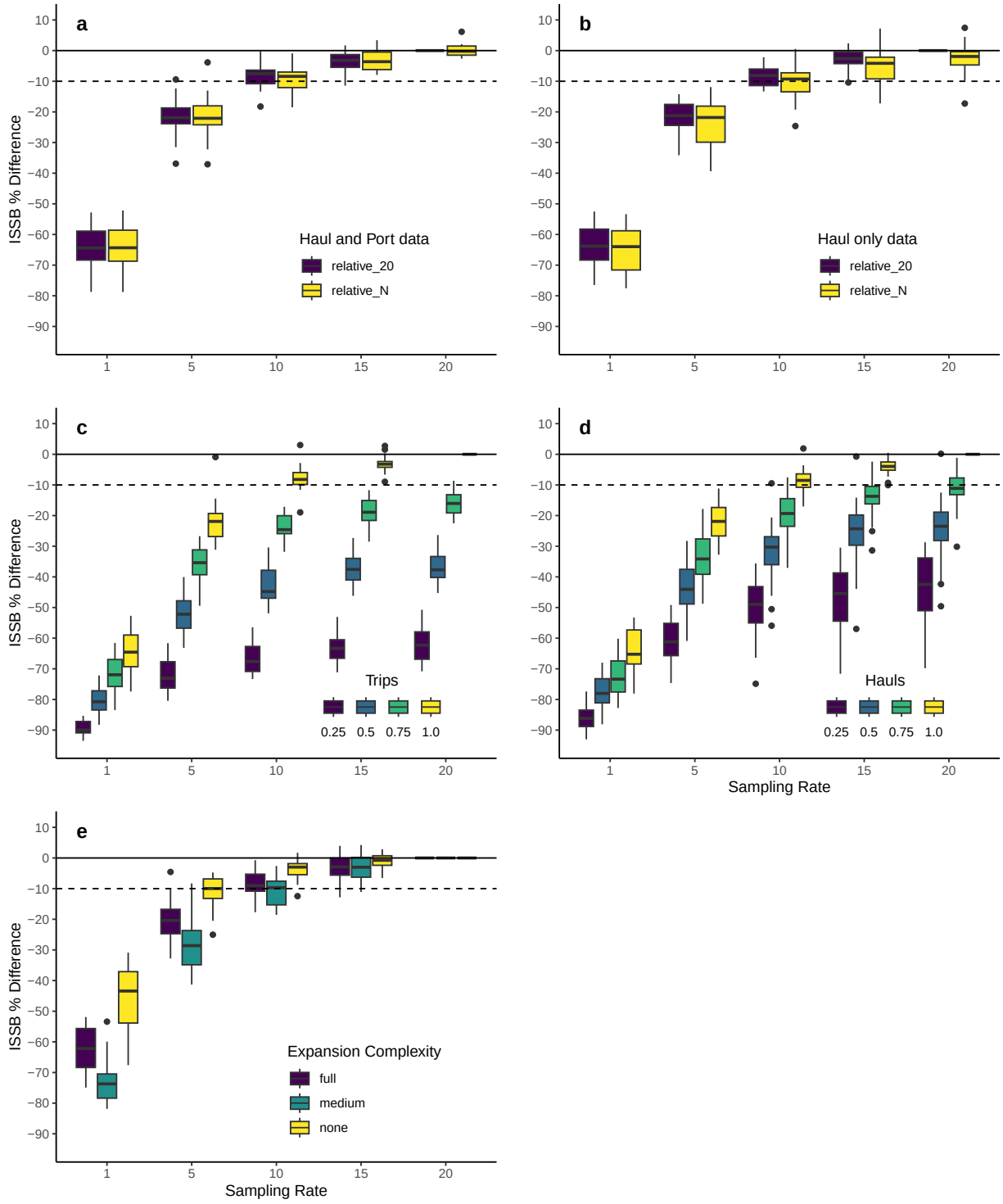
DATA: Samples VS Trip. Replace=TRUE, including 1.0

DATA: Samples VS Trip/haul. Replace=TRUE, including 1.0

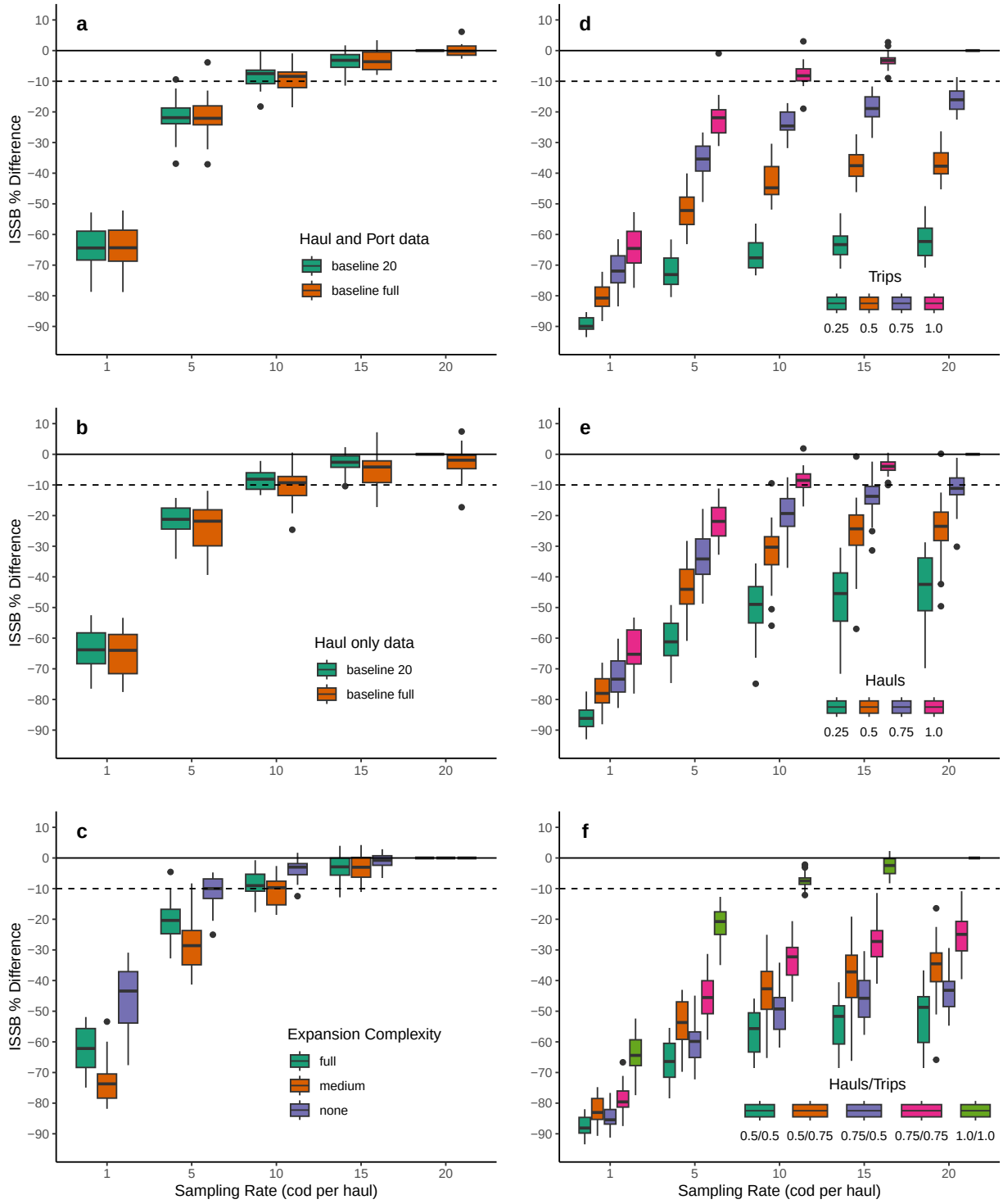
*** 2 Panel: Sample Size VS Trip, Haul**



Sampling Rates Together 5 panel

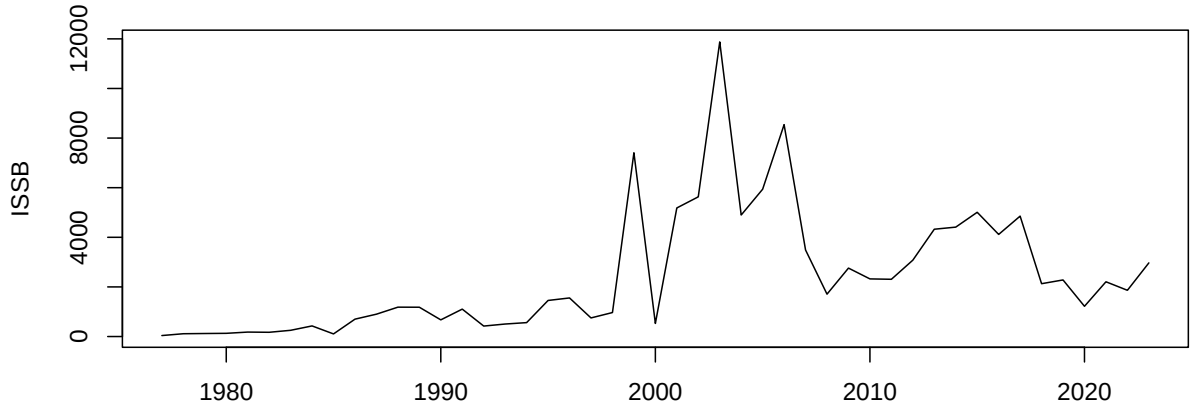


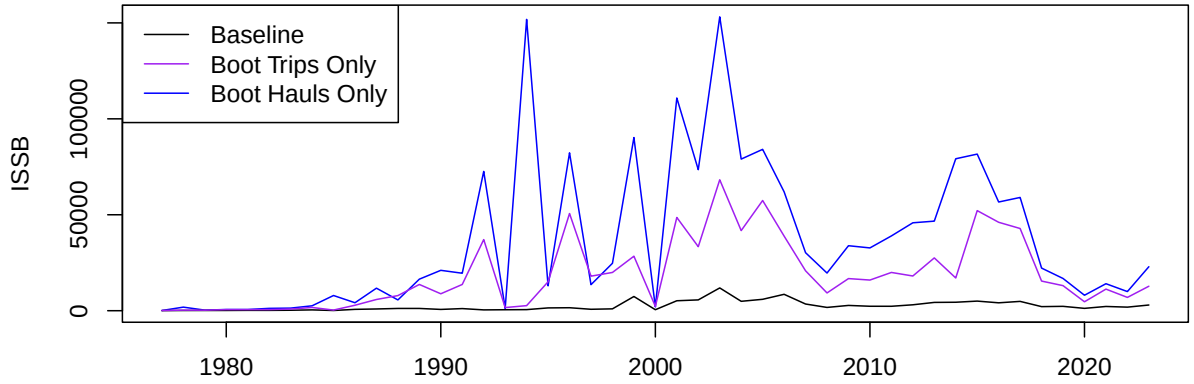
Sampling Rates Together 6 panel



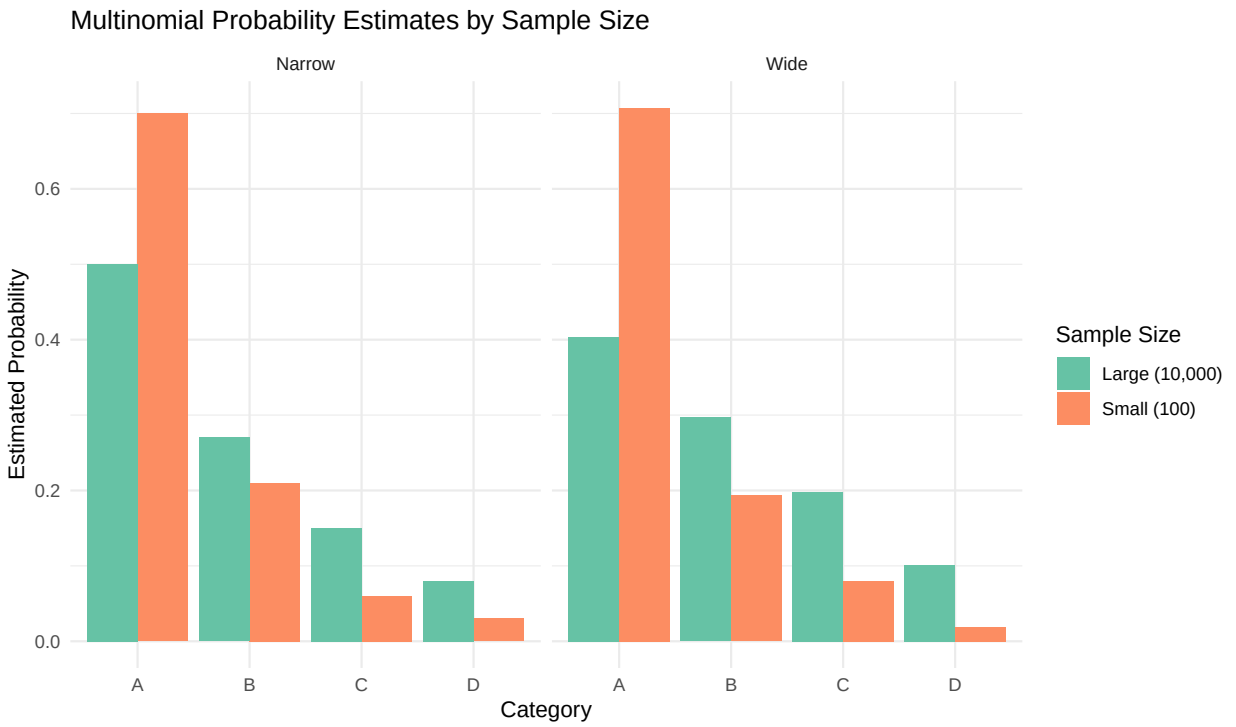
SCRATCH

PLOT BOOT.HAUL AND BOOT.TRIP ONLY SCENARIOS?





Supp Mat Simulation



Supp Mat Bimodal