Paper Plots V1

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Introduction

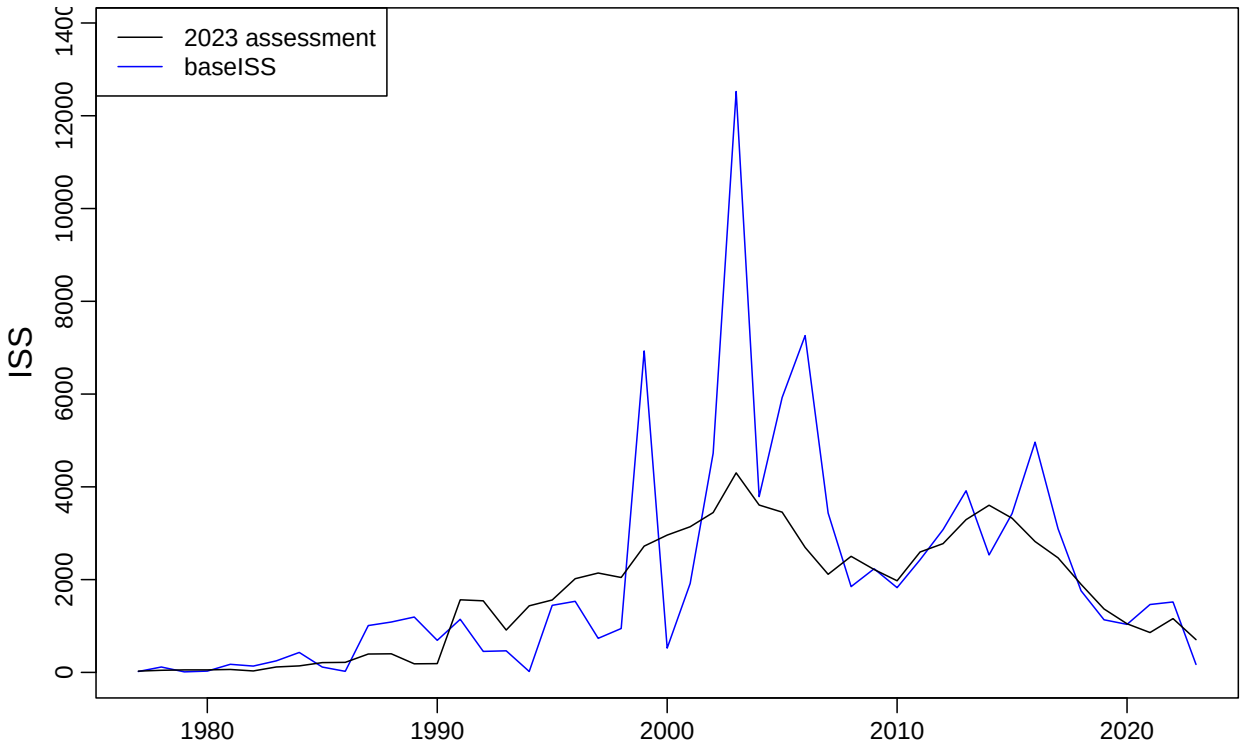
Plots for paper:

1. Time series of new ISS vs old. Accompanied by number of hauls, nominal sample size, and possibly RSS boxplots. RSS boxplots may help justify focusing in on 20 sample size meidan for later plots to get an apples to apples, granular test of impact of sample size and expansion complexity.
2. ISS full, ISS without expansion, ISS without sampling strata, ISS without either.
3. 3x3 grid: sample size 10, 20, 30 fixed X expansion none, haul only, haul+month. With sampling strata.

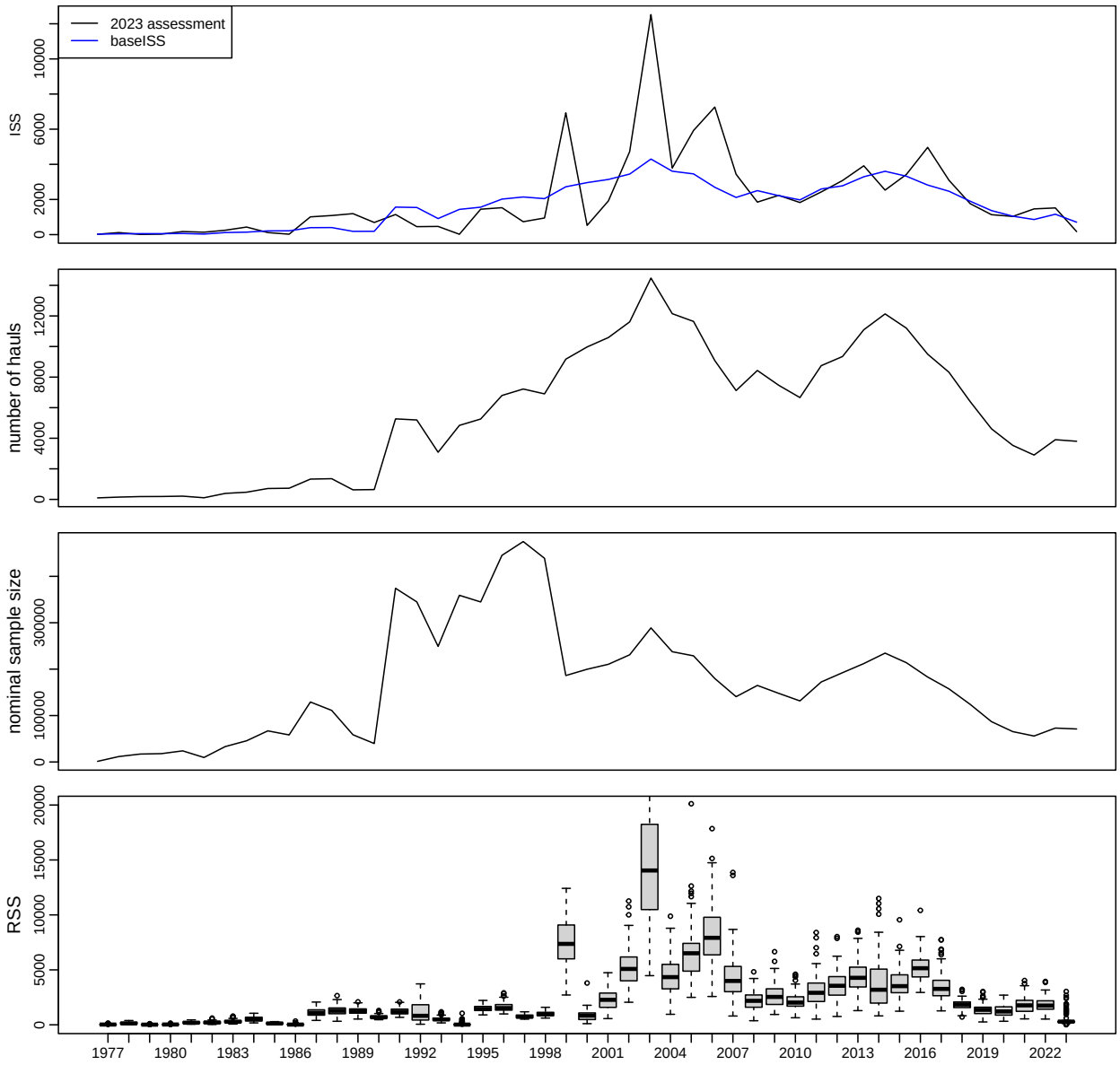
3.supp.1: same as above but without sampling strata. 3.supp.2: same as above but without bootstrapping trip. 3.supp.3: same as above but without either.

Plot 1.1

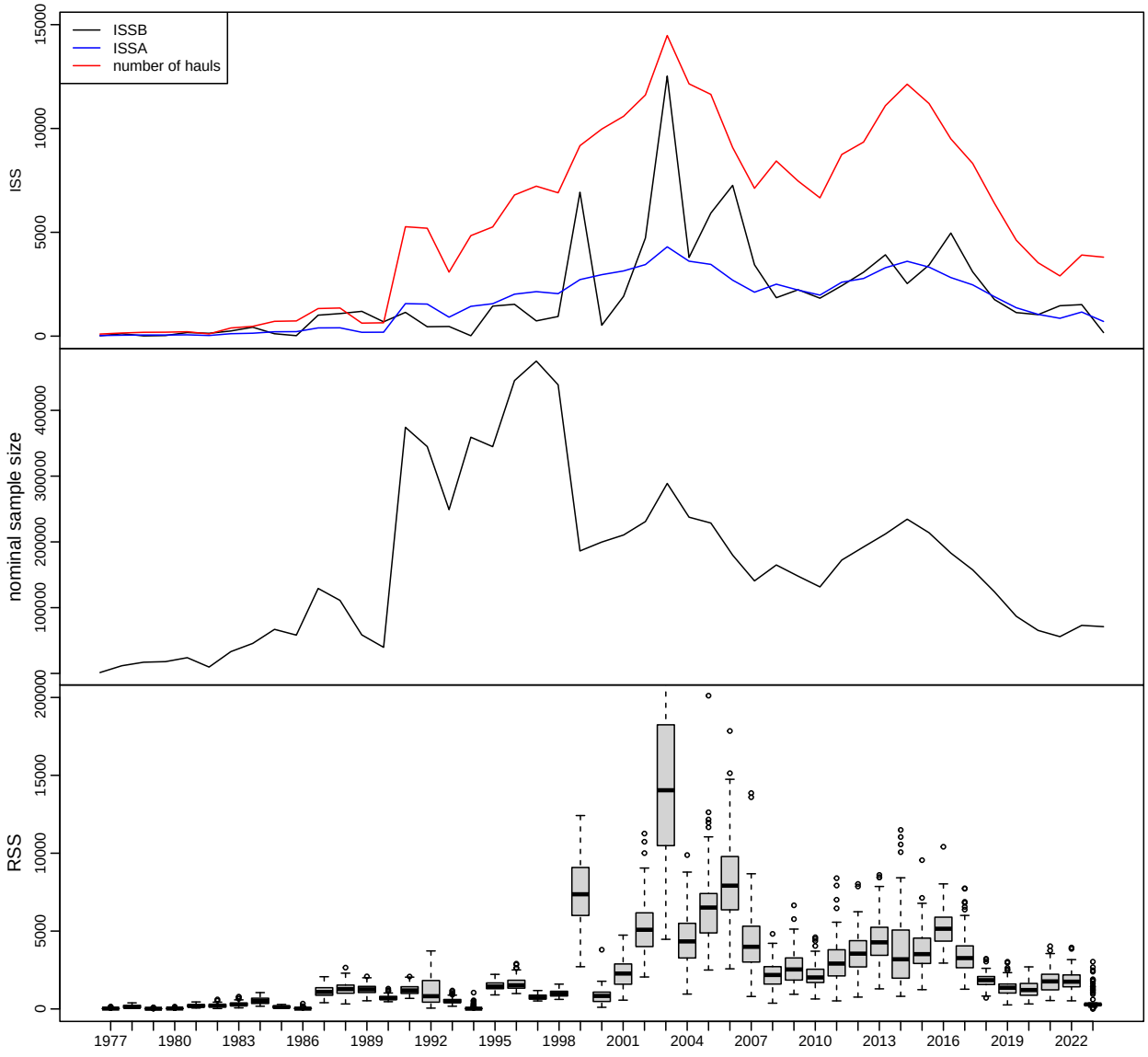
baseISS with assessment ISS



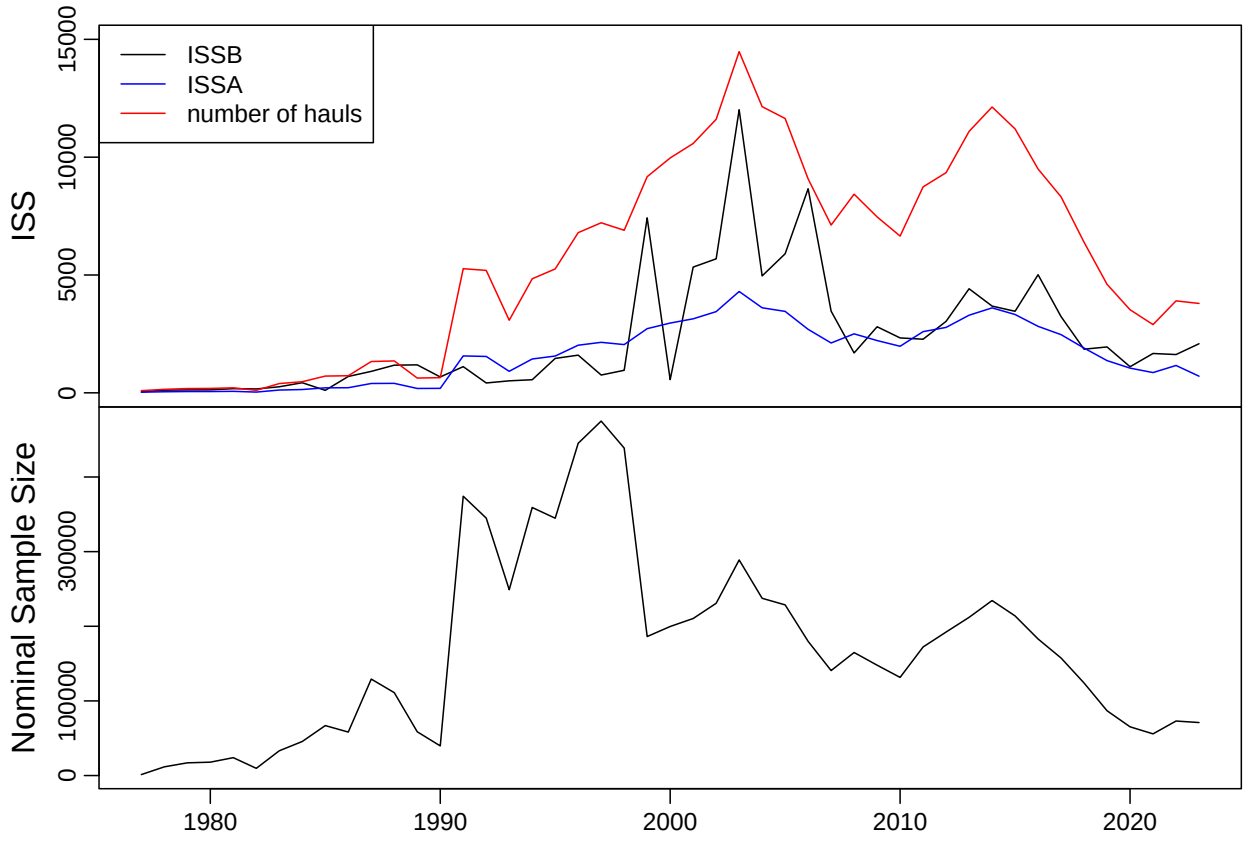
All together 4 panel



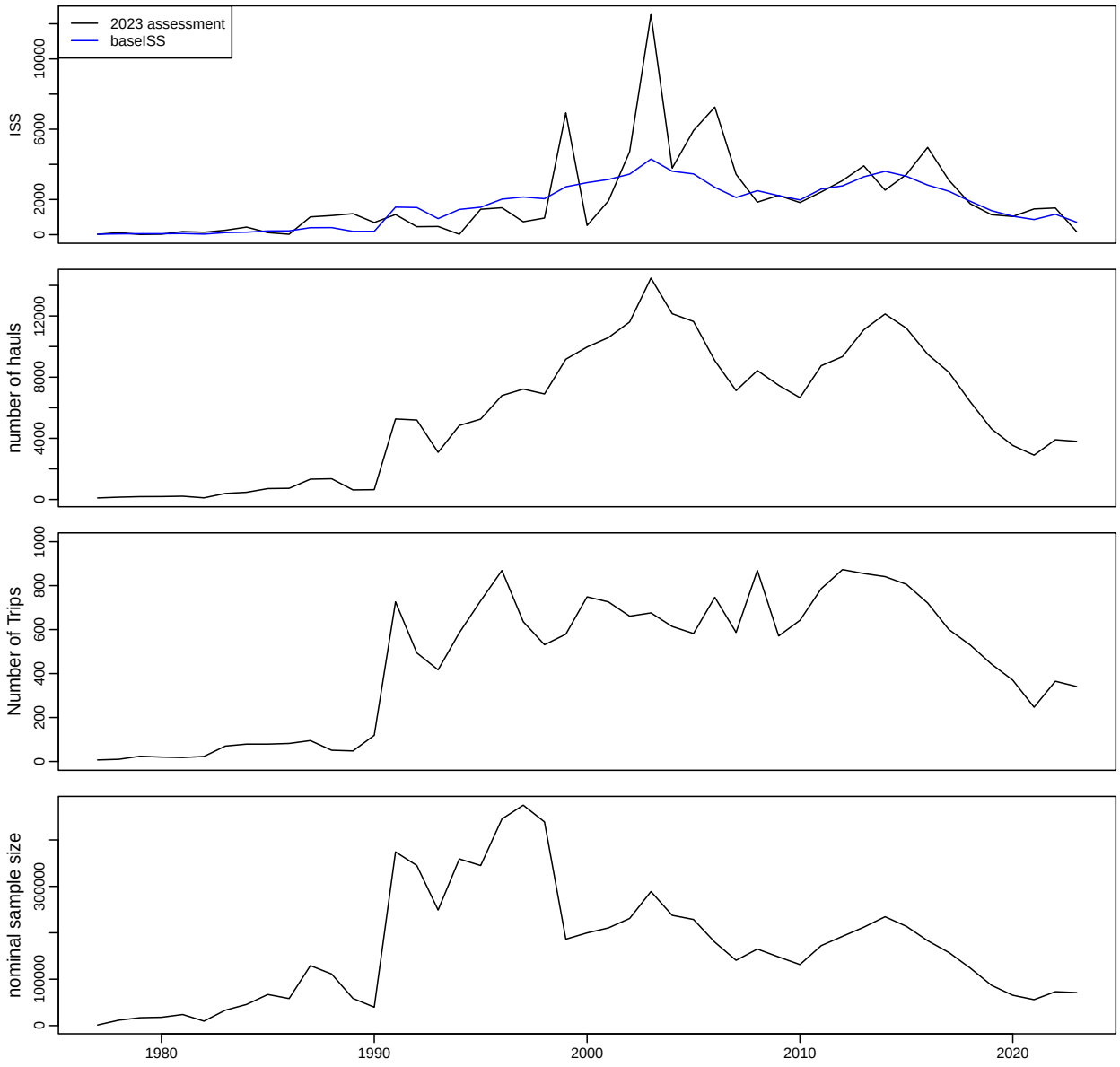
All together 3 panel



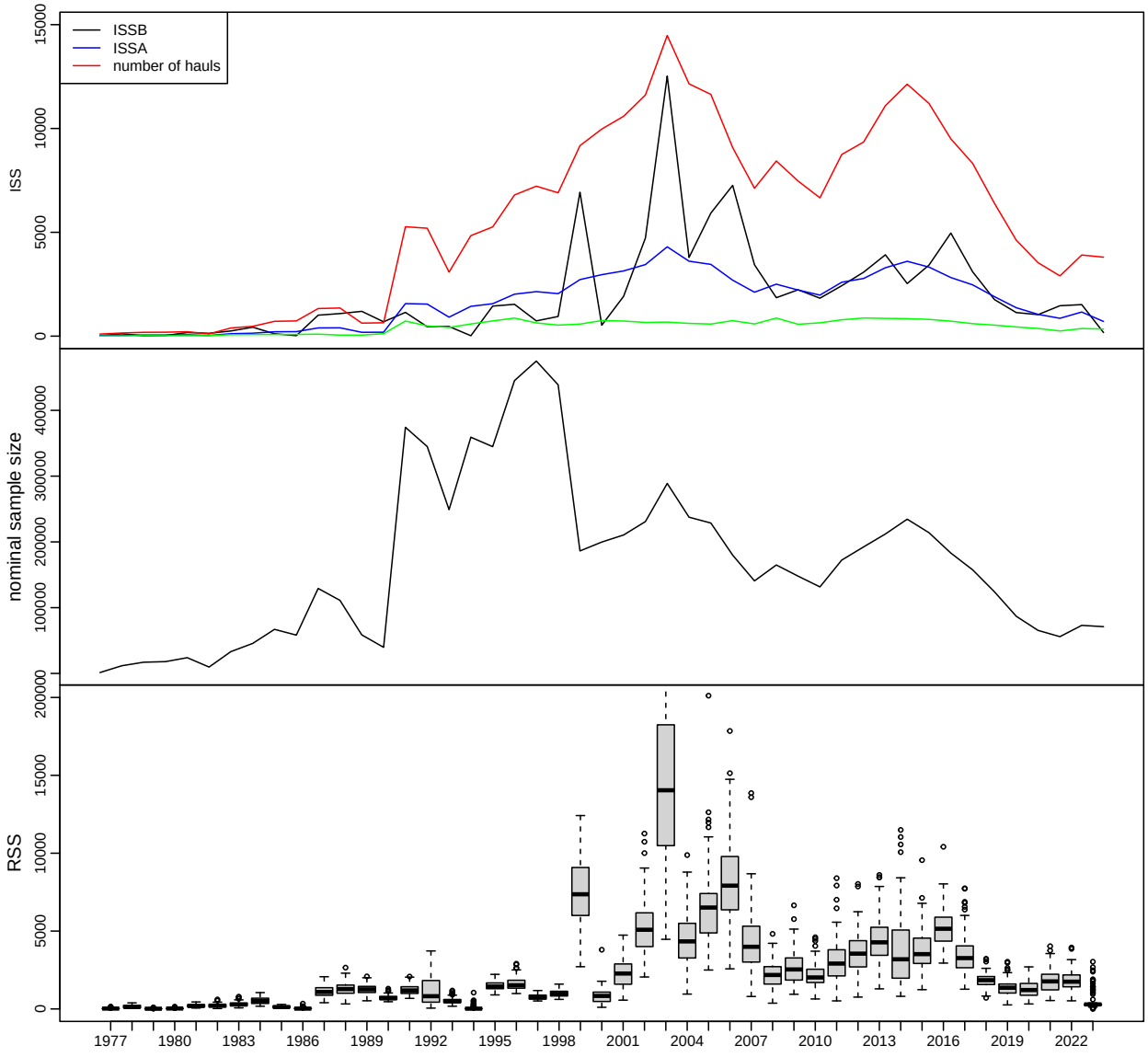
*** All together 2 panel**



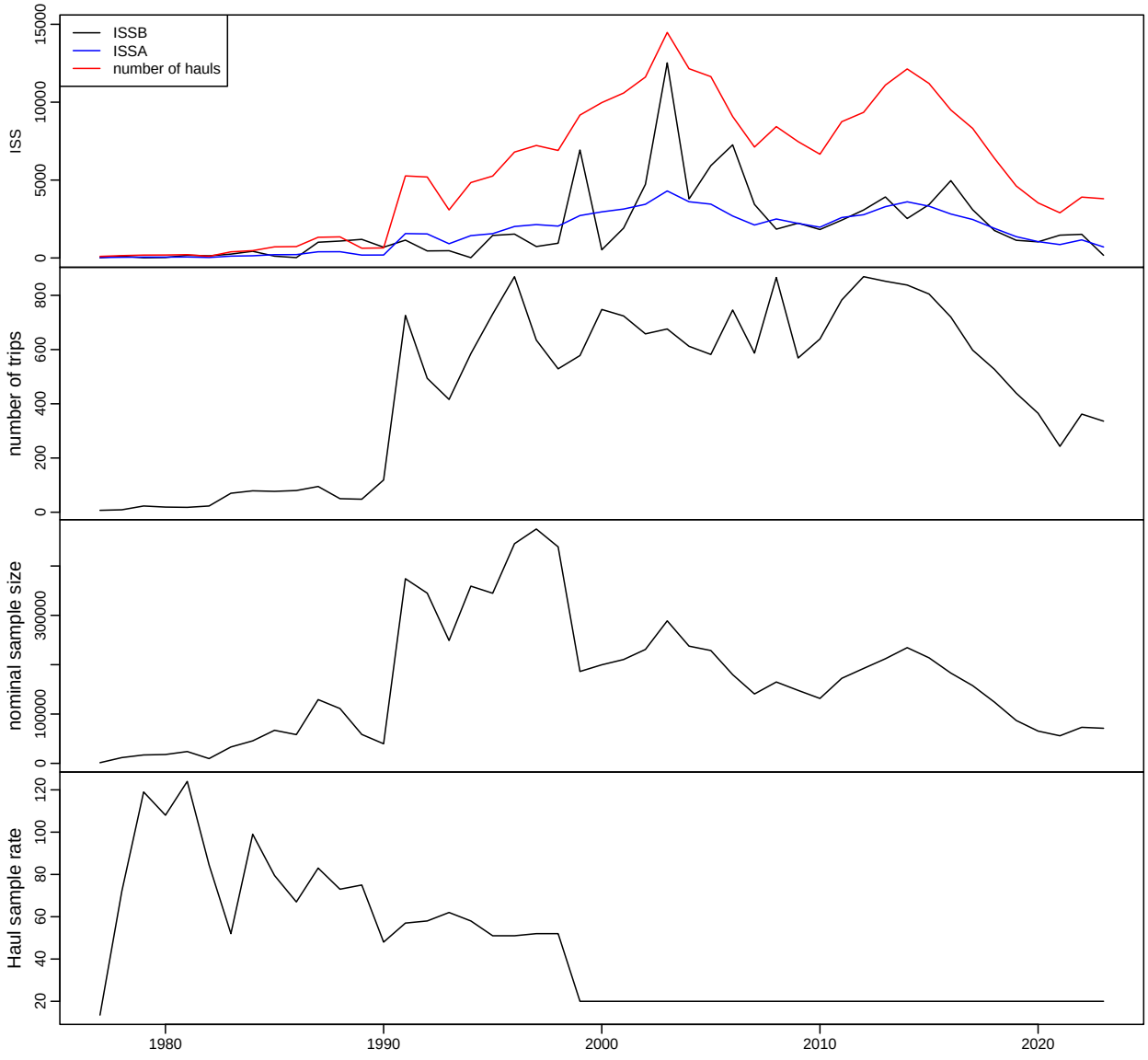
All together TRIPS TOO 4 panel



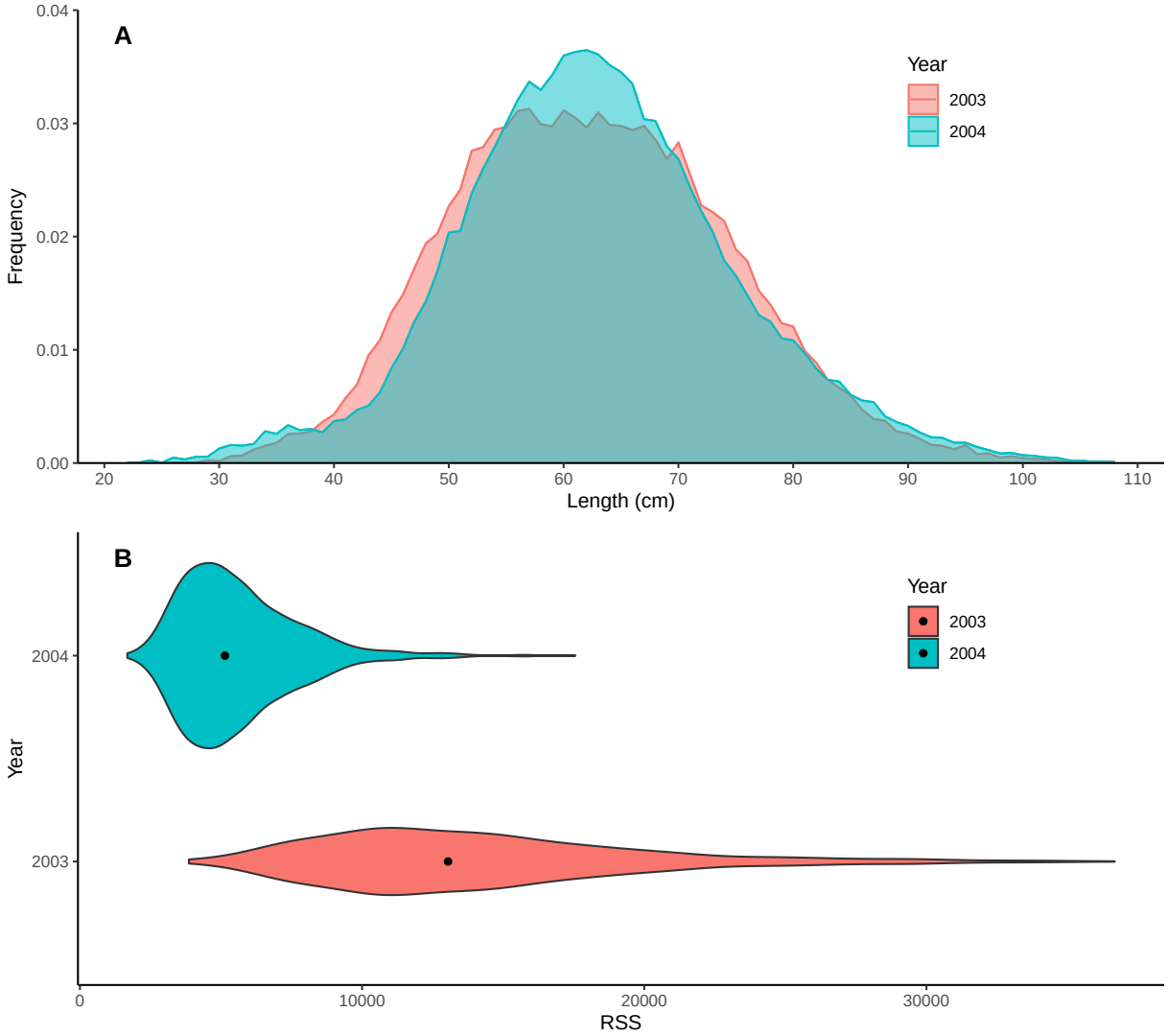
All together TRIPS TOO 3 panel



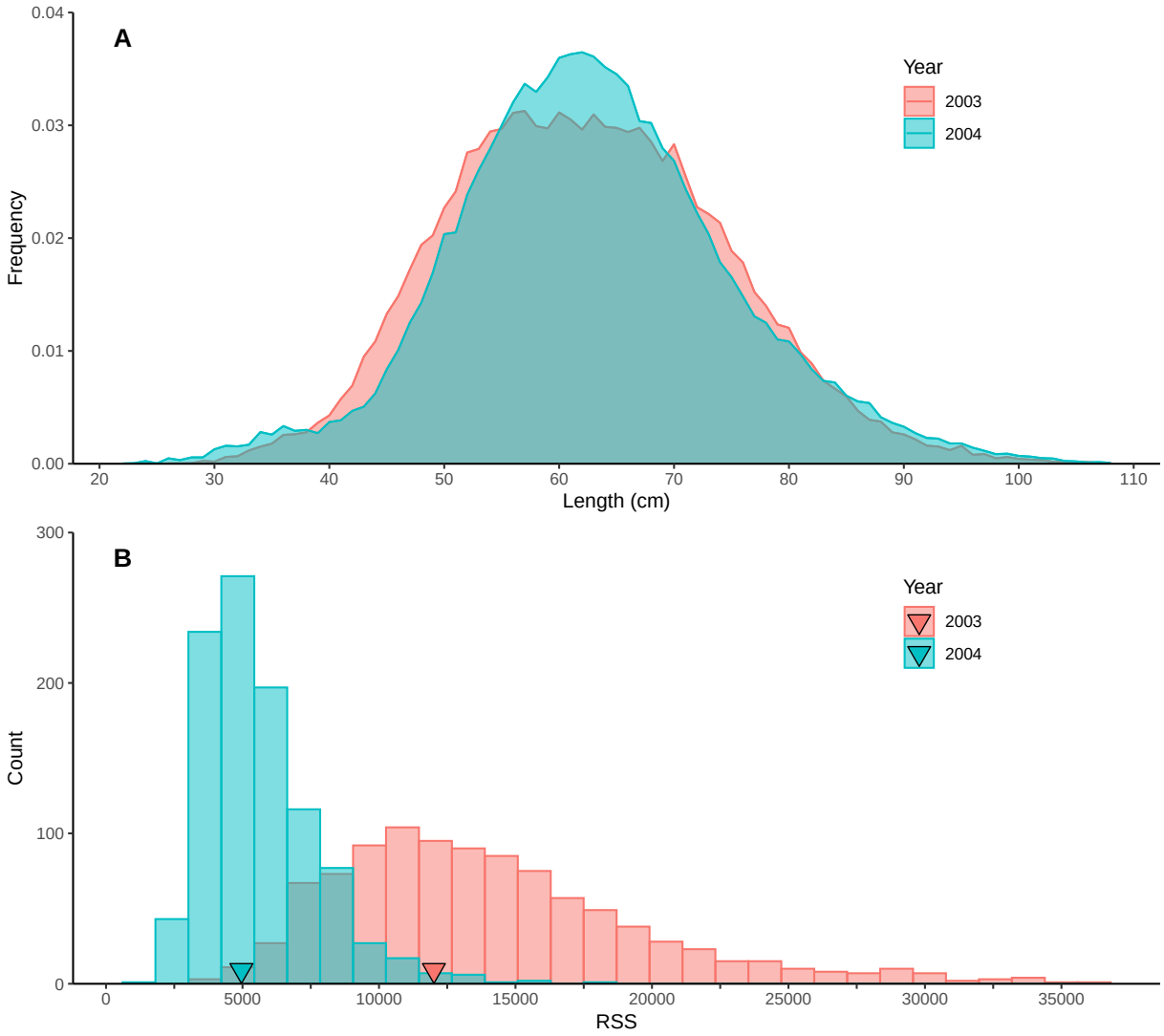
All together TRIPS TOO 4 panel sample rate by HAUL on bottom



1999 and 2000 histograms



*** 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).

Simulate Multinomials

Plot new number of hauls vs old

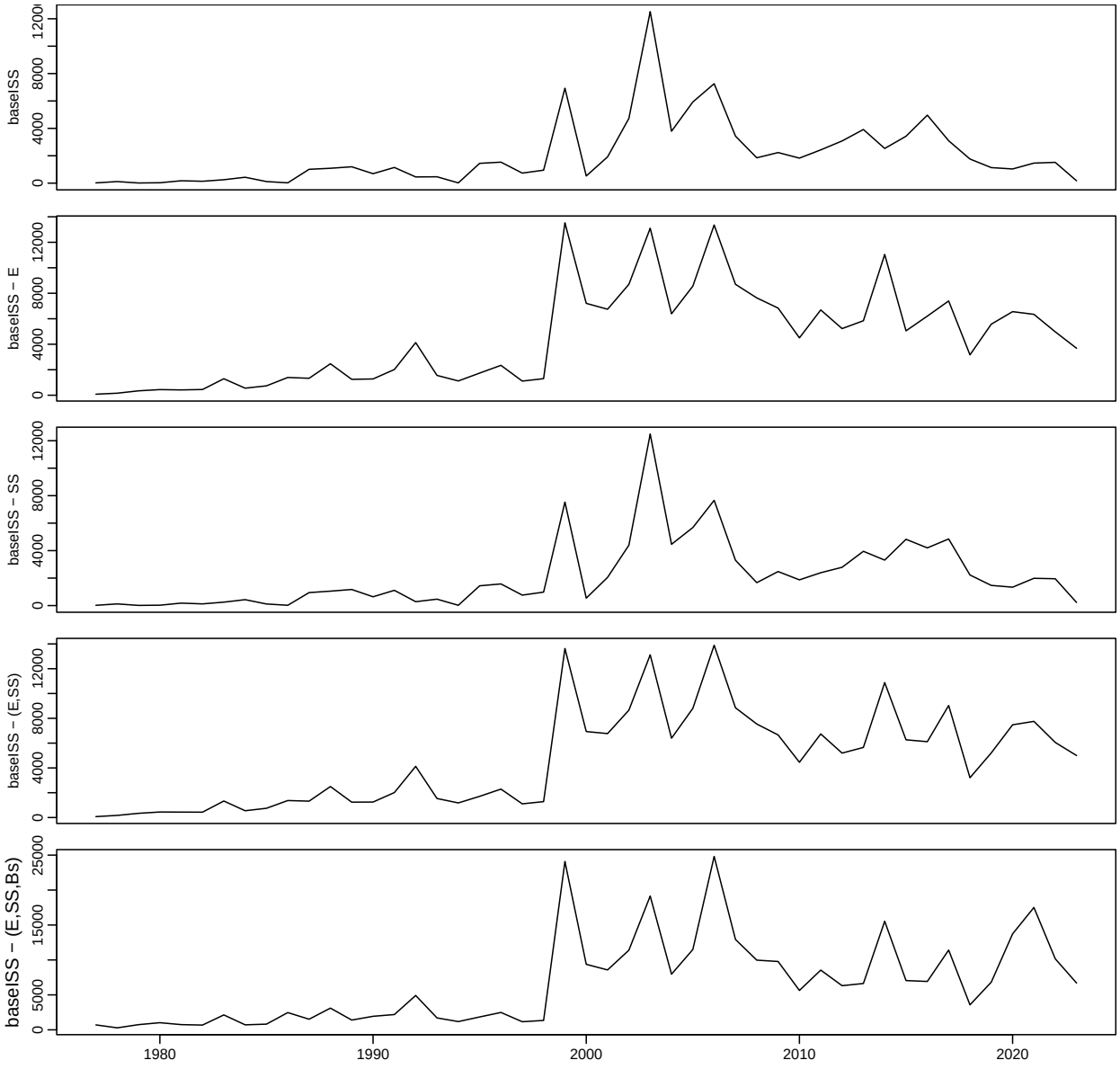
Inspect R-squared Fit models to number of hauls.

Plot 2.1

Deconstruct the contributors to baseISS

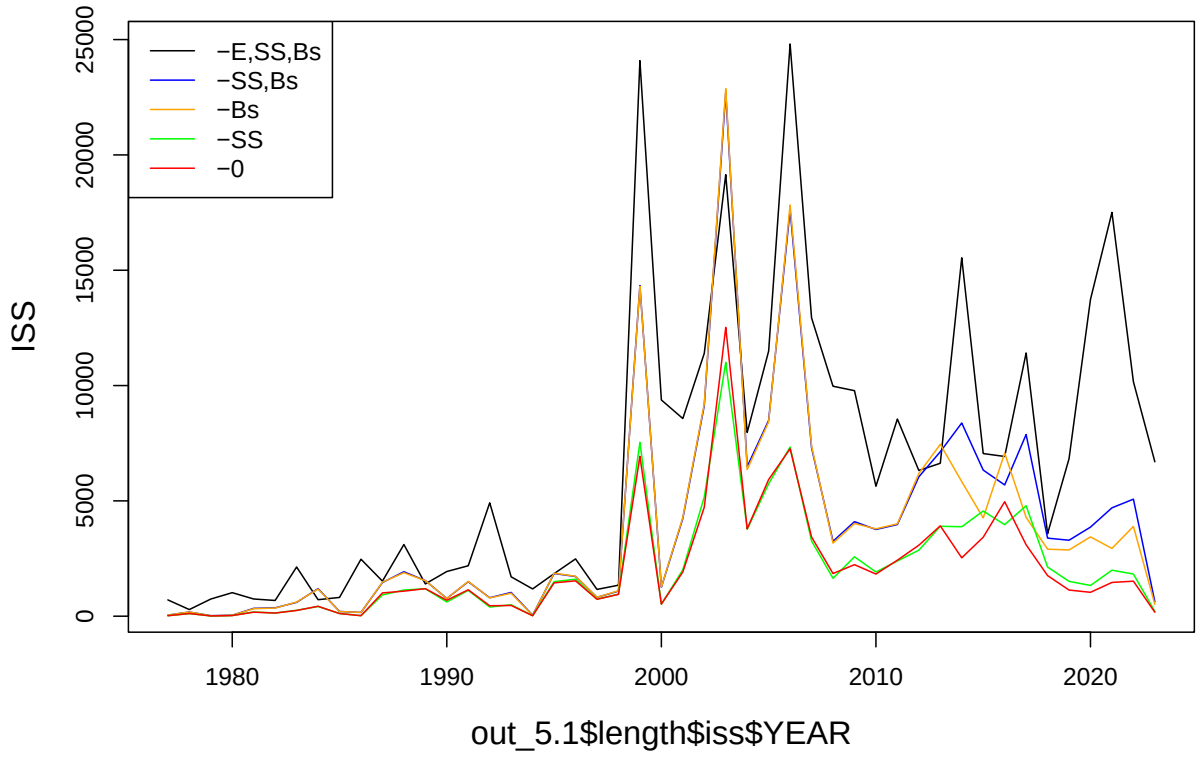
All together 1

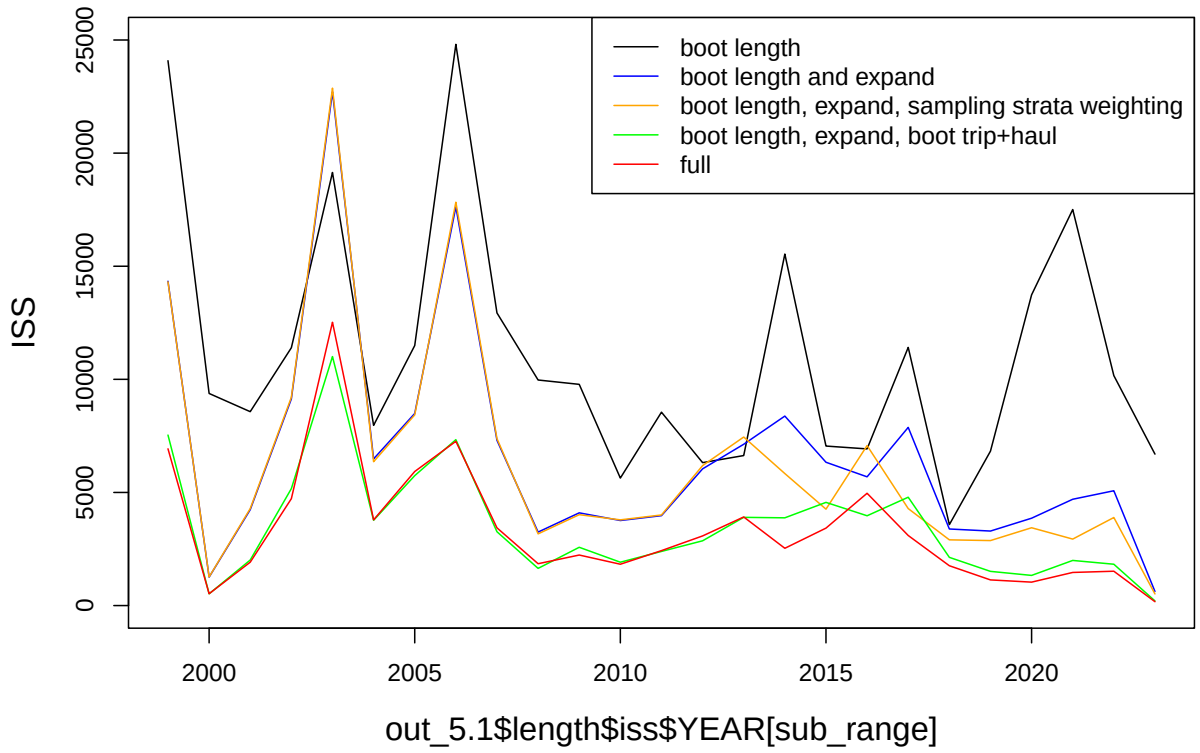
Subtracting things from baseISS



All together 2

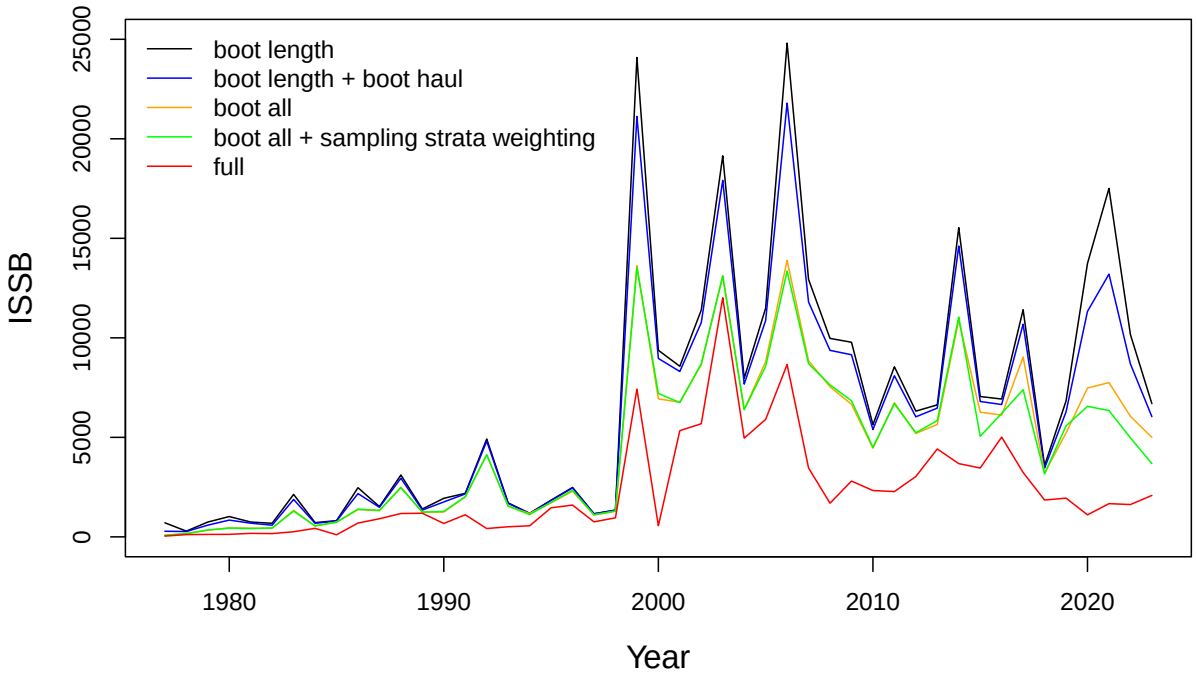
Adding things to baseISS

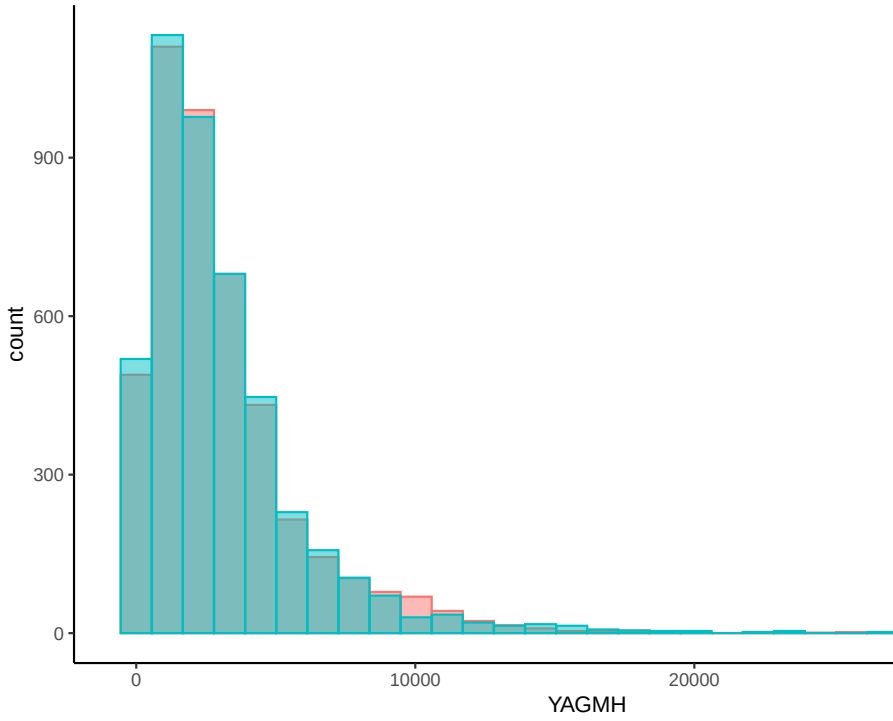

−E,SS,Bs
−SS,Bs
−Bs
−SS
−0
ISS
0
5000
10000
15000
20000
25000
1980
1990
2000
2010
2020
out_5.1$length$iss$YEAR



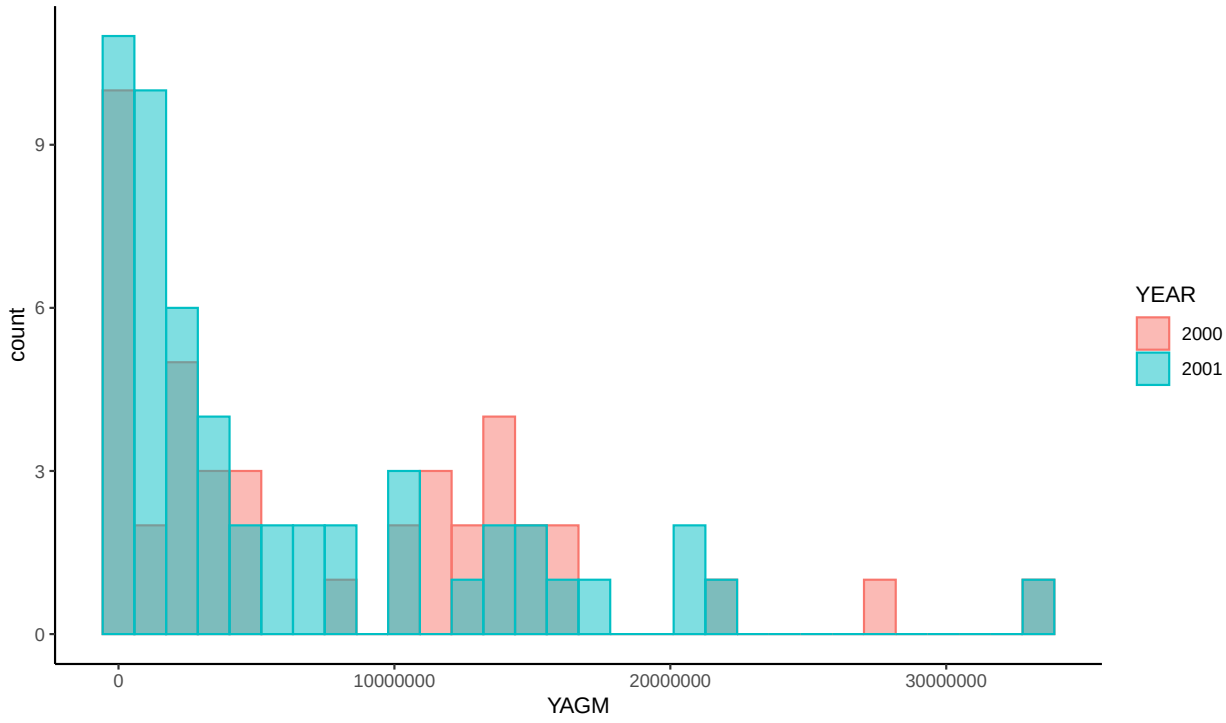
sub range 1

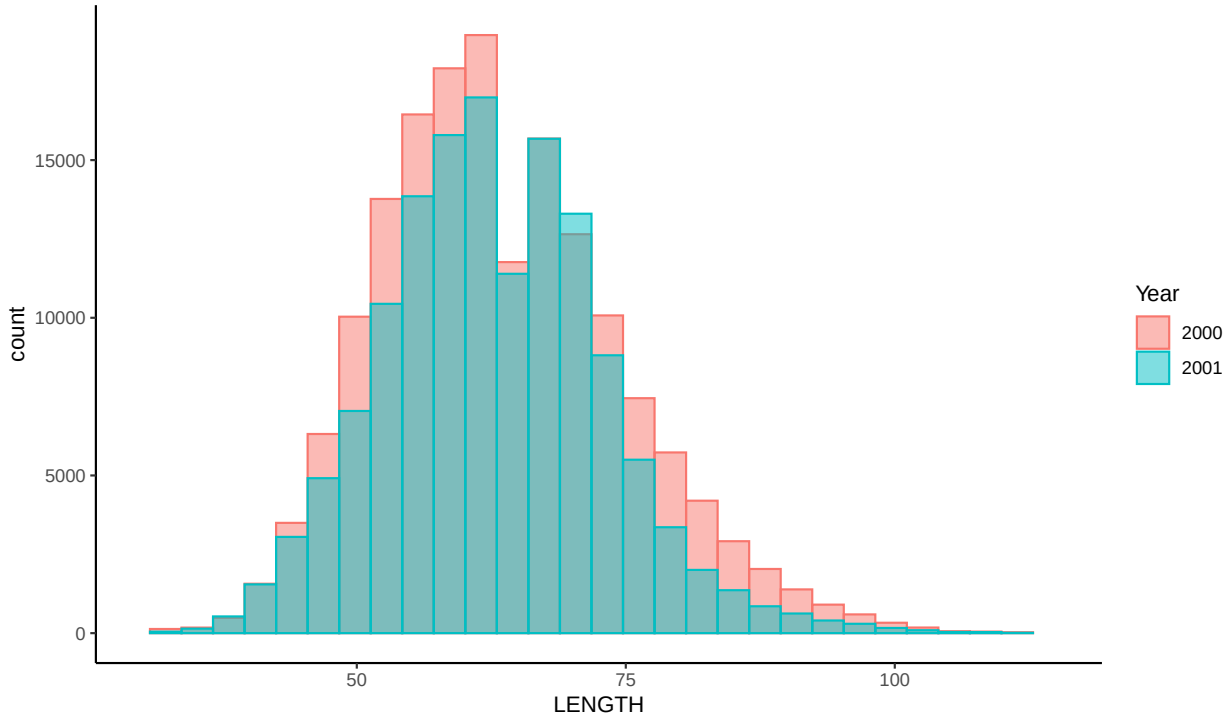
*** reorder long**


boot length
boot length + boot haul
boot all
boot all + sampling strata weighting
full
ISSB
0
5000
10000
15000
20000
25000
1980
1990
2000
2010
2020
Year

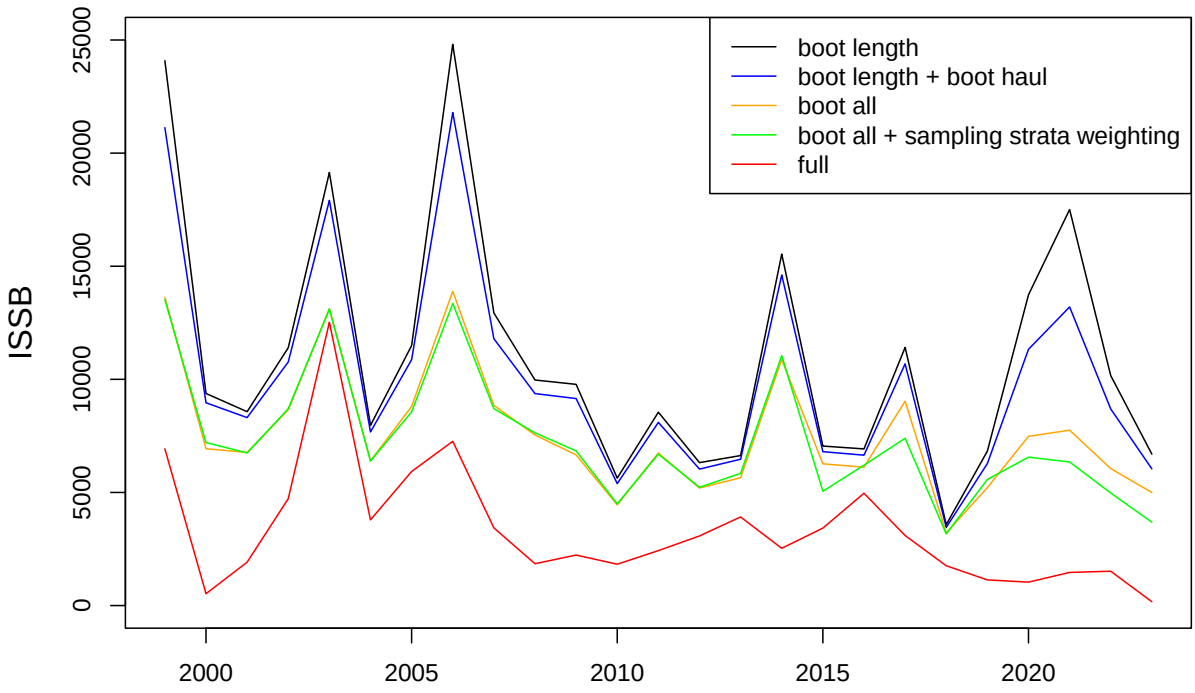


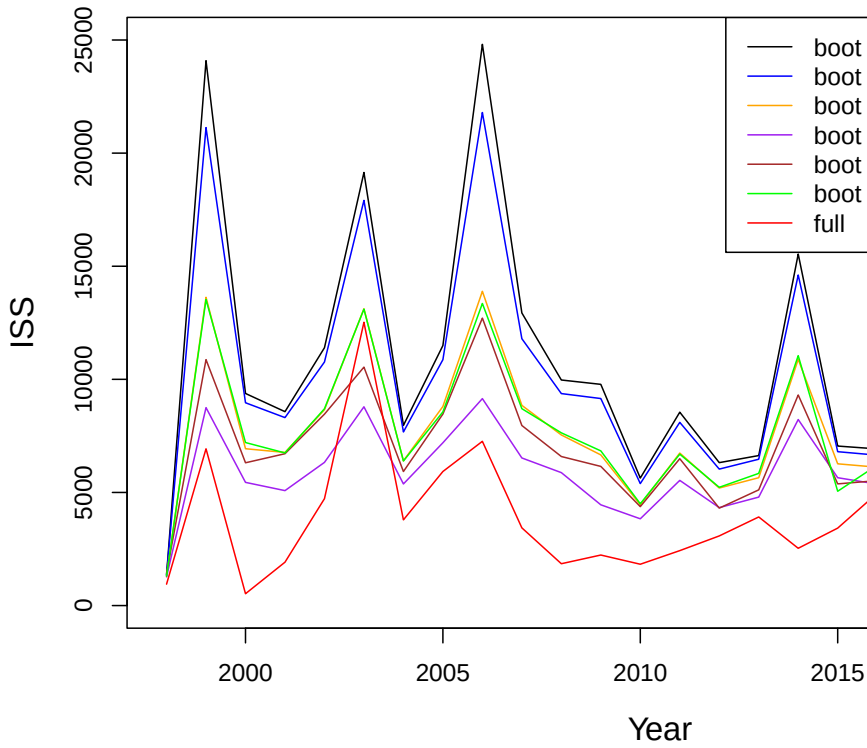
*** Inspect 2000, 2001 for expansion drop**



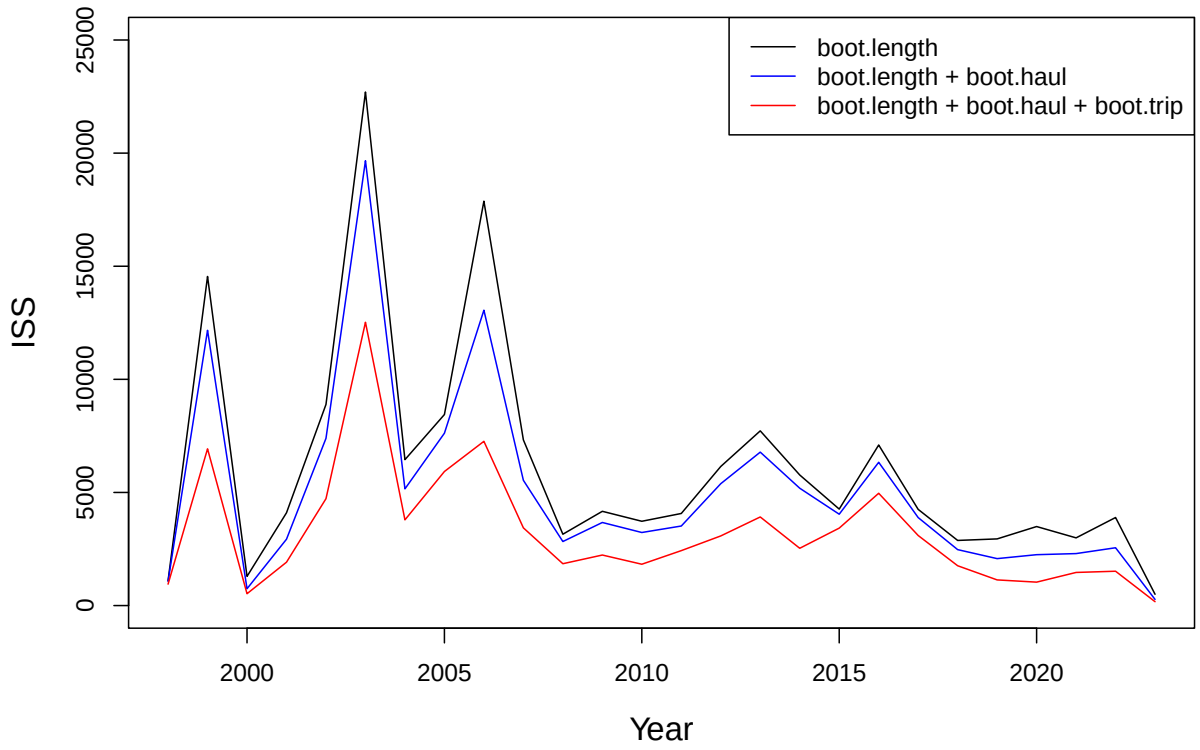


reorder short

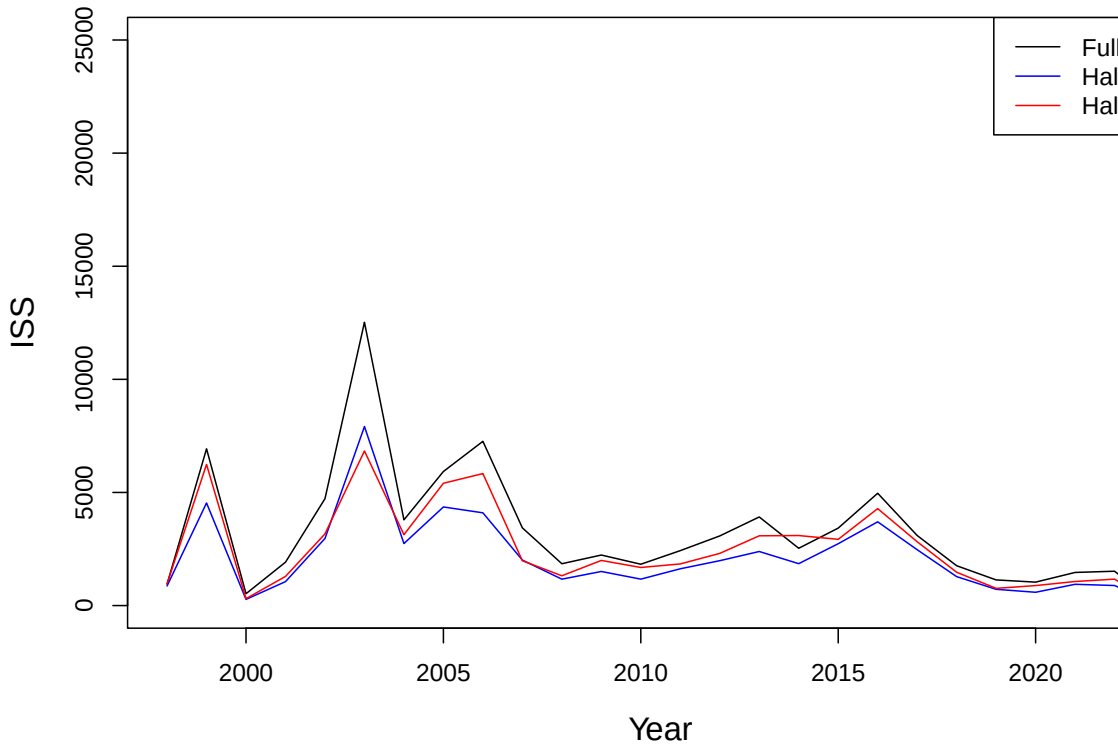

ISSB
0
5000
10000
15000
20000
25000
2000
2005
2010
2015
2020
boot length
boot length + boot haul
boot all
boot all + sampling strata weighting
full



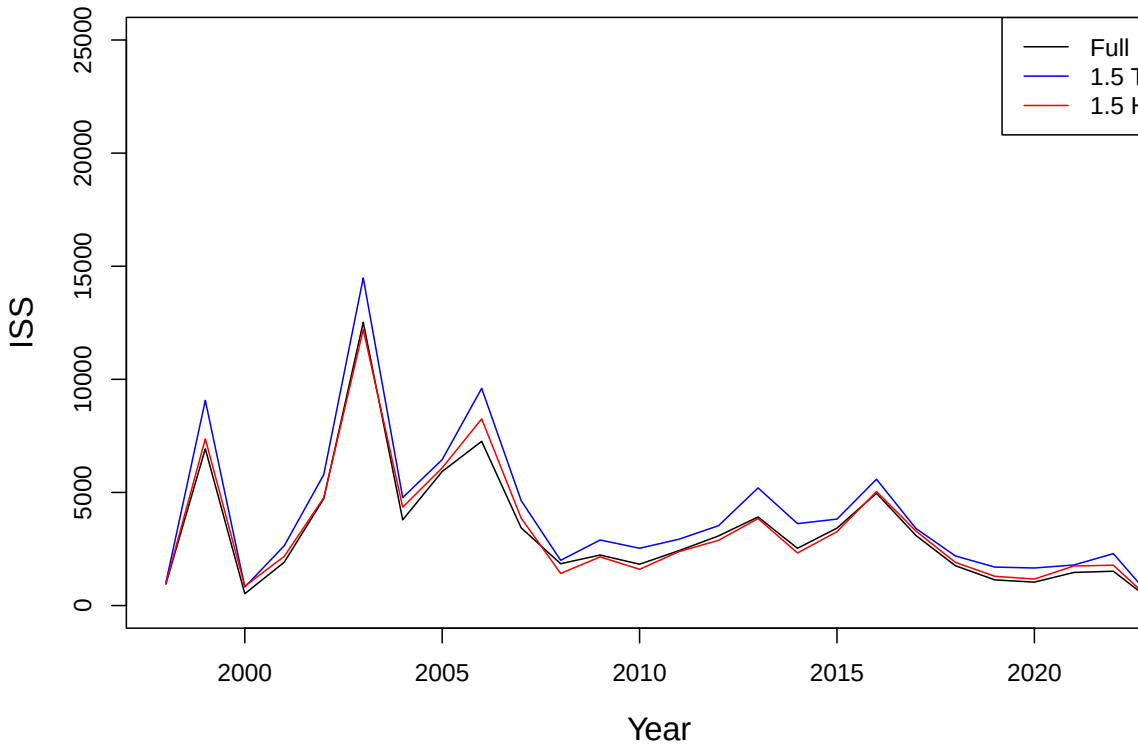
reorder short with half trips and half hauls



reorder short 2



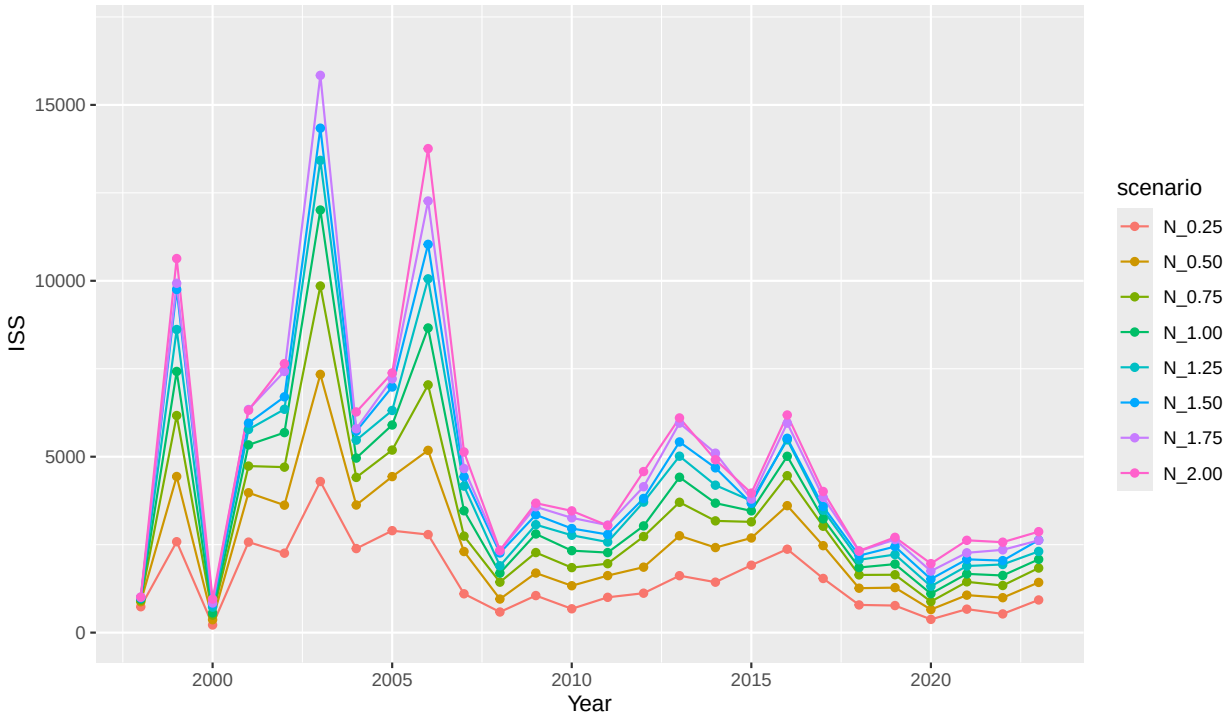
Full, half trip, half haul



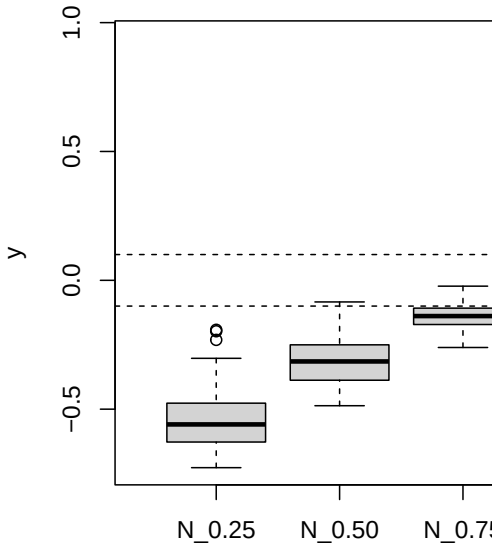
Full, 1.5 trip, 1.5 haul

Plot 7x2 Grid Haul and Trip numbers

Trip Change

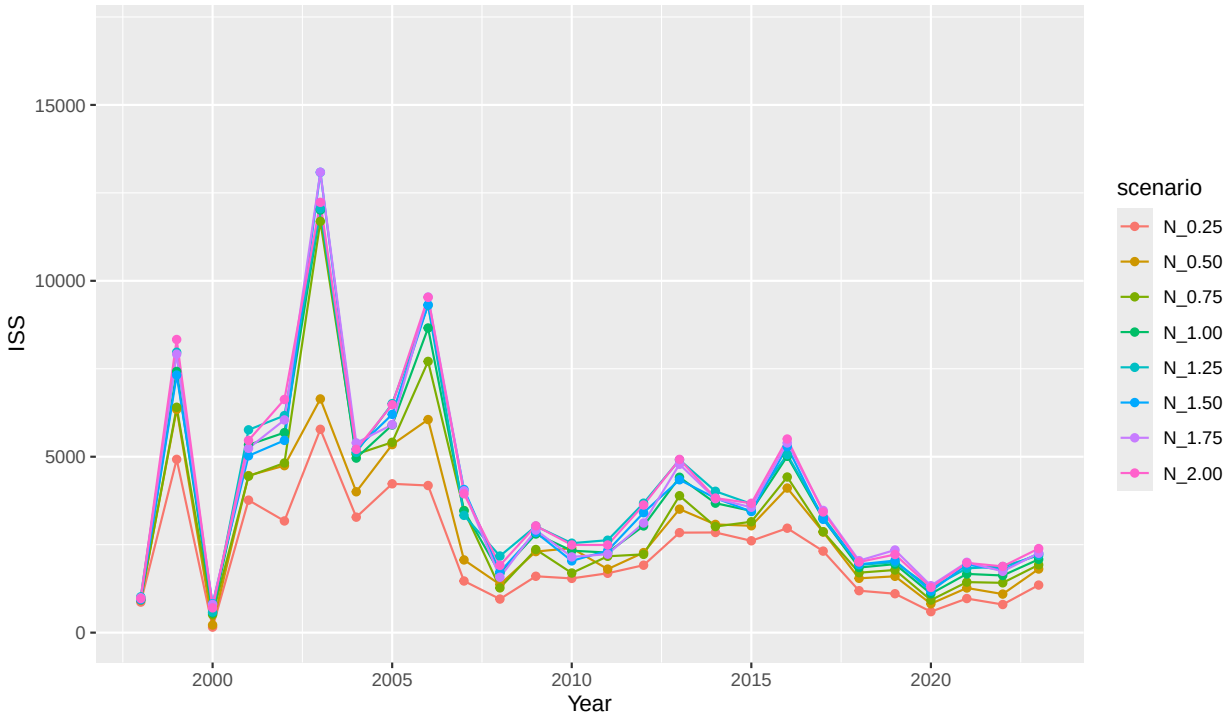


Boxplots

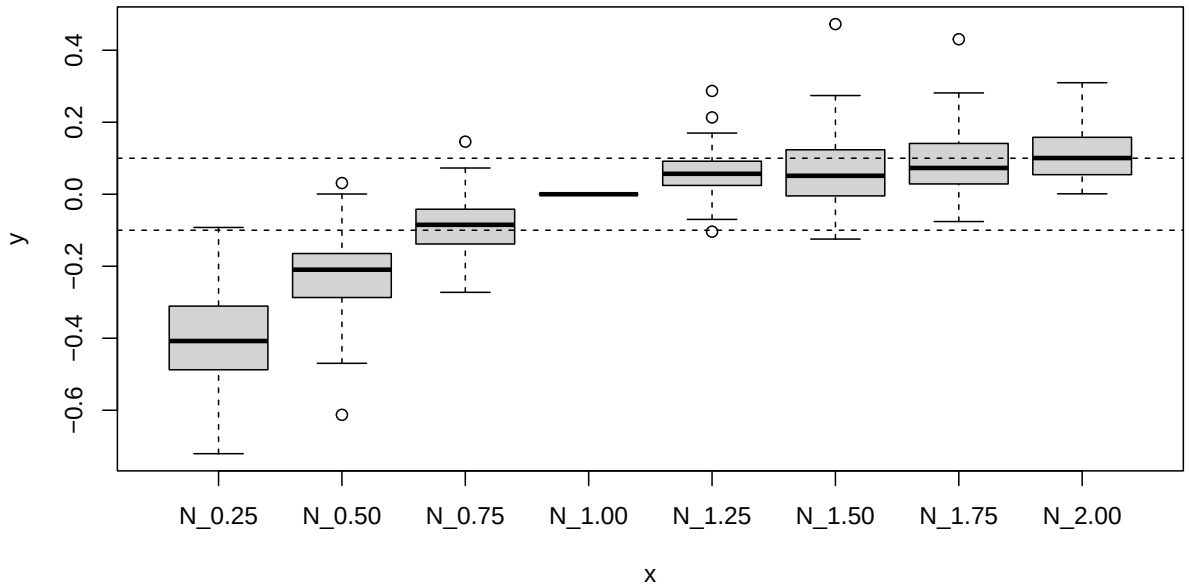


REMEMBER! these are the full year range, may want to narrow it to recent range.

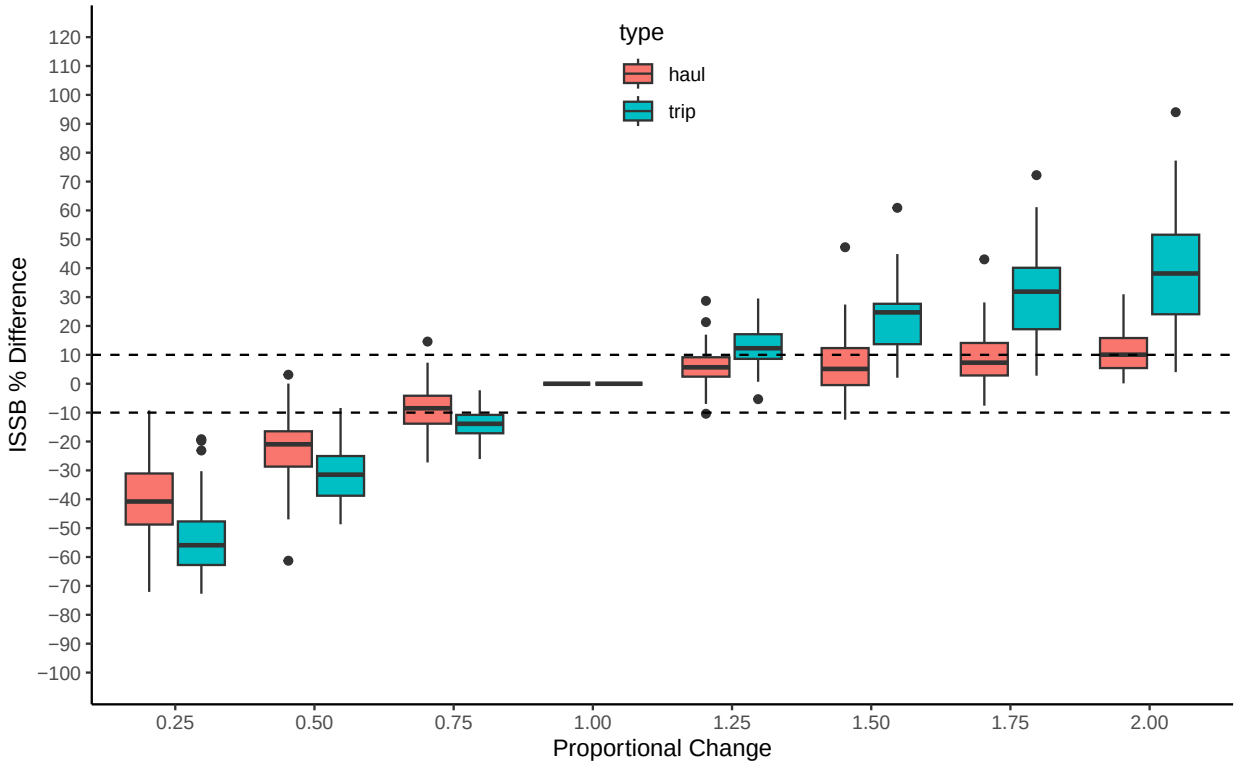
Haul Change



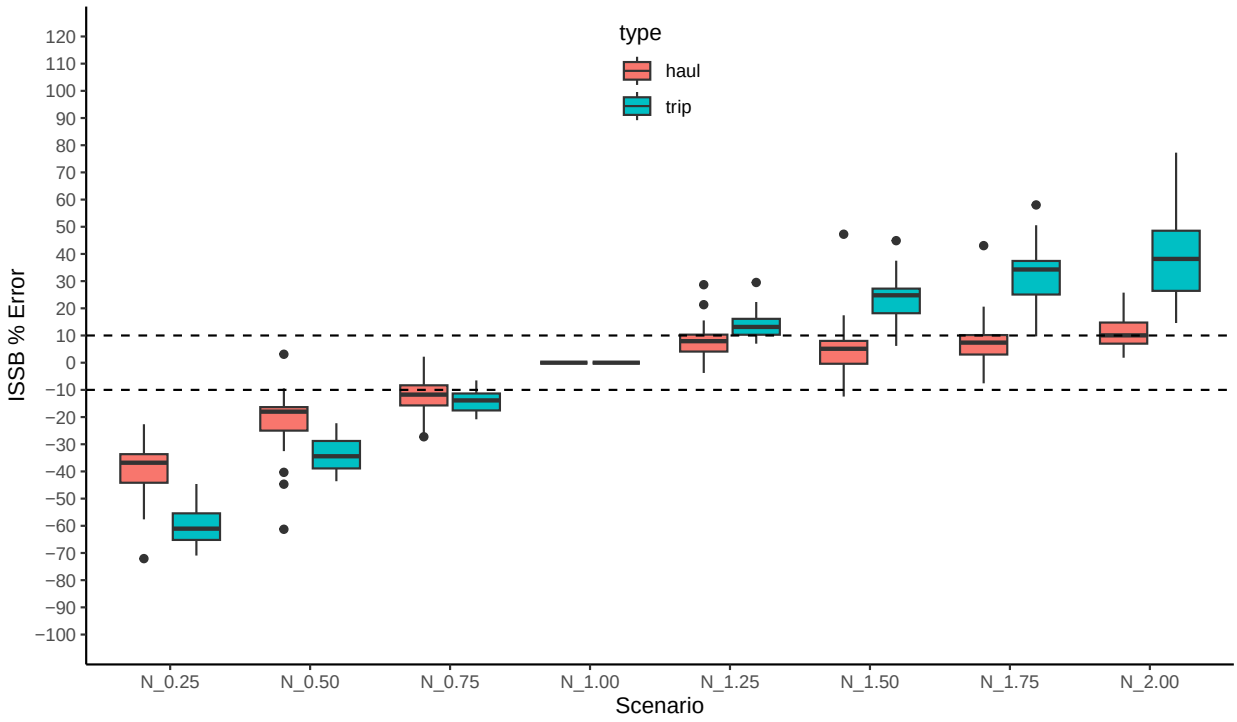
Boxplots Haul and Trip



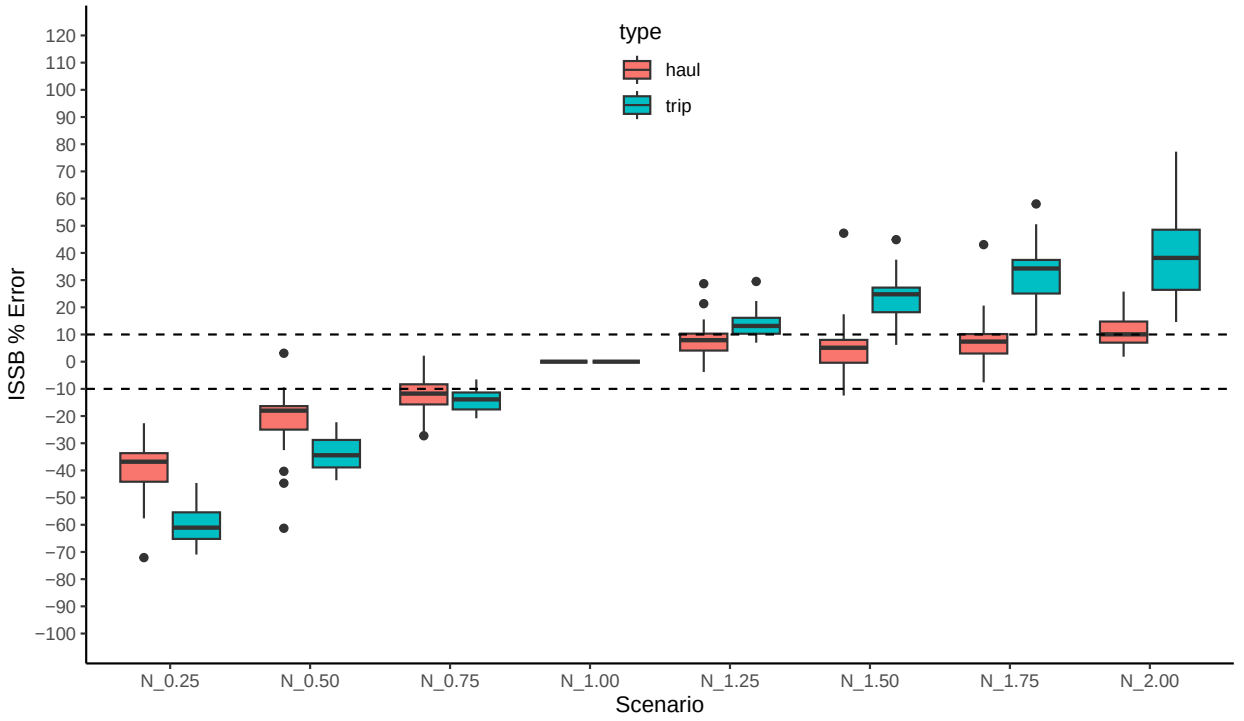
*** Boxplots Together 1977-2023**



Boxplots Together 1999-2023



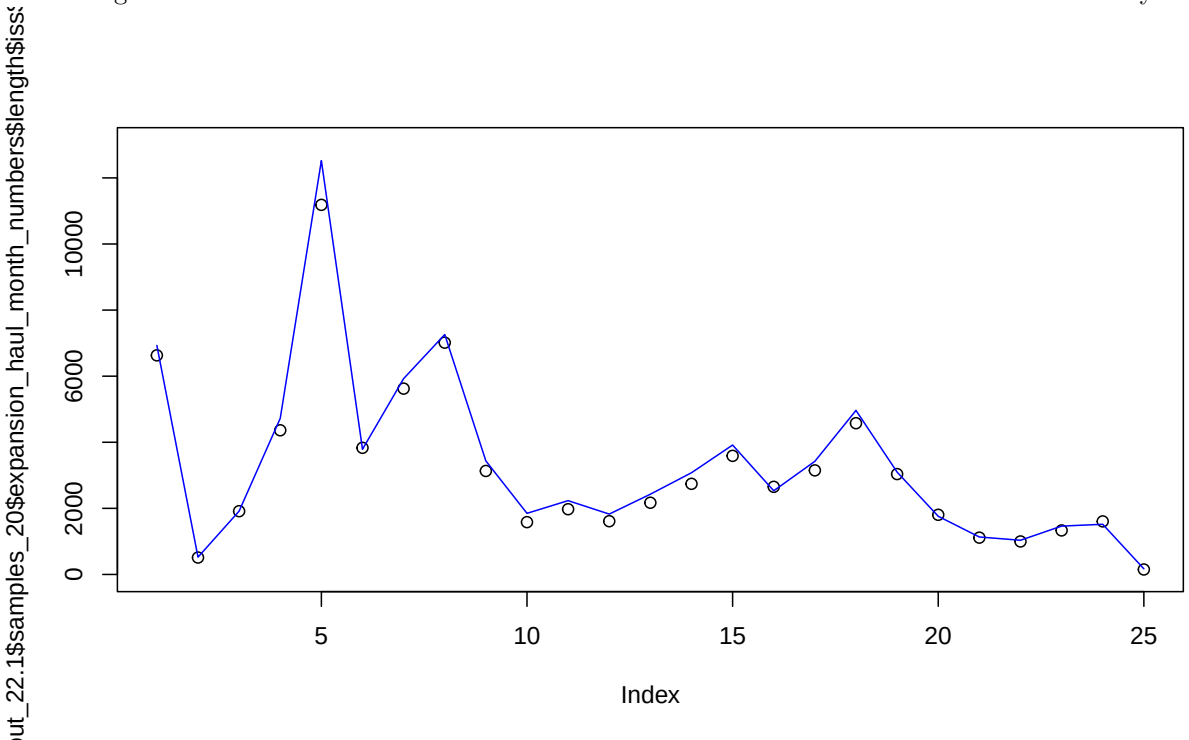
Boxplots Together 1999-2023 TAKE TWO. fix mistake? NO ITS THE SAME AS ABOVE



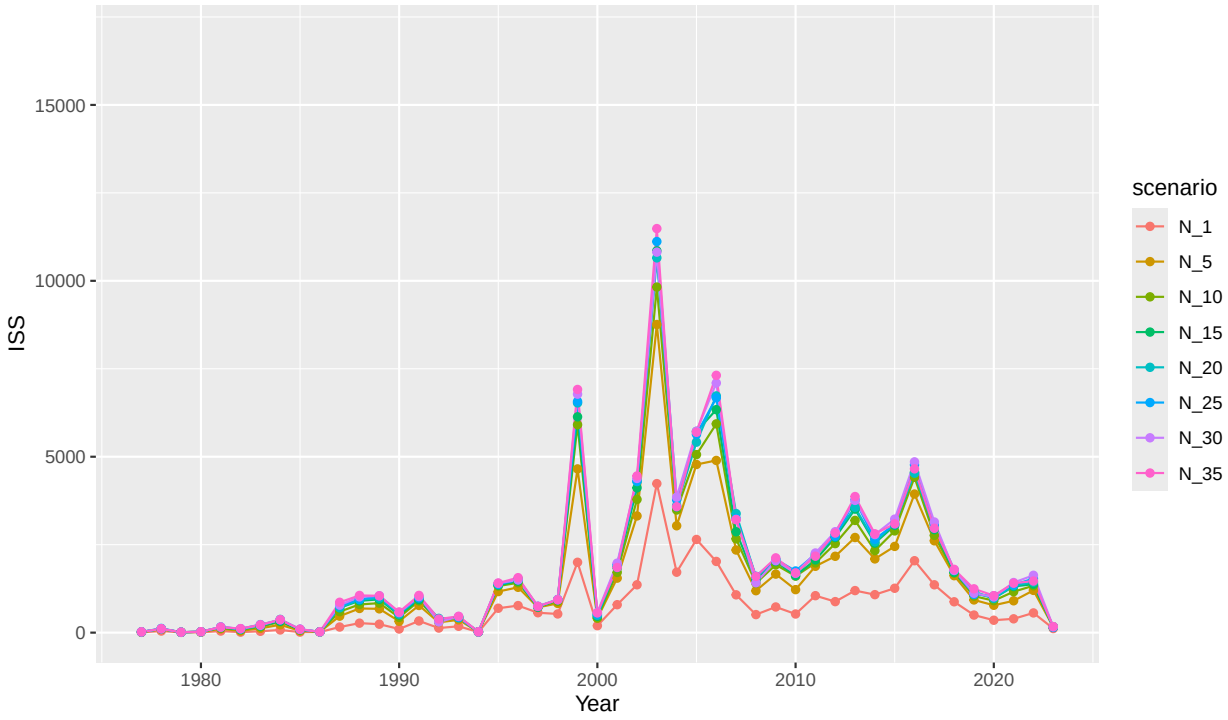
Boxplots samples

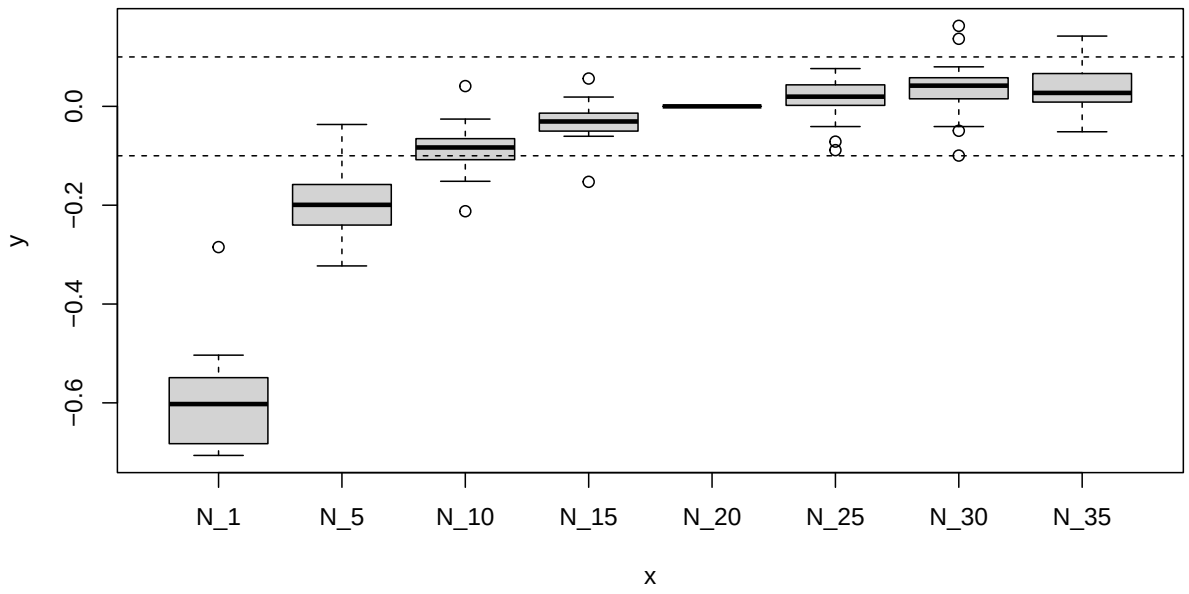
Validate N=20 assumption

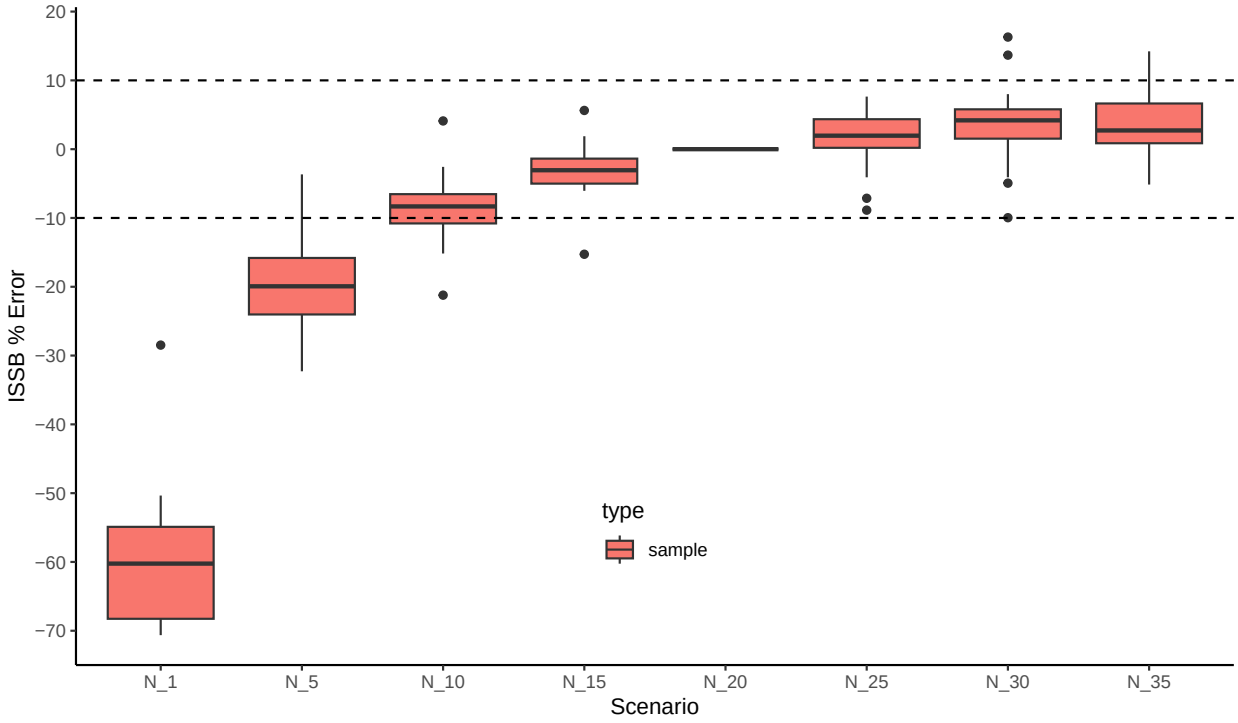
is assuming n=20 when the median is 20 for 1999-2023 valid to make a valid control? How well do they match?



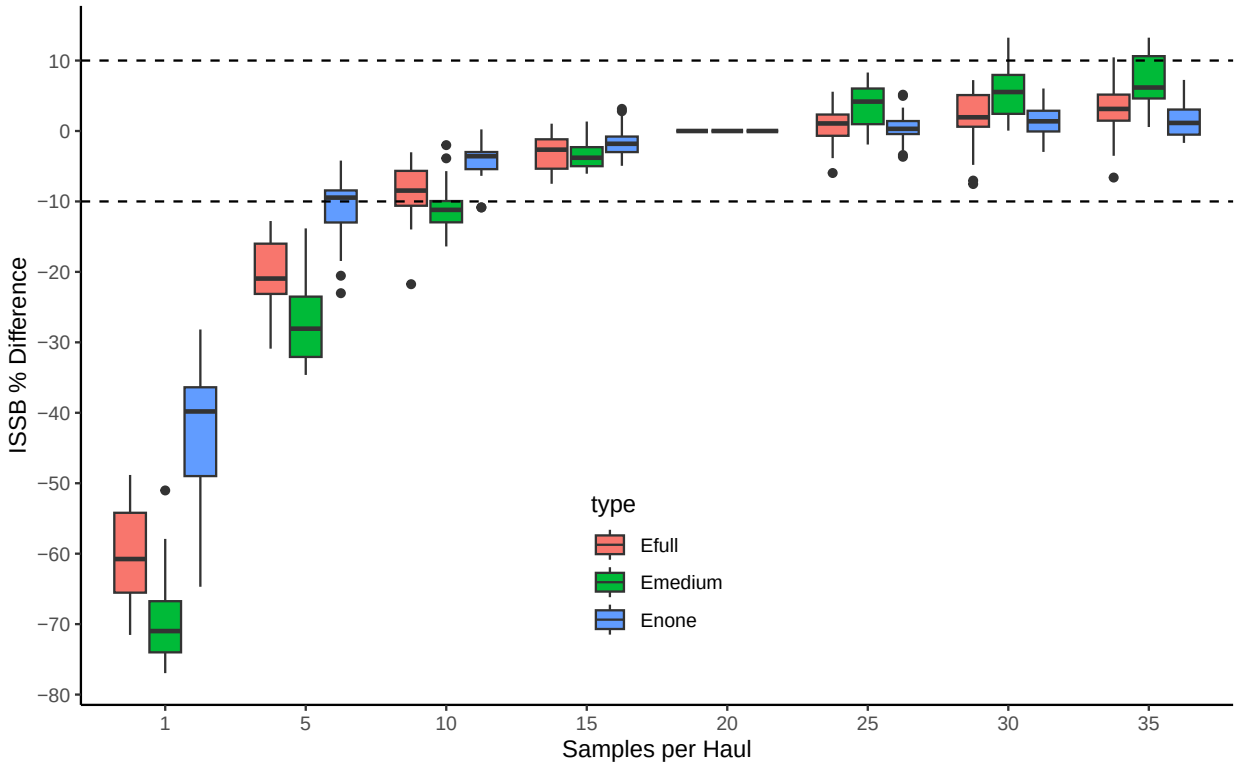
Boxplots Together 1977-2023



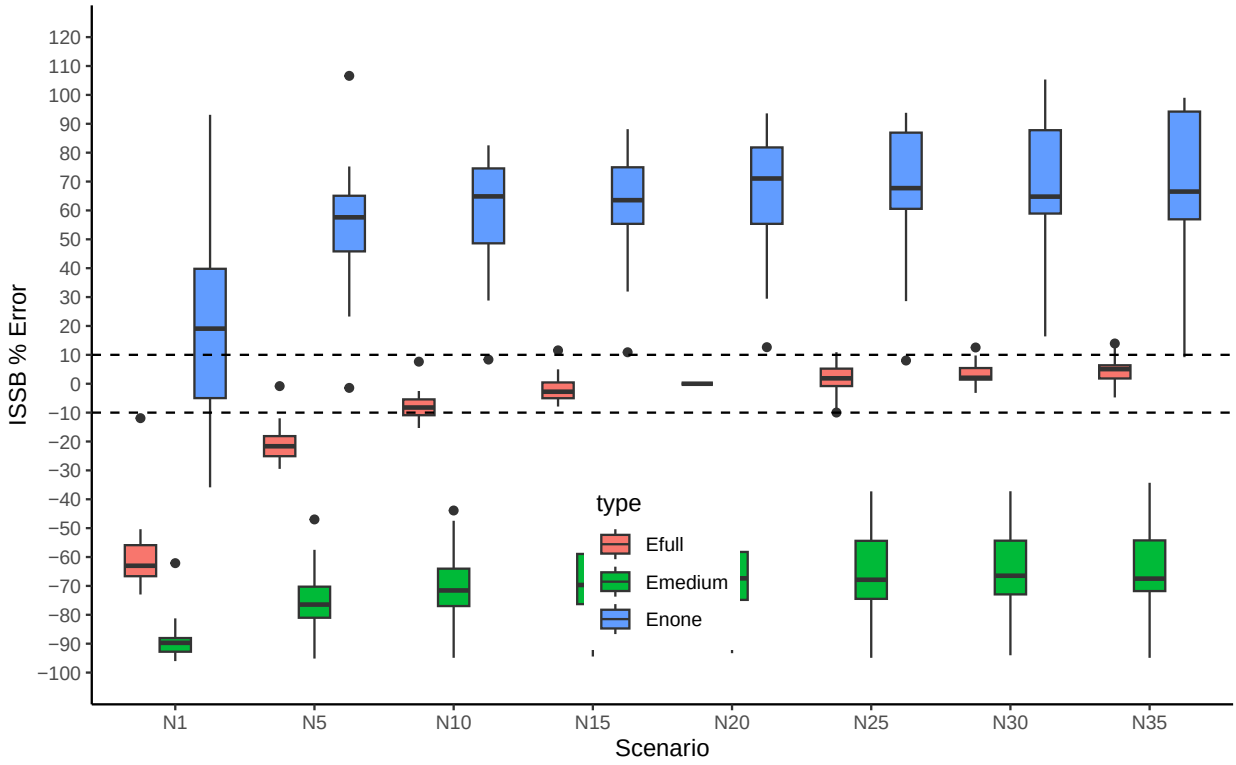




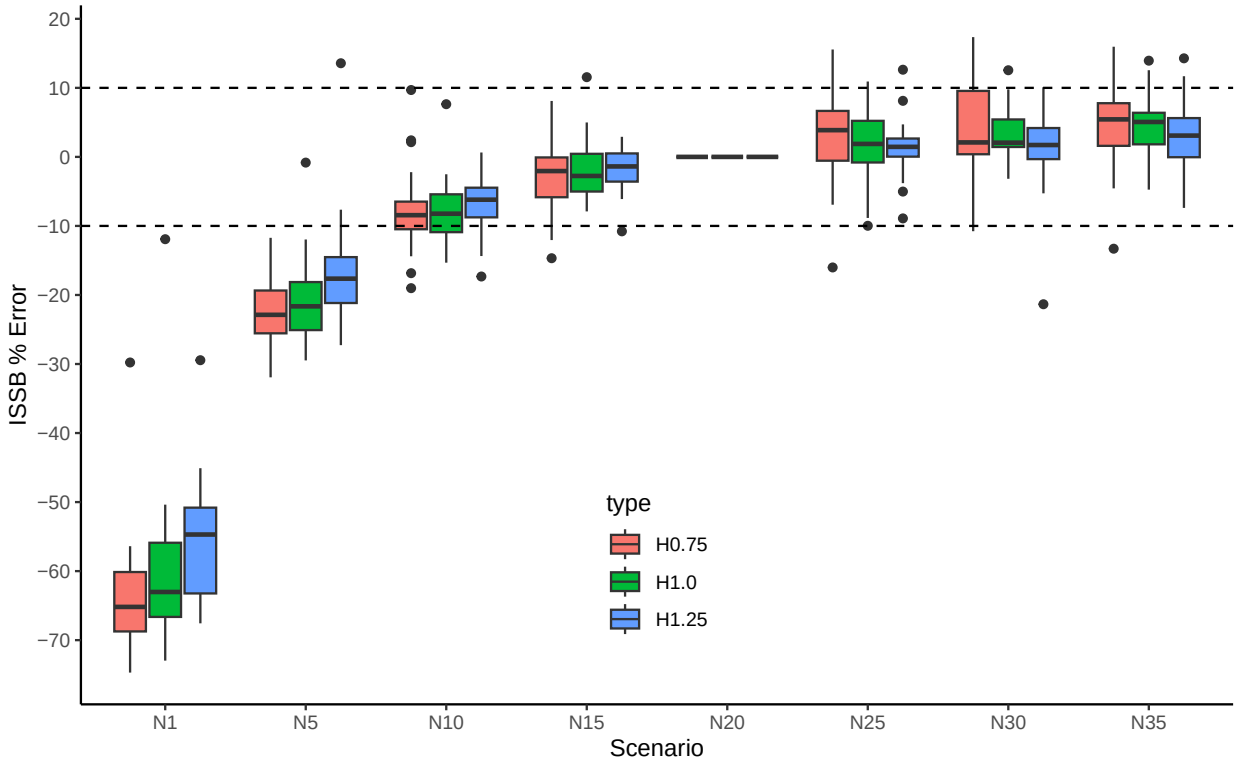
*** Samples VS Expantion. Boxplots Together 1999-2023**



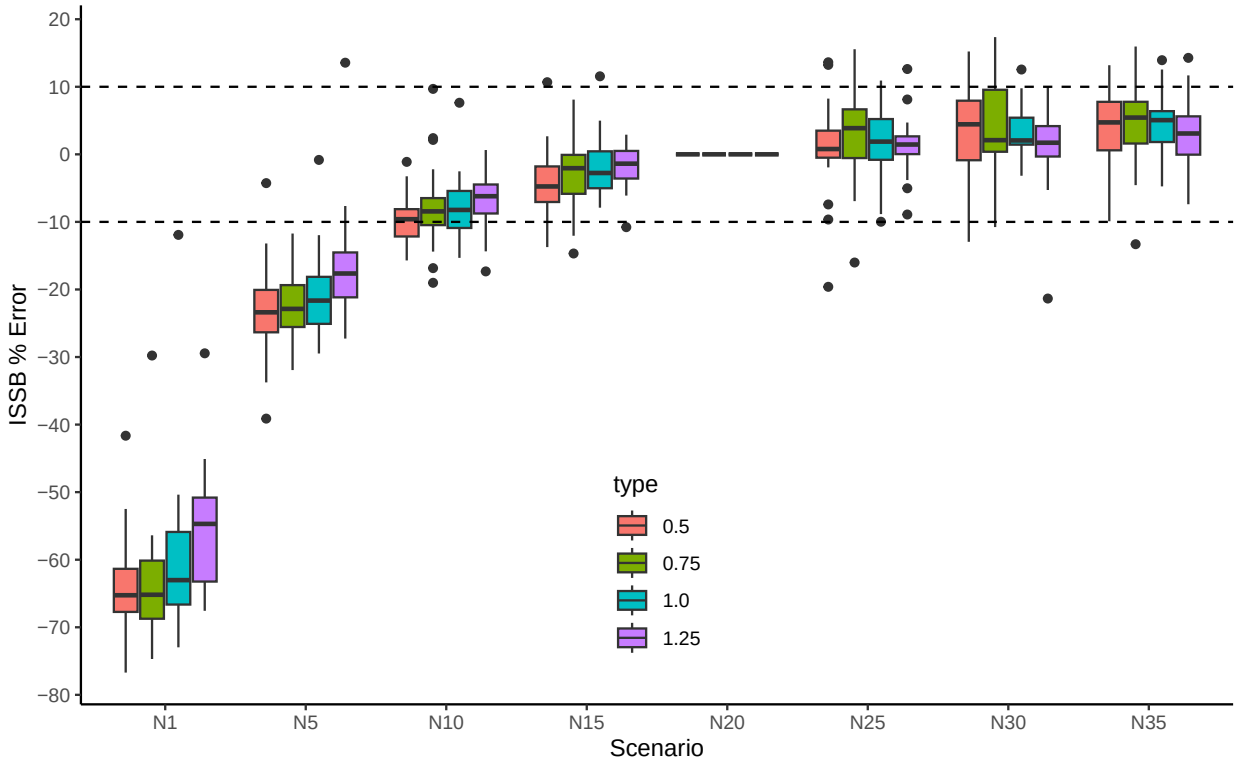
Samples VS Expantion TAKE 2: relative to unbiased control. Boxplots Together 1999-2023

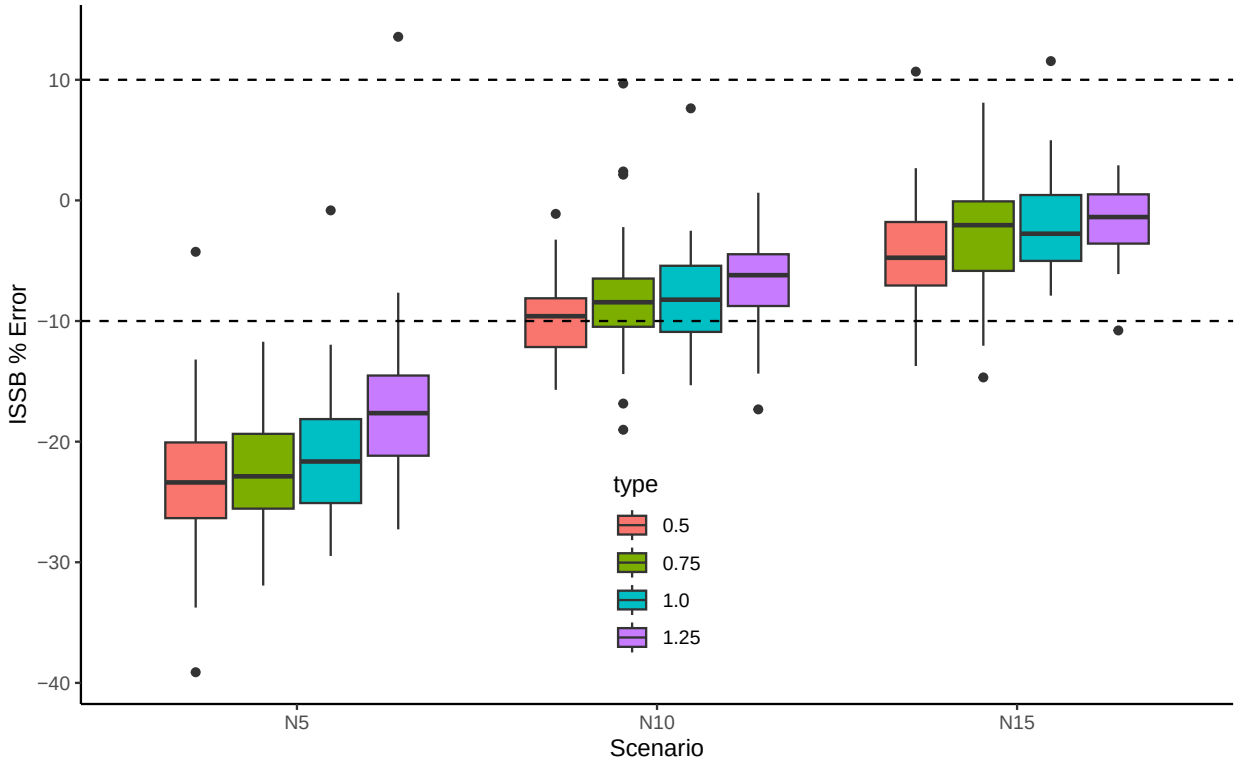


Samples VS Haul. Boxplots Together 1999-2023

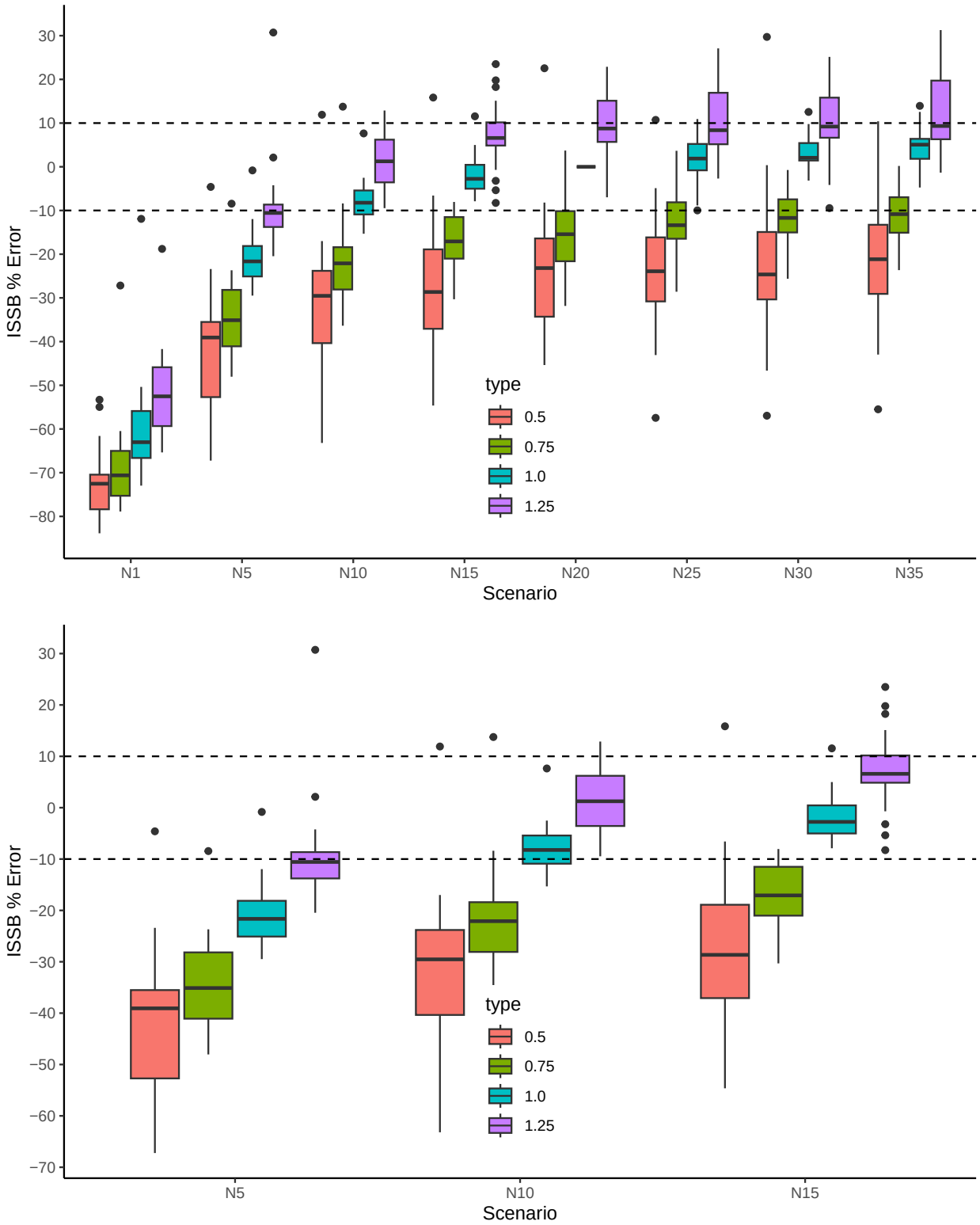


Samples VS Haul. Boxplots Together 1999-2023. sub-sample range

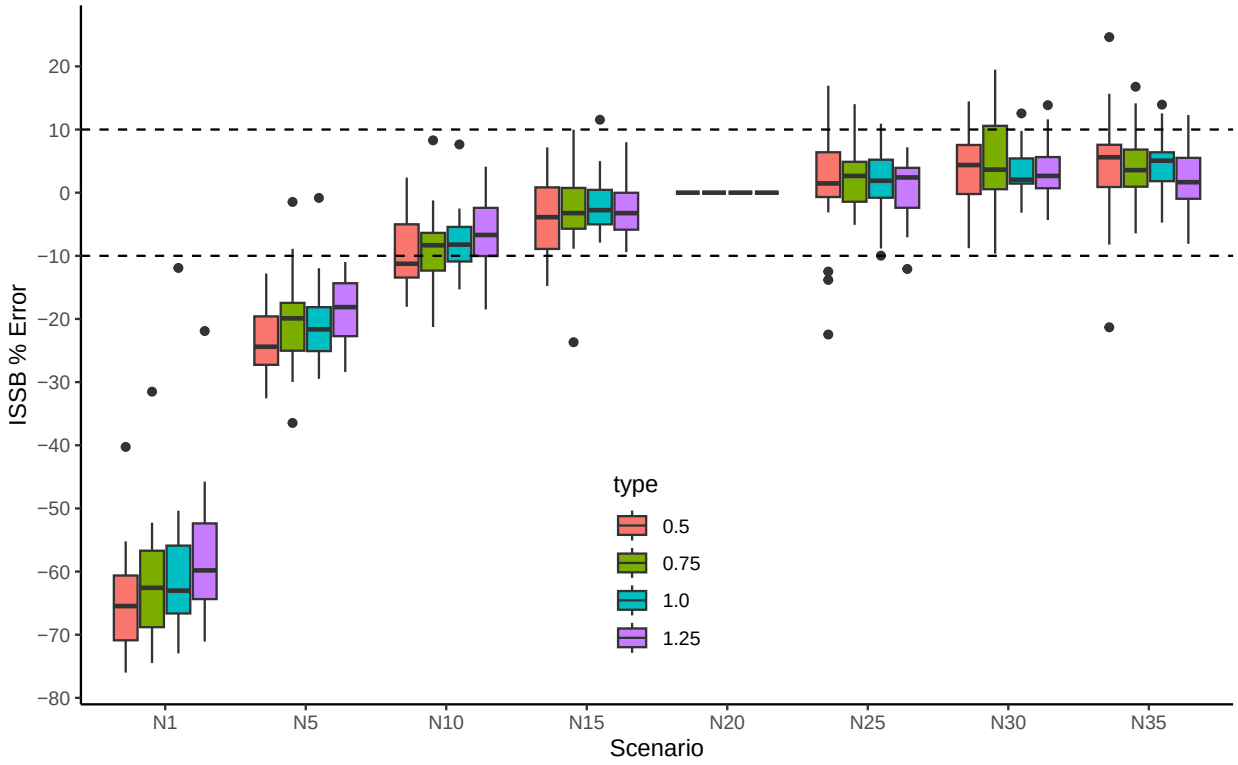


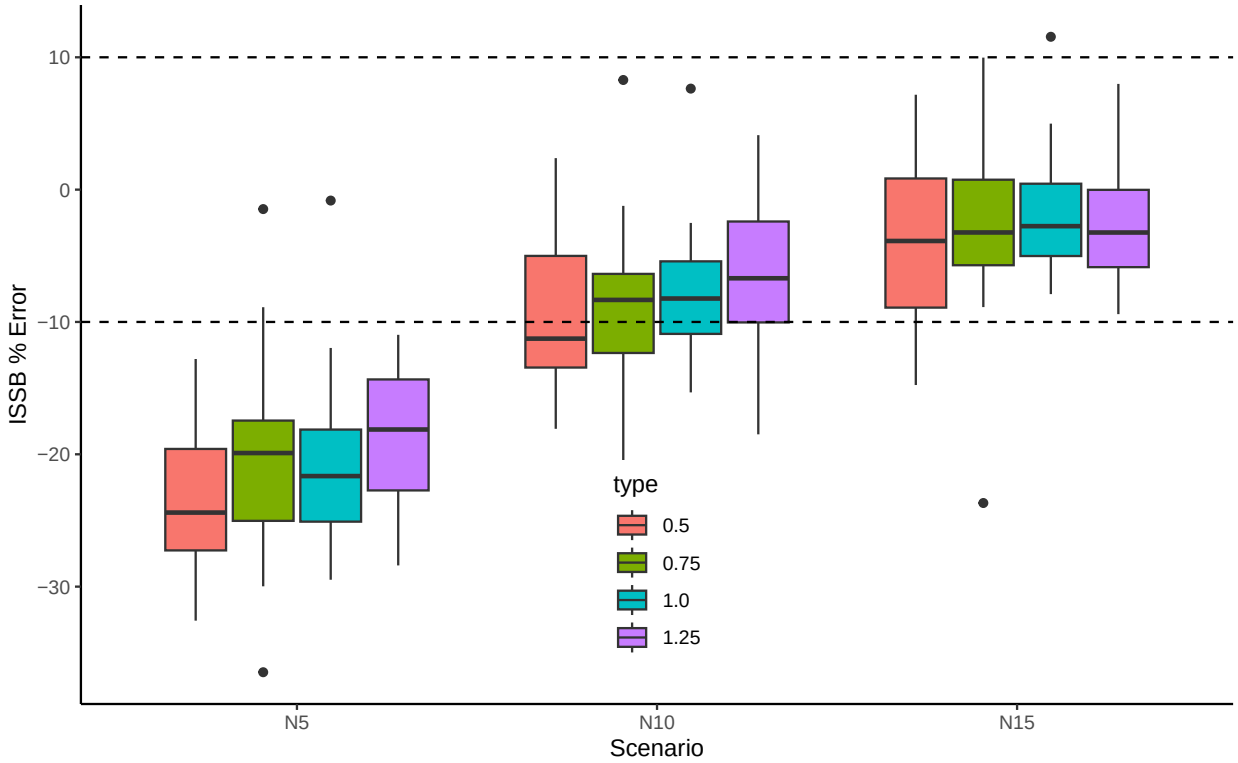


Samples VS Haul TAKE 2: relative to unbiased control. Boxplots Together 1999-2023. sub-sample range

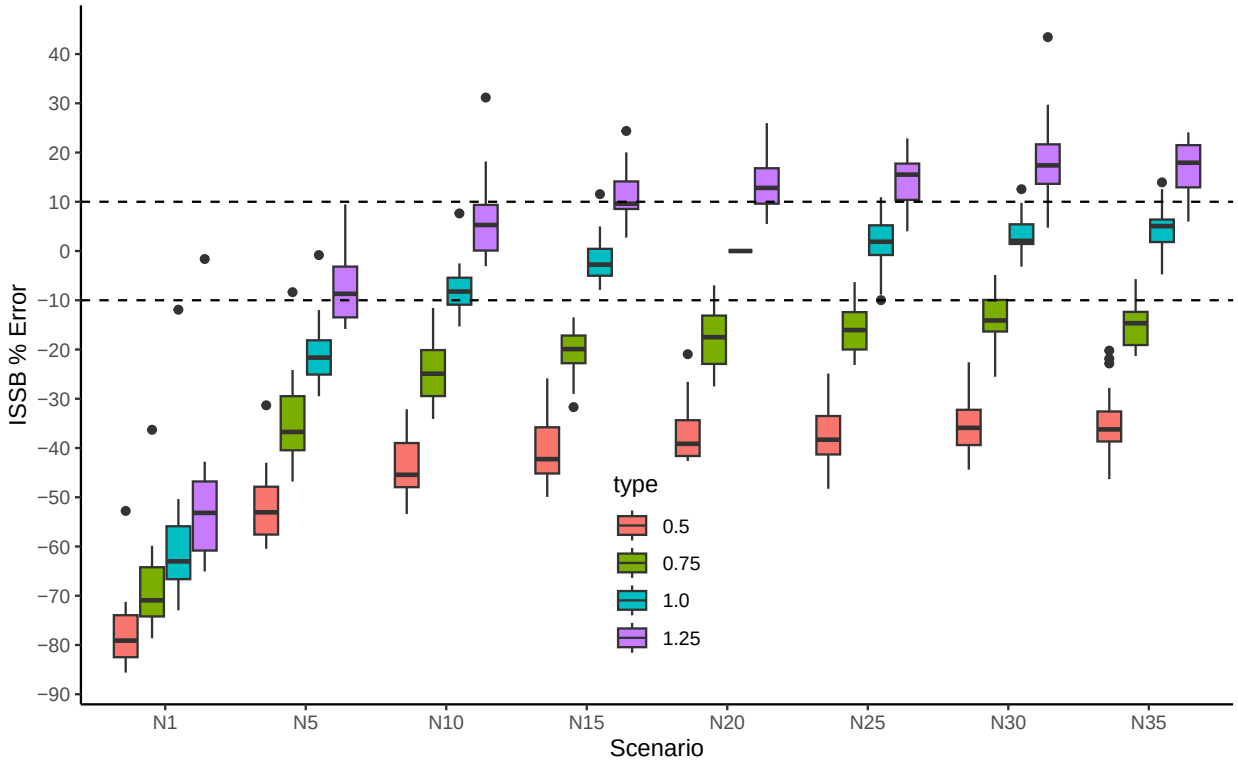


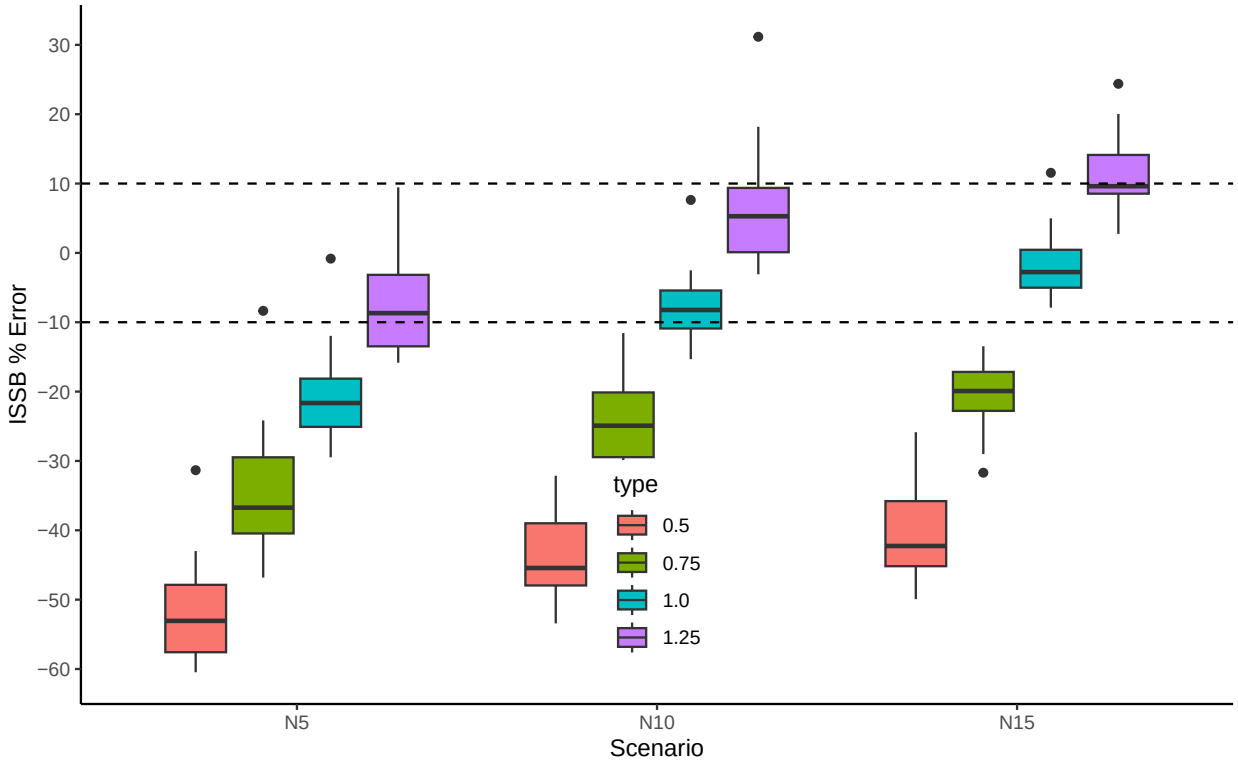
Samples VS Trip. Boxplots Together 1999-2023



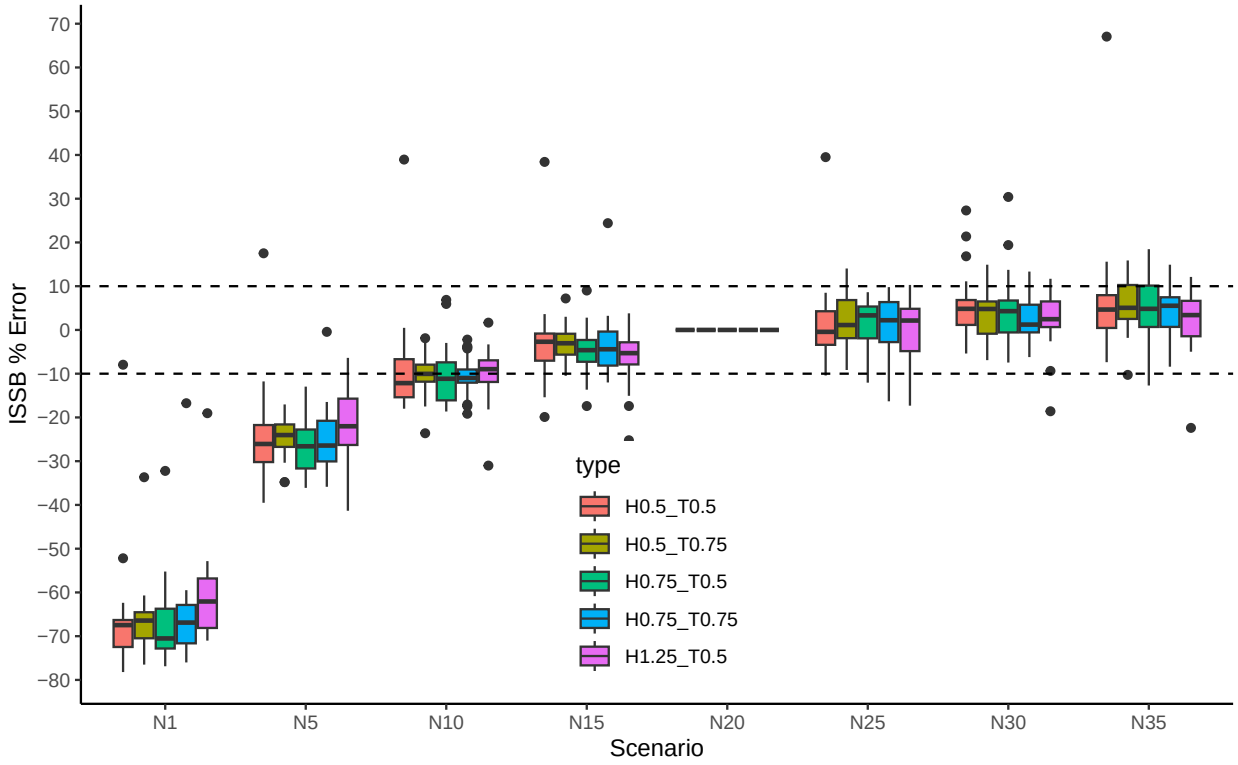


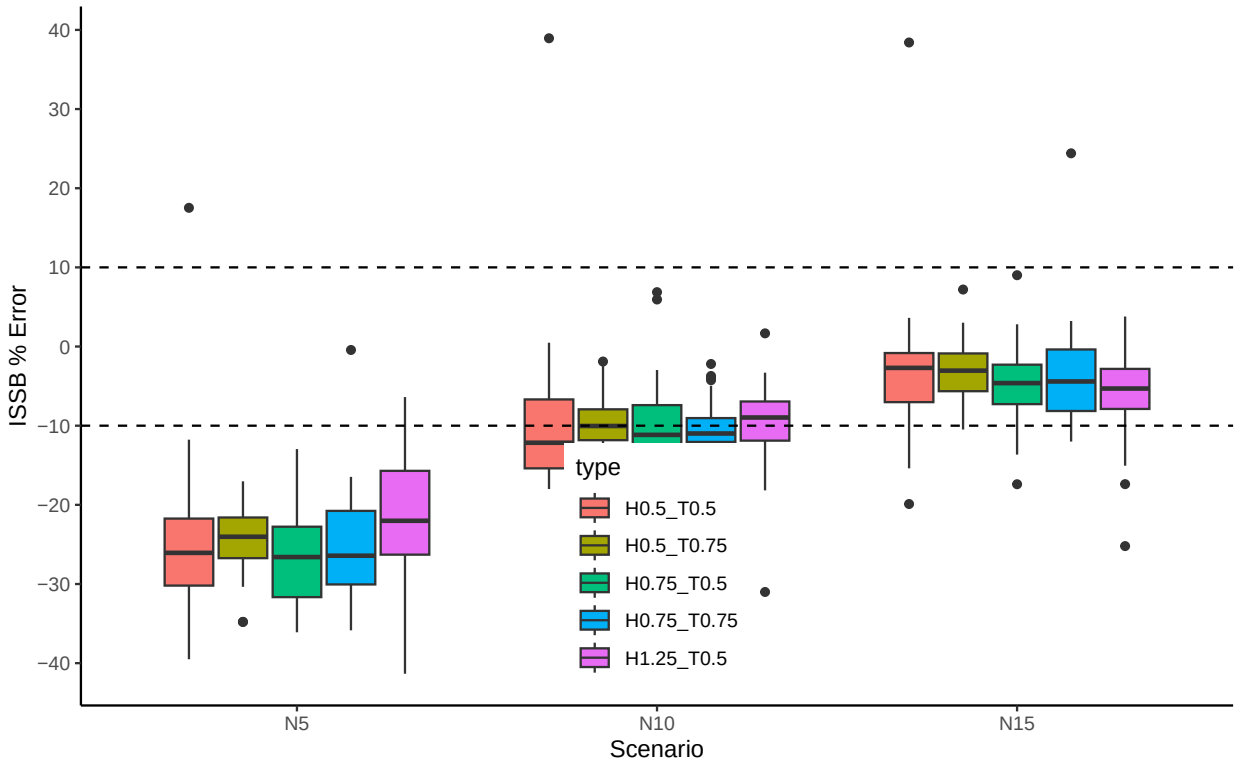
Samples VS Trip TAKE 2: relative to unbiased control. Boxplots Together 1999-2023



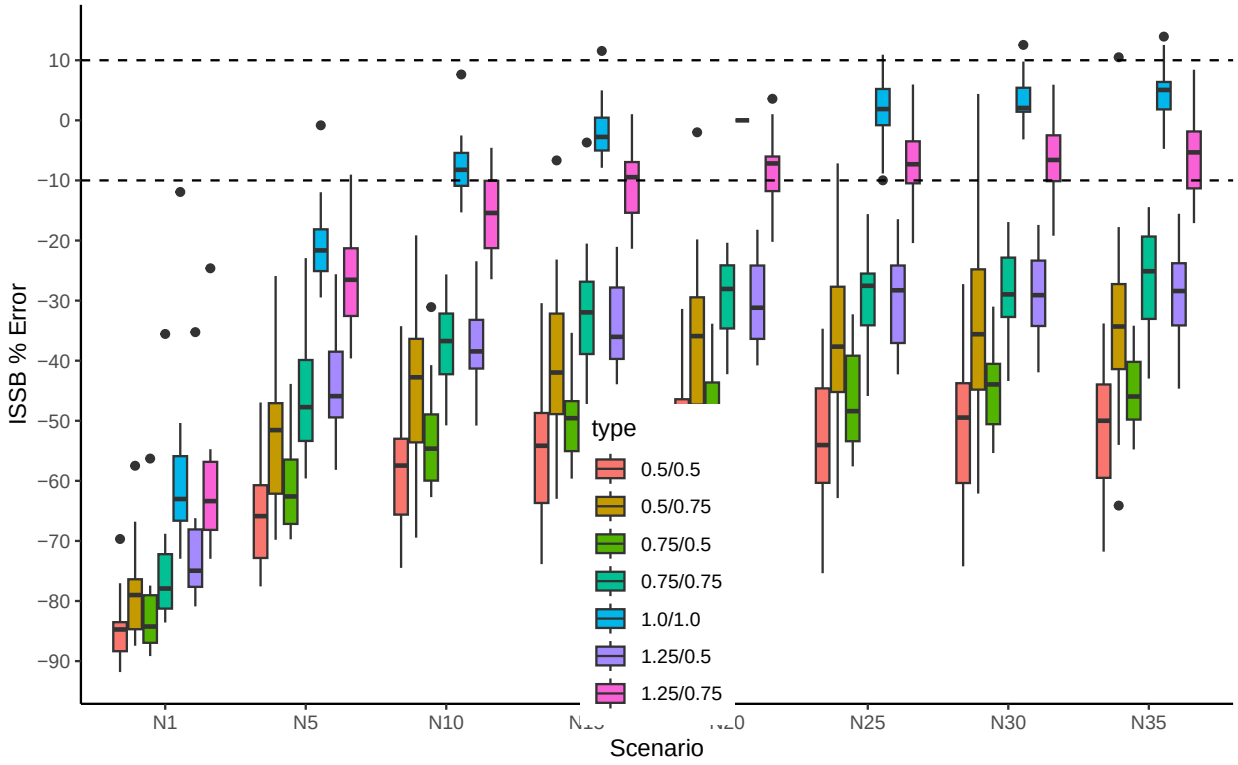


Samples VS Trip/Haul. Boxplots Together 1999-2023





Samples VS Trip/Haul TAKE 2: relative to unbiased control. Boxplots Together 1999-2023



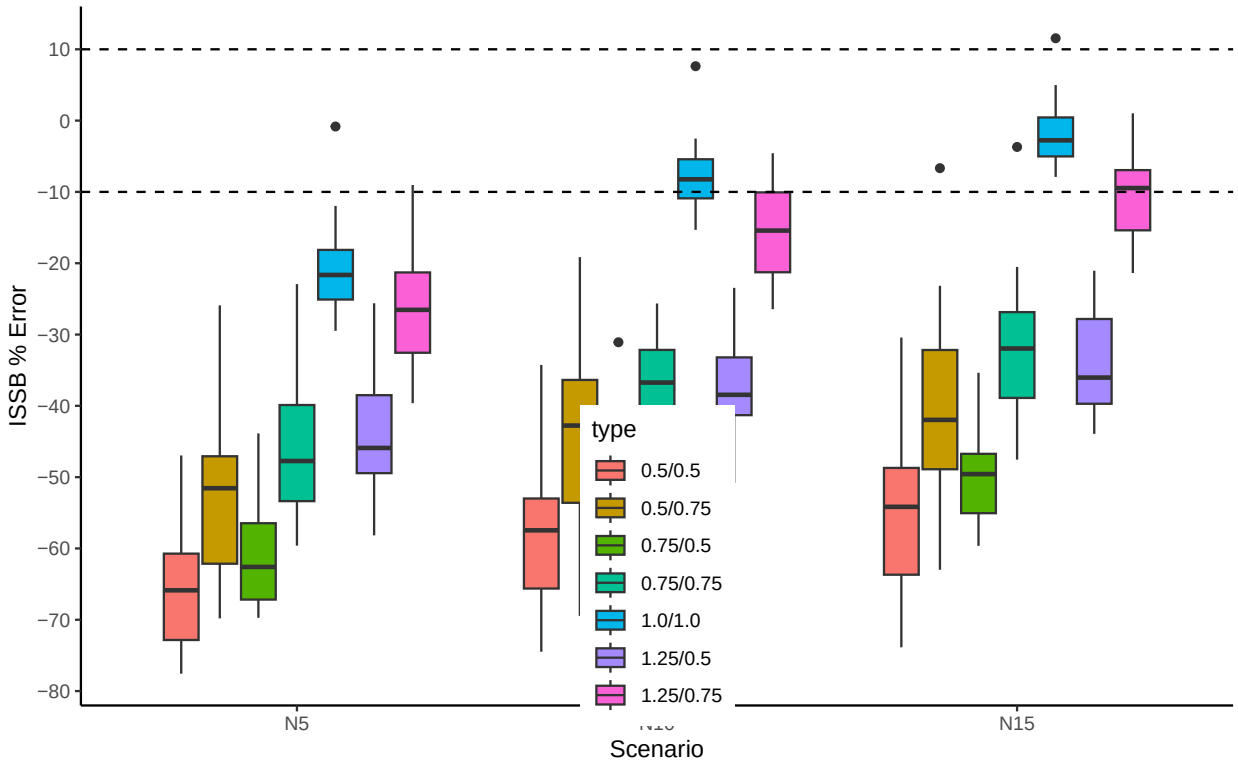
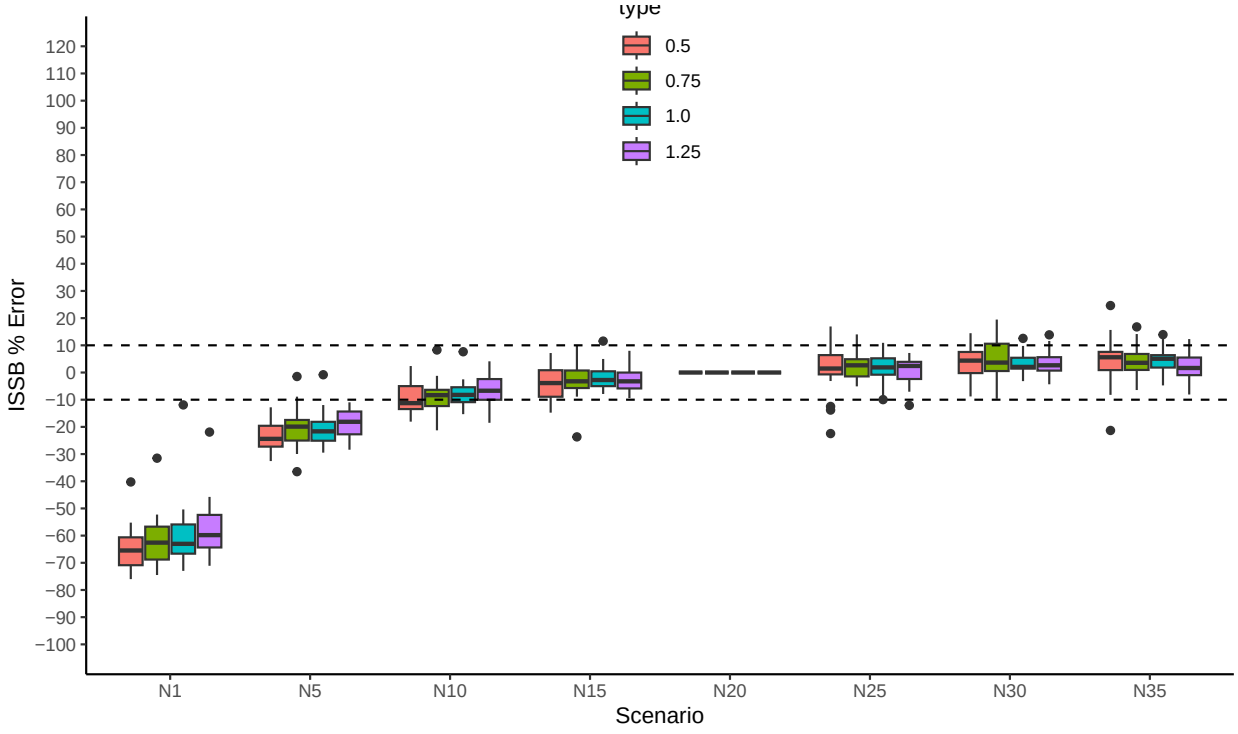
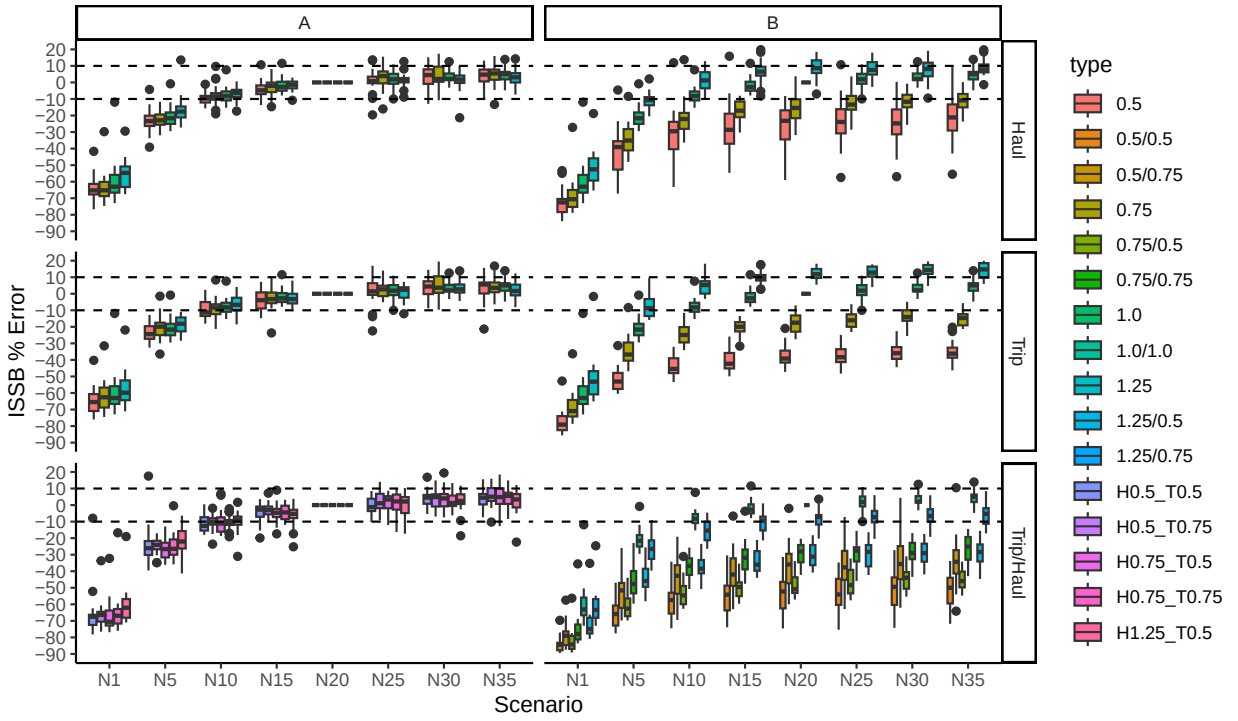
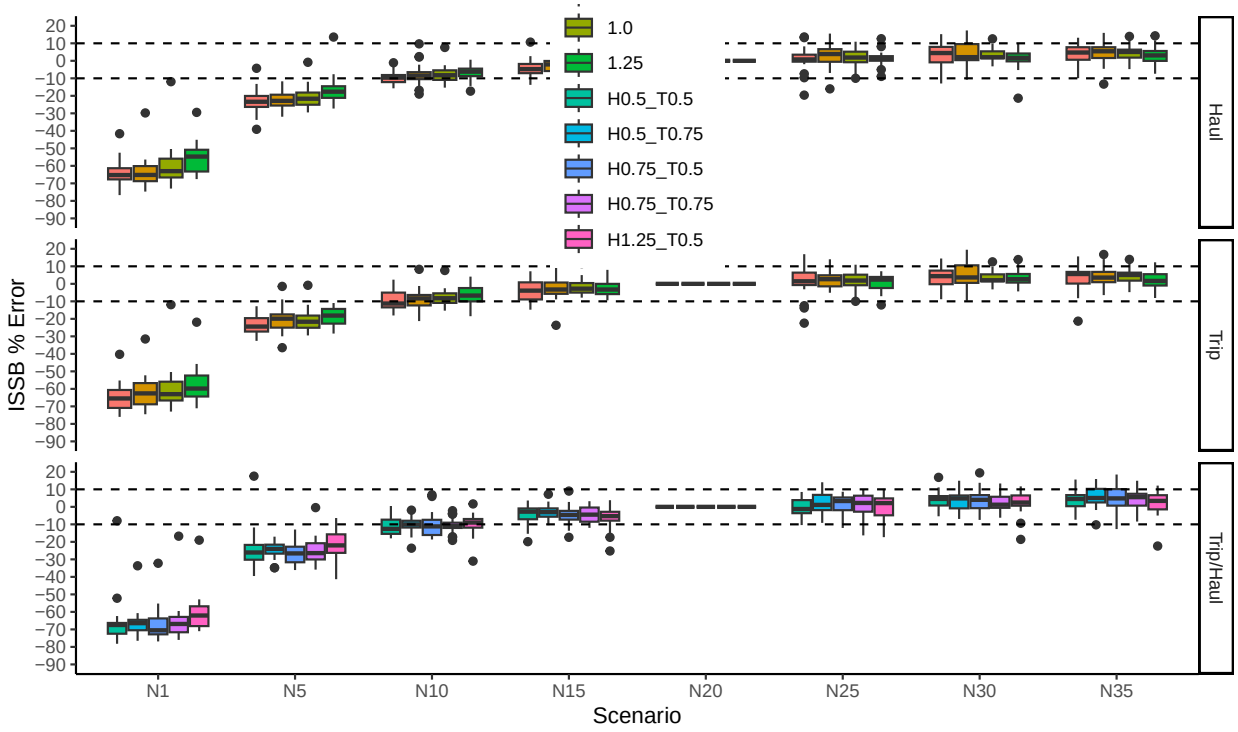


Figure 7 Boxplots

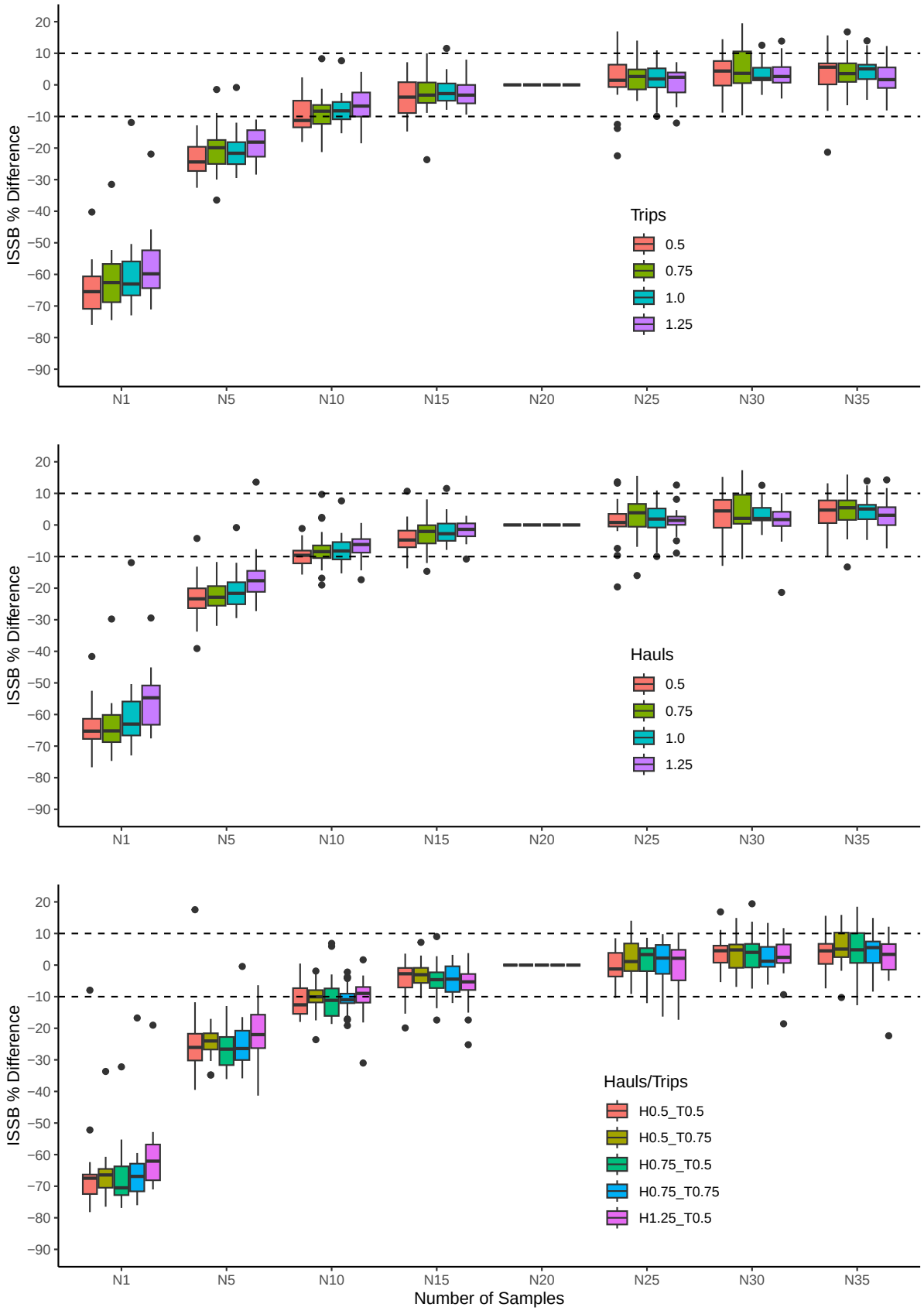
Trip and Haul over sample size. Trip first Haul second. 1999-2023. Plot A includes scenarios relative to themselves at different sample sizes Plot B includes scenarios relative to the standard scenario at different sample sizes.

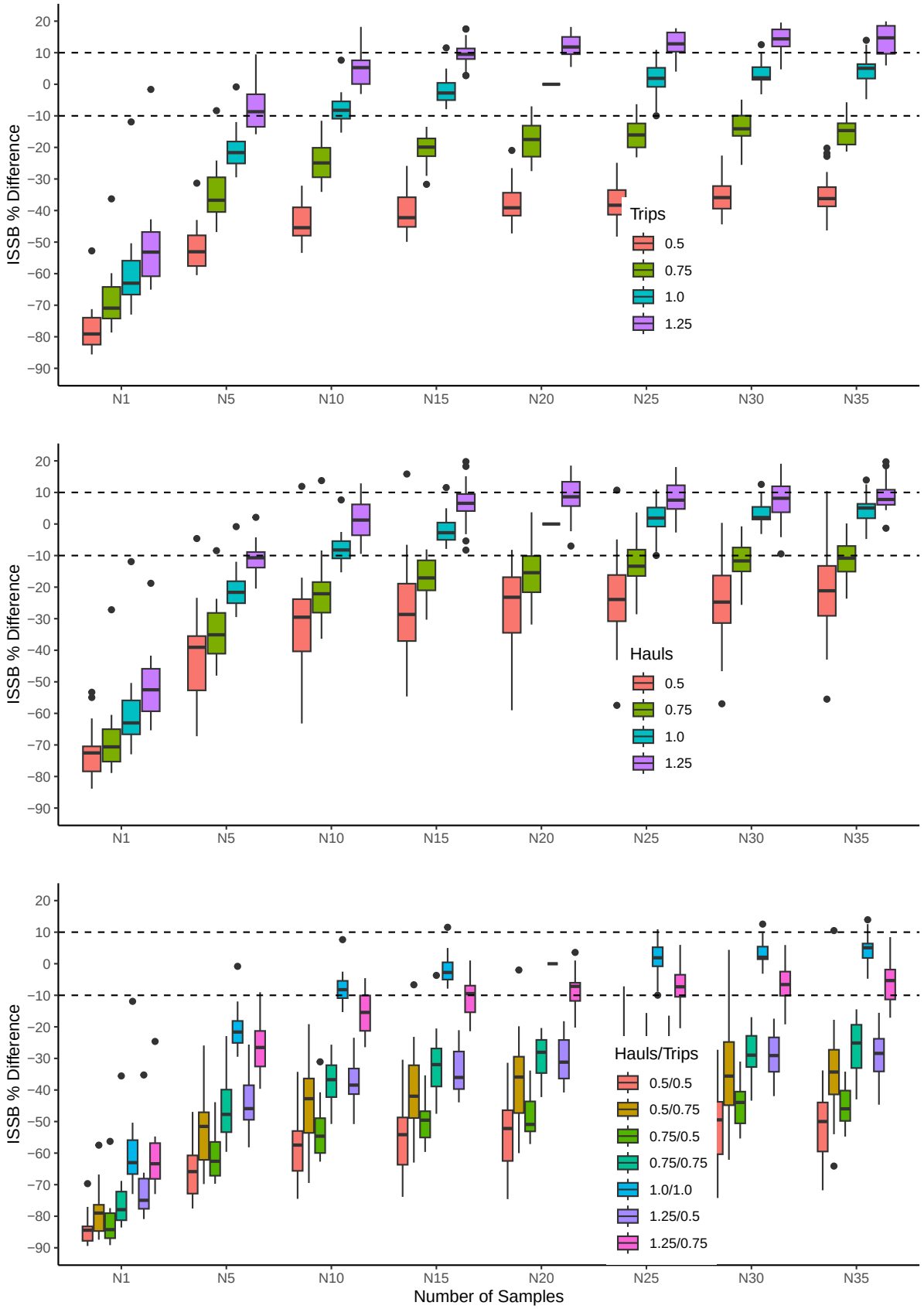




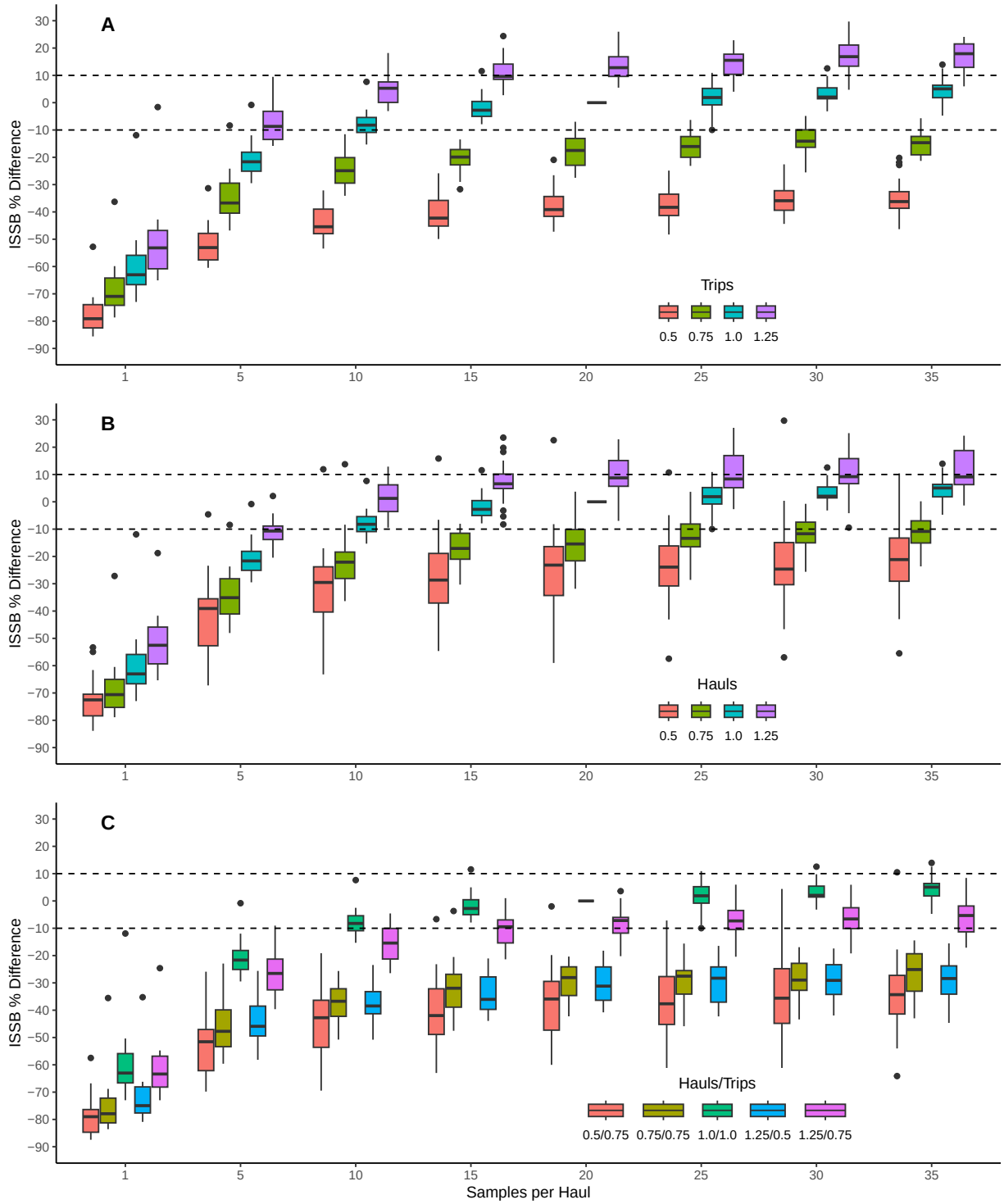

1.0
1.25
H0.5_T0.5
H0.5_T0.75
H0.75_T0.5
H0.75_T0.75
H1.25_T0.5
Haul
Trip
Trip/Haul
ISSB % Error
Scenario
N1
N5
N10
N15
N20
N25
N30
N35

Take Two


ISSB % Difference
20
10
0
−10
−20
−30
−40
−50
−60
−70
−80
−90
N1
N5
N10
N15
N20
N25
N30
N35
Trips
0.5
0.75
1.0
1.25
Hauls
0.5
0.75
1.0
1.25
Hauls/Trips
H0.5_T0.5
H0.5_T0.75
H0.75_T0.5
H0.75_T0.75
H1.25_T0.5
Number of Samples


ISSB % Difference
20
10
0
−10
−20
−30
−40
−50
−60
−70
−80
−90
N1
N5
N10
N15
N20
N25
N30
N35
Trips
0.5
0.75
1.0
1.25
Hauls
0.5
0.75
1.0
1.25
Hauls/Trips
0.5/0.5
0.5/0.75
0.75/0.5
0.75/0.75
1.0/1.0
1.25/0.5
1.25/0.75
Number of Samples

* 3 Panel

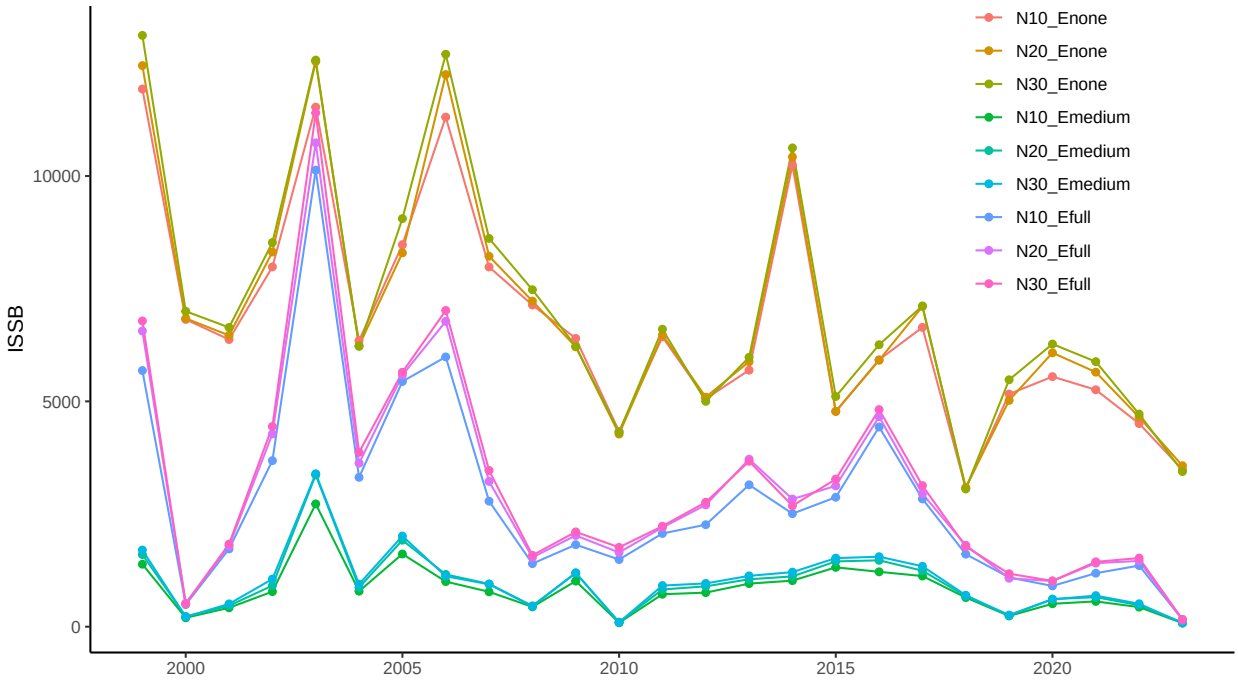


Plot 3.1

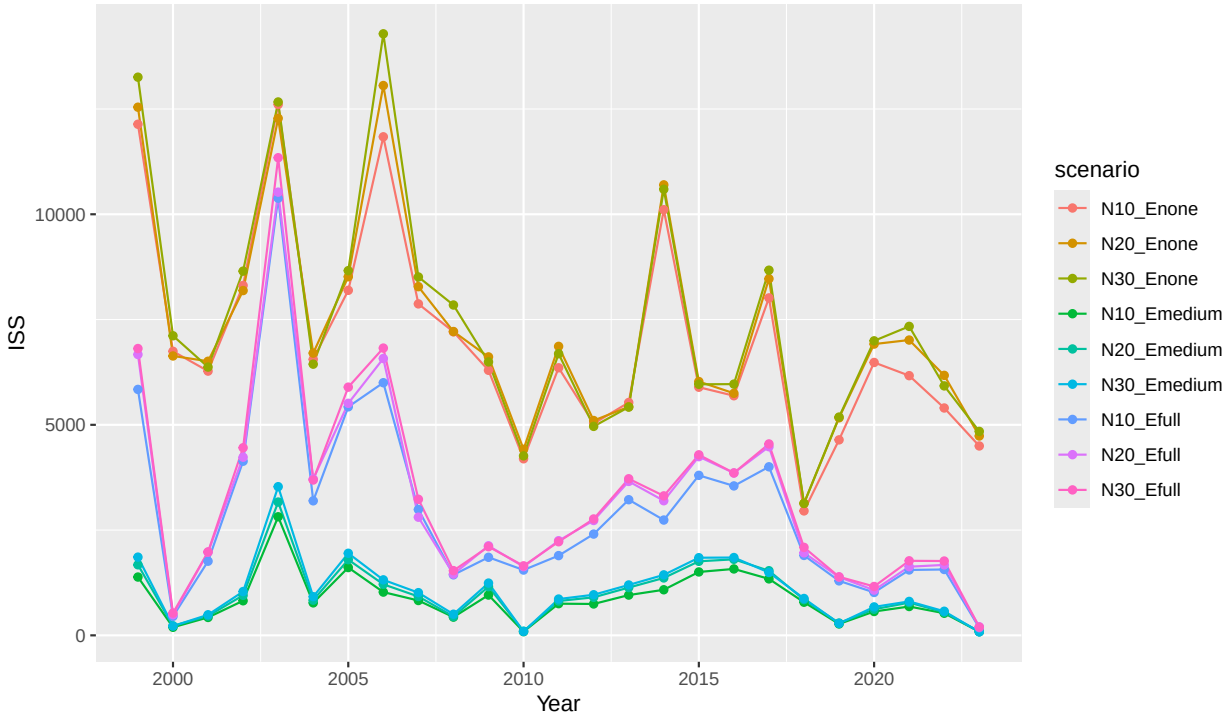
3x3 grid.

Data

* With sampling strata



Without sampling strata

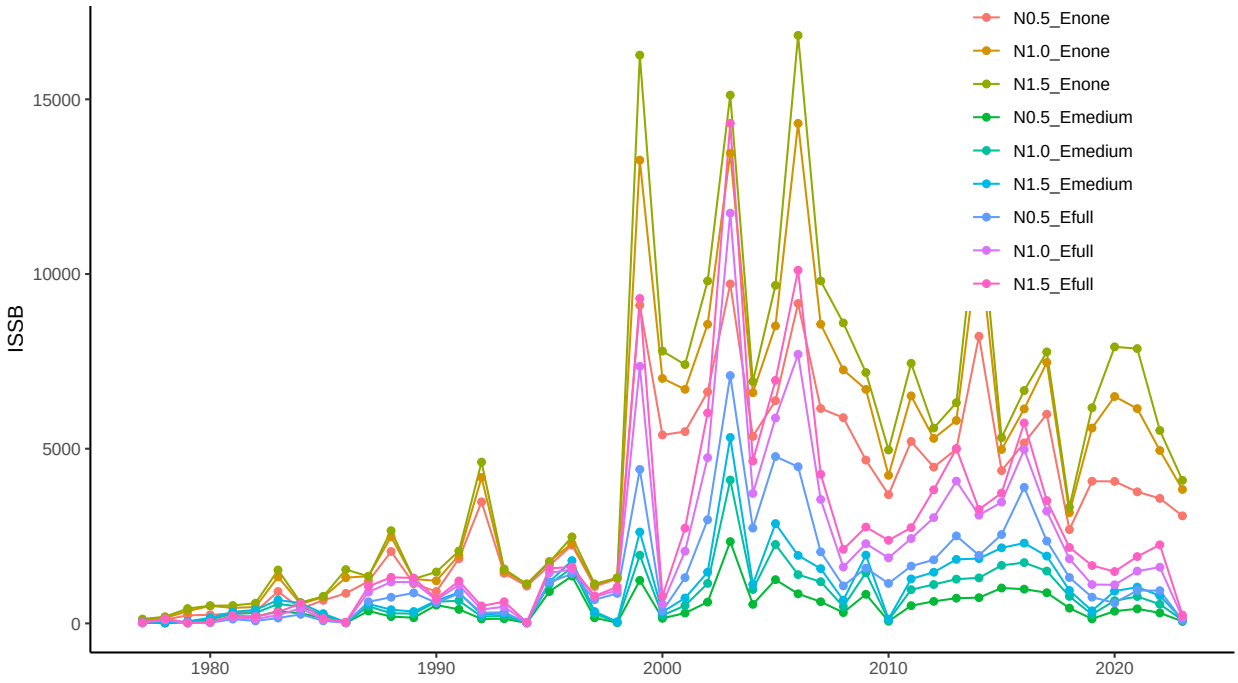


Plot 4.1 Trip and Haul x .5, 1.5

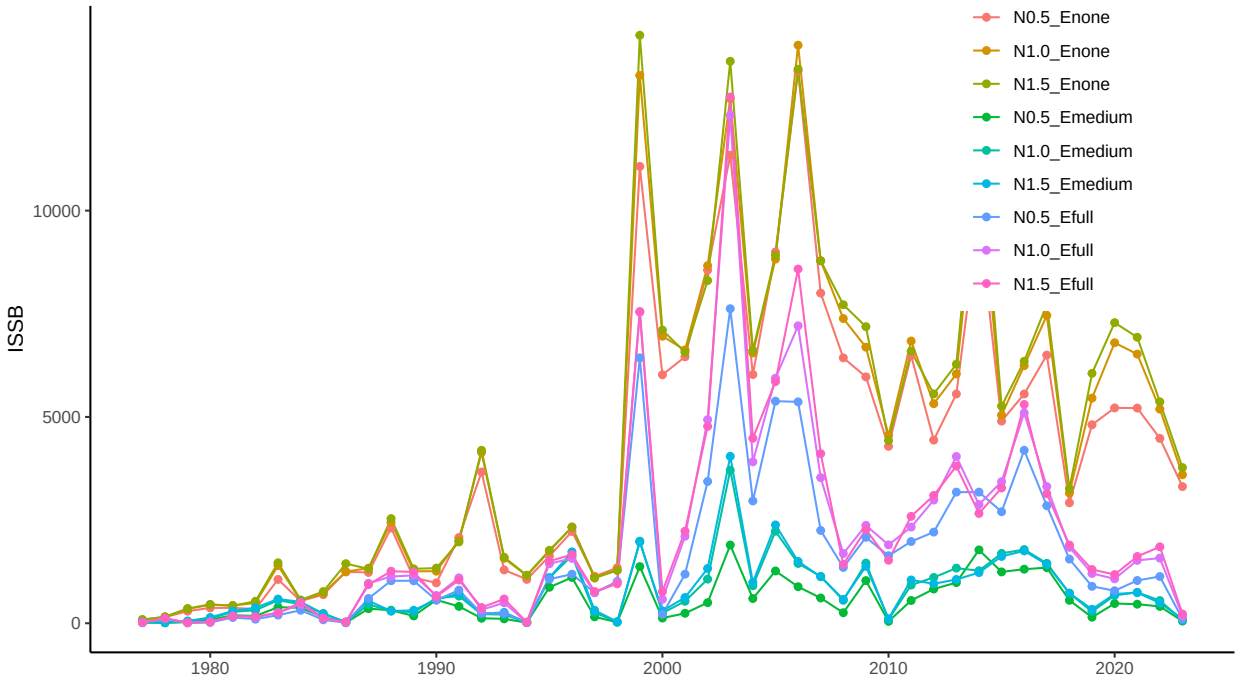
2x3 grid.

Data

Trip



Haul



Correlation Plots

Can I calculate the intra-haul correlation between samples and plot that against sample size for average over the sampling years?

I would have to sample with replacement lengths at every sample size and save them then corr() them, or save the corr() for every iteration, or save the average corr() over all iterations - then I could average over years to come up with either a boxplot or line plot.