TIM Diagnostics

MODEL STRUCTURE
Match/Mismatch: Matching
Population Structure: Metapopulation
Diagnostic Run: NO. Uses OBS values as data inputs
Residual plots represent RELATIVE difference; ((TRUE−ESTIMATED)/TRUE)*100

Run Time of Estimation: 0.084 minutes

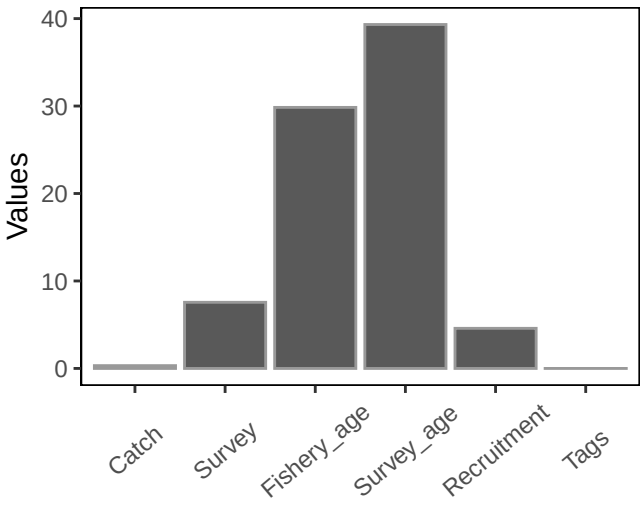
OM Error Parameters

	Parameter	1	2
1	Sigma_Rec	0.4	0.4
2	Sigma_Rec_Apport	0.2	0.2
3	Sigma_F	0.2	0.2
4	Rec_Index_sigma	0.5	0.5
5	Survey_Sigma	0.2	0.2
6	Catch_Sigma	0.05	0.05
7	SIM_N_Catch	100	100
8	SIM_N_Survey	100	100

Model Converged

num gradient component = 8.04252445466849e

Likelihood Components

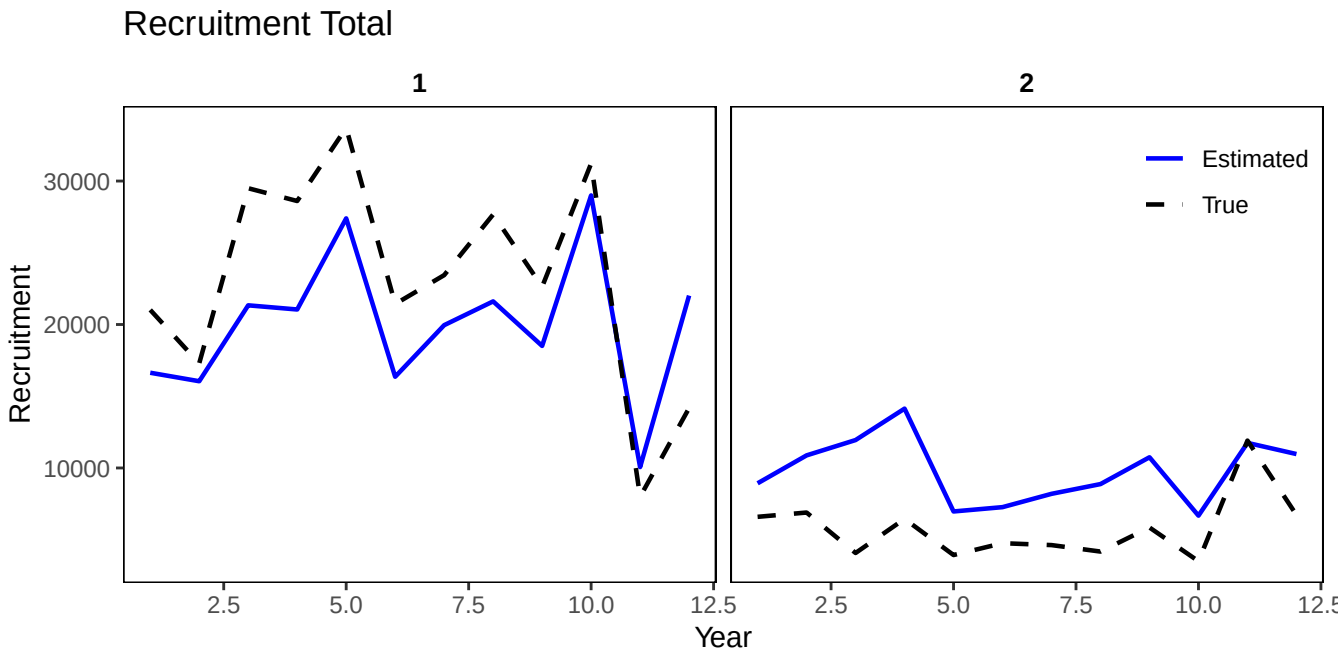


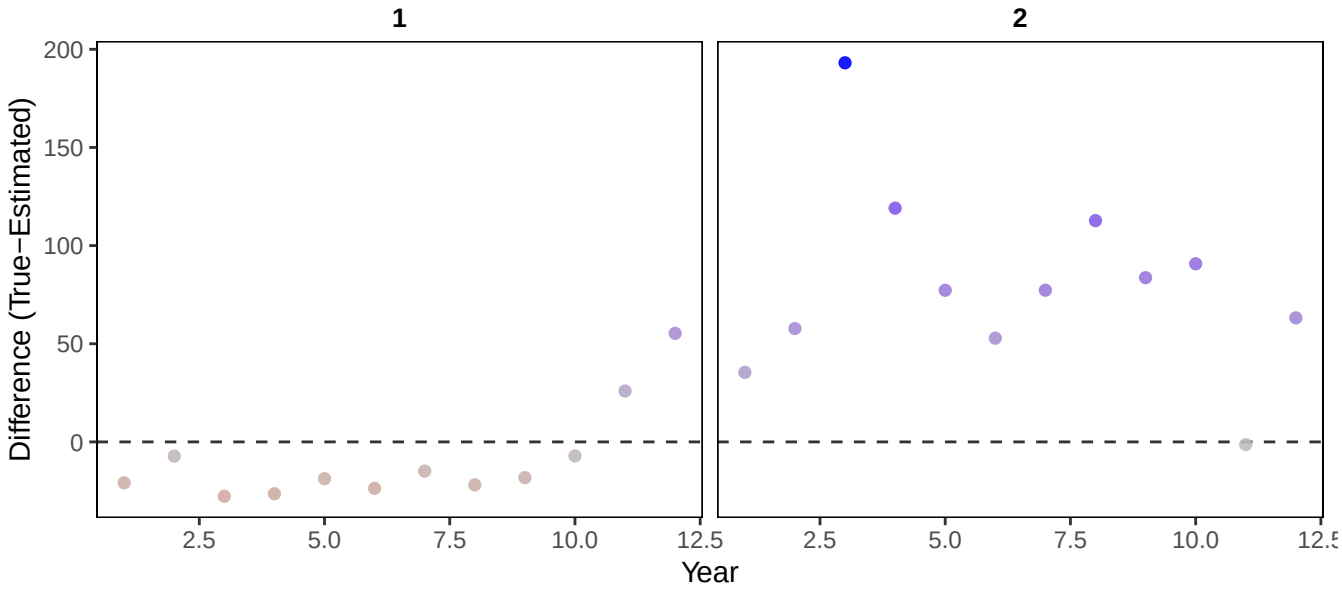
Estimated Parameter Values

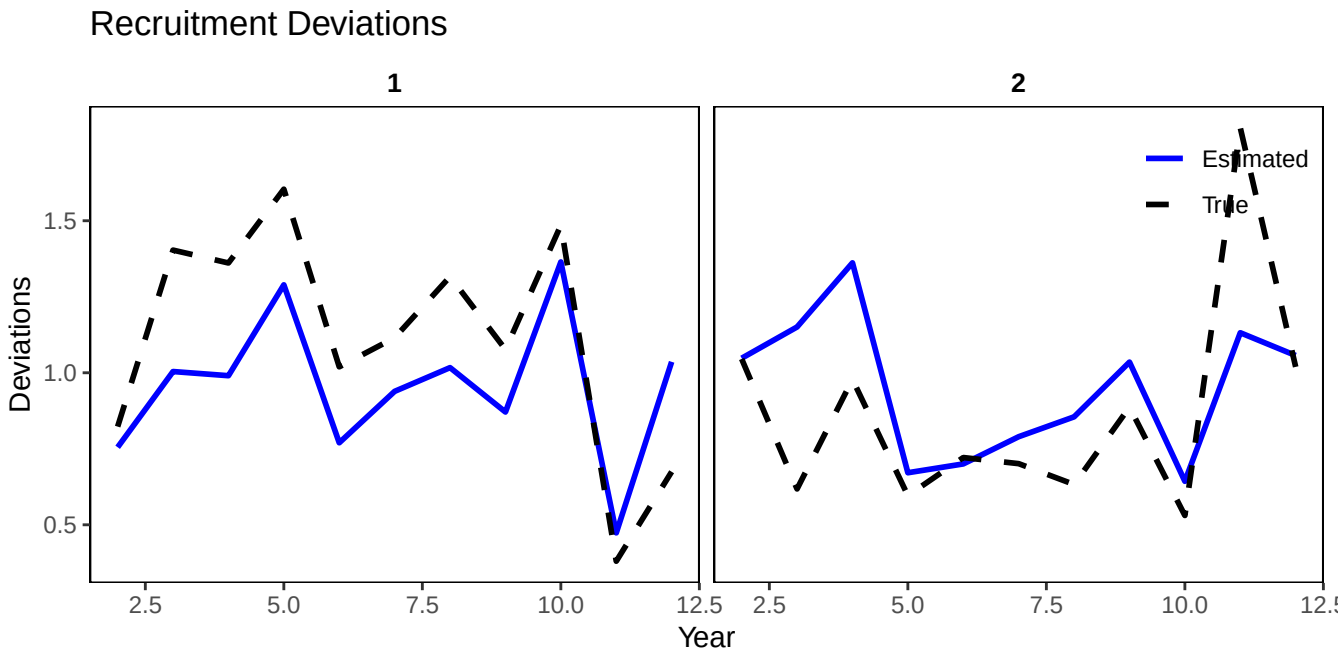
	Parameter	1	2
1	q	0.00	0.00
2	R_ave	21251.80	10382.30
3	beta 1 fishery	5.01	4.91
4	beta 2 fishery	1.70	1.96
5	beta 3 fishery	NA	NA
6	beta 4 fishery	NA	NA
7	beta 1 survey	6.66	4.51
8	beta 2 survey	1.39	1.79
9	beta 3 survey	NA	NA
10	beta 4 survey	NA	NA

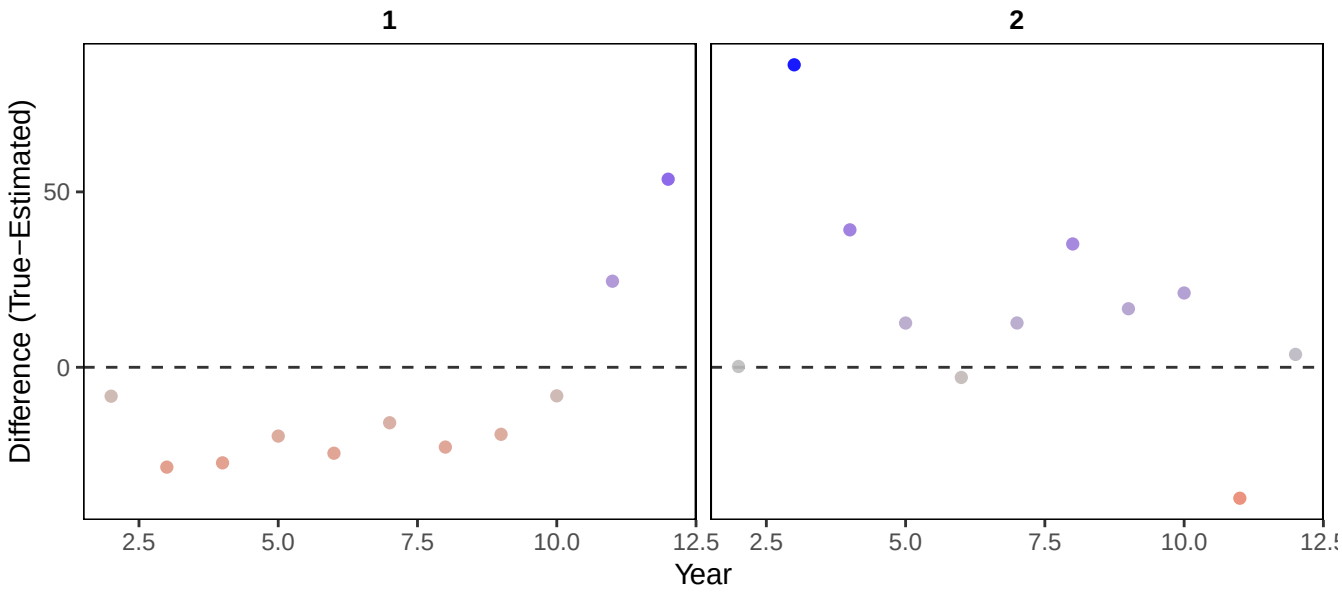
True Parameter Values

	Parameter	1	2
1	q	0.00	0.00
2	R_ave	21019.00	6596.00
3	beta 1 fishery	1.31	2.45
4	beta 2 fishery	3.76	3.16
5	beta 3 fishery	NA	NA
6	beta 4 fishery	NA	NA
7	beta 1 survey	2.51	1.81
8	beta 2 survey	2.31	2.64
9	beta 3 survey	NA	NA
10	beta 4 survey	NA	NA

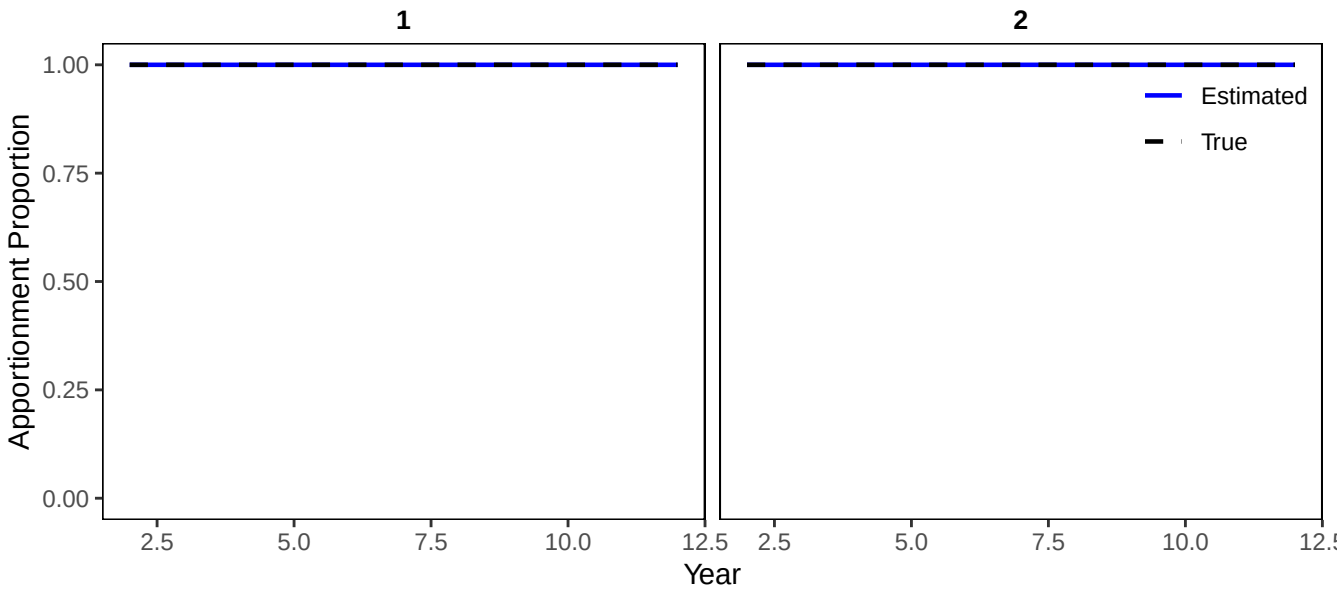

Recruitment Total
1
2
Estimated
True
Recruitment
30000
20000
10000
2.5
5.0
7.5
10.0
12.5
Year


Recruitment Residuals
1
2
Difference (True−Estimated)
200
150
100
50
0
2.5
5.0
7.5
10.0
12.5
Year

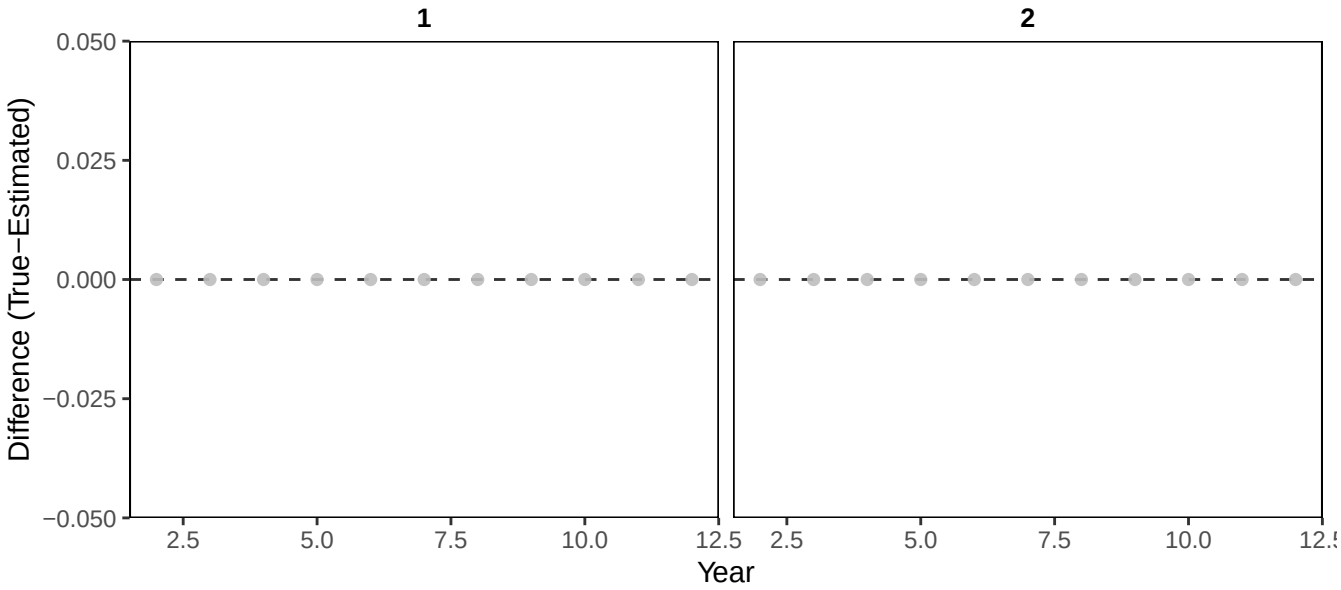

Recruitment Deviations
1
2
Estimated
True
Deviations
1.5
1.0
0.5
2.5
5.0
7.5
10.0
12.5
Year

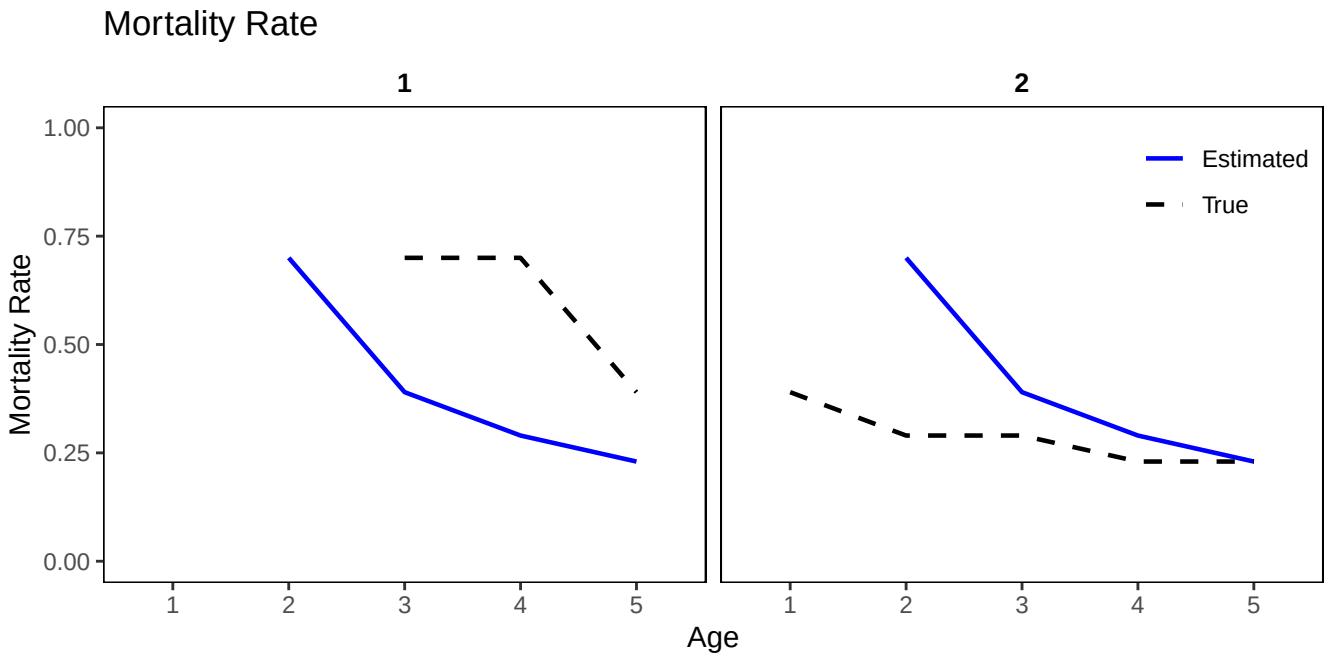

Recruitment Devs Residuals
1
2
Difference (True−Estimated)
50
0
2.5
5.0
7.5
10.0
12.5
Year

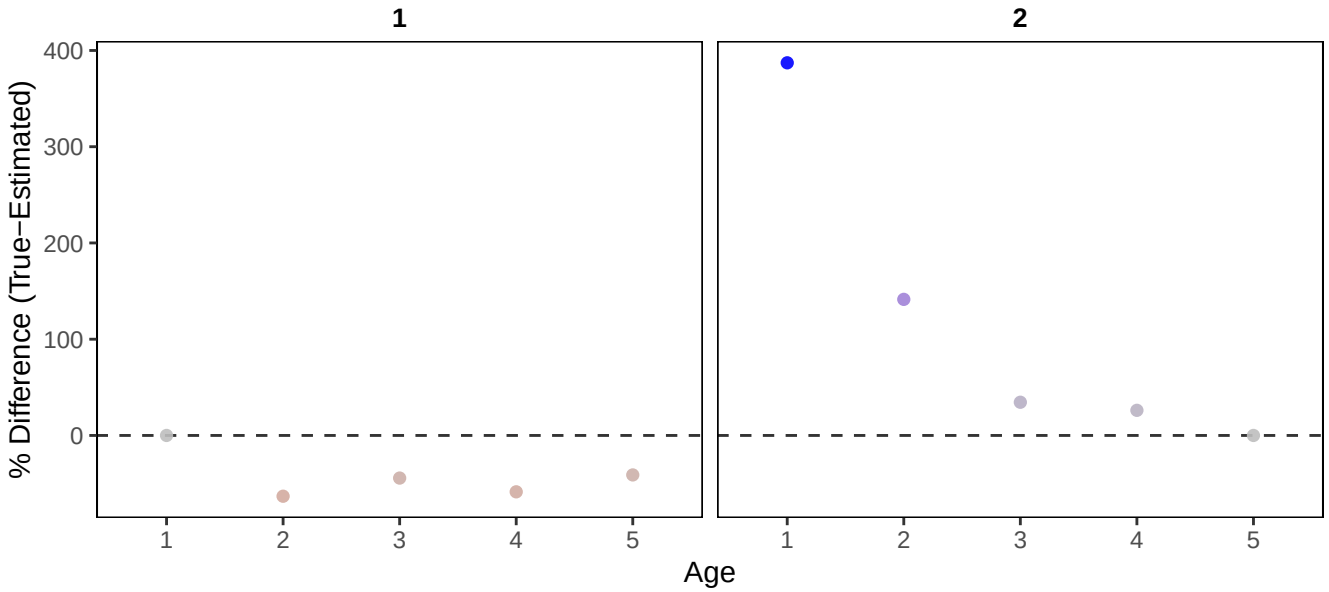
Recruitment Apportionment

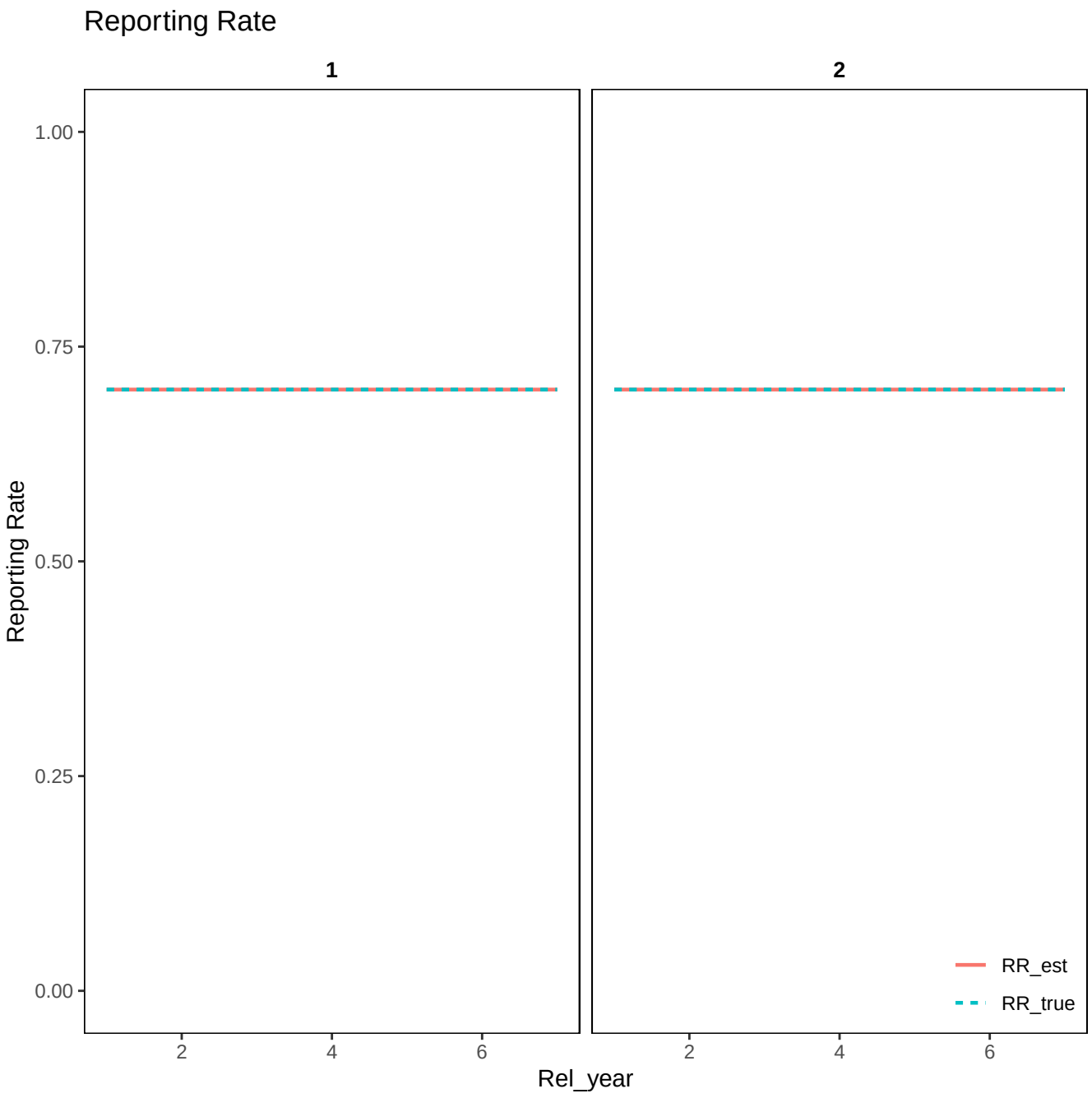


Recruitment Apportionment Residuals

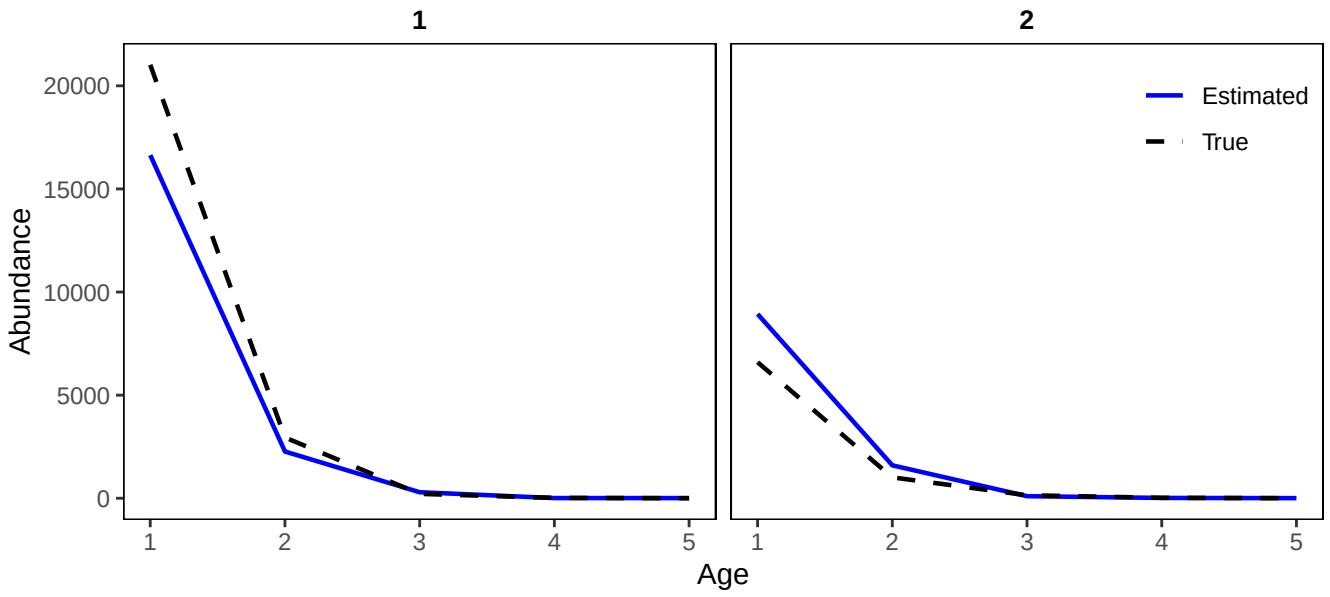



Mortality Rate
1
2
1.00
0.75
0.50
0.25
0.00
Mortality Rate
Estimated
True
1
2
3
4
5
Age

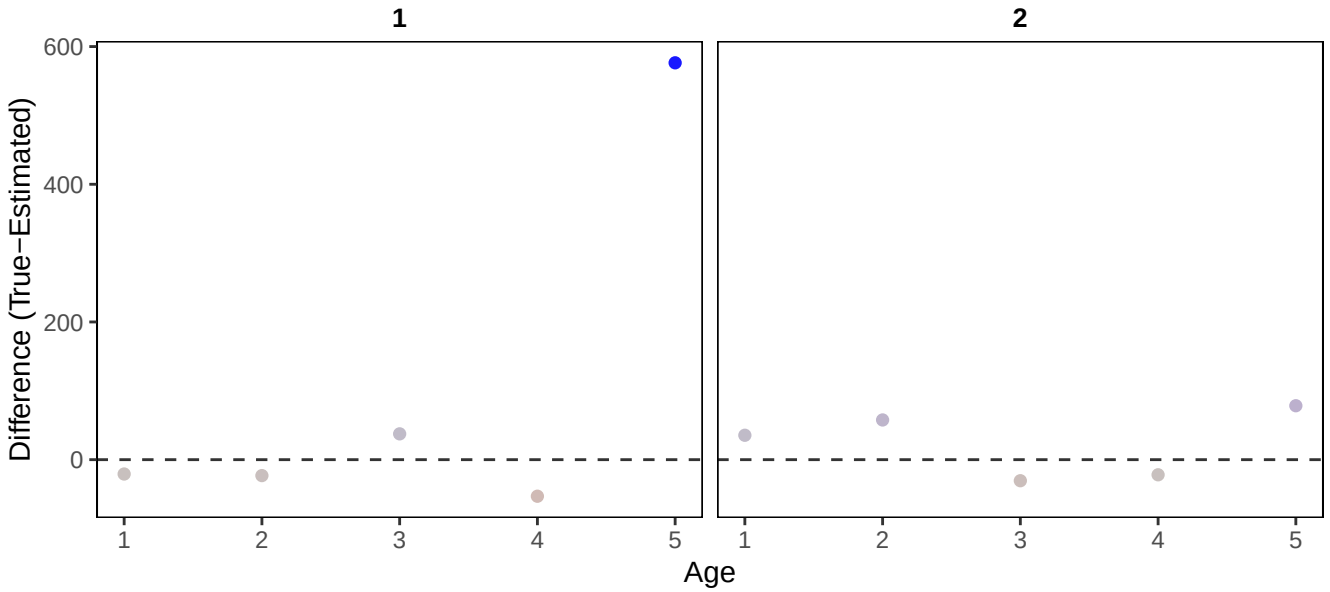

Mortality Rate Residuals
1
2
400
300
200
100
0
% Difference (True−Estimated)
1
2
3
4
5
Age

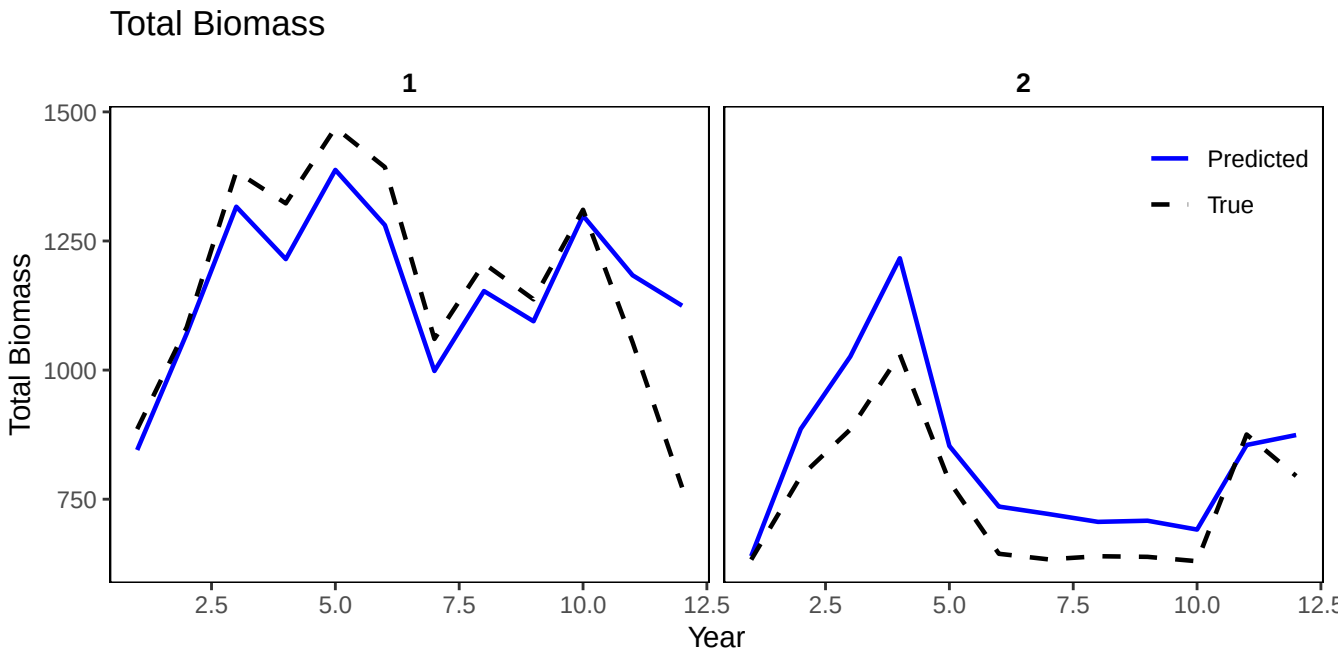

Reporting Rate
1
2
1.00
0.75
0.50
0.25
0.00
Reporting Rate
2
4
6
2
4
6
Rel_year
RR_est
RR_true

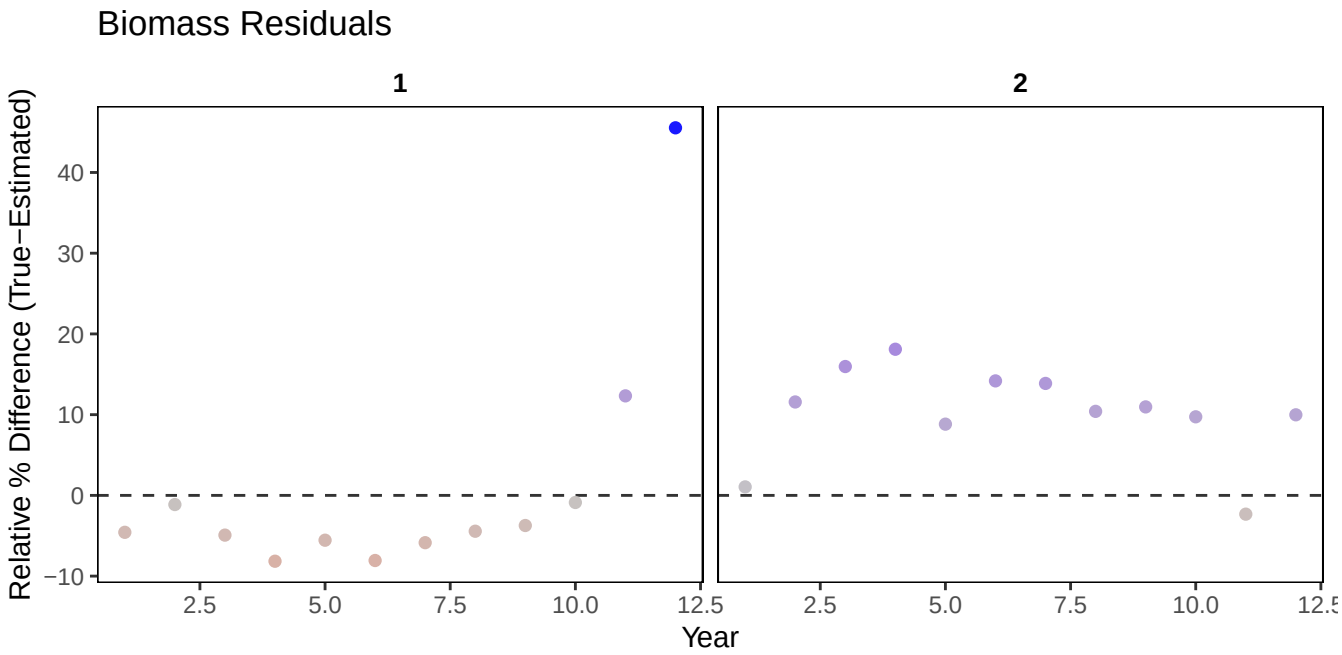
Initial Abundance

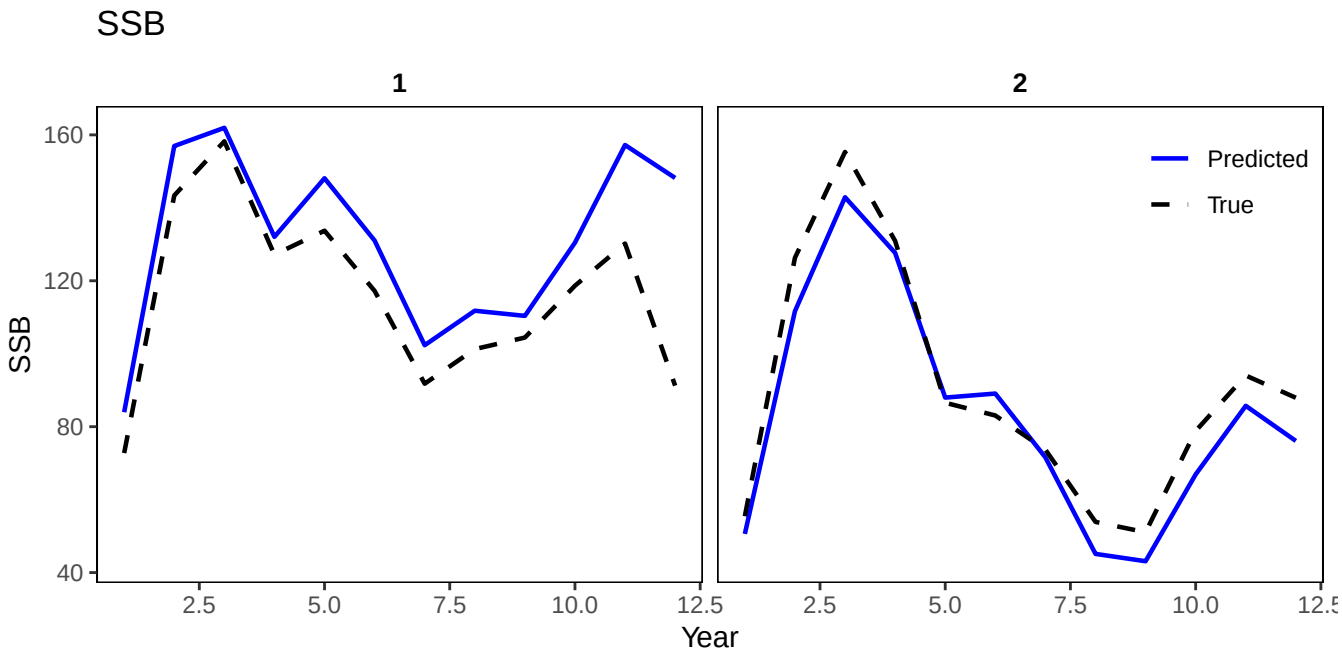


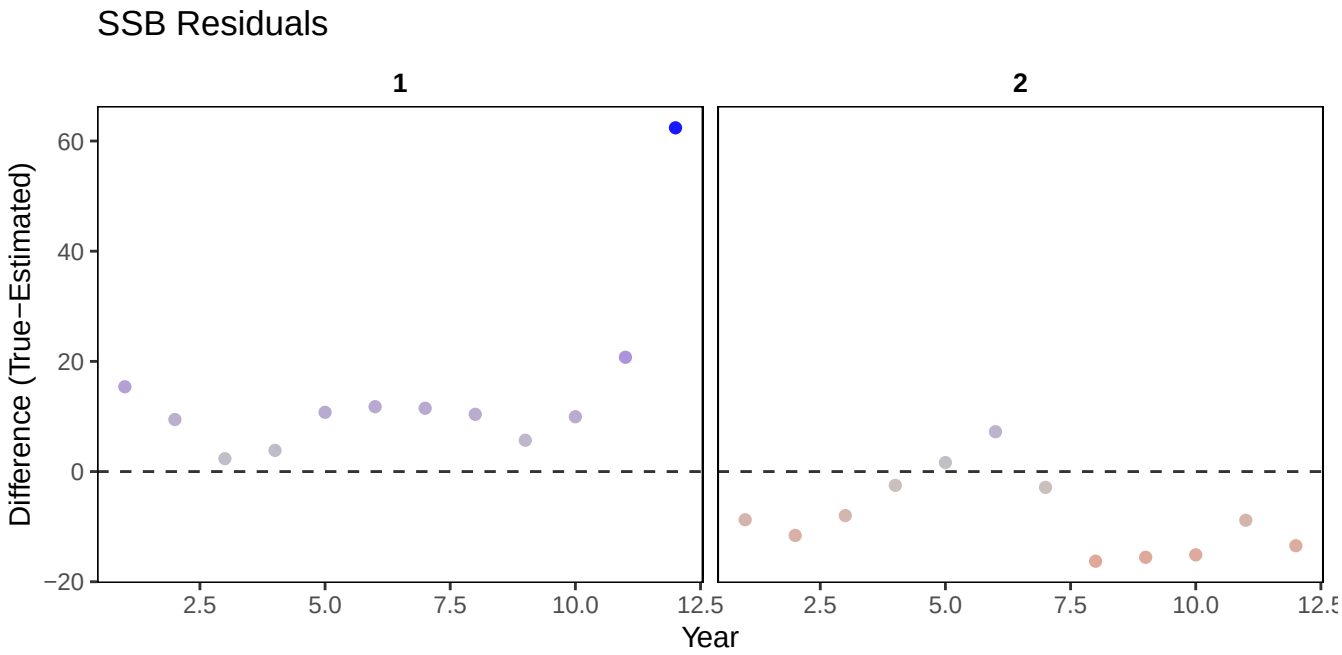
Initial Abundance Residuals

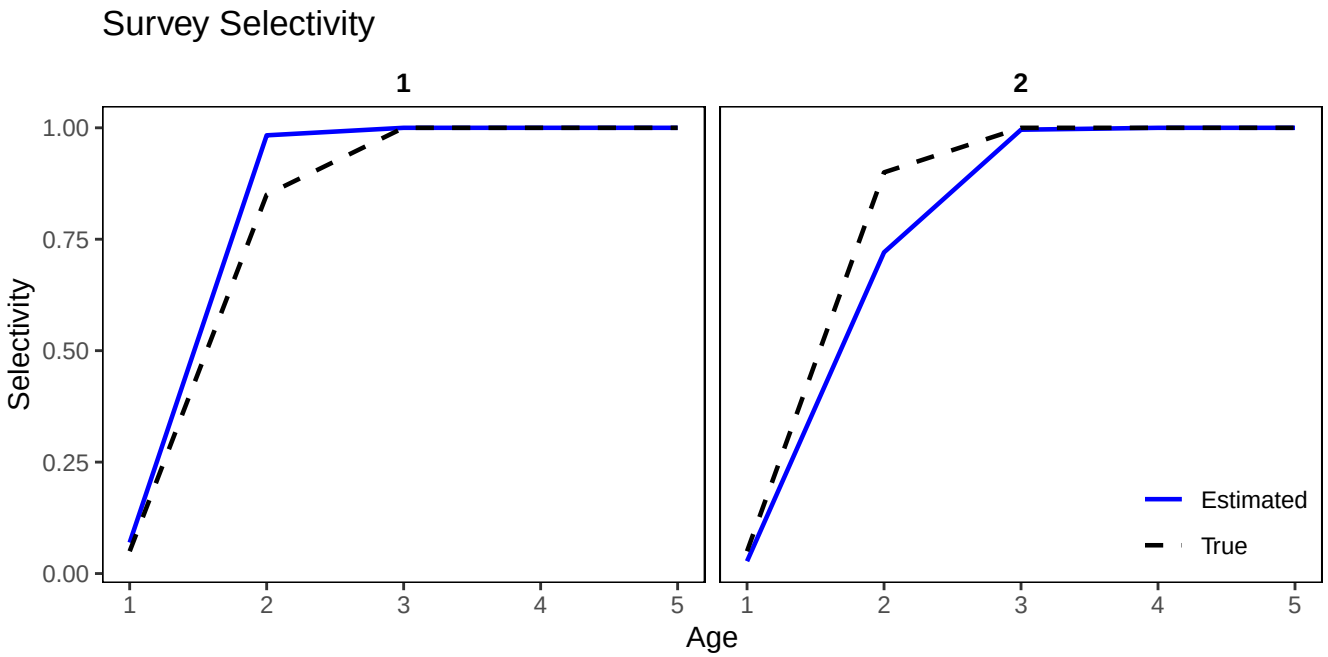


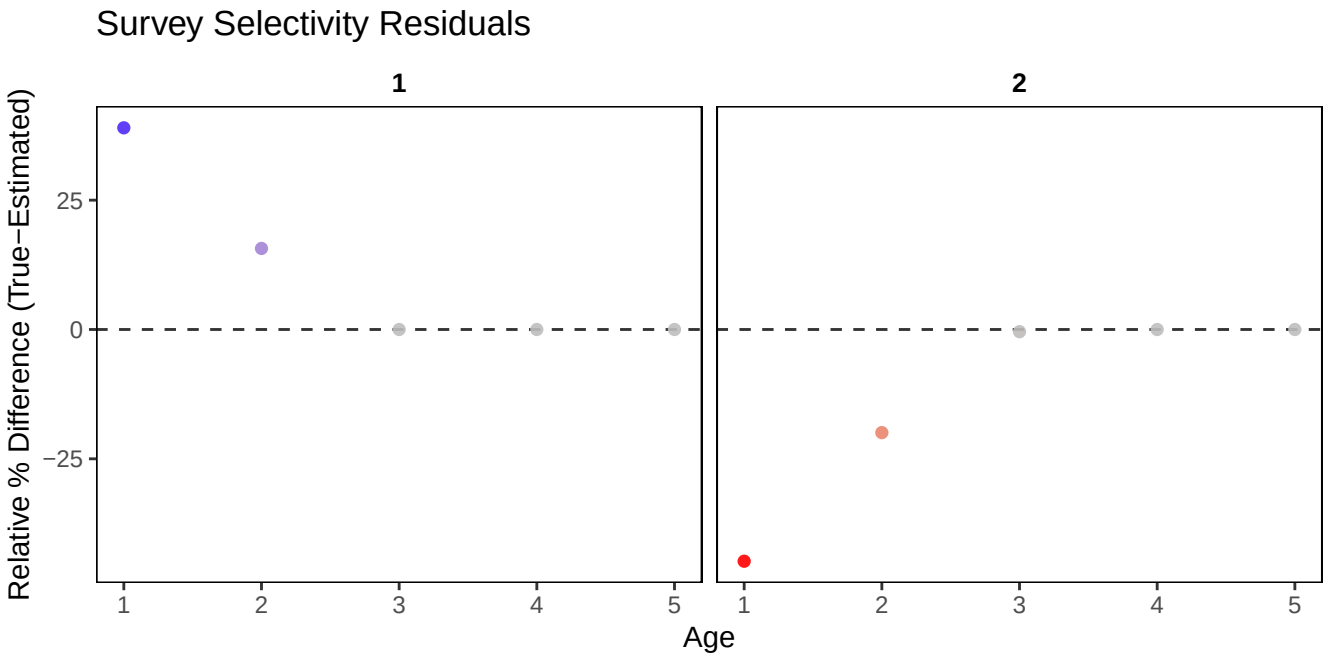

Total Biomass
1
2
1500
1250
1000
750
Total Biomass
Predicted
True
2.5
5.0
7.5
10.0
12.5
Year

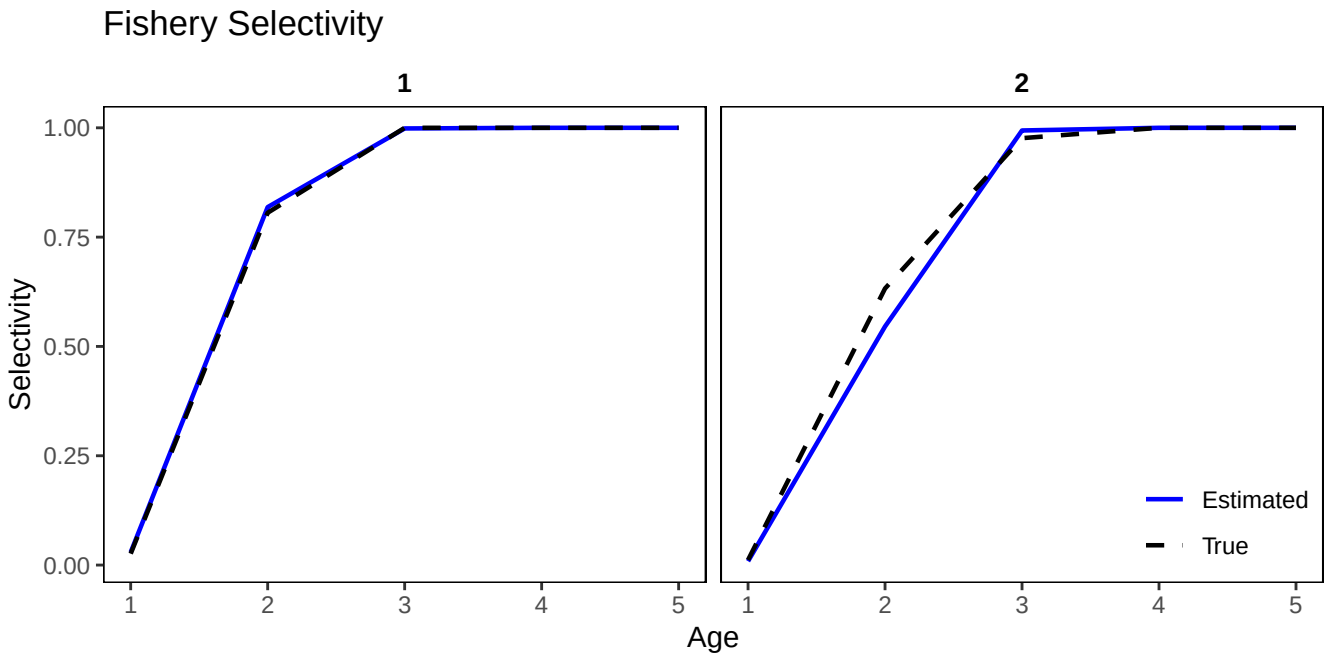

Biomass Residuals
1
2
40
30
20
10
0
−10
Relative % Difference (True−Estimated)
2.5
5.0
7.5
10.0
12.5
Year

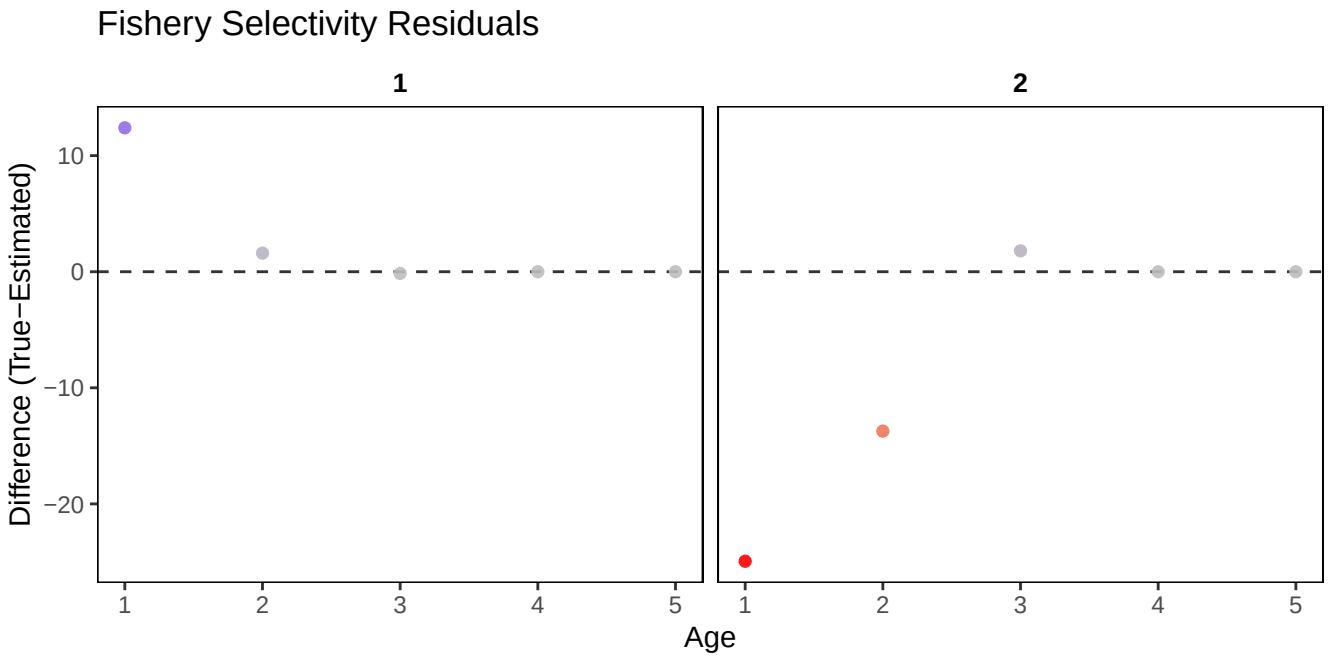

SSB
1
2
160
120
80
40
SSB
Predicted
True
2.5
5.0
7.5
10.0
12.5
Year


SSB Residuals
1
2
60
40
20
0
−20
Difference (True−Estimated)
2.5
5.0
7.5
10.0
12.5
Year


Survey Selectivity
1
2
1.00
0.75
0.50
0.25
0.00
Selectivity
Estimated
True
1
2
3
4
5
Age

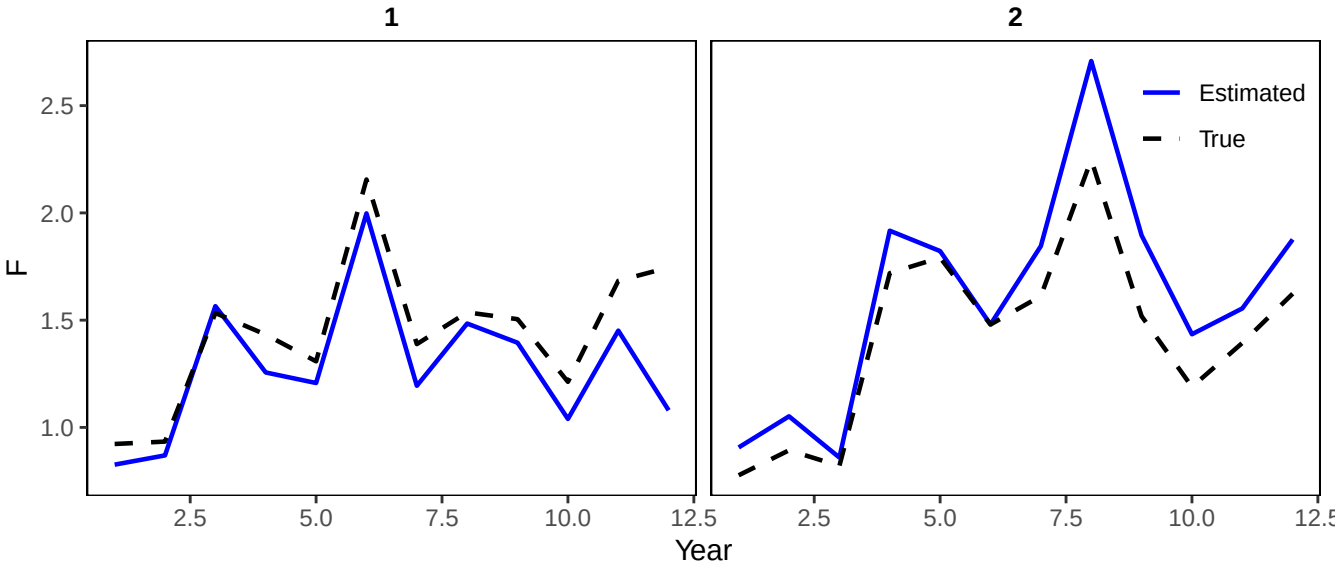

Survey Selectivity Residuals
1
2
25
0
−25
Relative % Difference (True−Estimated)
1
2
3
4
5
Age


Fishery Selectivity
1
2
1.00
0.75
0.50
0.25
0.00
Selectivity
Estimated
True
1
2
3
4
5
Age

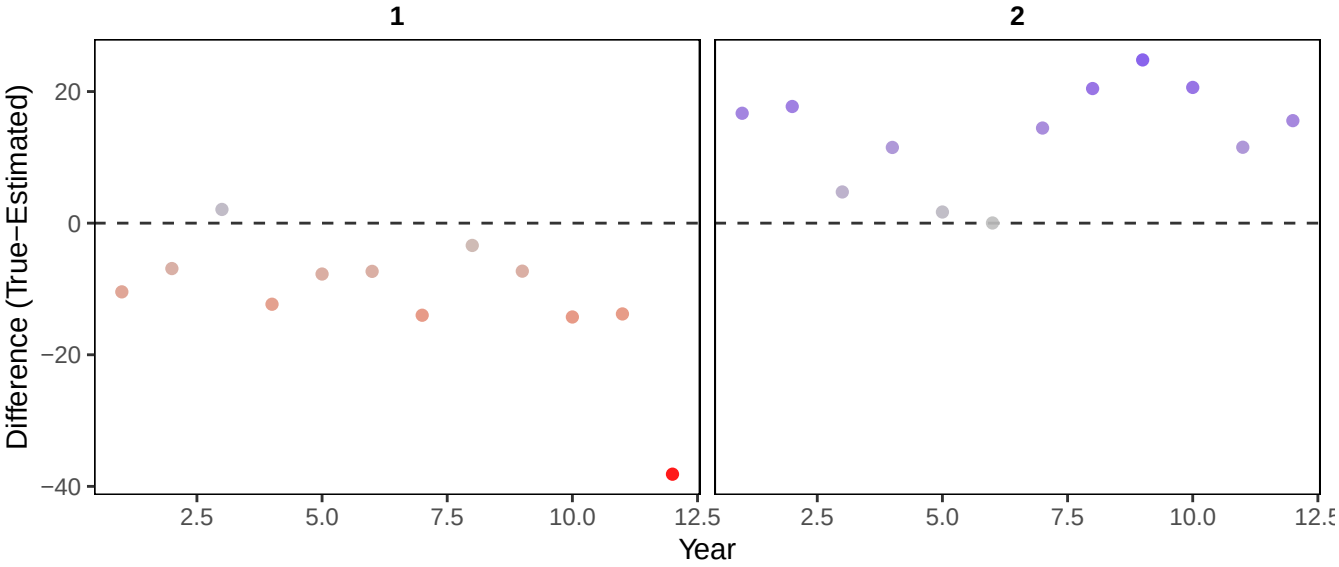

Fishery Selectivity Residuals
1
2
10
0
−10
−20
Difference (True−Estimated)
1
2
3
4
5
Age

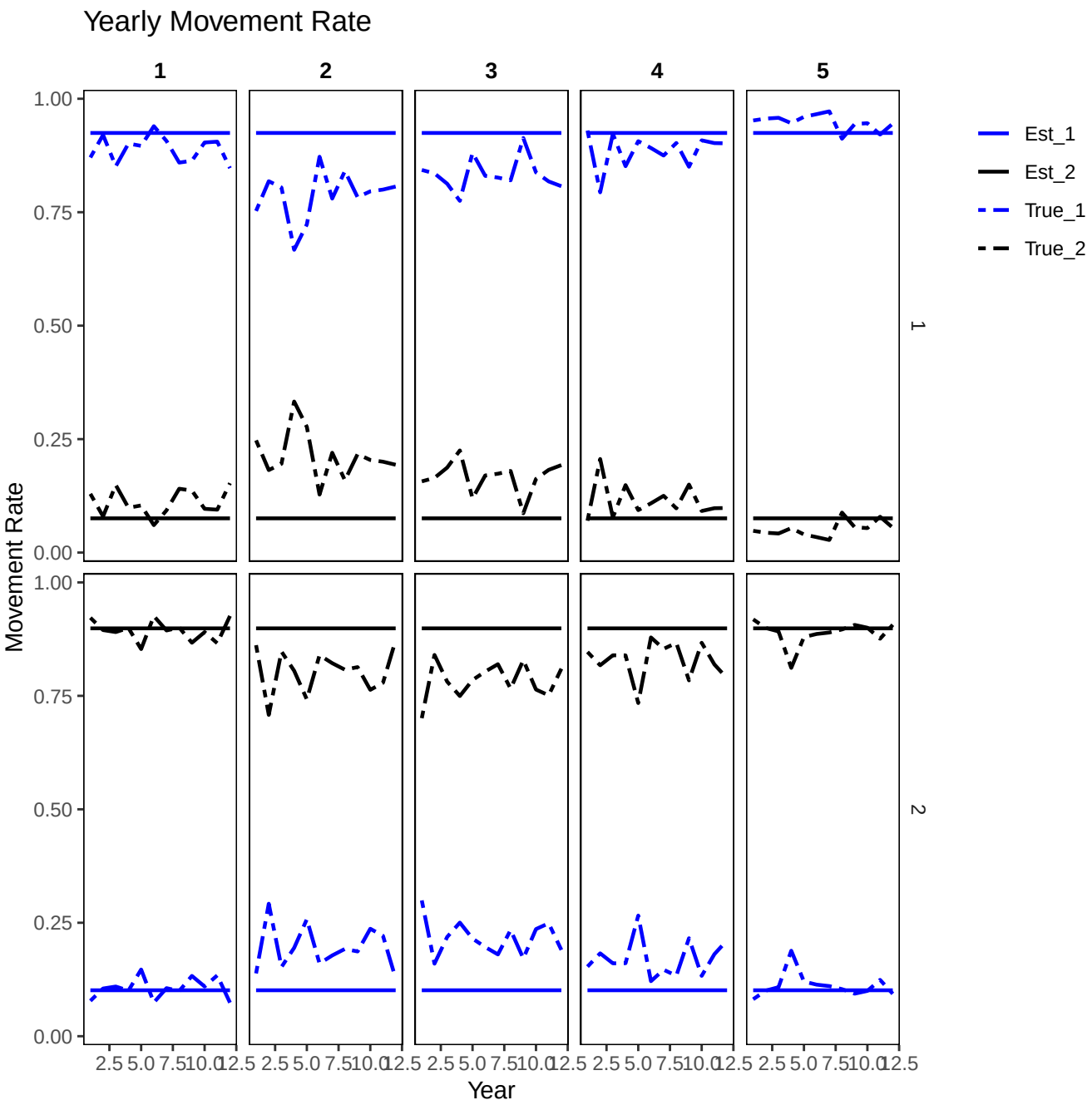
Fishing Mortality

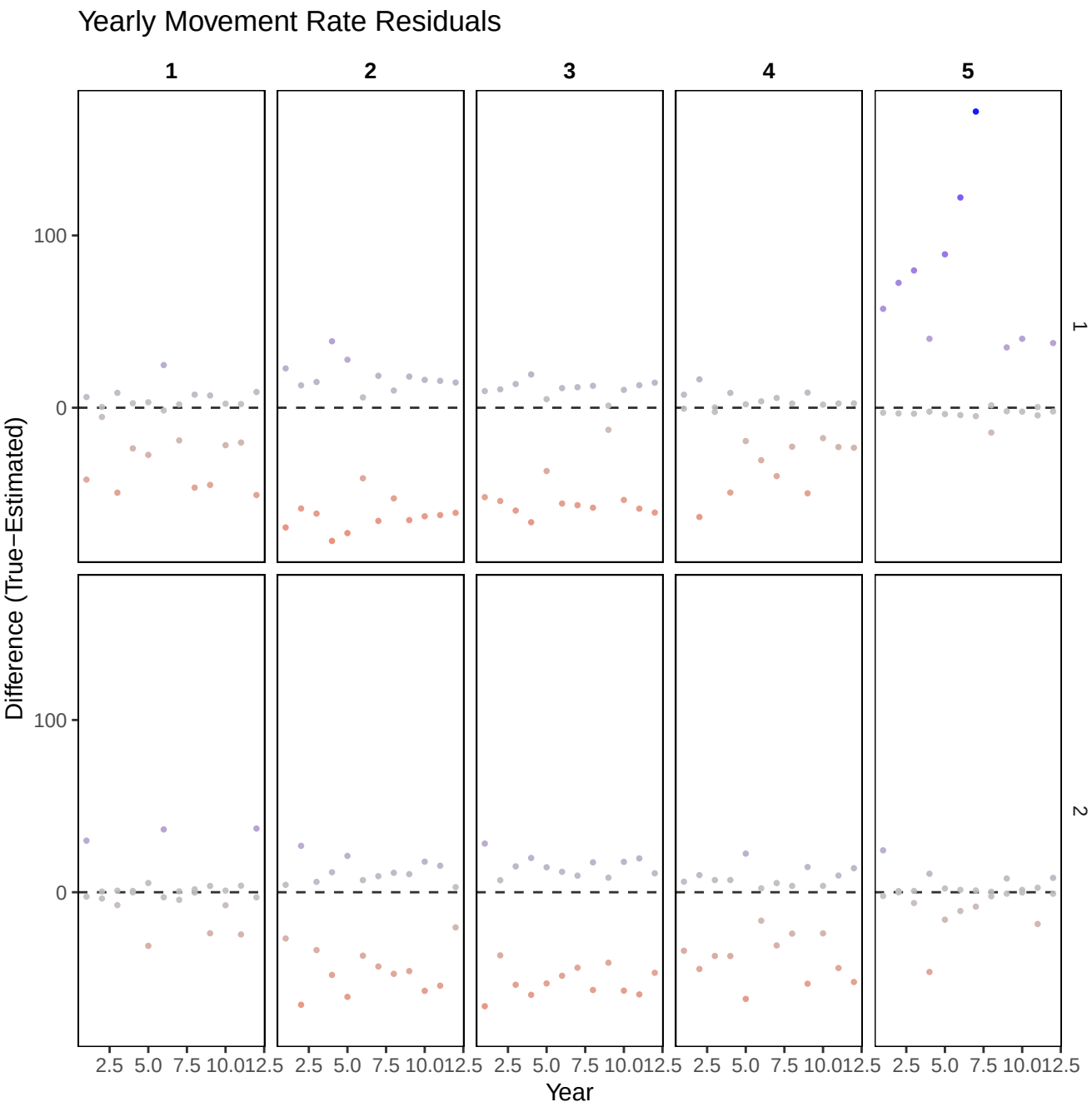
Fully selected F by Year



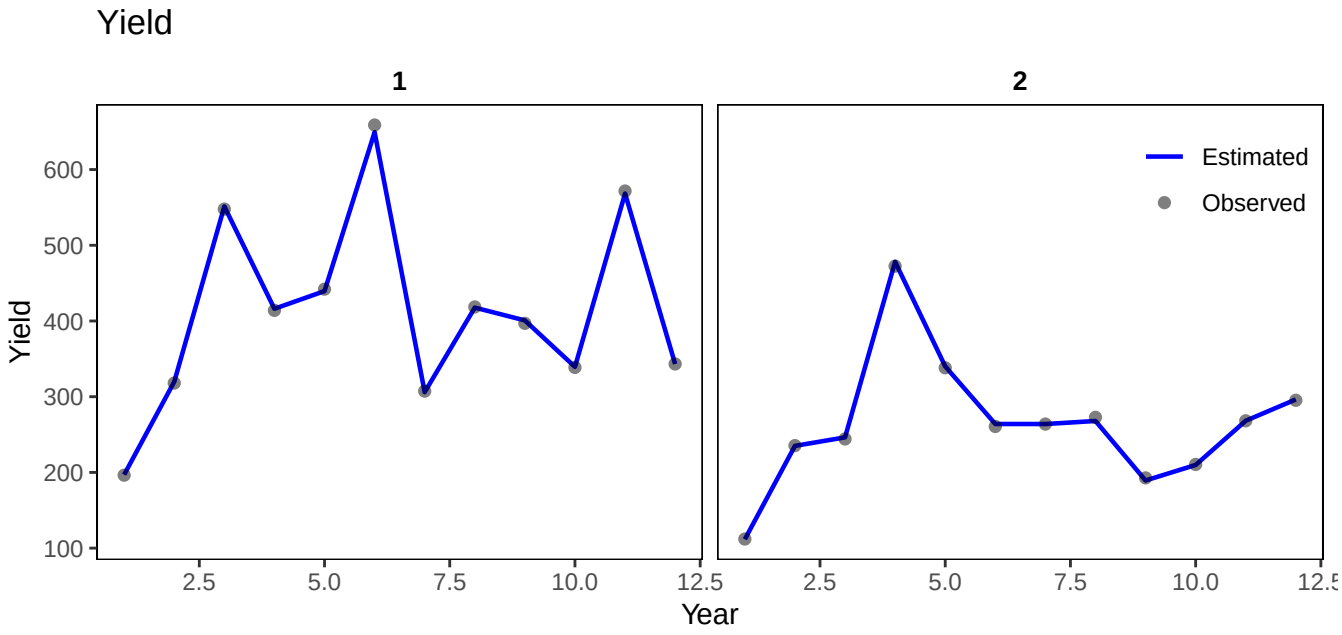
Fully Selected F Residuals

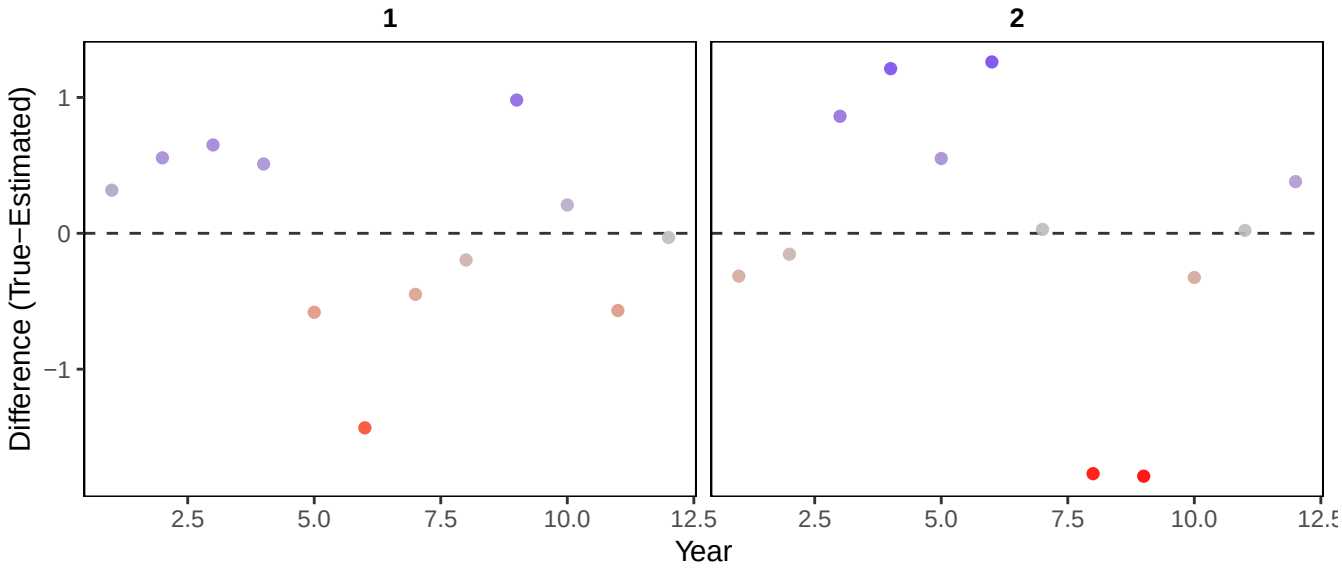



Yearly Movement Rate
1
2
3
4
5
1.00
0.75
0.50
0.25
0.00
Movement Rate
1
2
2.5 5.0 7.5 10.0 12.5
Year
Est_1
Est_2
True_1
True_2


Yearly Movement Rate Residuals
1
2
3
4
5
100
0
100
0
1
2
Difference (True−Estimated)
2.5 5.0 7.5 10.012.5 2.5 5.0 7.5 10.012.5 2.5 5.0 7.5 10.012.5 2.5 5.0 7.5 10.012.5 2.5 5.0 7.5 10.012.5
Year

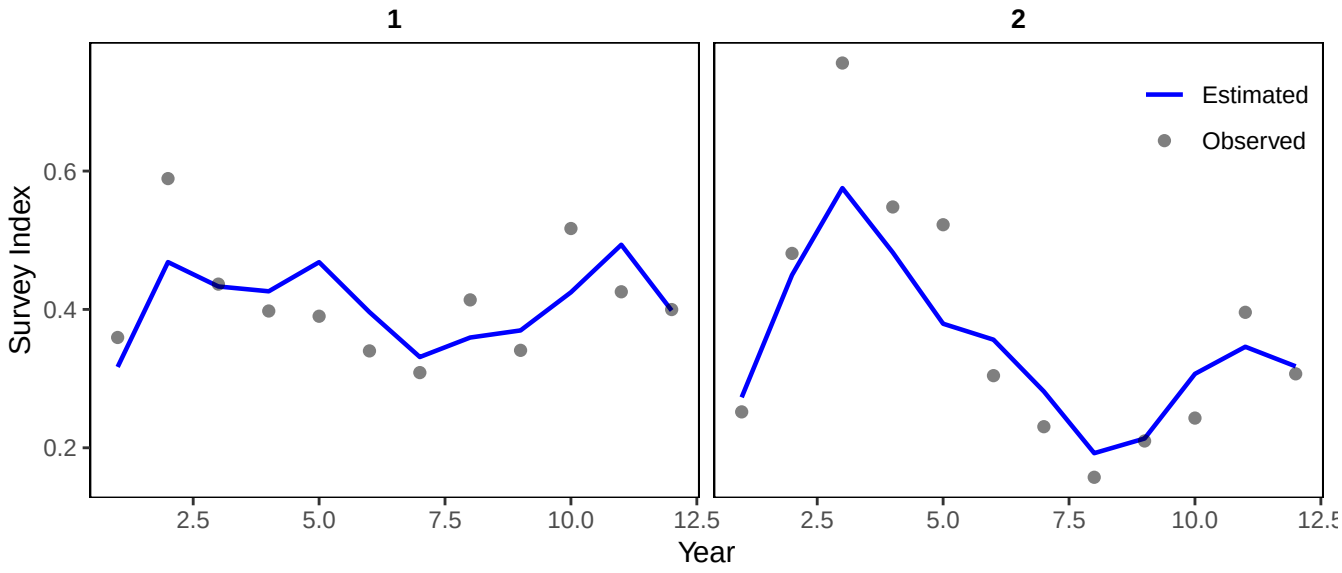
Fits to Data


Yield
1
2
Yield
600
500
400
300
200
100
2.5
5.0
7.5
10.0
12.5
Year
Estimated
Observed

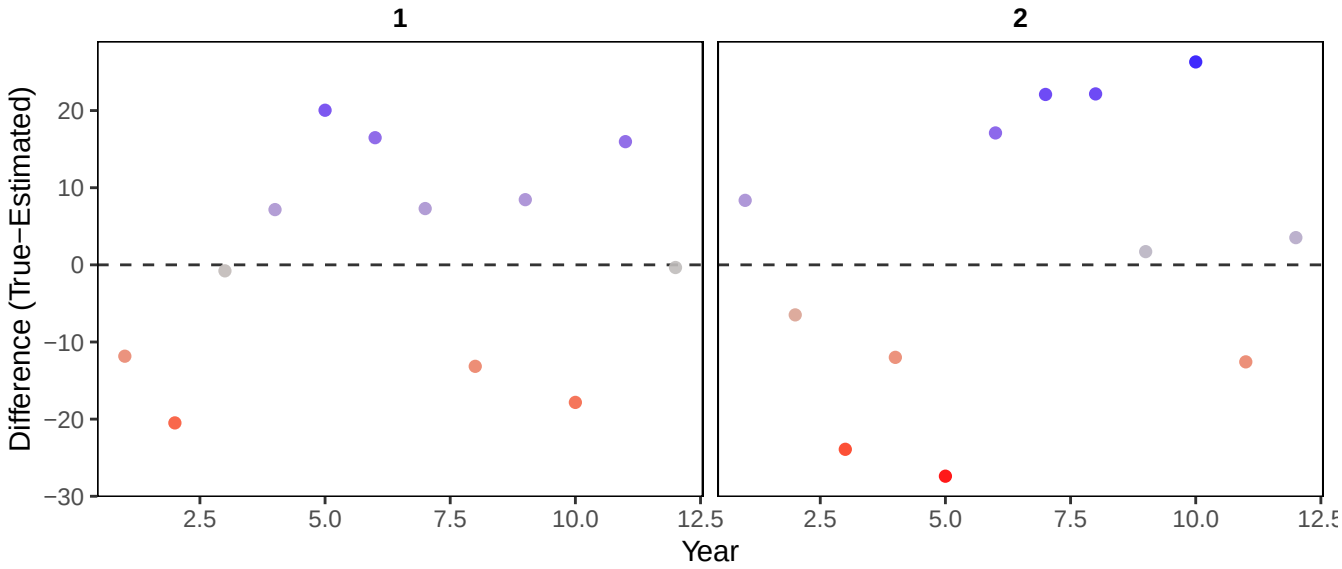

Yield Residuals
1
2
Difference (True−Estimated)
1
0
−1
2.5
5.0
7.5
10.0
12.5
Year

Fits to Data continued

Survey Biomass



Survey Index Residuals



Fits to Data continued