WHAM for unnamed stock

Model years: 1-20

Number of stocks: 1

Number of regions: 1

Number of fleets: 1

Fleet Age Comp Models: Multinomial

Number of indices: 6

Index Age Comp Models: Multinomial, Multinomial, Multinomial, Multinomial, Multinomial, Multinomial

Recruitment model for each stock: Random about mean

No Environmental covariates.

Number of Selectivity blocks: 7

tivity Block Types: Age-specific, Age-specific, Age-specific, Age-specific, Age-specific, Age-specific, Age-specific

Fleet 1 Selectivity Blocks: 1

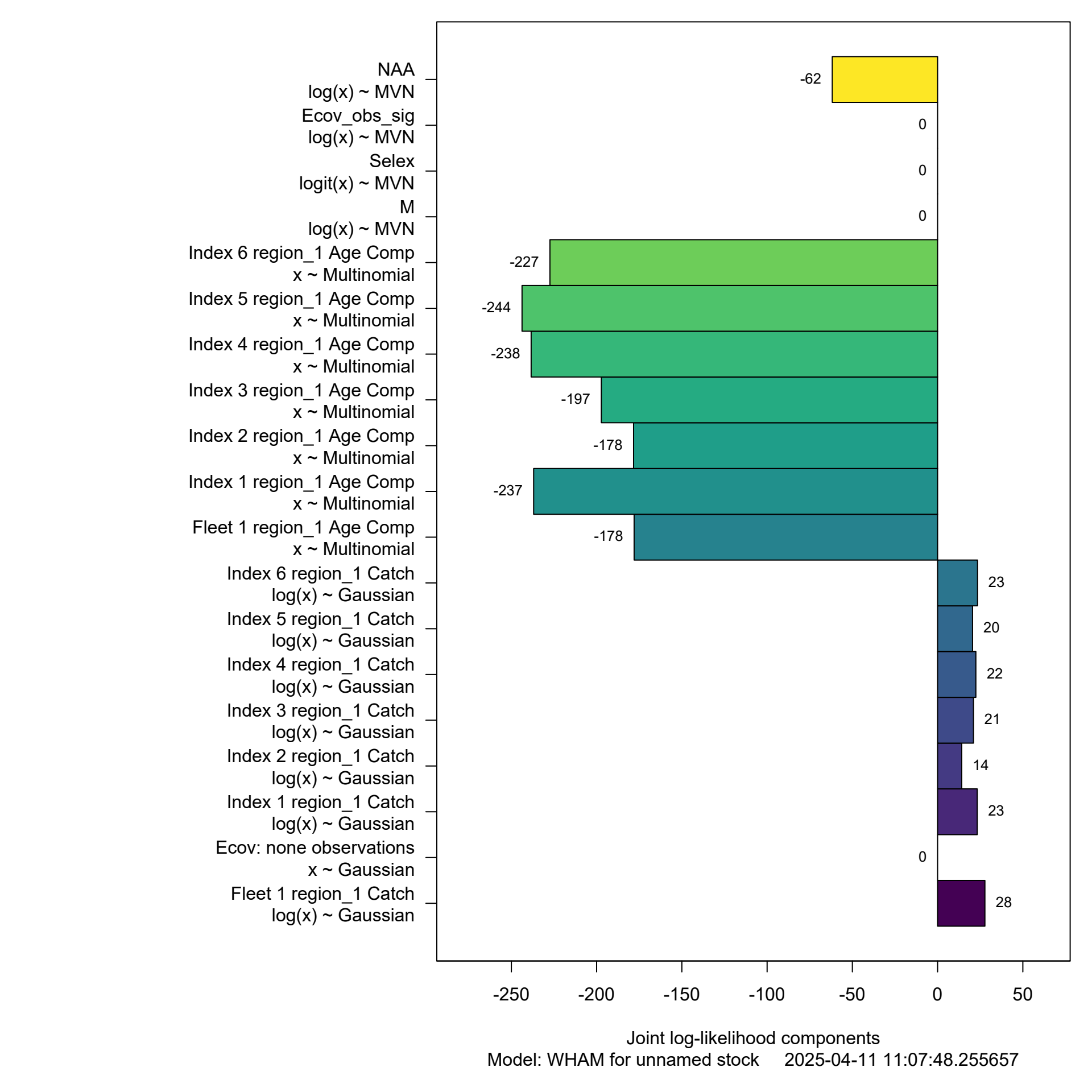
Index 1 Selectivity Blocks: 2

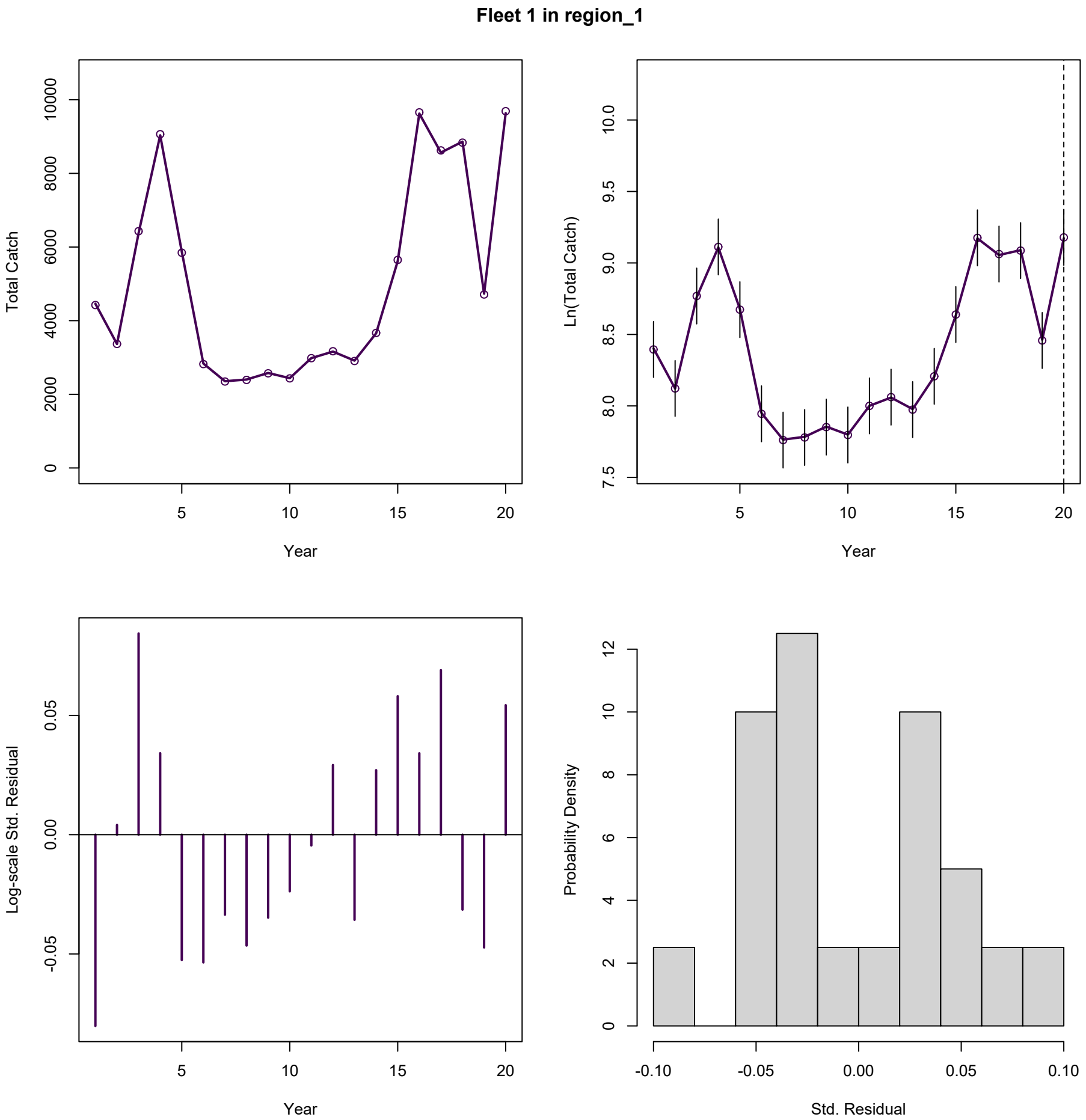
Index 2 Selectivity Blocks: 3

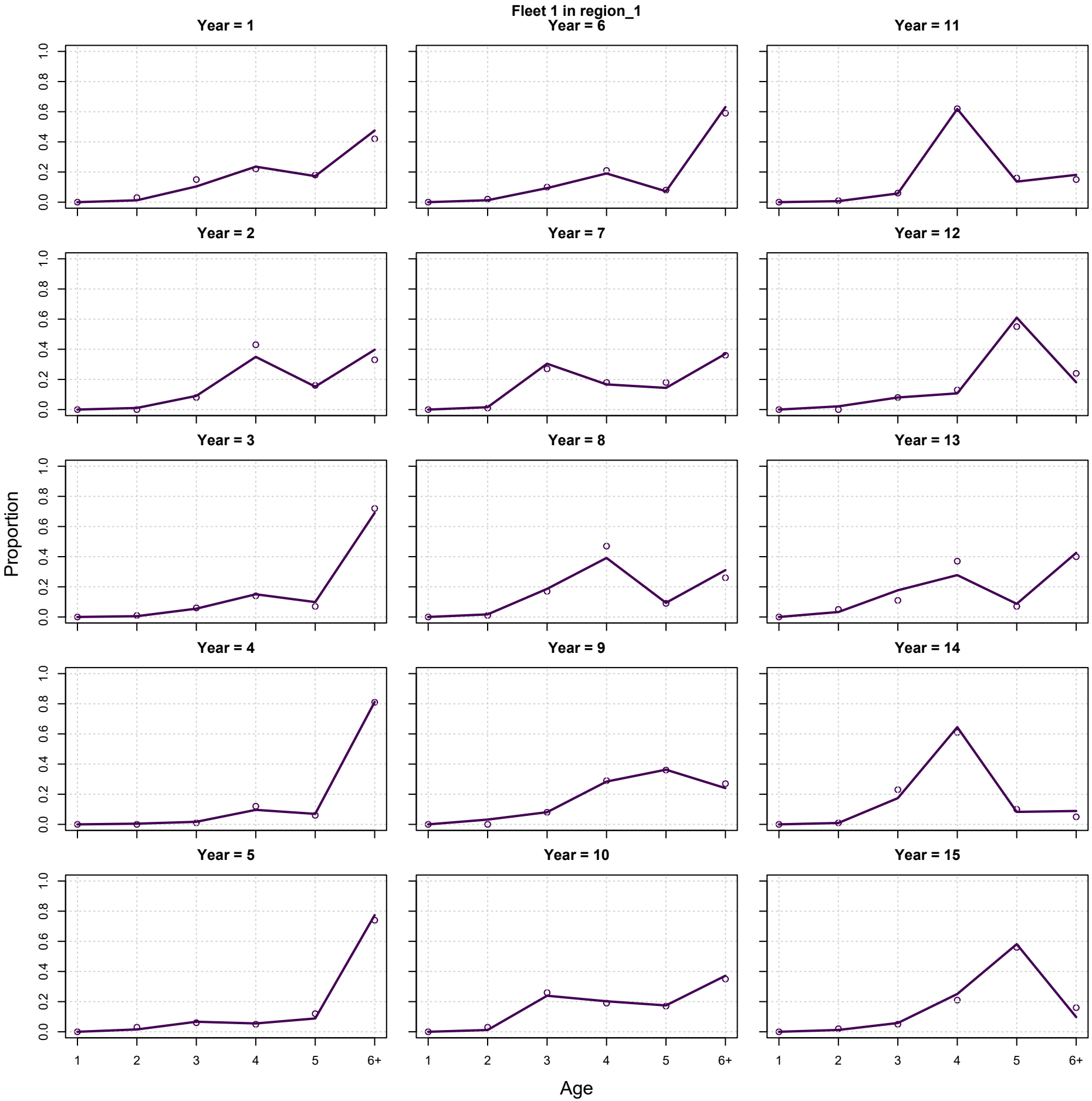
Index 3 Selectivity Blocks: 4

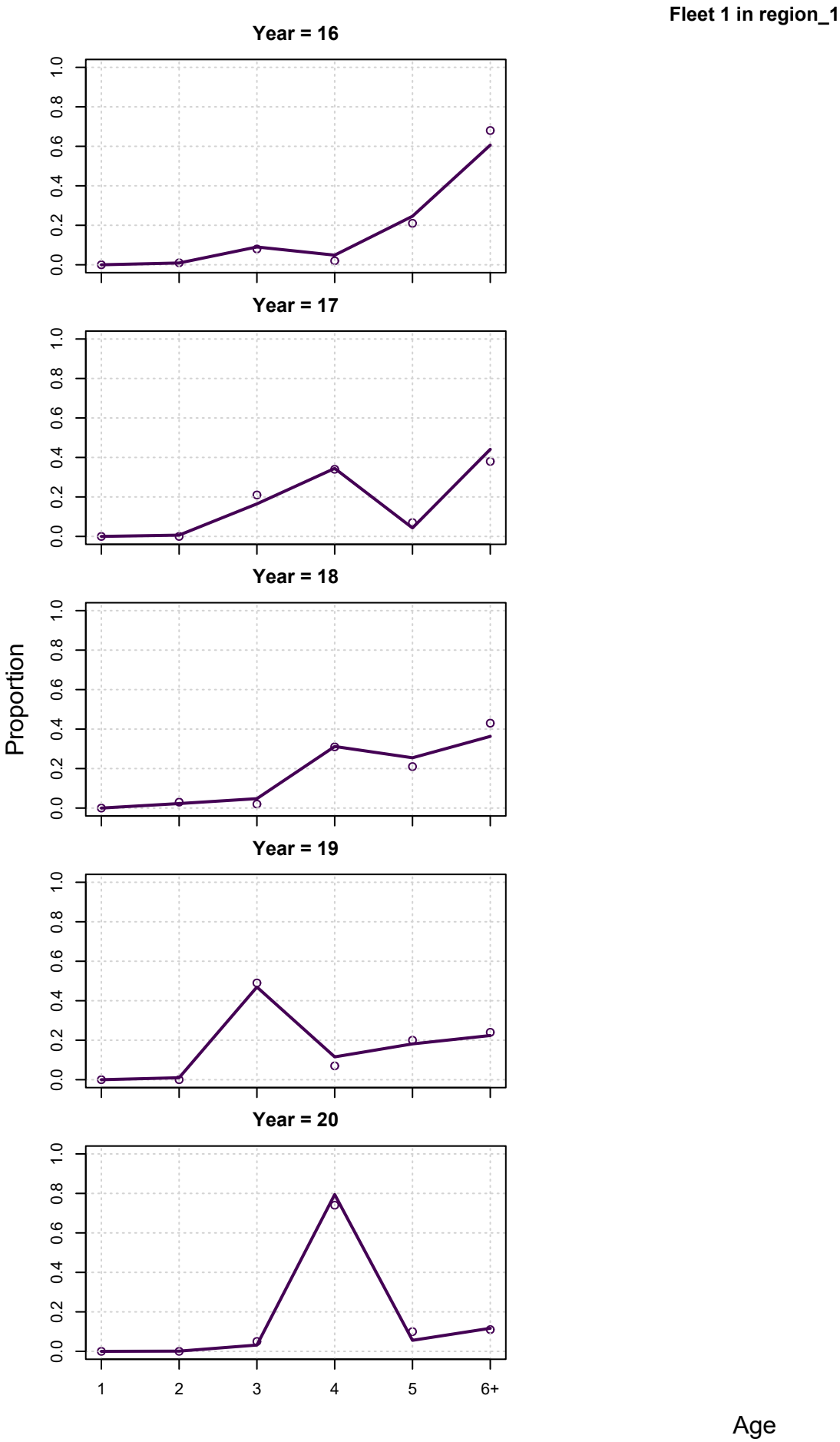
Index 4 Selectivity Blocks: 5

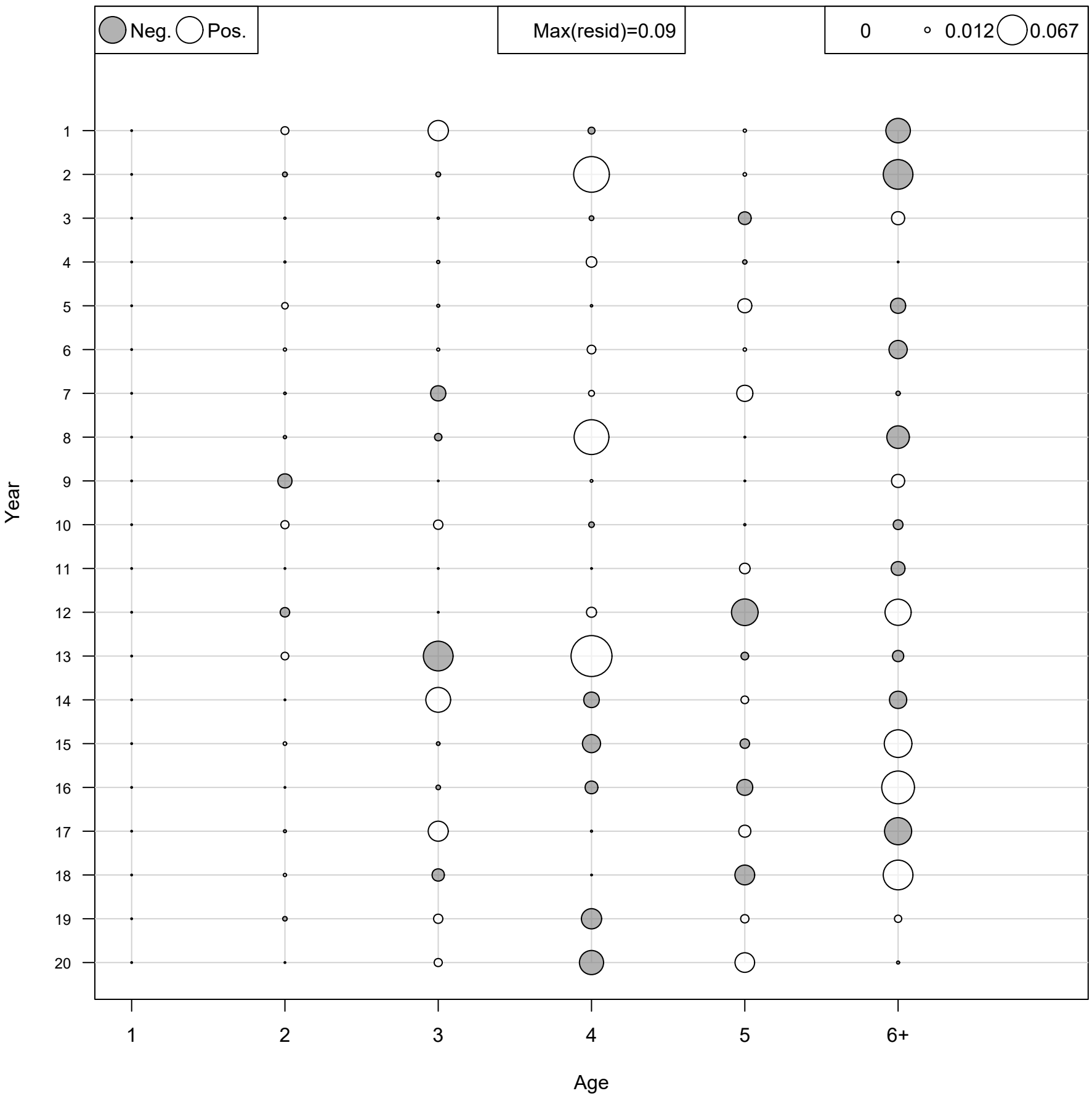
Index 5 Selectivity Blocks: 6

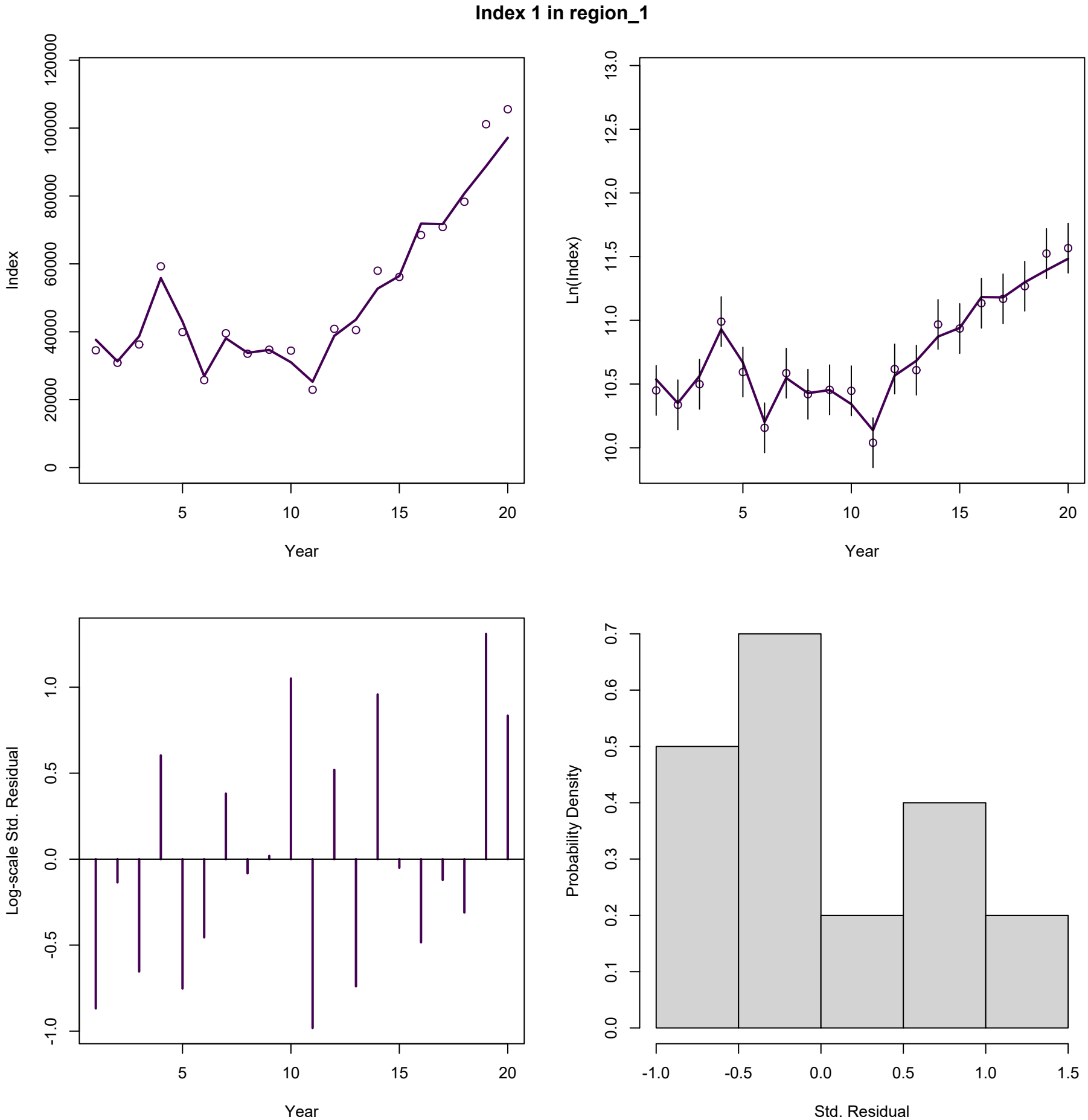

NAA
log(x) ~ MVN
Ecov_obs_sig
log(x) ~ MVN
Selex
logit(x) ~ MVN
M
log(x) ~ MVN
Index 6 region_1 Age Comp
x ~ Multinomial
Index 5 region_1 Age Comp
x ~ Multinomial
Index 4 region_1 Age Comp
x ~ Multinomial
Index 3 region_1 Age Comp
x ~ Multinomial
Index 2 region_1 Age Comp
x ~ Multinomial
Index 1 region_1 Age Comp
x ~ Multinomial
Fleet 1 region_1 Age Comp
x ~ Multinomial
Index 6 region_1 Catch
log(x) ~ Gaussian
Index 5 region_1 Catch
log(x) ~ Gaussian
Index 4 region_1 Catch
log(x) ~ Gaussian
Index 3 region_1 Catch
log(x) ~ Gaussian
Index 2 region_1 Catch
log(x) ~ Gaussian
Index 1 region_1 Catch
log(x) ~ Gaussian
Ecov: none observations
x ~ Gaussian
Fleet 1 region_1 Catch
log(x) ~ Gaussian
-62
0
0
0
-227
-244
-238
-197
-178
-237
-178
23
20
22
21
14
23
0
28
-250
-200
-150
-100
-50
0
50
Joint log-likelihood components
Model: WHAM for unnamed stock 2025-04-11 11:07:48.255657

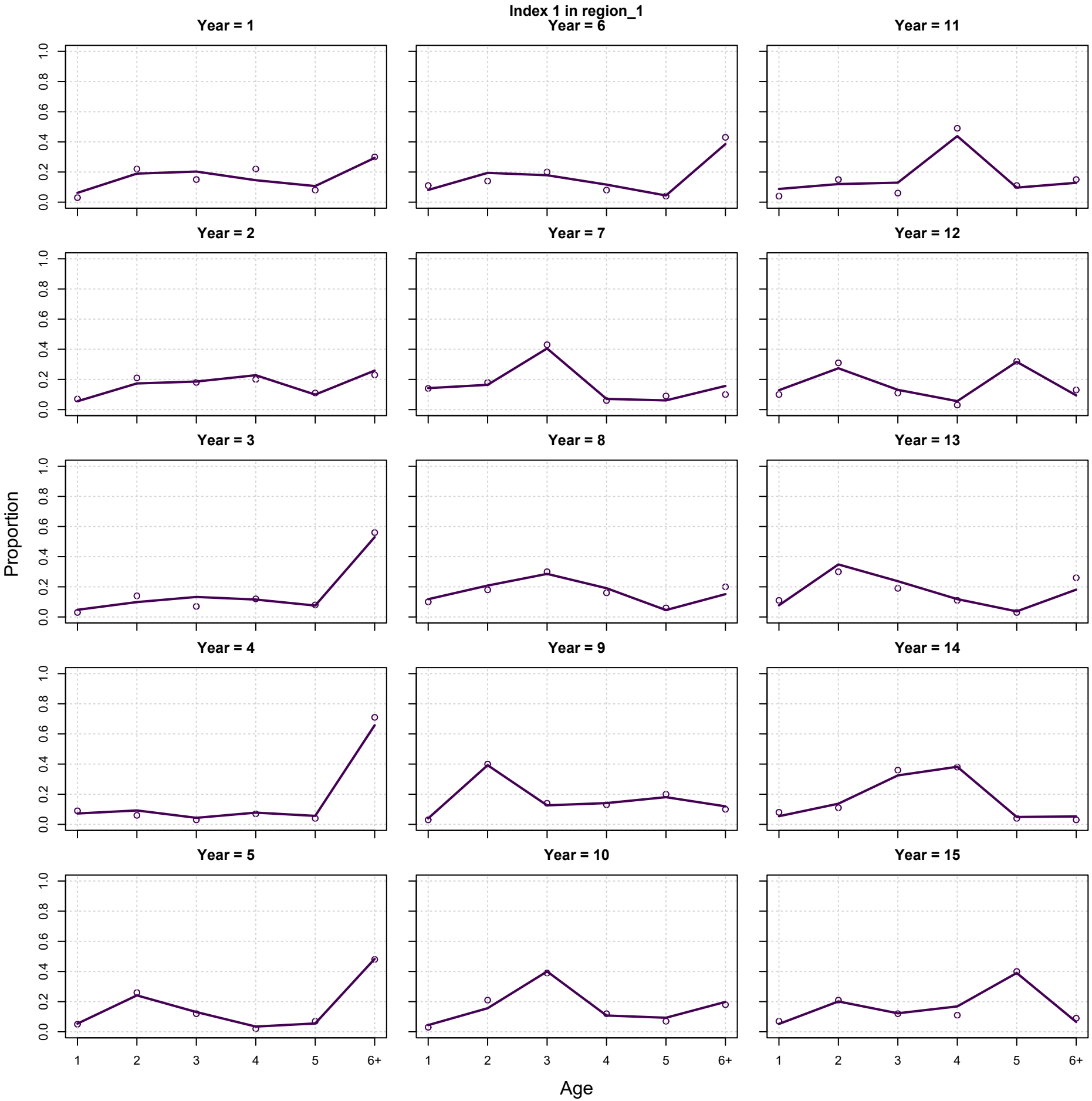

Fleet 1 in region_1
Total Catch
Year
Ln(Total Catch)
Year
Log-scale Std. Residual
Year
Probability Density
Std. Residual

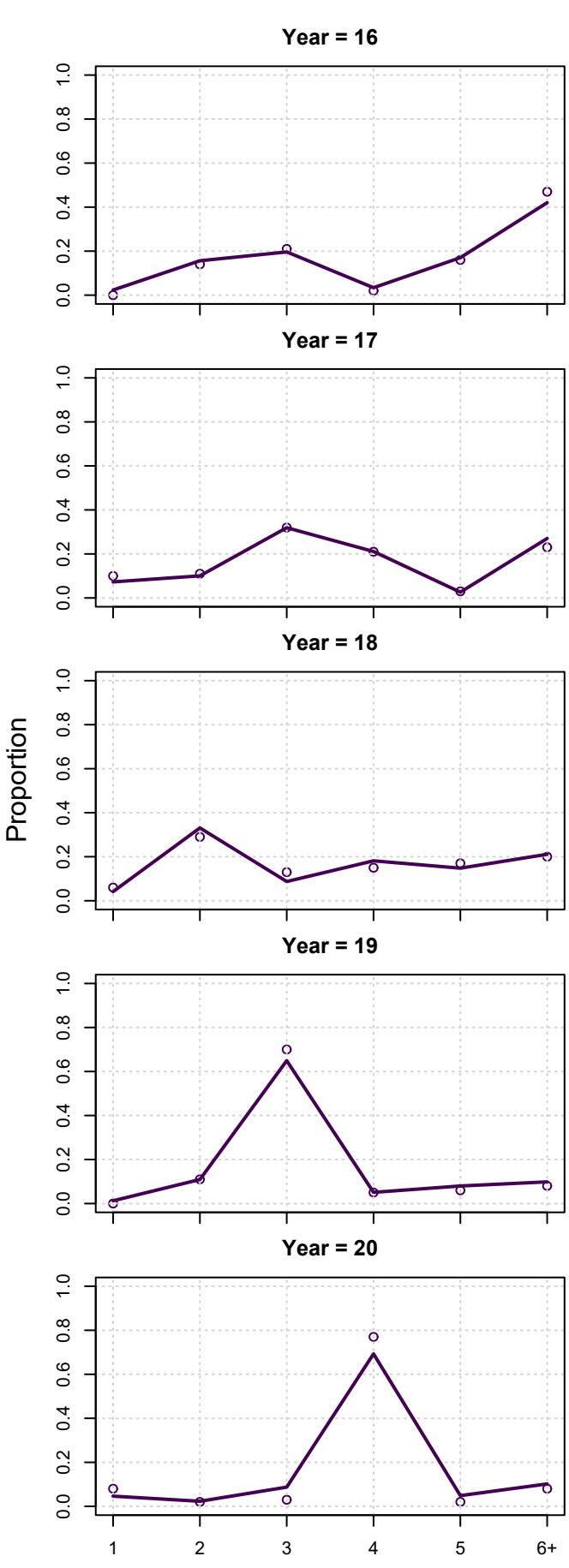

Fleet 1 in region_1
Year = 1
Year = 6
Year = 11
Year = 2
Year = 7
Year = 12
Year = 3
Year = 8
Year = 13
Year = 4
Year = 9
Year = 14
Year = 5
Year = 10
Year = 15
Proportion
0.0
0.2
0.4
0.6
0.8
1.0
1
2
3
4
5
6+
Age

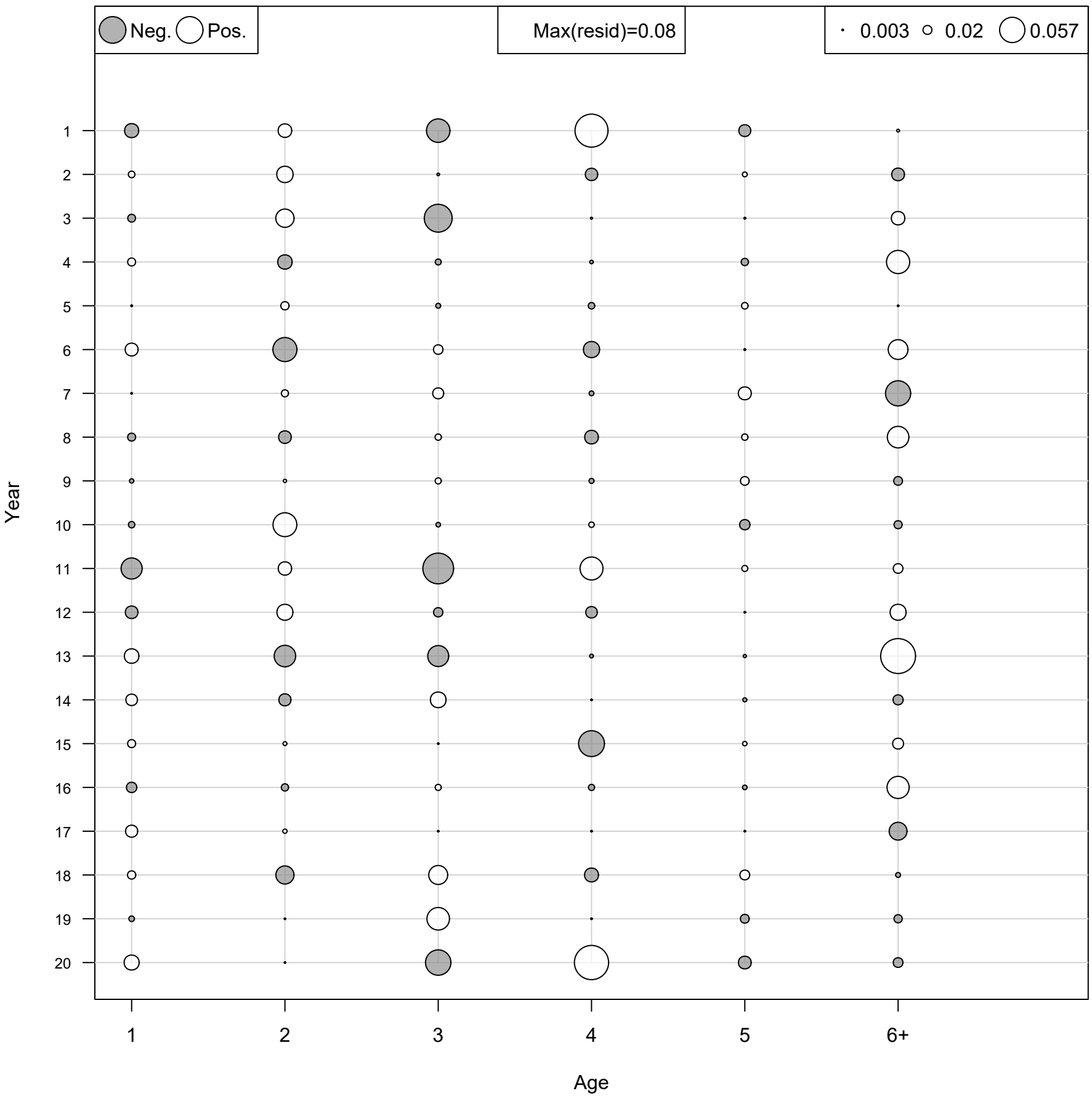

Fleet 1 in region_1
Year = 16
Year = 17
Year = 18
Year = 19
Year = 20
Proportion
0.0
0.2
0.4
0.6
0.8
1.0
1
2
3
4
5
6+
Age

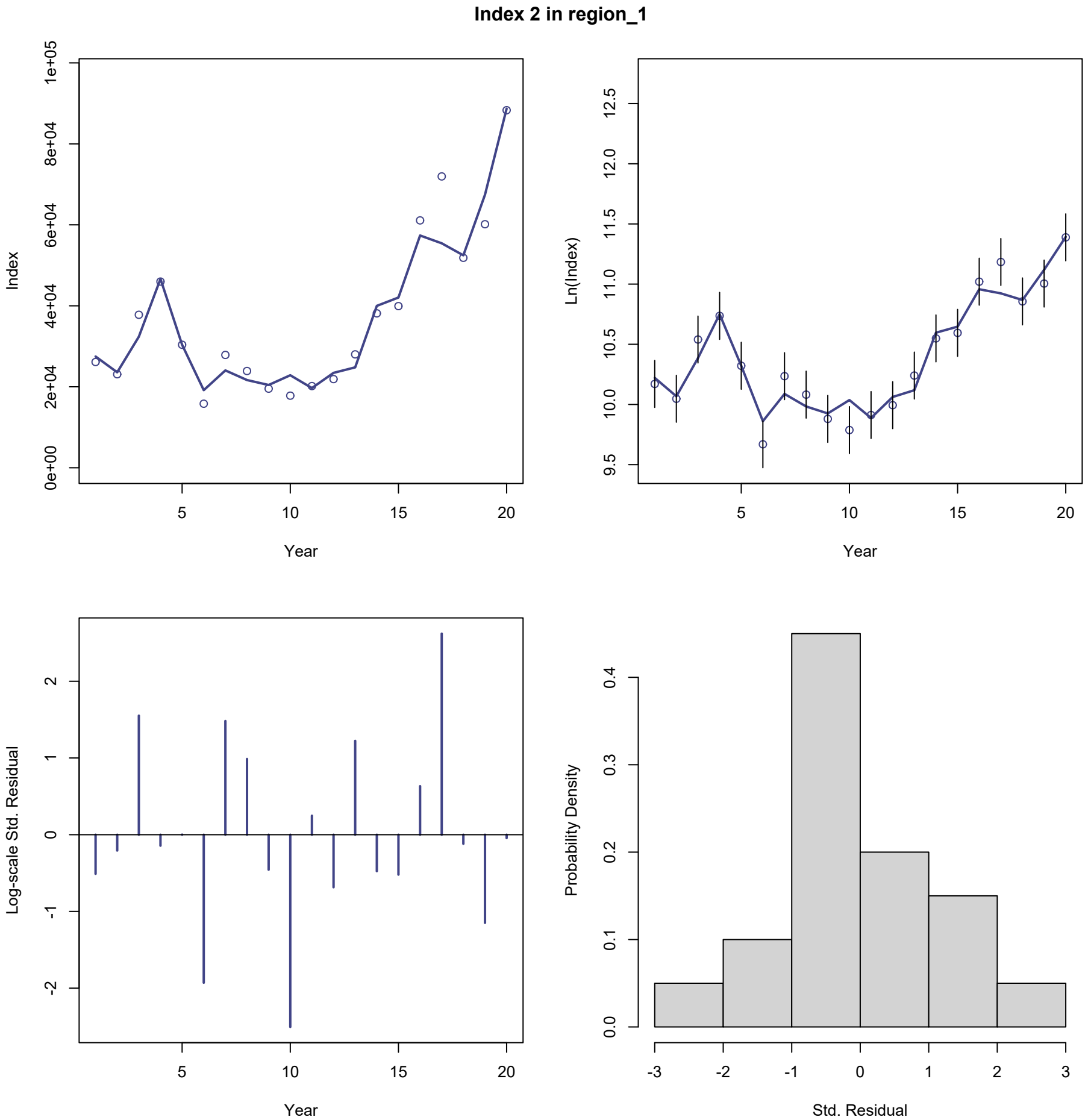

Age Comp Residuals (Observed-Predicted) for Fleet 1
Neg.
Pos.
Max(resid)=0.09
0
0.012
0.067
Year
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
1
2
3
4
5
6+
Age

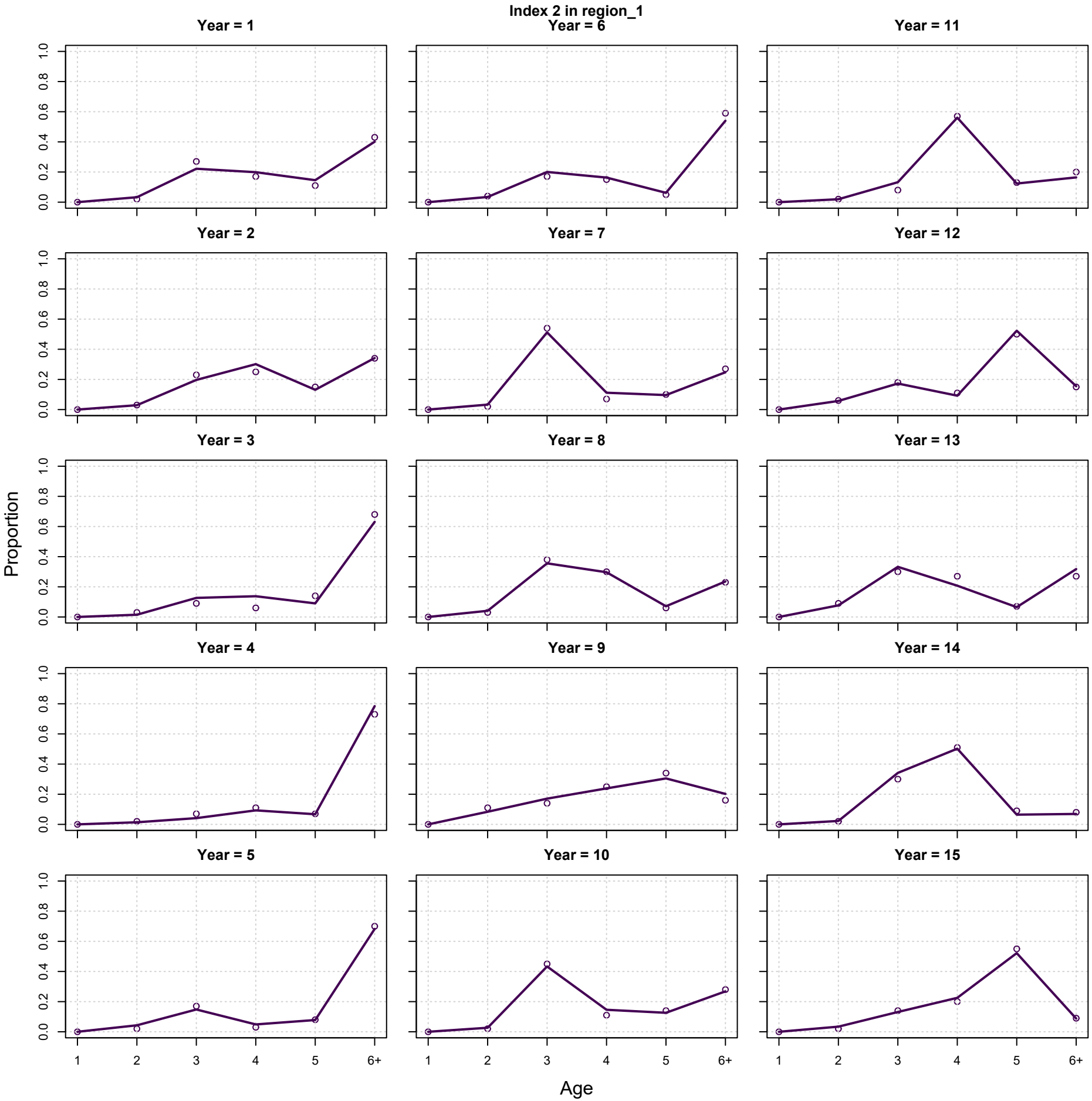

Index 1 in region_1
Index
Year
Ln(Index)
Year
Log-scale Std. Residual
Year
Probability Density
Std. Residual

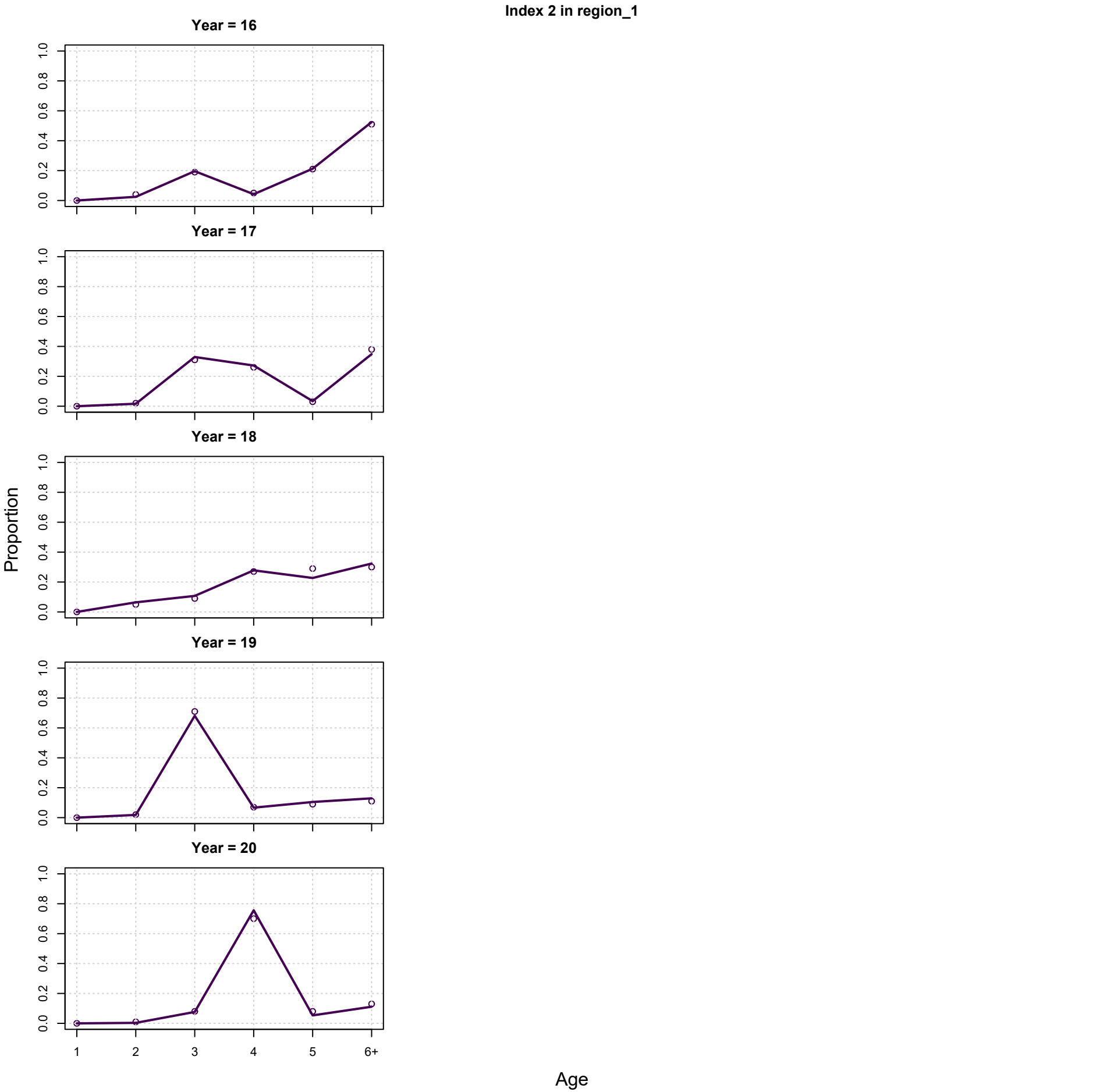

Index 1 in region_1
Year = 1
Year = 6
Year = 11
Year = 2
Year = 7
Year = 12
Year = 3
Year = 8
Year = 13
Year = 4
Year = 9
Year = 14
Year = 5
Year = 10
Year = 15
Proportion
0.0
0.2
0.4
0.6
0.8
1.0
1
2
3
4
5
6+
Age

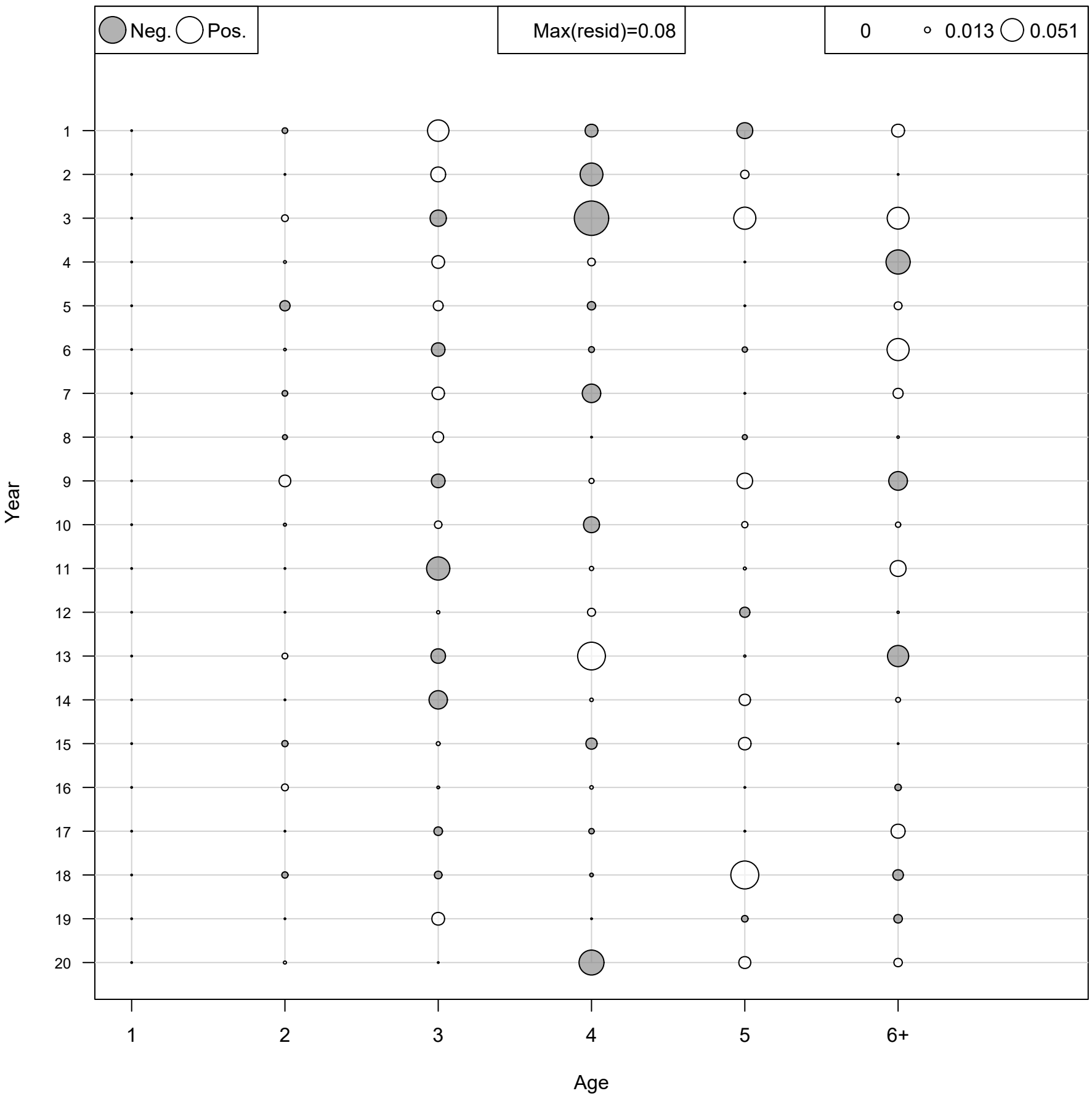

Index 1 in region_1
Year = 16
Year = 17
Year = 18
Year = 19
Year = 20
Proportion
0.0
0.2
0.4
0.6
0.8
1.0
1
2
3
4
5
6+
Age

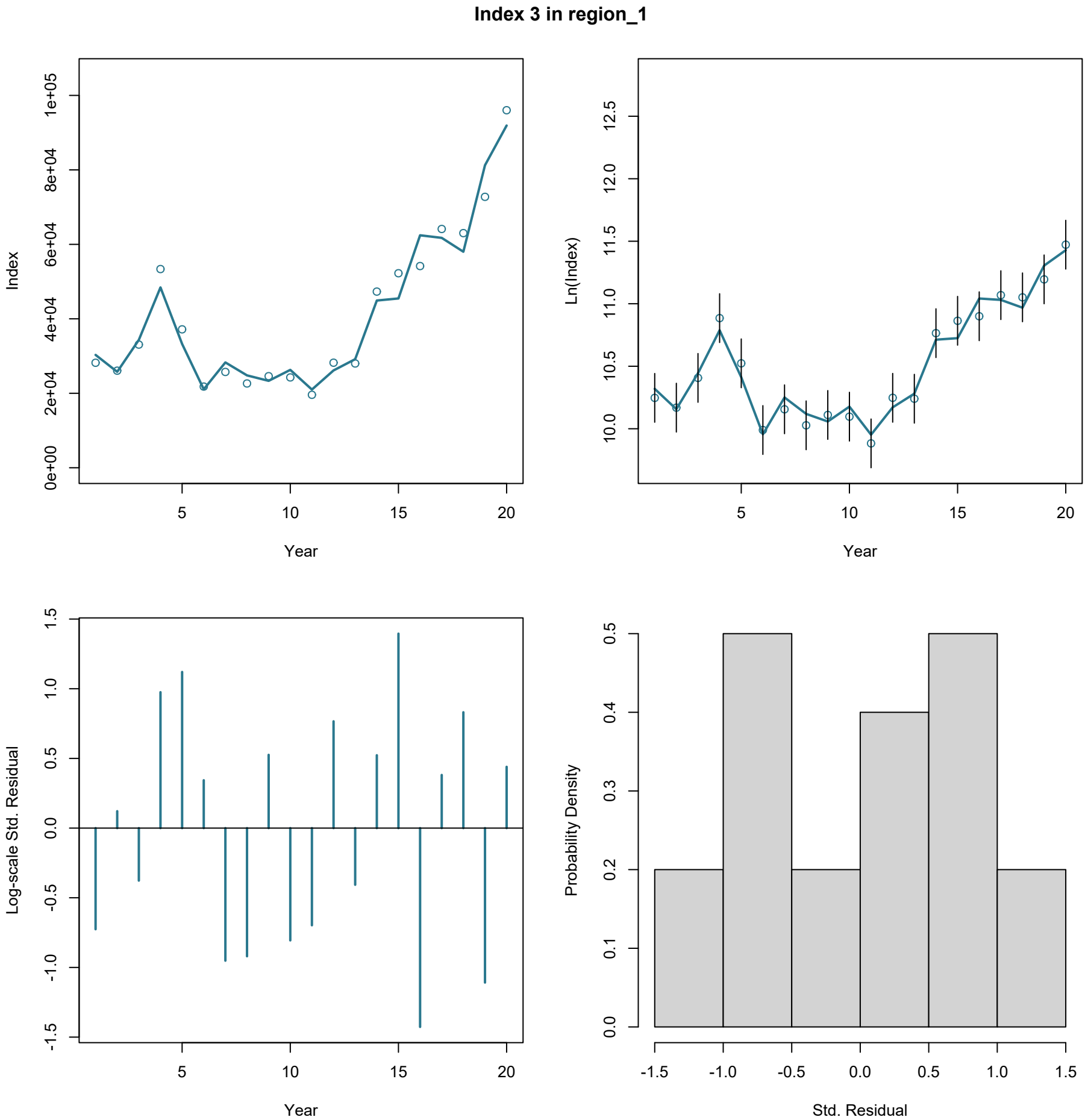

Age Comp Residuals (Observed-Predicted) for Index 1
Neg.
Pos.
Max(resid)=0.08
0.003
0.02
0.057
Year
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
1
2
3
4
5
6+
Age

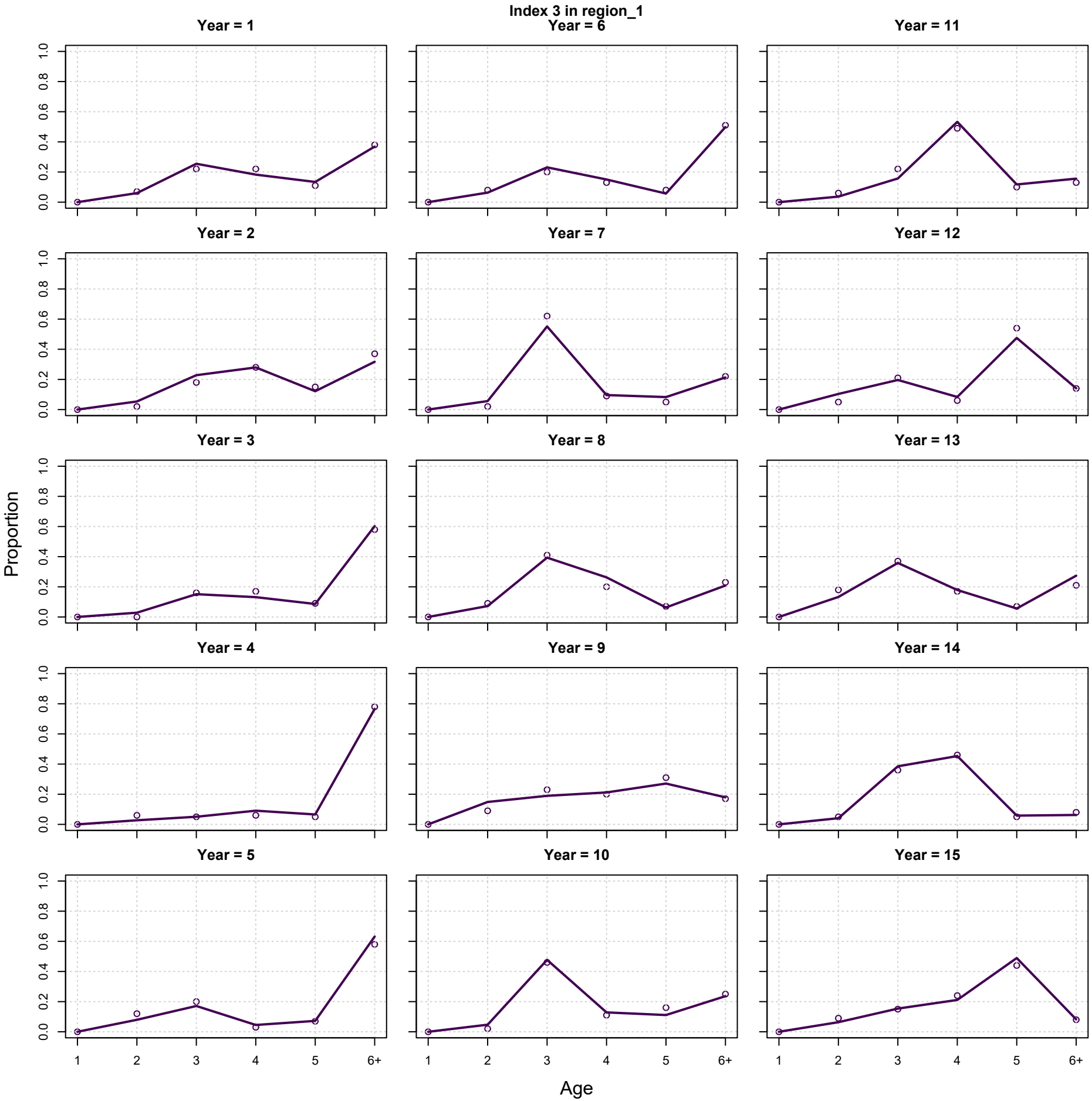

Index 2 in region_1
Index
0e+00
2e+04
4e+04
6e+04
8e+04
1e+05
5
10
15
20
Year
Ln(Index)
9.5
10.0
10.5
11.0
11.5
12.0
12.5
5
10
15
20
Year
Log-scale Std. Residual
-2
-1
0
1
2
5
10
15
20
Year
Probability Density
0.0
0.1
0.2
0.3
0.4
-3
-2
-1
0
1
2
3
Std. Residual

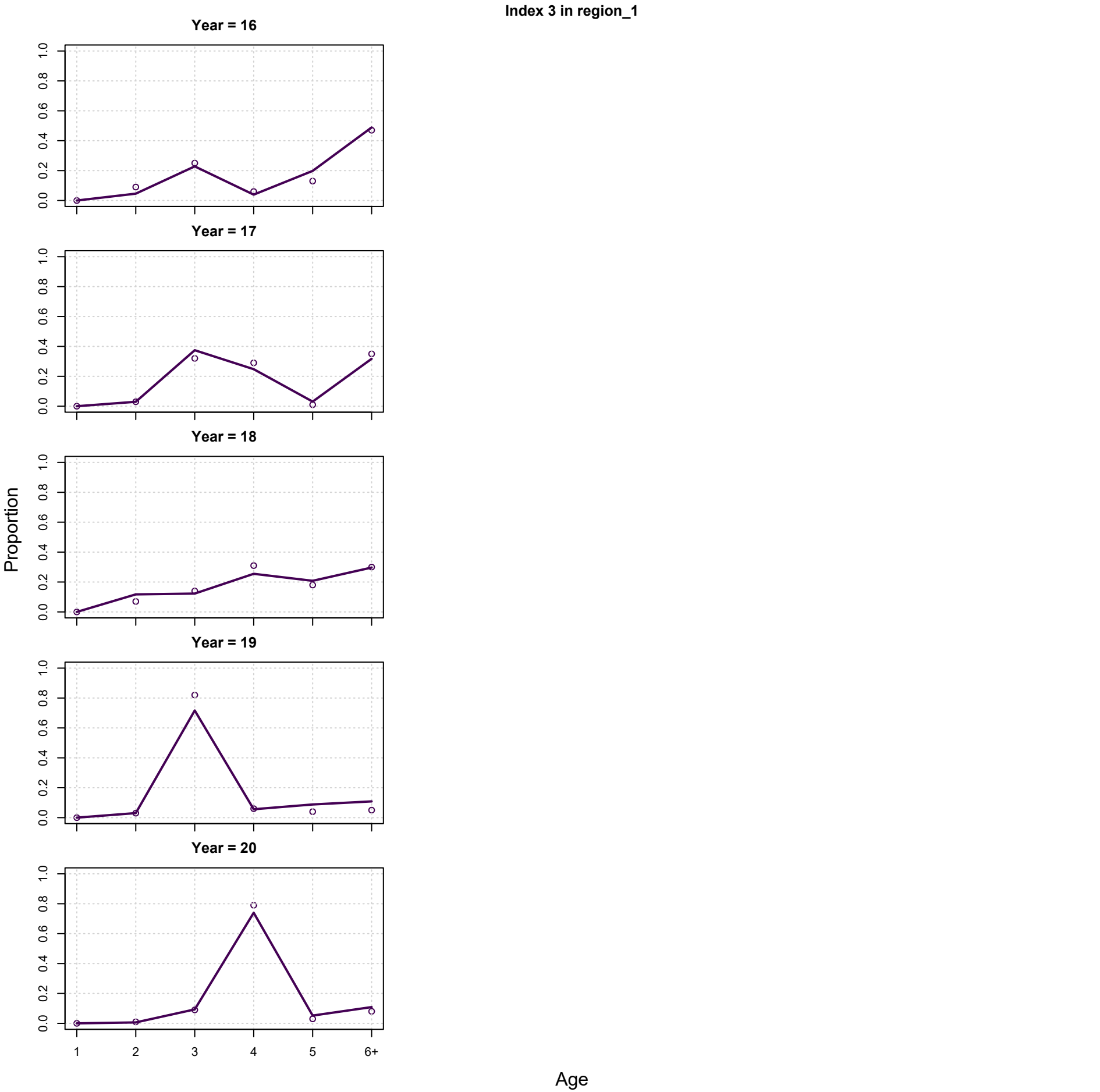

Index 2 in region_1
Year = 1
Year = 6
Year = 11
Year = 2
Year = 7
Year = 12
Year = 3
Year = 8
Year = 13
Year = 4
Year = 9
Year = 14
Year = 5
Year = 10
Year = 15
Proportion
0.0
0.2
0.4
0.6
0.8
1.0
1
2
3
4
5
6+
Age

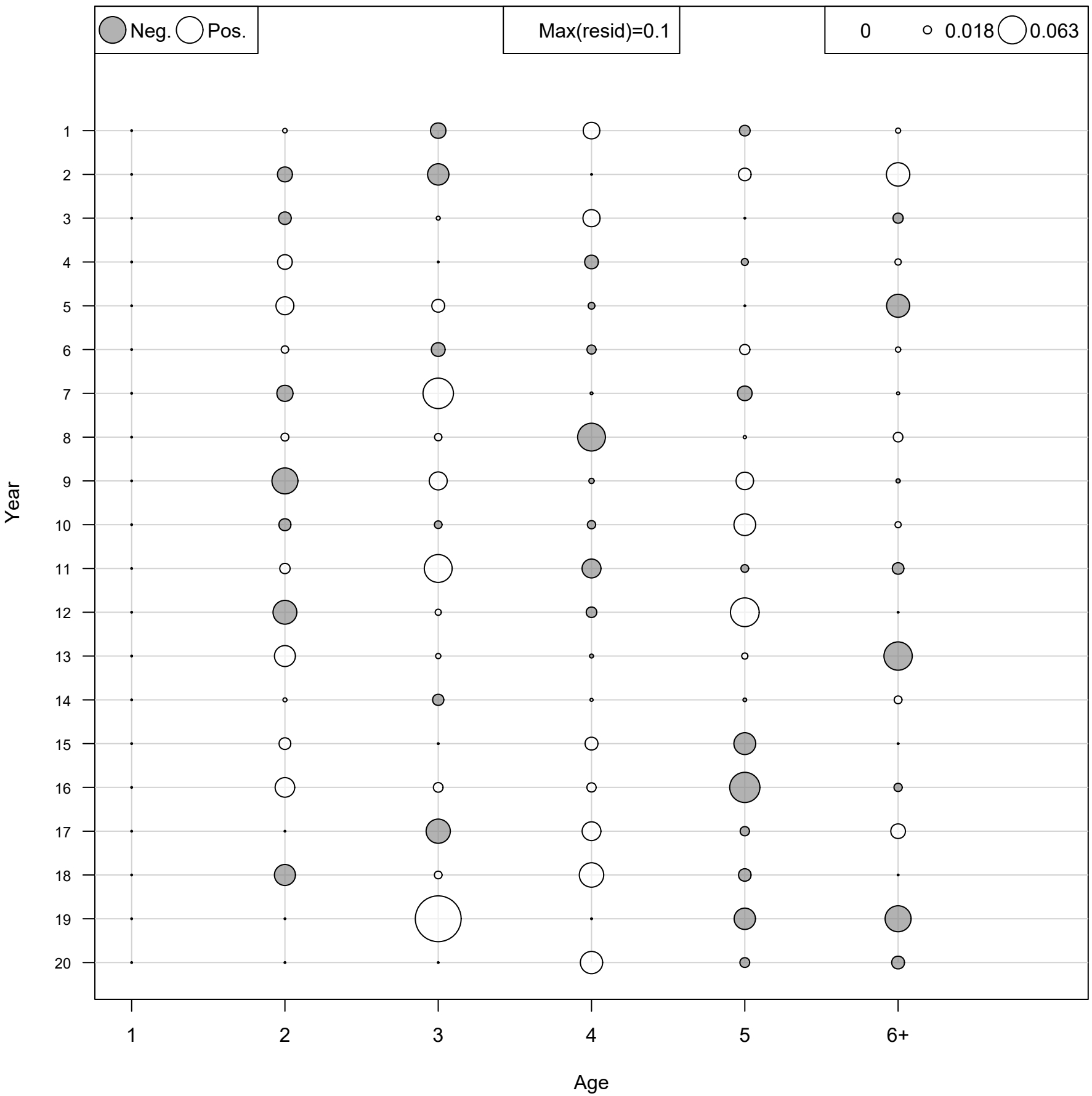

Index 2 in region_1
Year = 16
Year = 17
Year = 18
Year = 19
Year = 20
Proportion
0.0
0.2
0.4
0.6
0.8
1.0
1
2
3
4
5
6+
Age

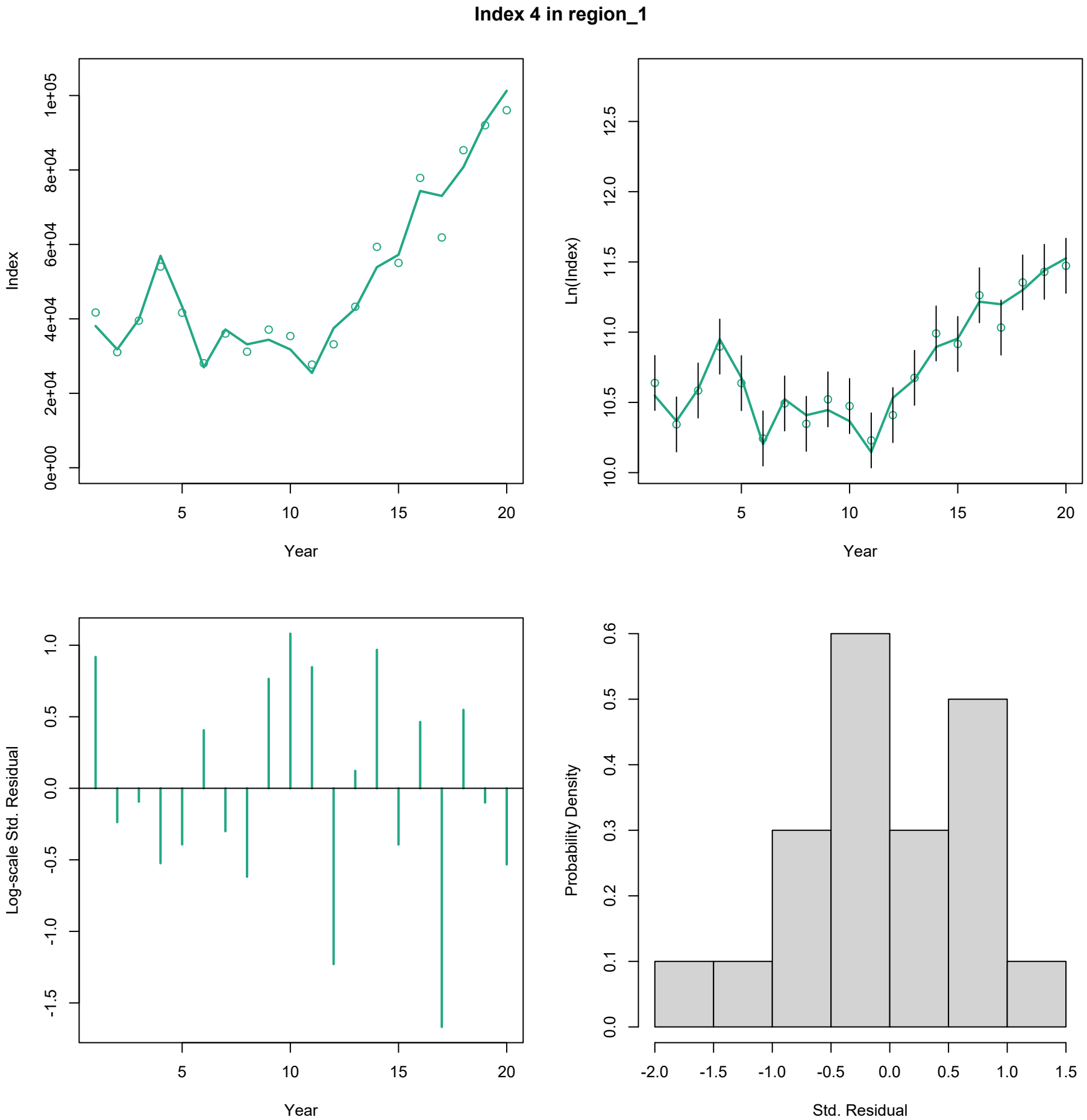

Age Comp Residuals (Observed-Predicted) for Index 2
Neg.
Pos.
Max(resid)=0.08
0
0.013
0.051
Year
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
1
2
3
4
5
6+
Age

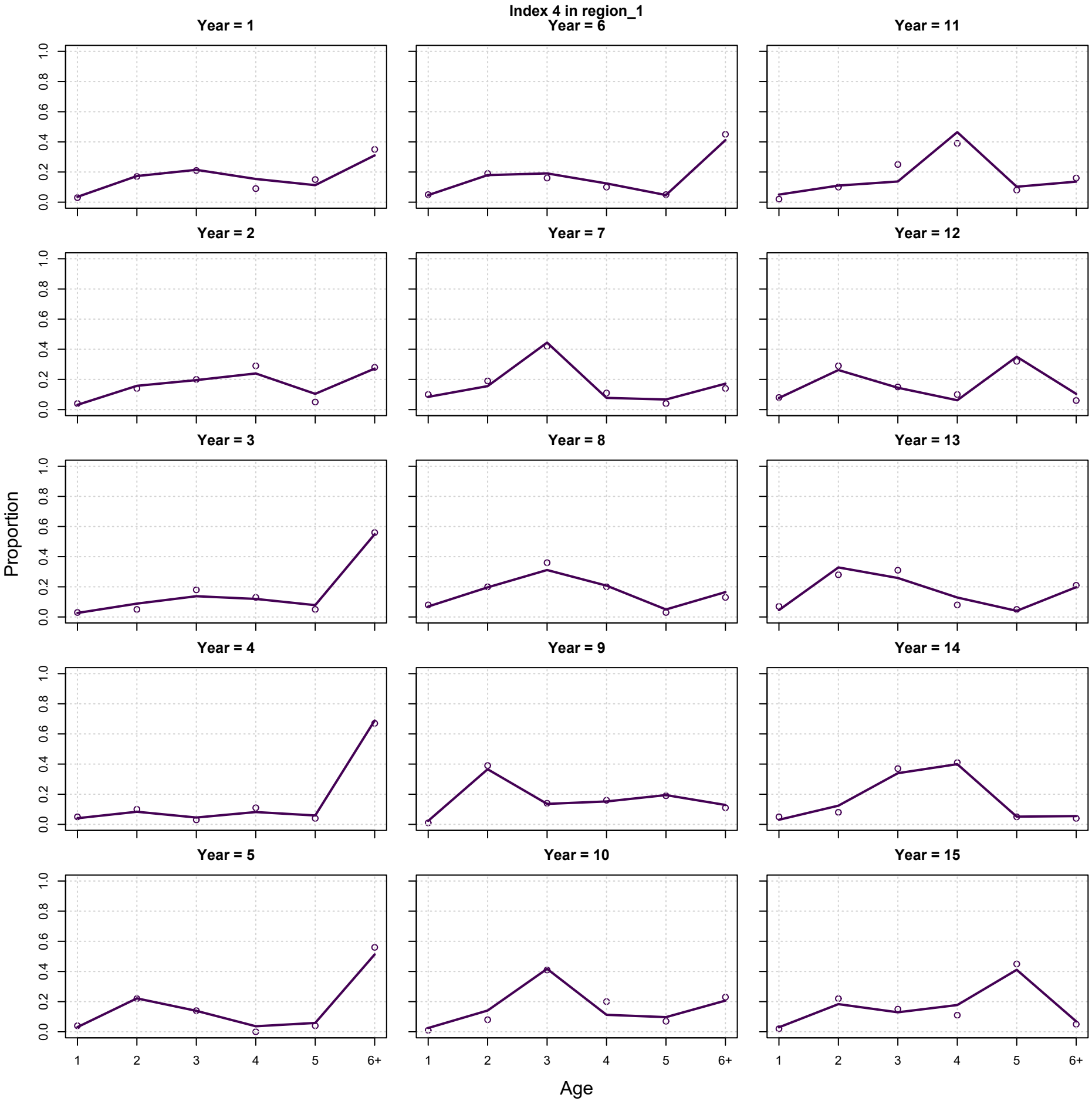

Index 3 in region_1
Index
0e+00
2e+04
4e+04
6e+04
8e+04
1e+05
5
10
15
20
Year
Ln(Index)
10.0
10.5
11.0
11.5
12.0
12.5
5
10
15
20
Year
Log-scale Std. Residual
-1.5
-1.0
-0.5
0.0
0.5
1.0
1.5
5
10
15
20
Year
Probability Density
0.0
0.1
0.2
0.3
0.4
0.5
-1.5
-1.0
-0.5
0.0
0.5
1.0
1.5
Std. Residual

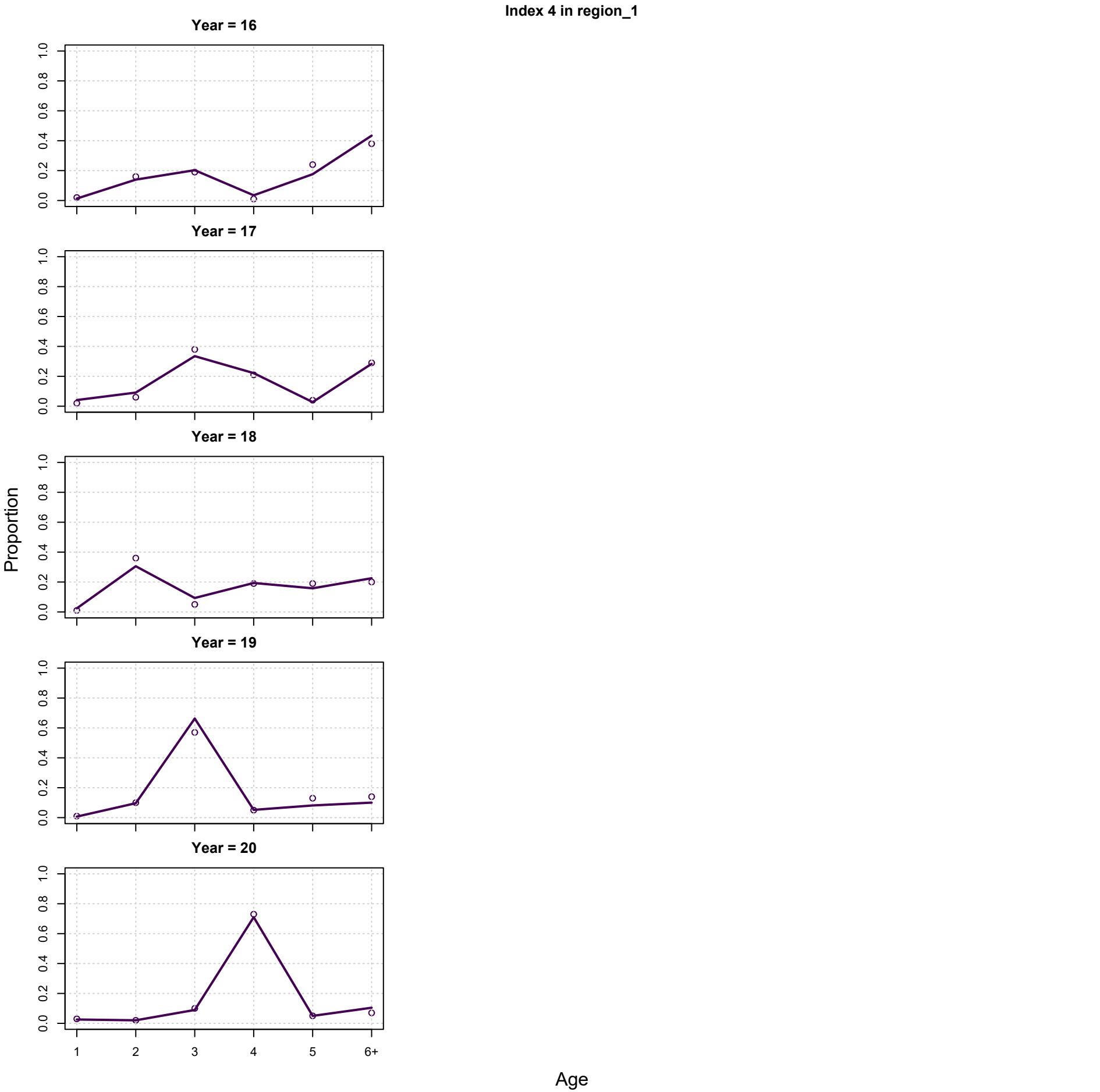

Index 3 in region_1
Year = 1
Year = 6
Year = 11
Year = 2
Year = 7
Year = 12
Year = 3
Year = 8
Year = 13
Year = 4
Year = 9
Year = 14
Year = 5
Year = 10
Year = 15
Proportion
0.0
0.2
0.4
0.6
0.8
1.0
1
2
3
4
5
6+
Age

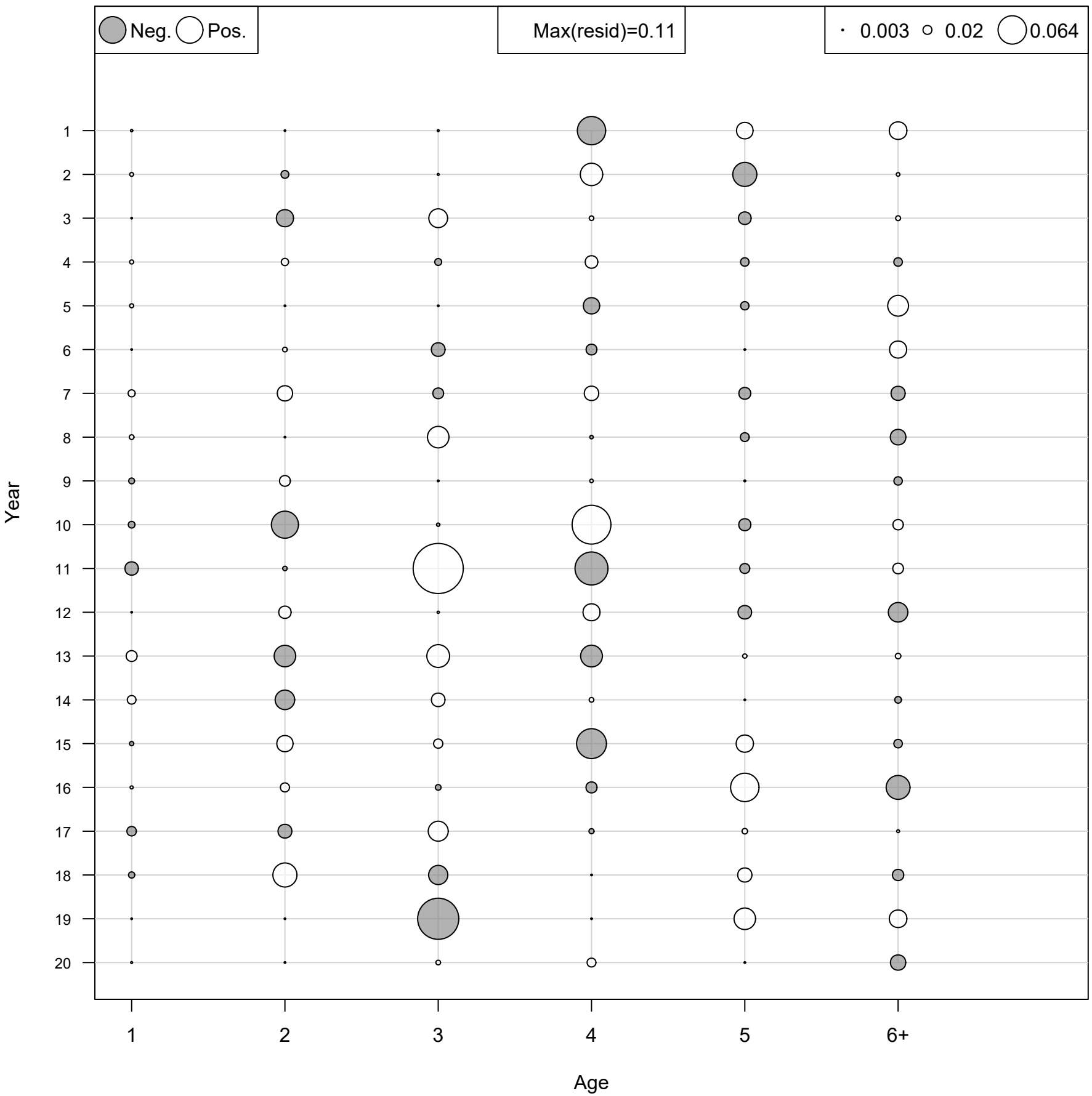

Index 3 in region_1
Year = 16
Year = 17
Year = 18
Year = 19
Year = 20
Proportion
0.0
0.2
0.4
0.6
0.8
1.0
1
2
3
4
5
6+
Age

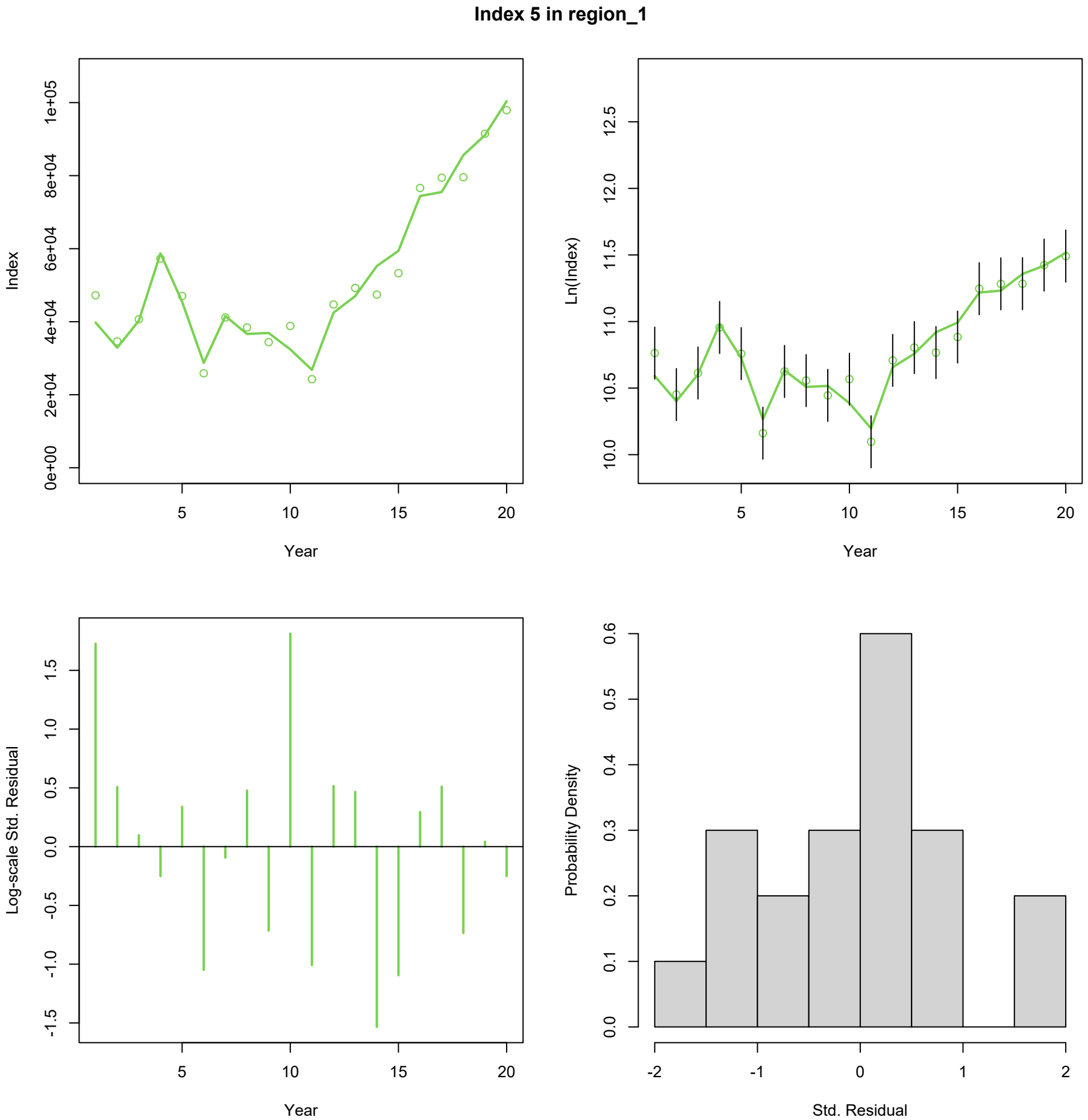

Age Comp Residuals (Observed-Predicted) for Index 3
Neg.
Pos.
Max(resid)=0.1
0
0.018
0.063
Year
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
1
2
3
4
5
6+
Age

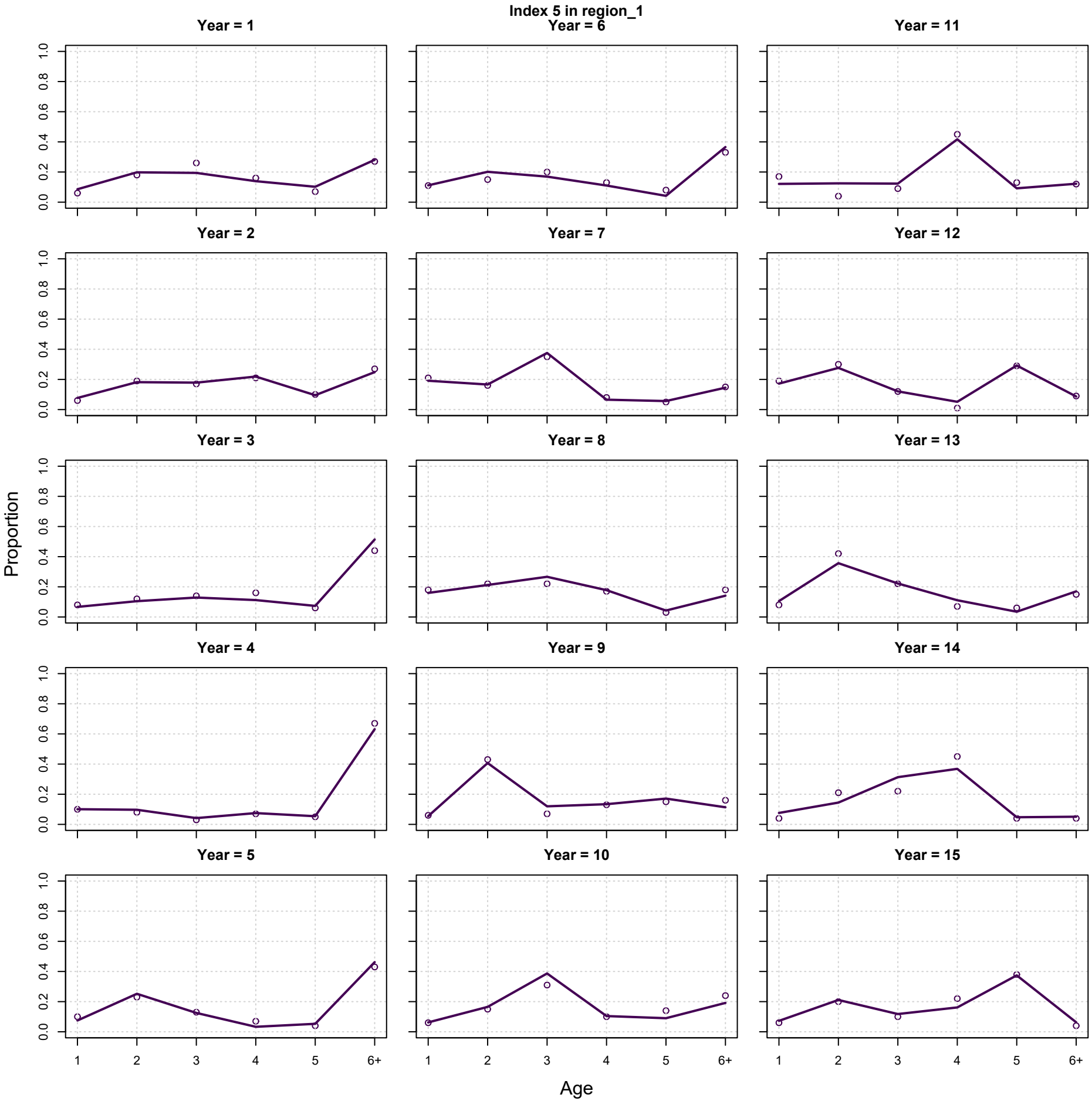

Index 4 in region_1
Index
0e+00
2e+04
4e+04
6e+04
8e+04
1e+05
5
10
15
20
Year
Ln(Index)
10.0
10.5
11.0
11.5
12.0
12.5
5
10
15
20
Year
Log-scale Std. Residual
-1.5
-1.0
-0.5
0.0
0.5
1.0
5
10
15
20
Year
Probability Density
0.0
0.1
0.2
0.3
0.4
0.5
0.6
-2.0
-1.5
-1.0
-0.5
0.0
0.5
1.0
1.5
Std. Residual

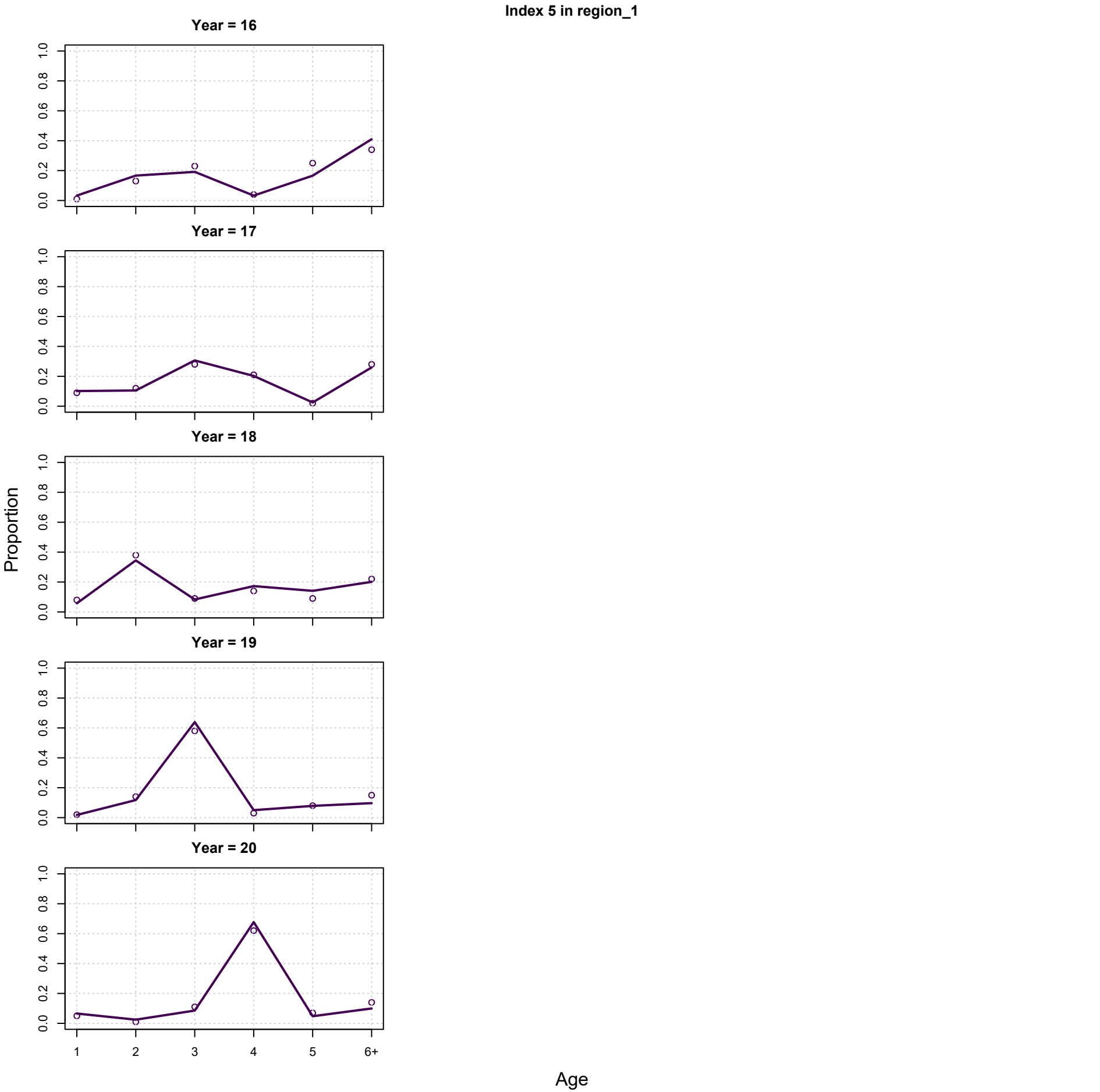

Index 4 in region_1
Year = 1
Year = 6
Year = 11
Year = 2
Year = 7
Year = 12
Year = 3
Year = 8
Year = 13
Year = 4
Year = 9
Year = 14
Year = 5
Year = 10
Year = 15
Proportion
0.0
0.2
0.4
0.6
0.8
1.0
1
2
3
4
5
6+
Age

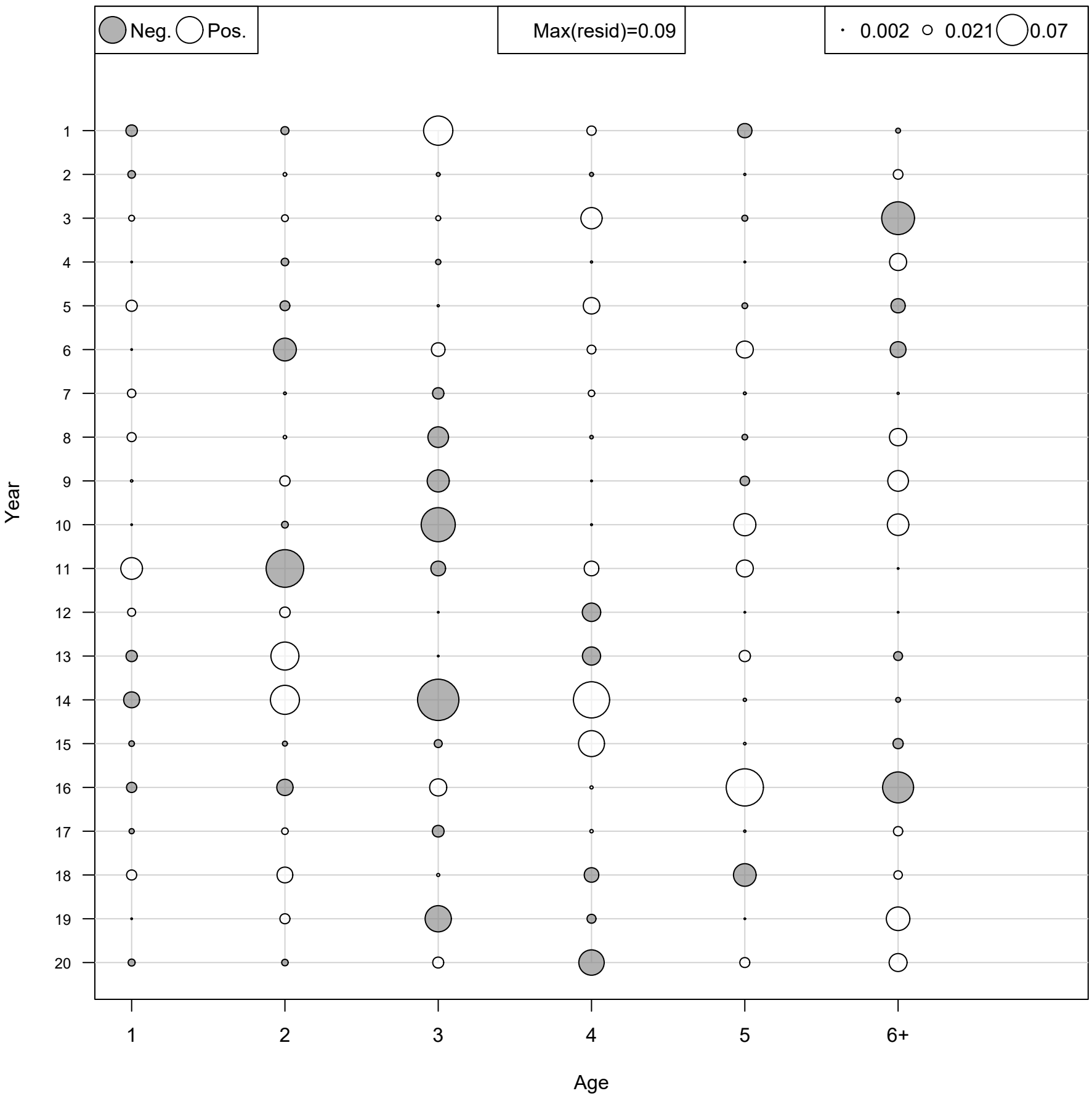

Index 4 in region_1
Year = 16
Year = 17
Year = 18
Year = 19
Year = 20
Proportion
0.0
0.2
0.4
0.6
0.8
1.0
1
2
3
4
5
6+
Age

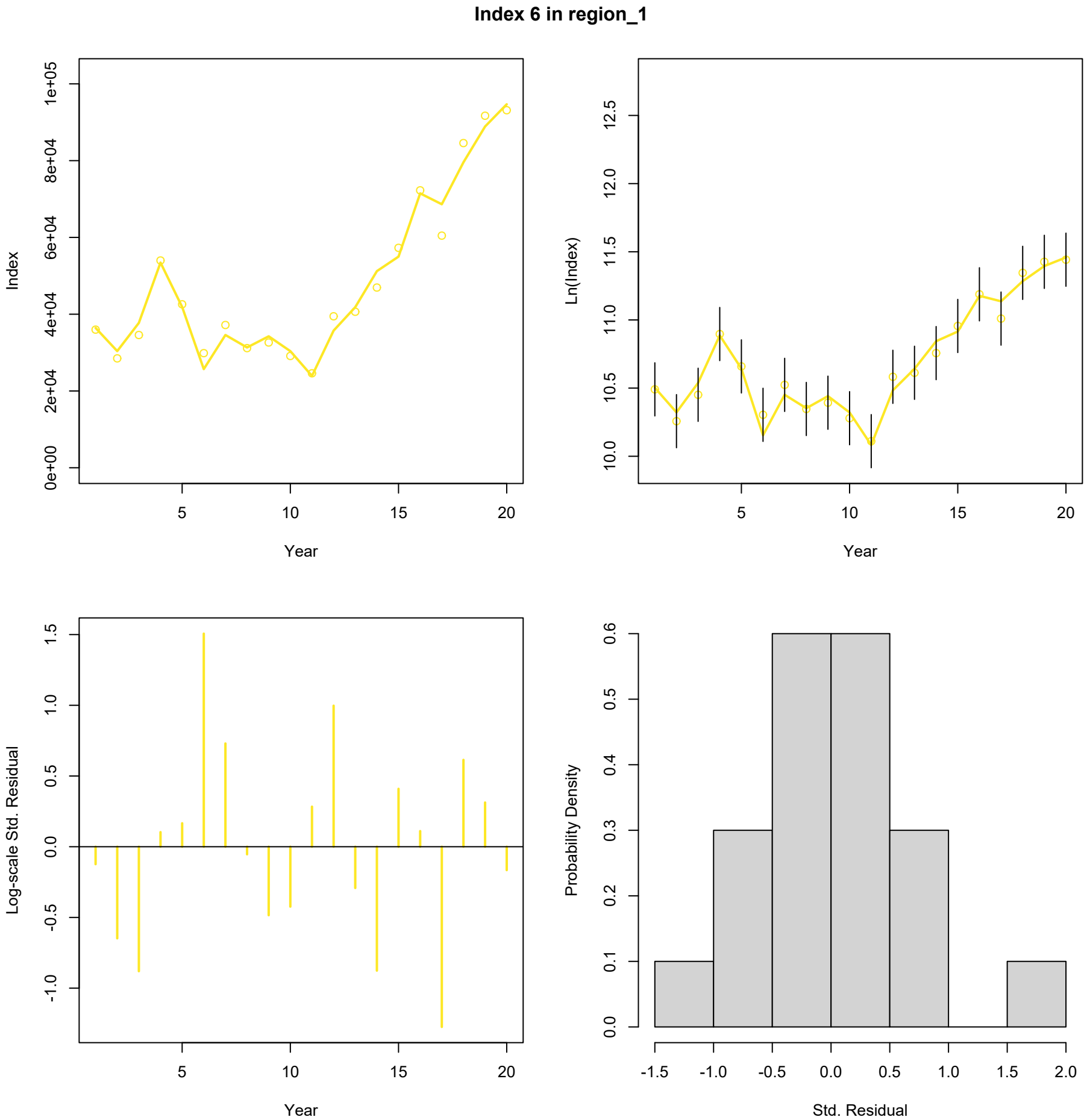

Age Comp Residuals (Observed-Predicted) for Index 4
Neg.
Pos.
Max(resid)=0.11
0.003
0.02
0.064
Year
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
1
2
3
4
5
6+
Age

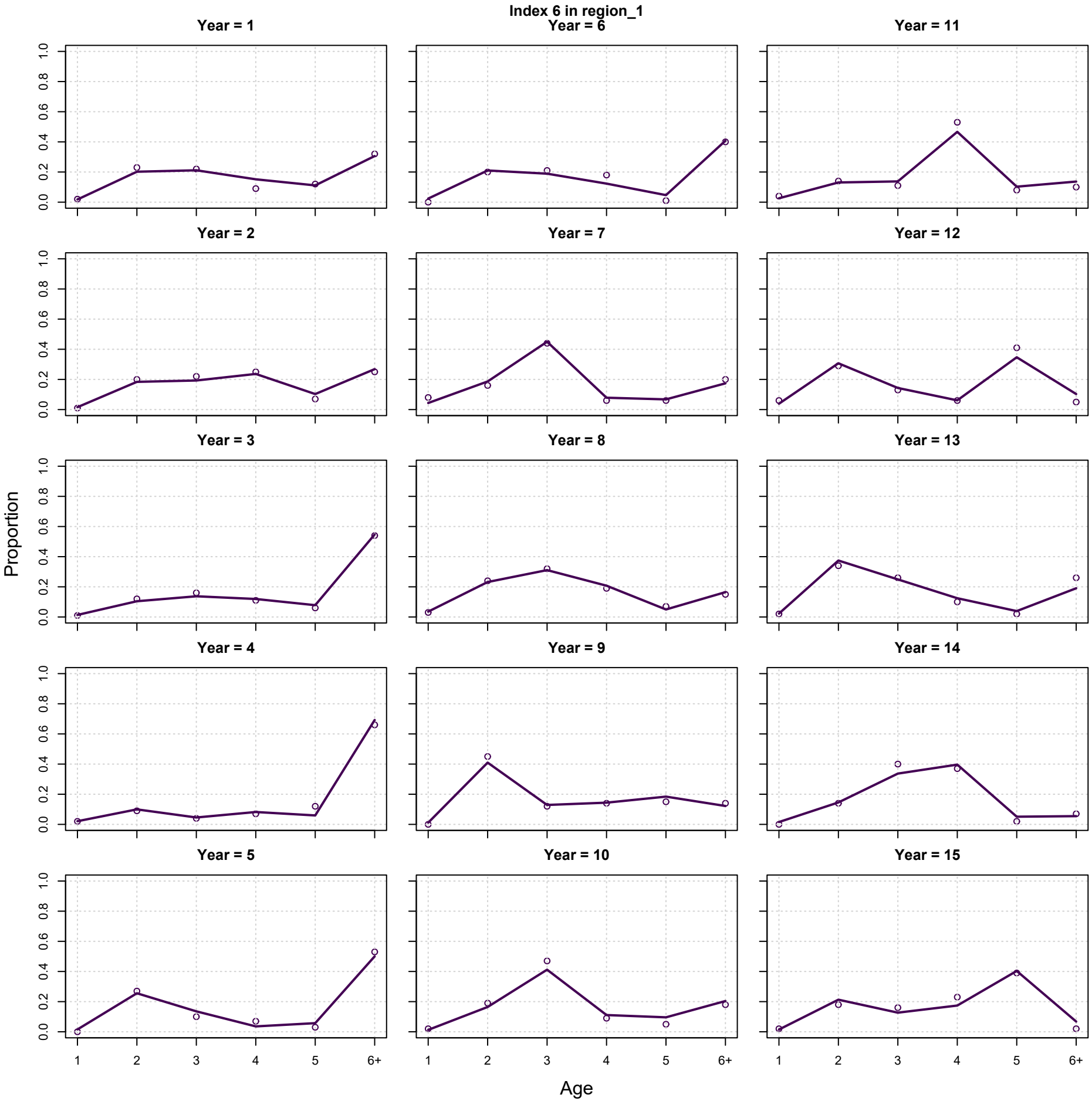

Index 5 in region_1
Index
0e+00
2e+04
4e+04
6e+04
8e+04
1e+05
5
10
15
20
Year
Ln(Index)
10.0
10.5
11.0
11.5
12.0
12.5
Log-scale Std. Residual
-1.5
-1.0
-0.5
0.0
0.5
1.0
1.5
Probability Density
0.0
0.1
0.2
0.3
0.4
0.5
0.6
-2
-1
0
1
2
Std. Residual

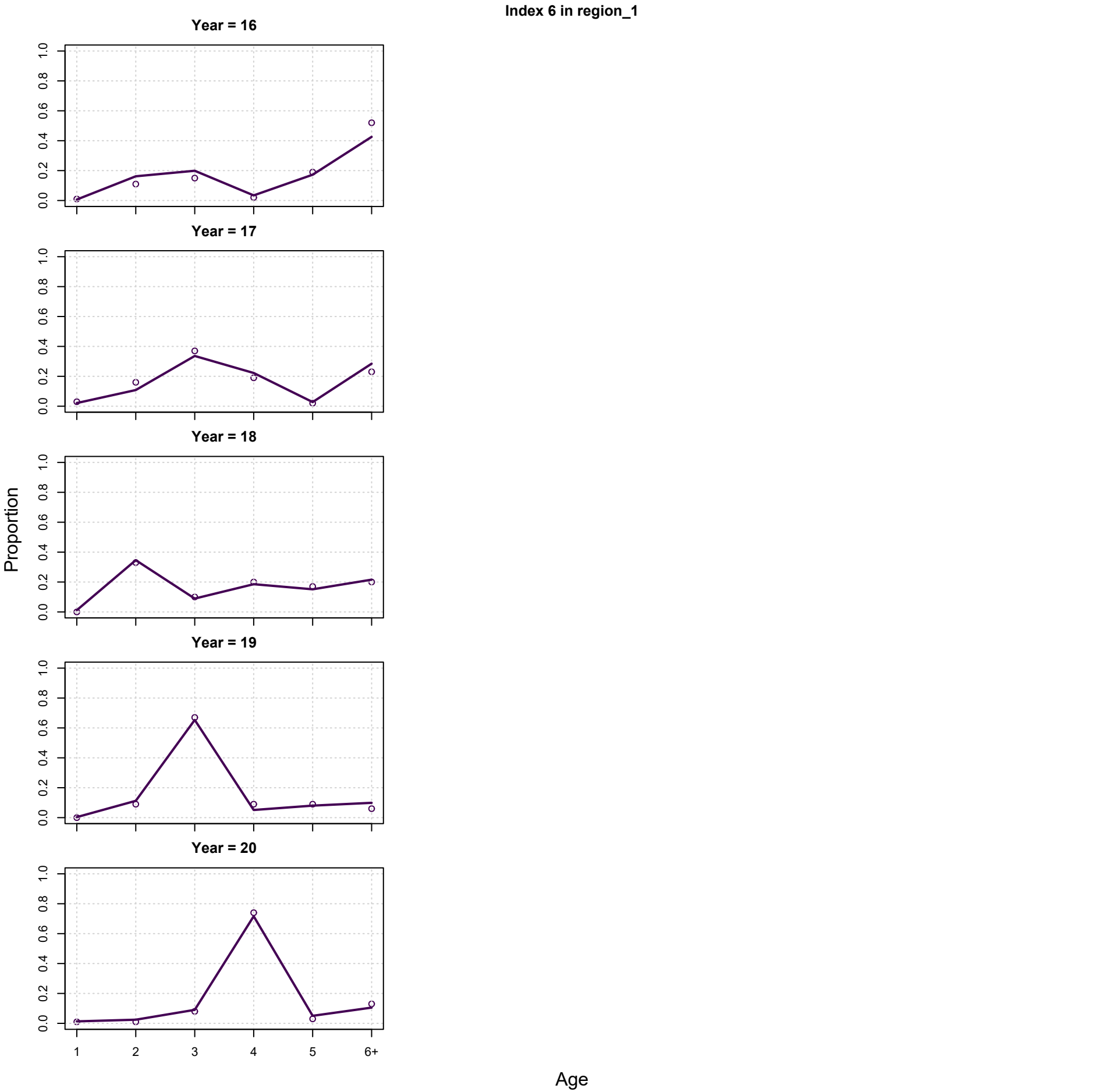

Index 5 in region_1
Year = 1
Year = 6
Year = 11
Year = 2
Year = 7
Year = 12
Year = 3
Year = 8
Year = 13
Year = 4
Year = 9
Year = 14
Year = 5
Year = 10
Year = 15
Proportion
0.0
0.2
0.4
0.6
0.8
1.0
1
2
3
4
5
6+
Age

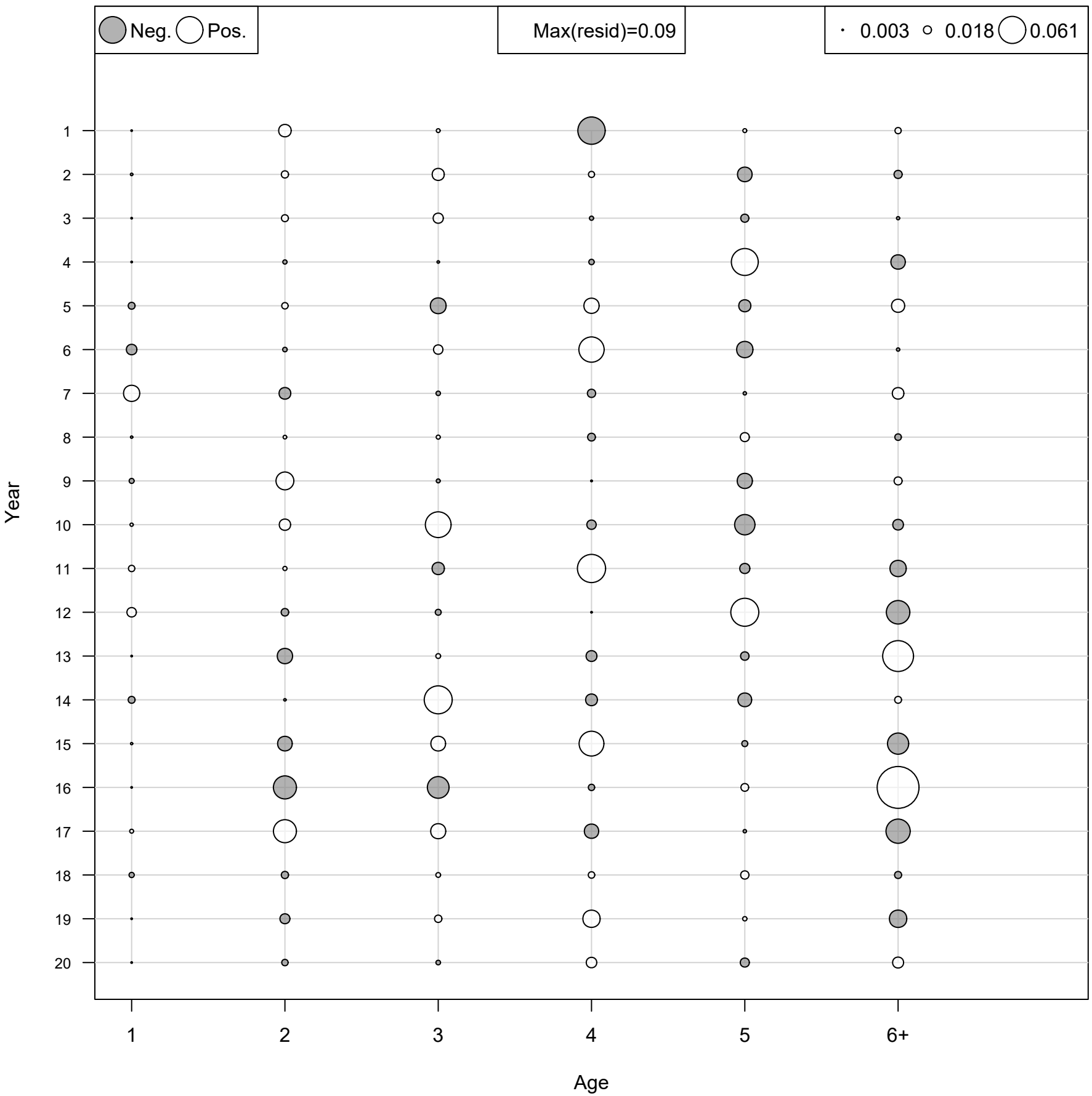

Index 5 in region_1
Year = 16
Year = 17
Year = 18
Year = 19
Year = 20
Proportion
0.0
0.2
0.4
0.6
0.8
1.0
1
2
3
4
5
6+
Age


Age Comp Residuals (Observed-Predicted) for Index 5
Neg.
Pos.
Max(resid)=0.09
0.002
0.021
0.07
Year
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
1
2
3
4
5
6+
Age

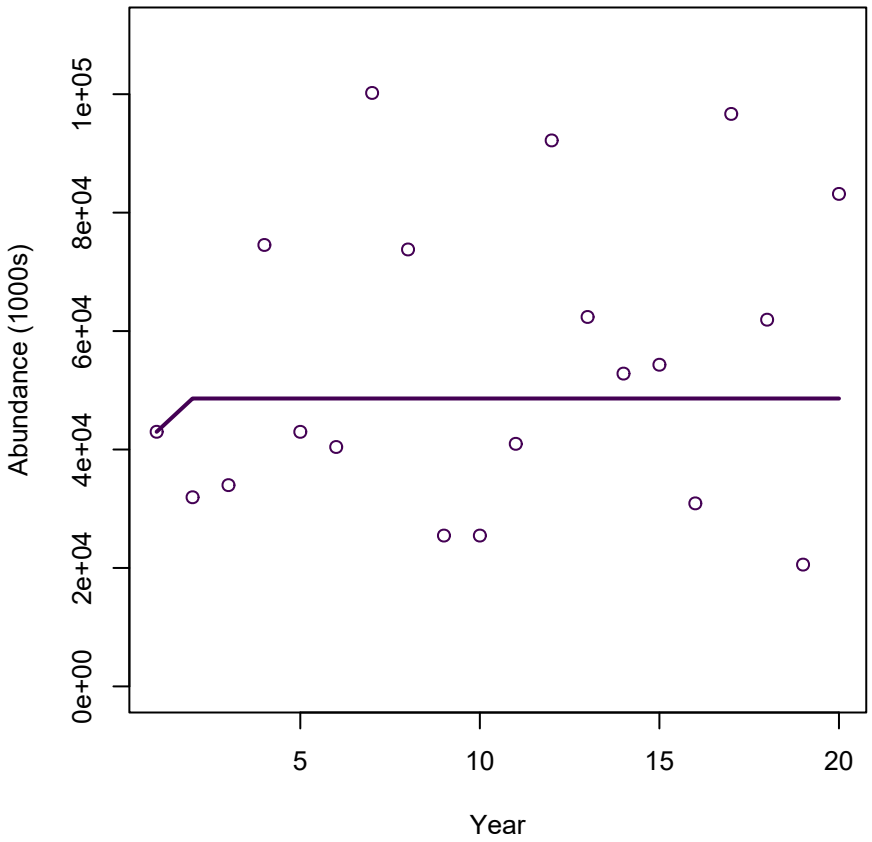

Index 6 in region_1
Index
0e+00
2e+04
4e+04
6e+04
8e+04
1e+05
5
10
15
20
Year
Ln(Index)
10.0
10.5
11.0
11.5
12.0
12.5
5
10
15
20
Year
Log-scale Std. Residual
-1.0
-0.5
0.0
0.5
1.0
1.5
5
10
15
20
Year
Probability Density
0.0
0.1
0.2
0.3
0.4
0.5
0.6
-1.5
-1.0
-0.5
0.0
0.5
1.0
1.5
2.0
Std. Residual

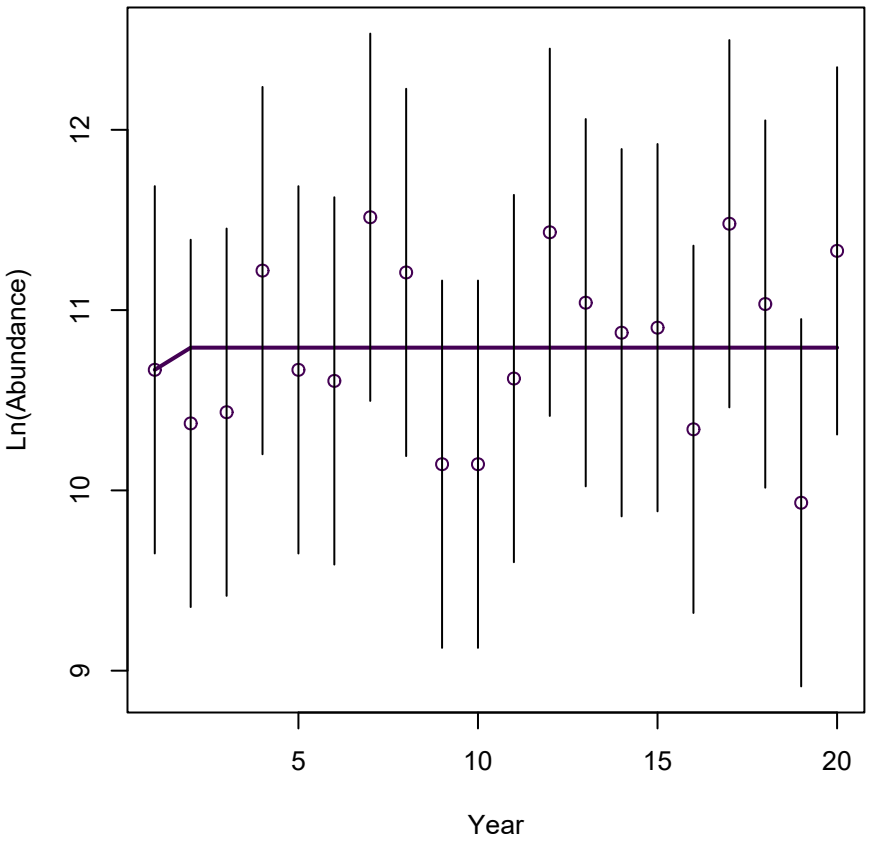

Index 6 in region_1
Year = 1
Year = 6
Year = 11
Year = 2
Year = 7
Year = 12
Year = 3
Year = 8
Year = 13
Year = 4
Year = 9
Year = 14
Year = 5
Year = 10
Year = 15
Proportion
0.0
0.2
0.4
0.6
0.8
1.0
1
2
3
4
5
6+
Age

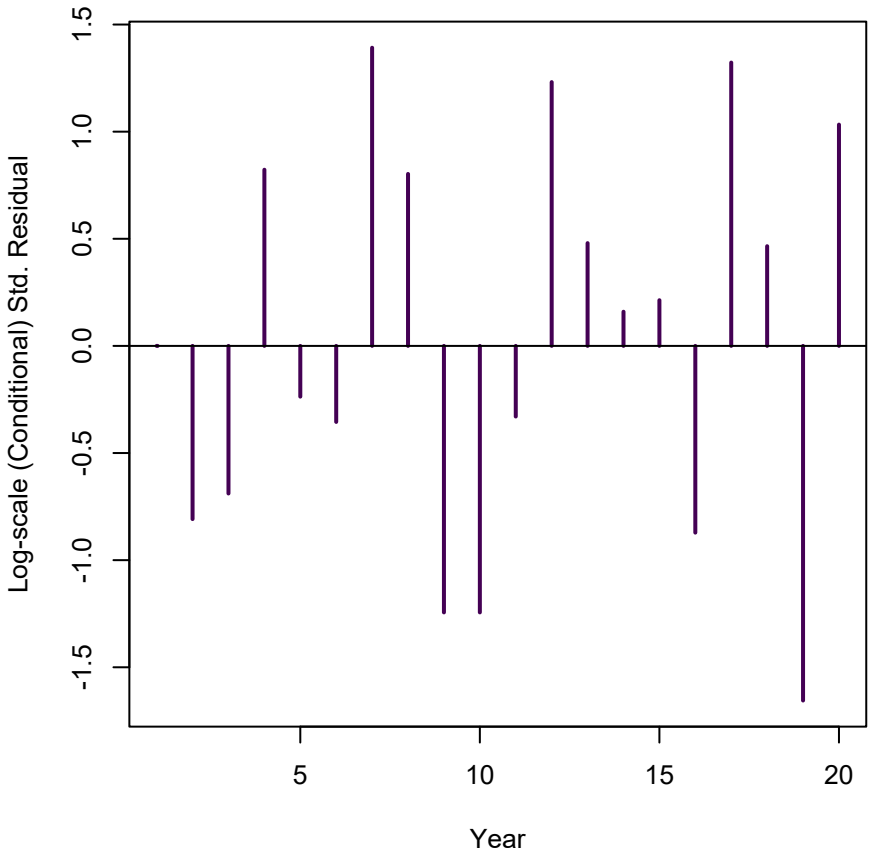

Index 6 in region_1
Year = 16
Year = 17
Year = 18
Year = 19
Year = 20
Proportion
0.0
0.2
0.4
0.6
0.8
1.0
1
2
3
4
5
6+
Age

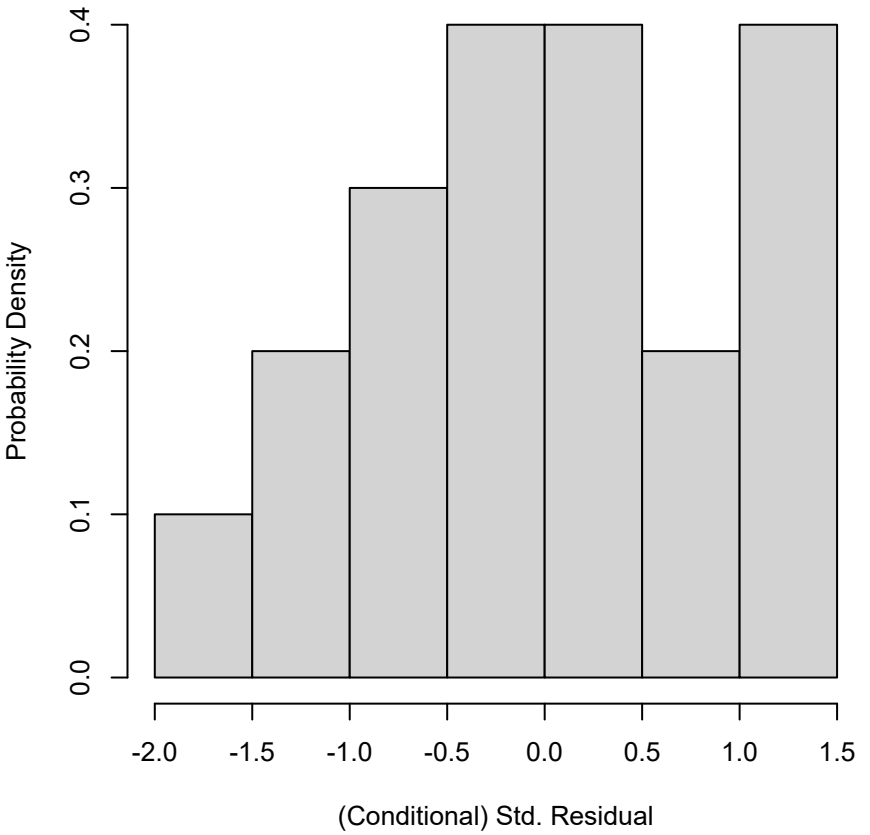

Age Comp Residuals (Observed-Predicted) for Index 6
Neg.
Pos.
Max(resid)=0.09
0.003
0.018
0.061
Year
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
1
2
3
4
5
6+
Age

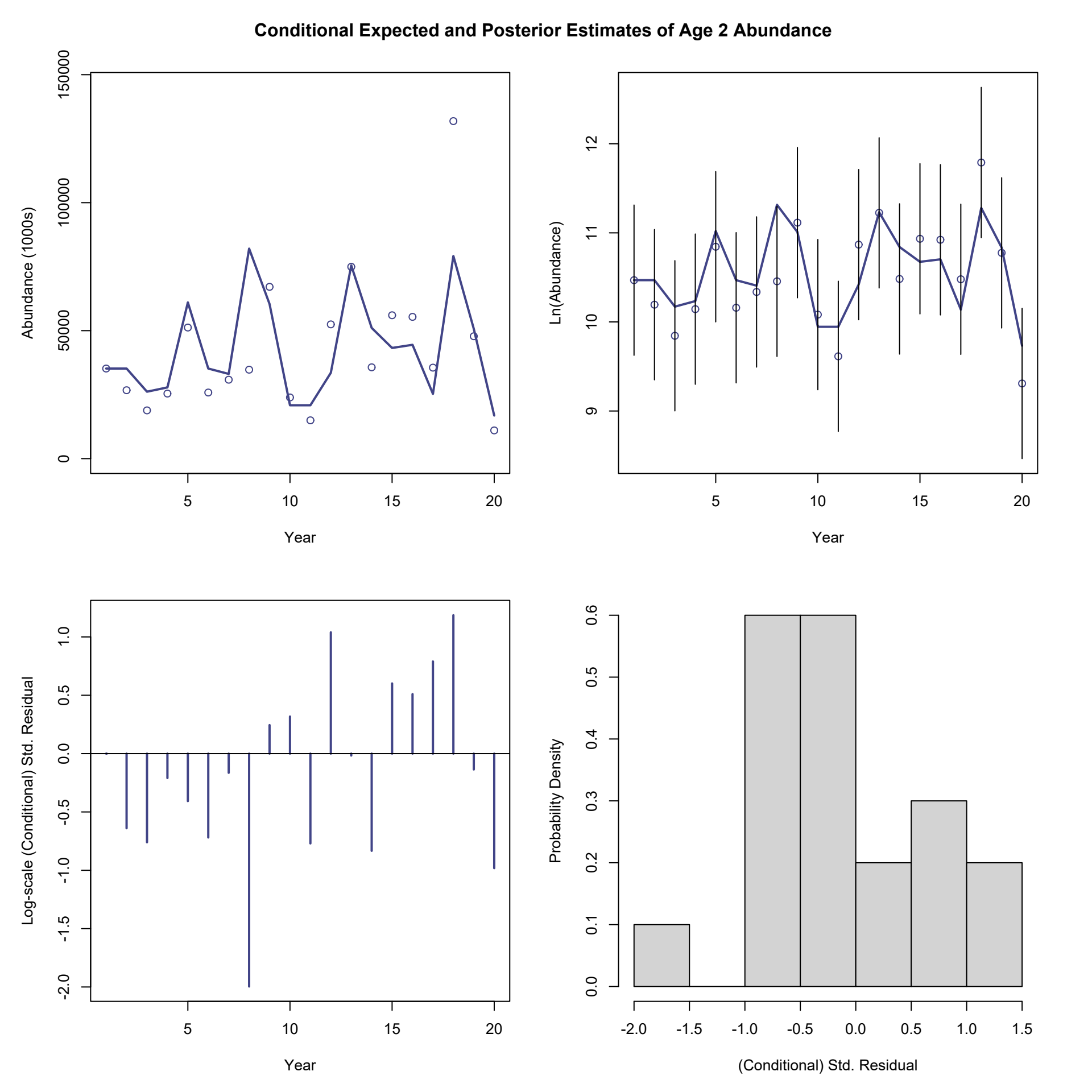
Conditional Expected and Posterior Estimates of Age 1 Abundance



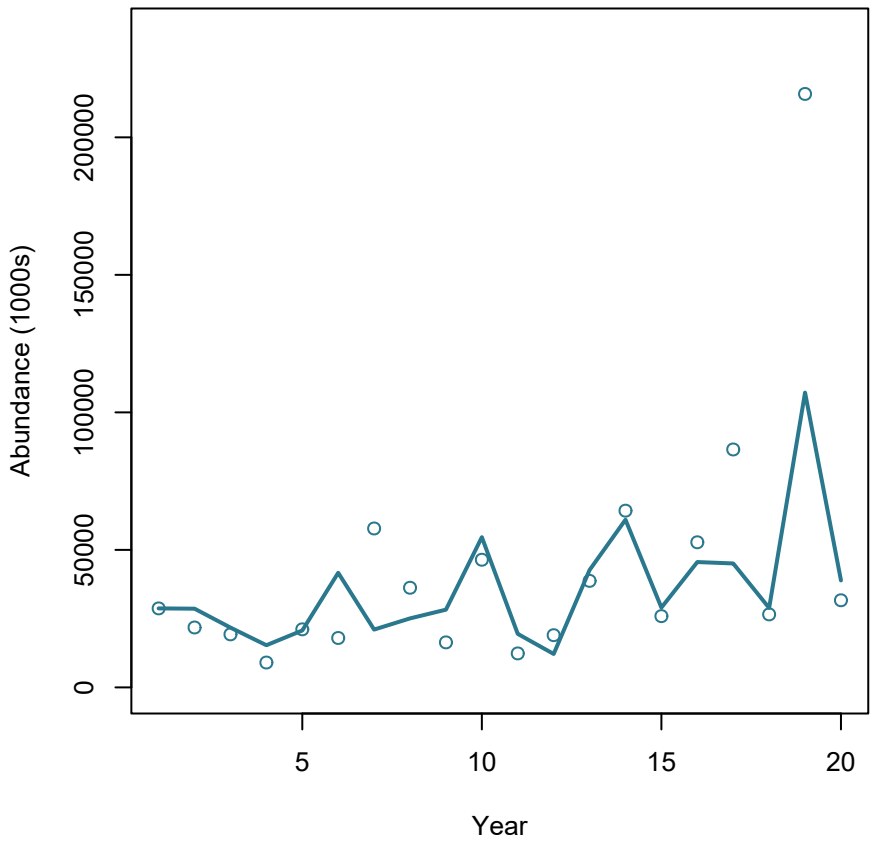


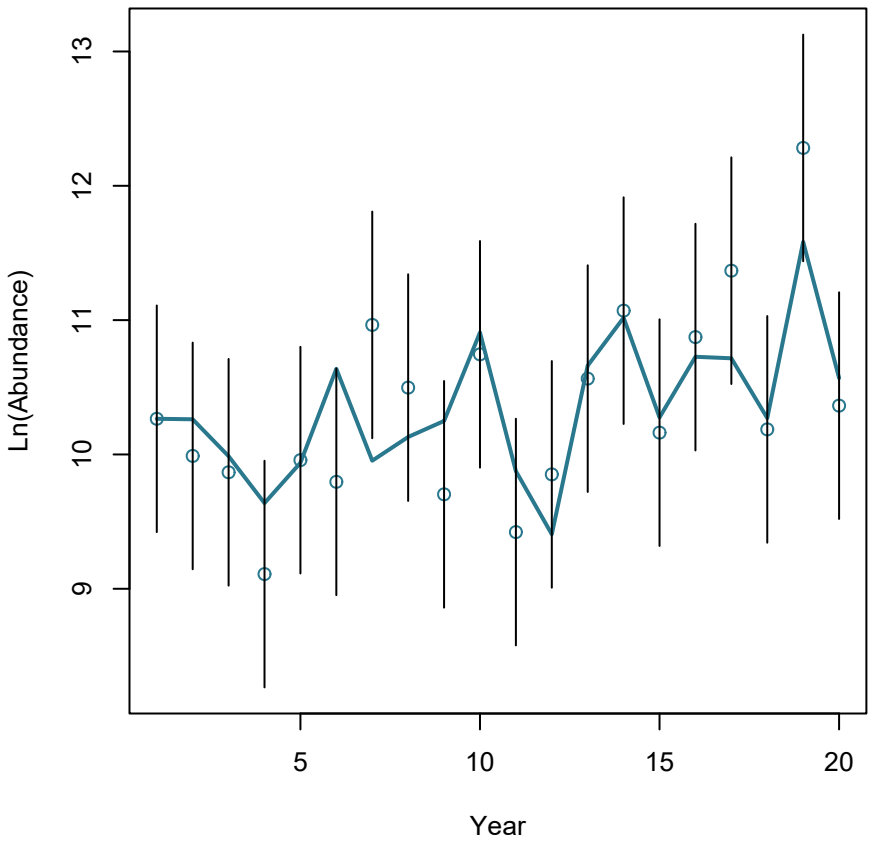


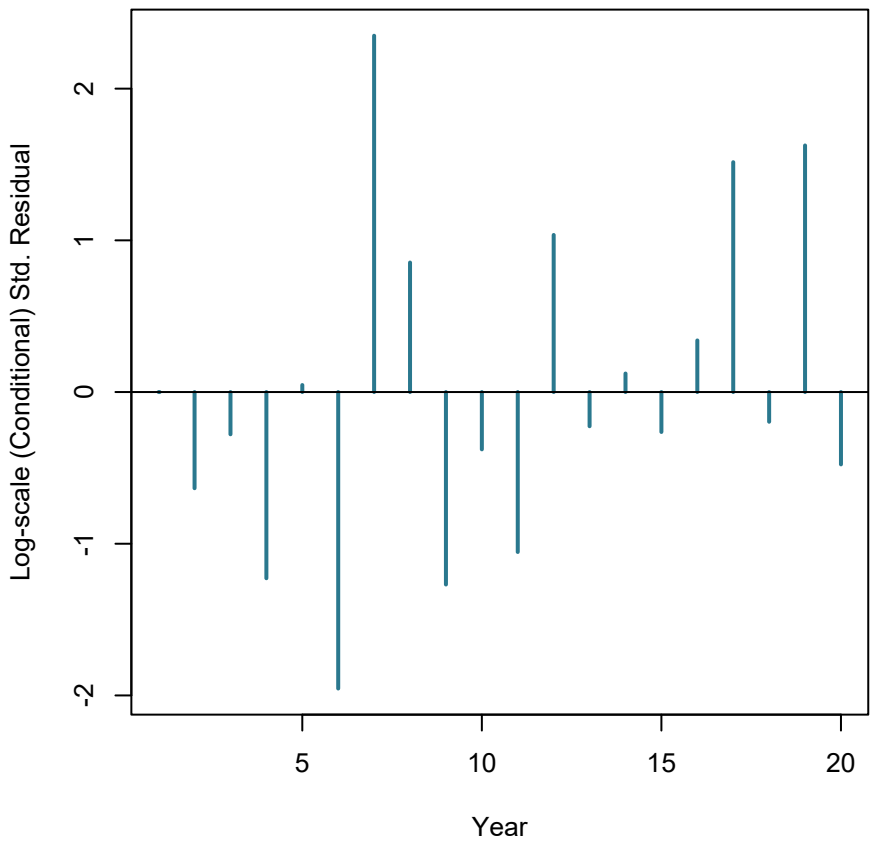


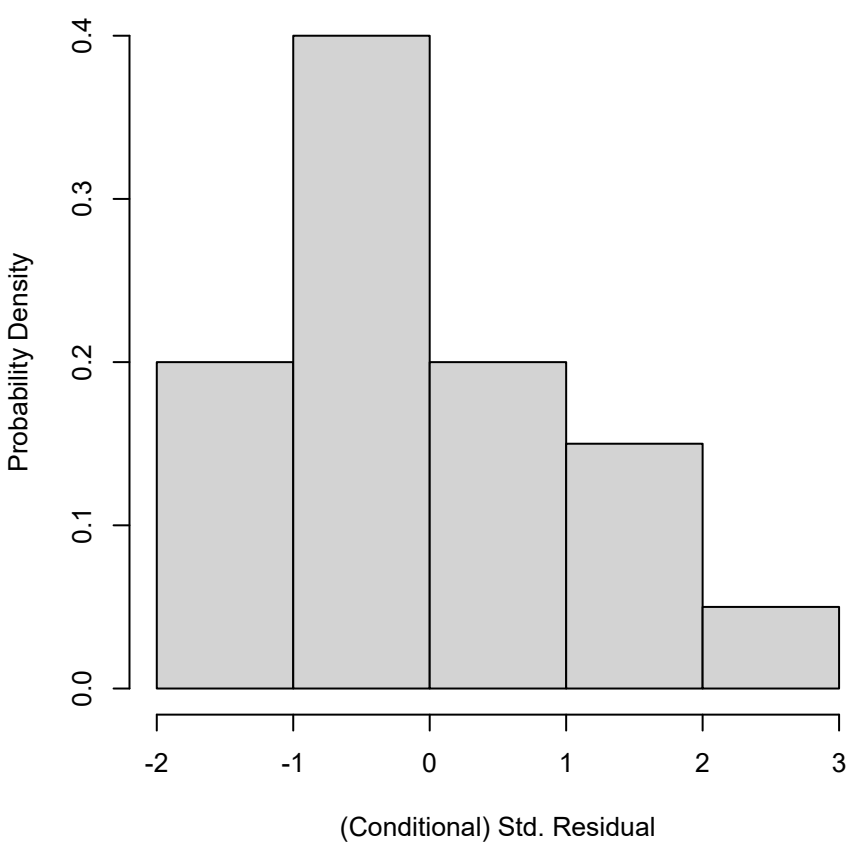

Conditional Expected and Posterior Estimates of Age 2 Abundance
Abundance (1000s)
0
50000
100000
150000
5
10
15
20
Year
Ln(Abundance)
9
10
11
12
5
10
15
20
Year
Log-scale (Conditional) Std. Residual
-2.0
-1.5
-1.0
-0.5
0.0
0.5
1.0
5
10
15
20
Year
Probability Density
0.0
0.1
0.2
0.3
0.4
0.5
0.6
-2.0
-1.5
-1.0
-0.5
0.0
0.5
1.0
1.5
(Conditional) Std. Residual

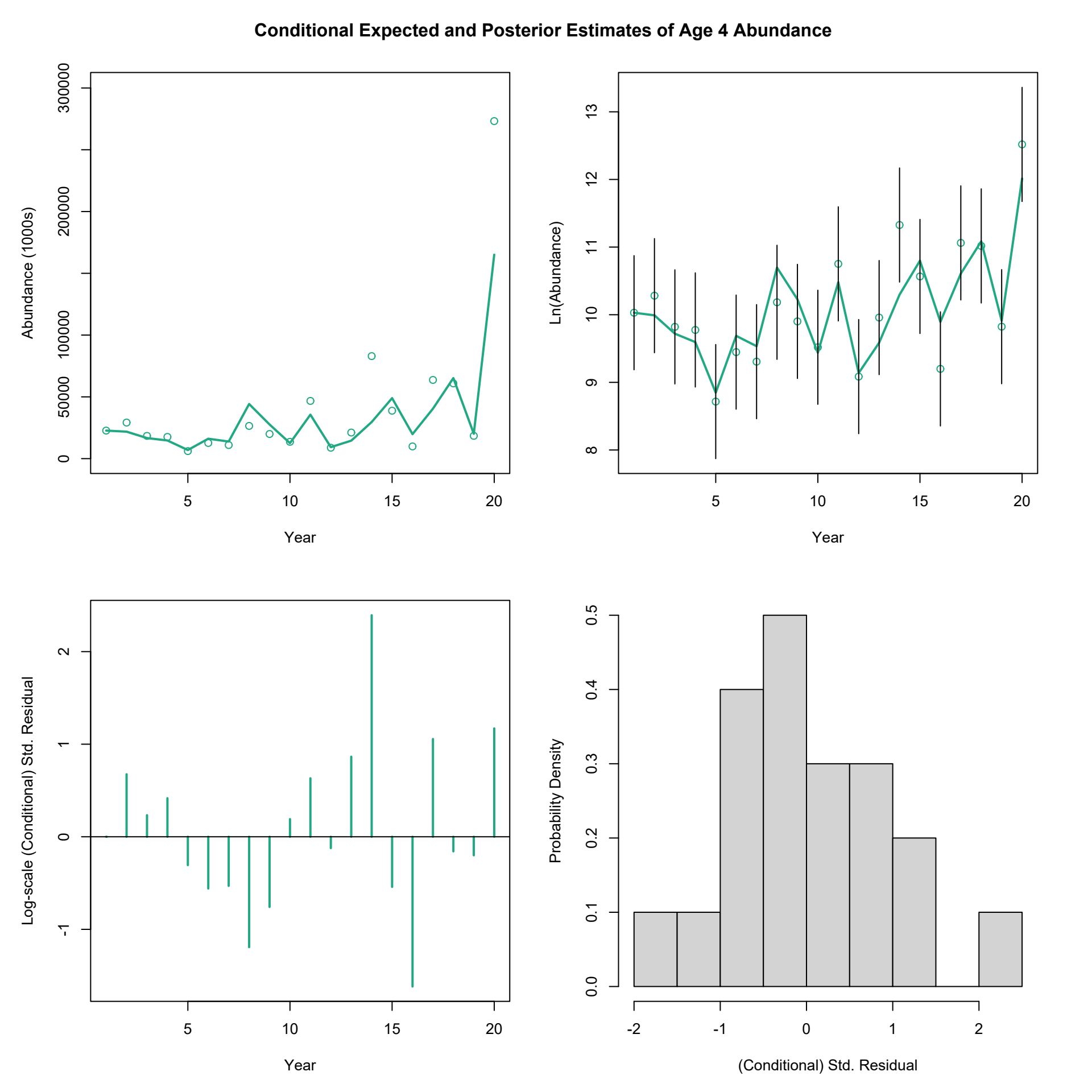
Conditional Expected and Posterior Estimates of Age 3 Abundance

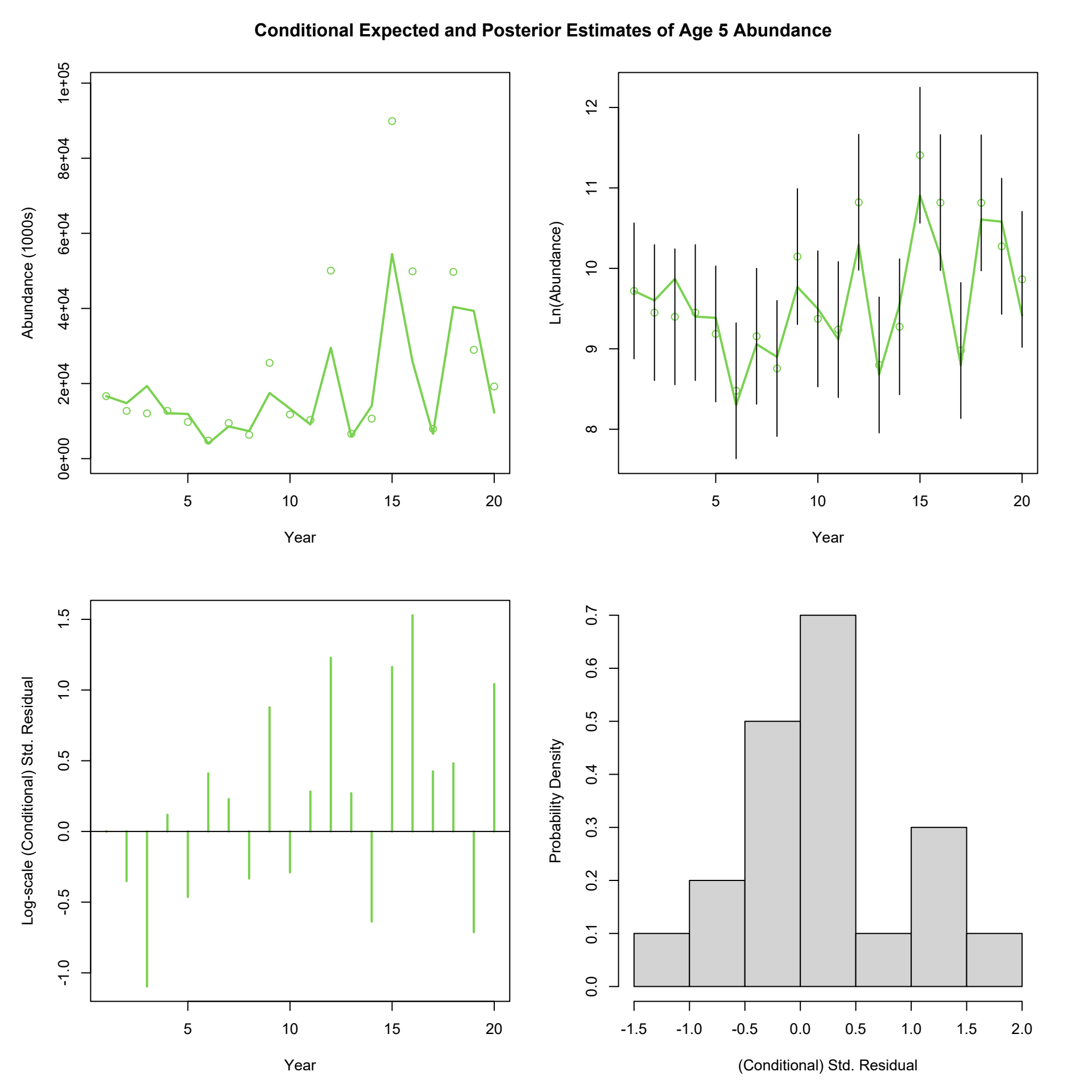


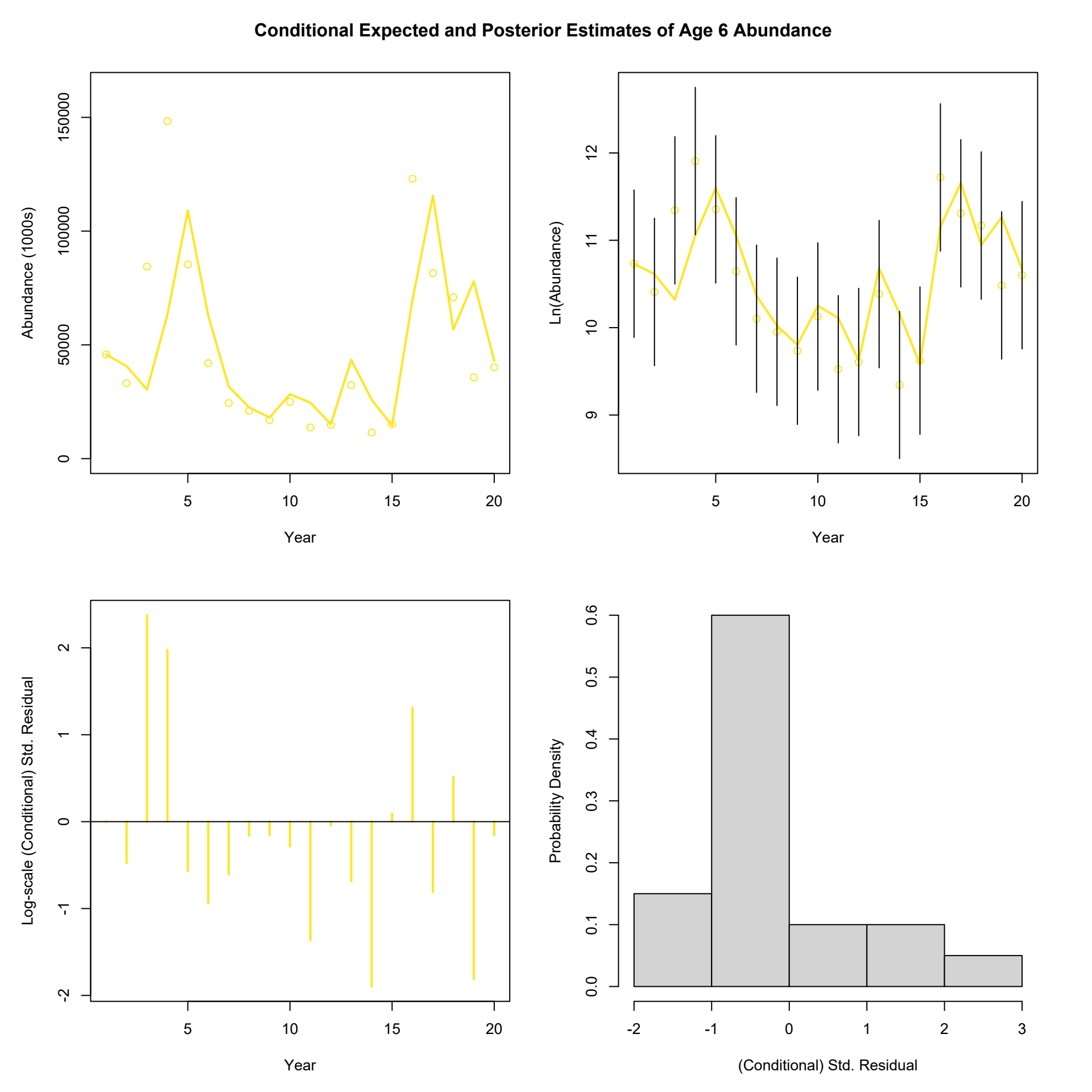


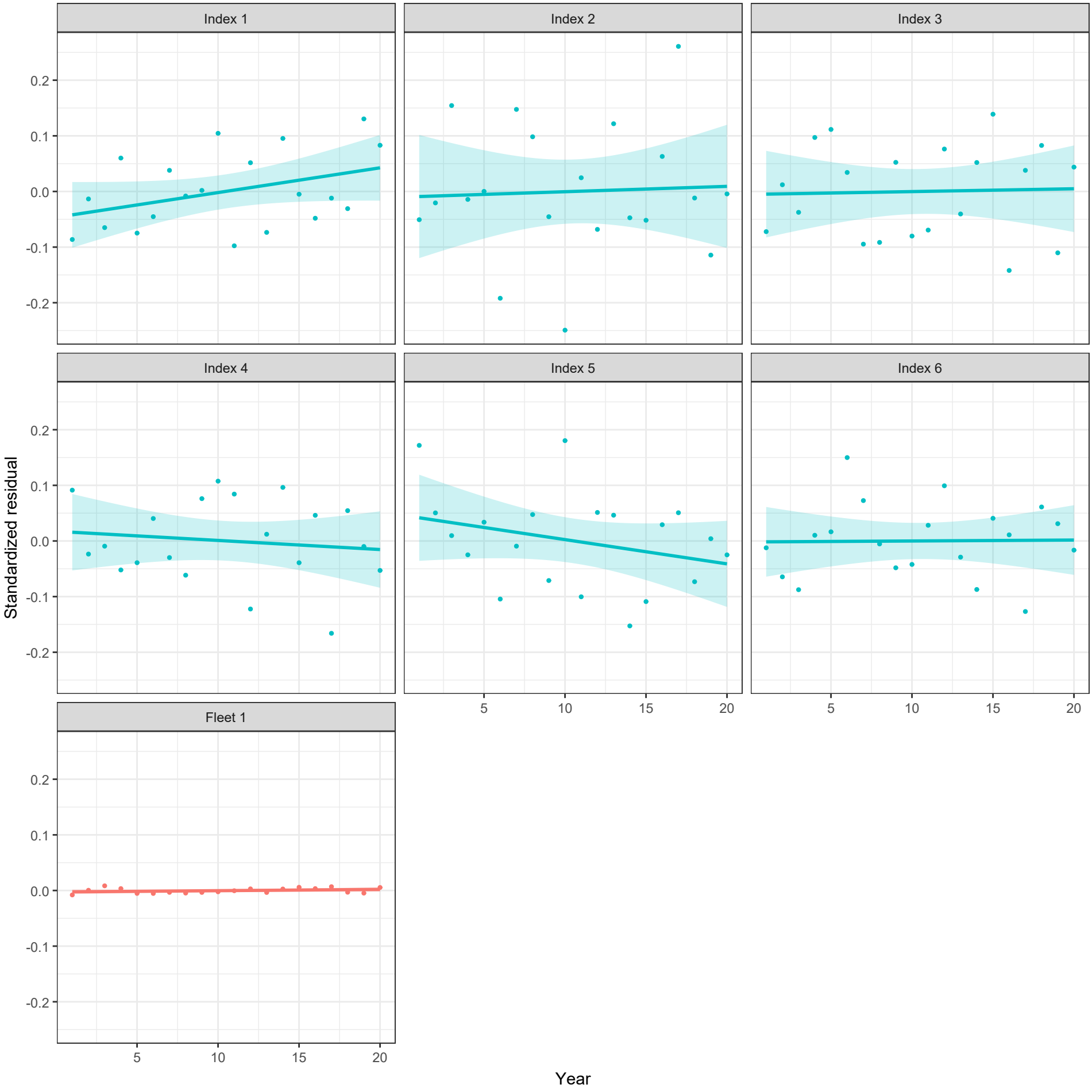





Conditional Expected and Posterior Estimates of Age 4 Abundance
Abundance (1000s)
0
50000
100000
200000
300000
5
10
15
20
Year
Ln(Abundance)
8
9
10
11
12
13
5
10
15
20
Year
Log-scale (Conditional) Std. Residual
-1
0
1
2
5
10
15
20
Year
Probability Density
0.0
0.1
0.2
0.3
0.4
0.5
-2
-1
0
1
2
(Conditional) Std. Residual


Conditional Expected and Posterior Estimates of Age 5 Abundance
Abundance (1000s)
0e+00
2e+04
4e+04
6e+04
8e+04
1e+05
5
10
15
20
Year
Ln(Abundance)
8
9
10
11
12
5
10
15
20
Year
Log-scale (Conditional) Std. Residual
-1.0
-0.5
0.0
0.5
1.0
1.5
5
10
15
20
Year
Probability Density
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
-1.5
-1.0
-0.5
0.0
0.5
1.0
1.5
2.0
(Conditional) Std. Residual


Conditional Expected and Posterior Estimates of Age 6 Abundance
Abundance (1000s)
0
50000
100000
150000
5
10
15
20
Year
Ln(Abundance)
9
10
11
12
5
10
15
20
Year
Log-scale (Conditional) Std. Residual
-2
-1
0
1
2
5
10
15
20
Year
Probability Density
0.0
0.1
0.2
0.3
0.4
0.5
0.6
-2
-1
0
1
2
3
(Conditional) Std. Residual


Index 1
Index 2
Index 3
Index 4
Index 5
Index 6
Fleet 1
Standardized residual
Year
0.2
0.1
0.0
-0.1
-0.2
5
10
15
20