

Scenario 3

Inference validation model A

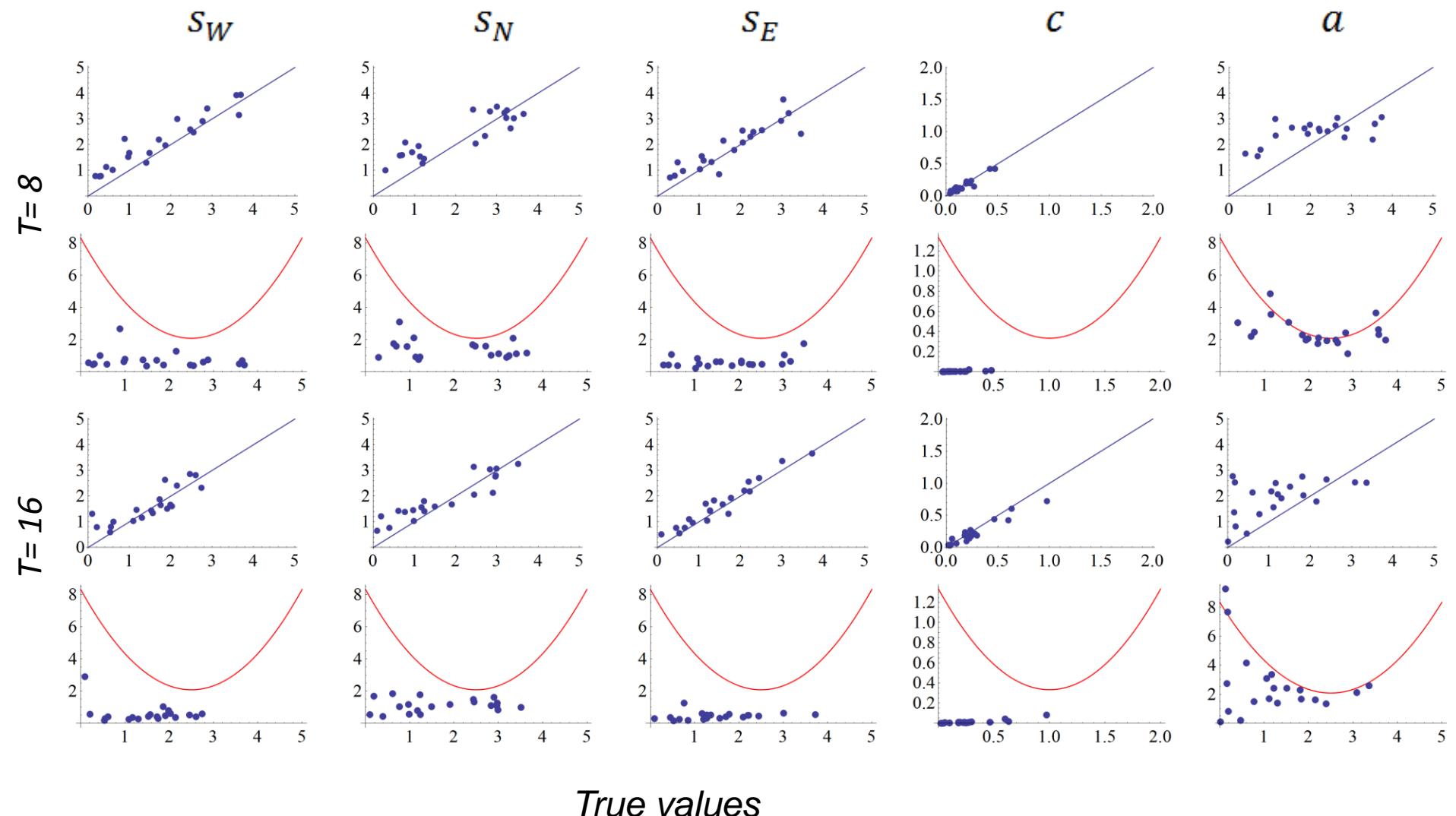


Figure SA1

Variance of posterior distribution

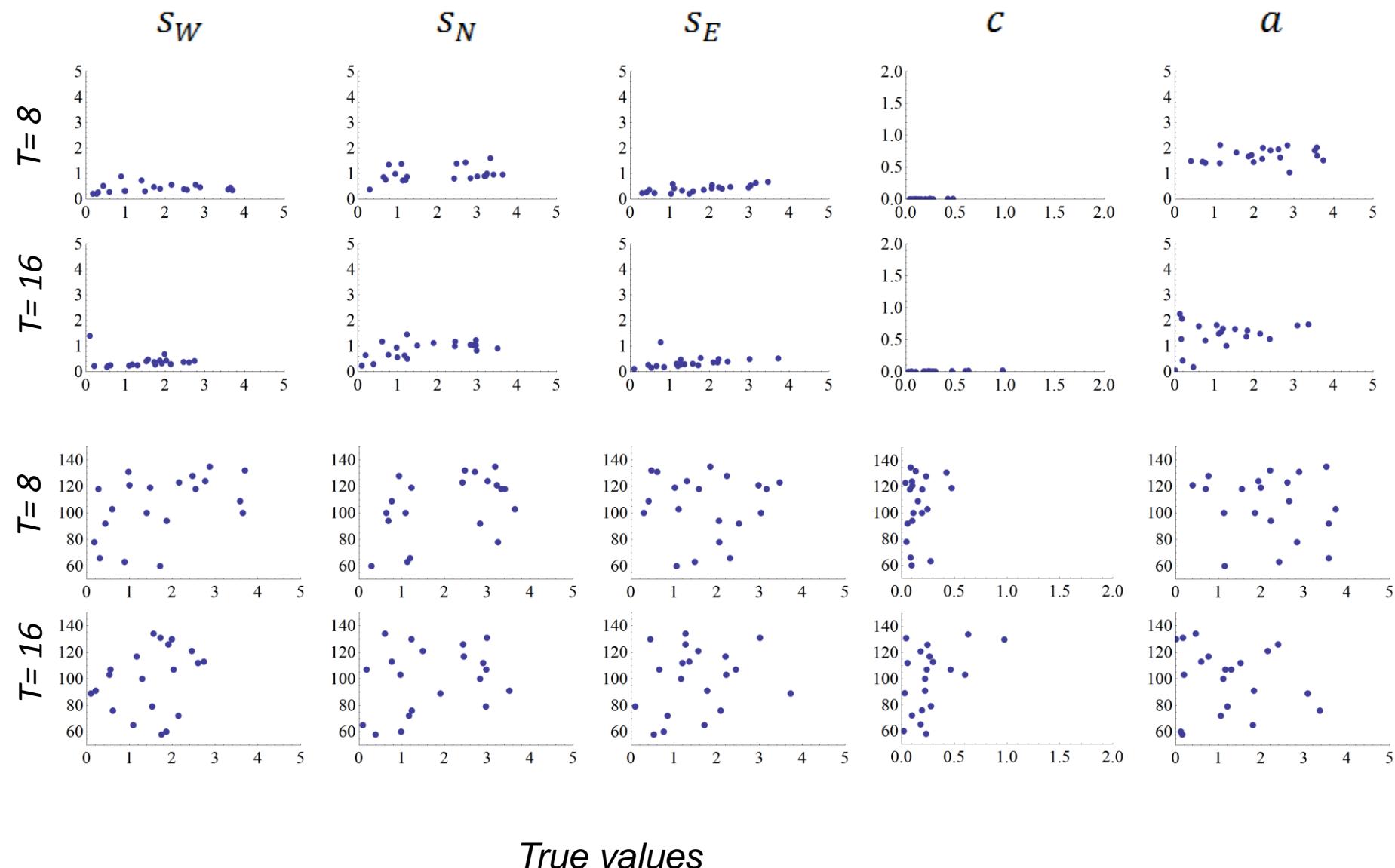


Figure SA2

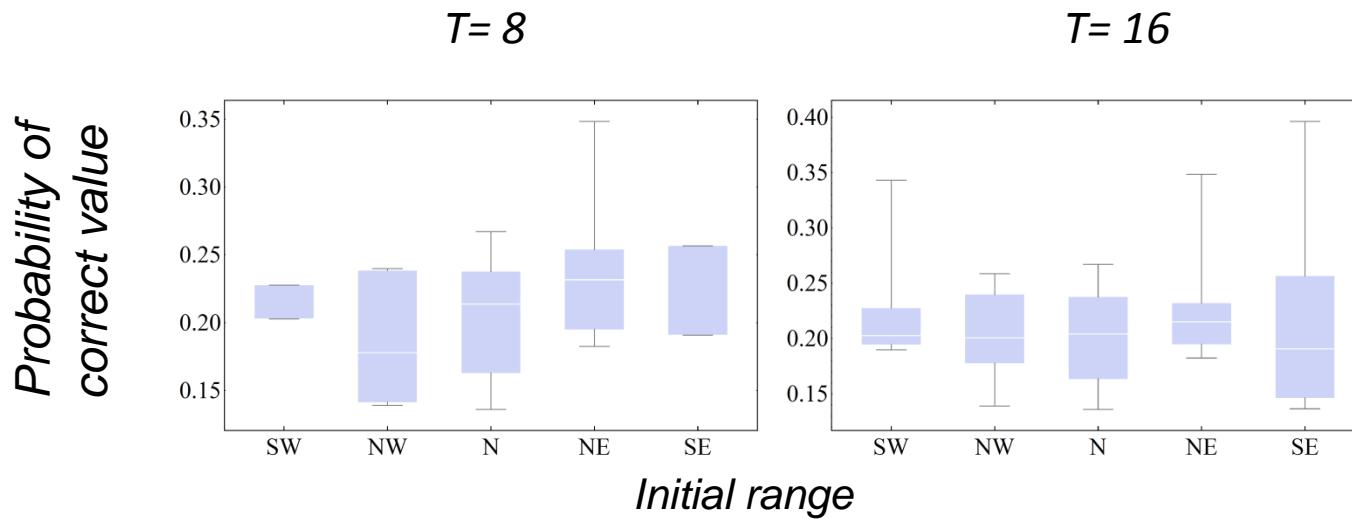


Figure SA3

Scenario 3

Estimates from Empirical data

Model A

Generations

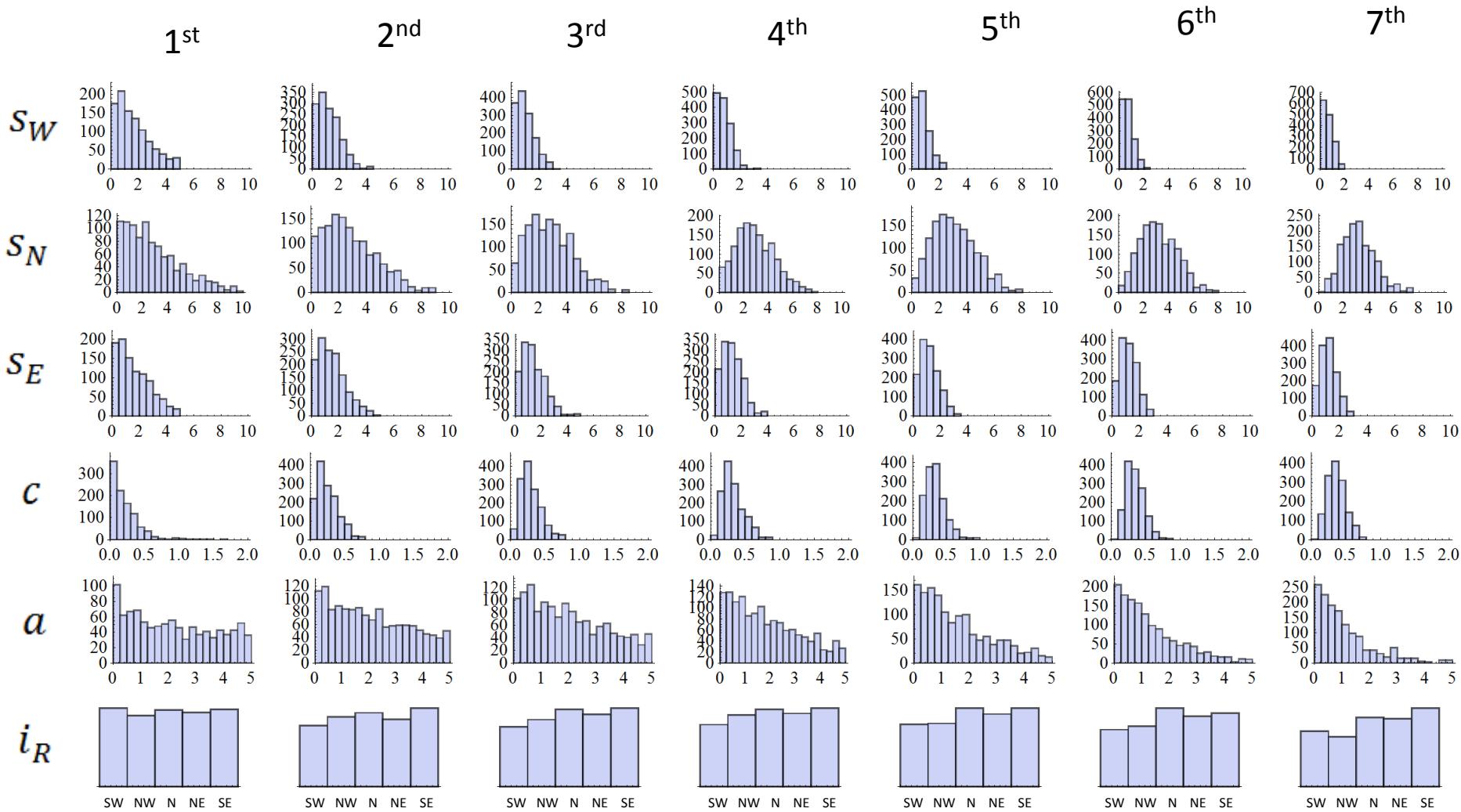


Figure SA4: $T = 8$, maximum number of lineages = 150

Generations

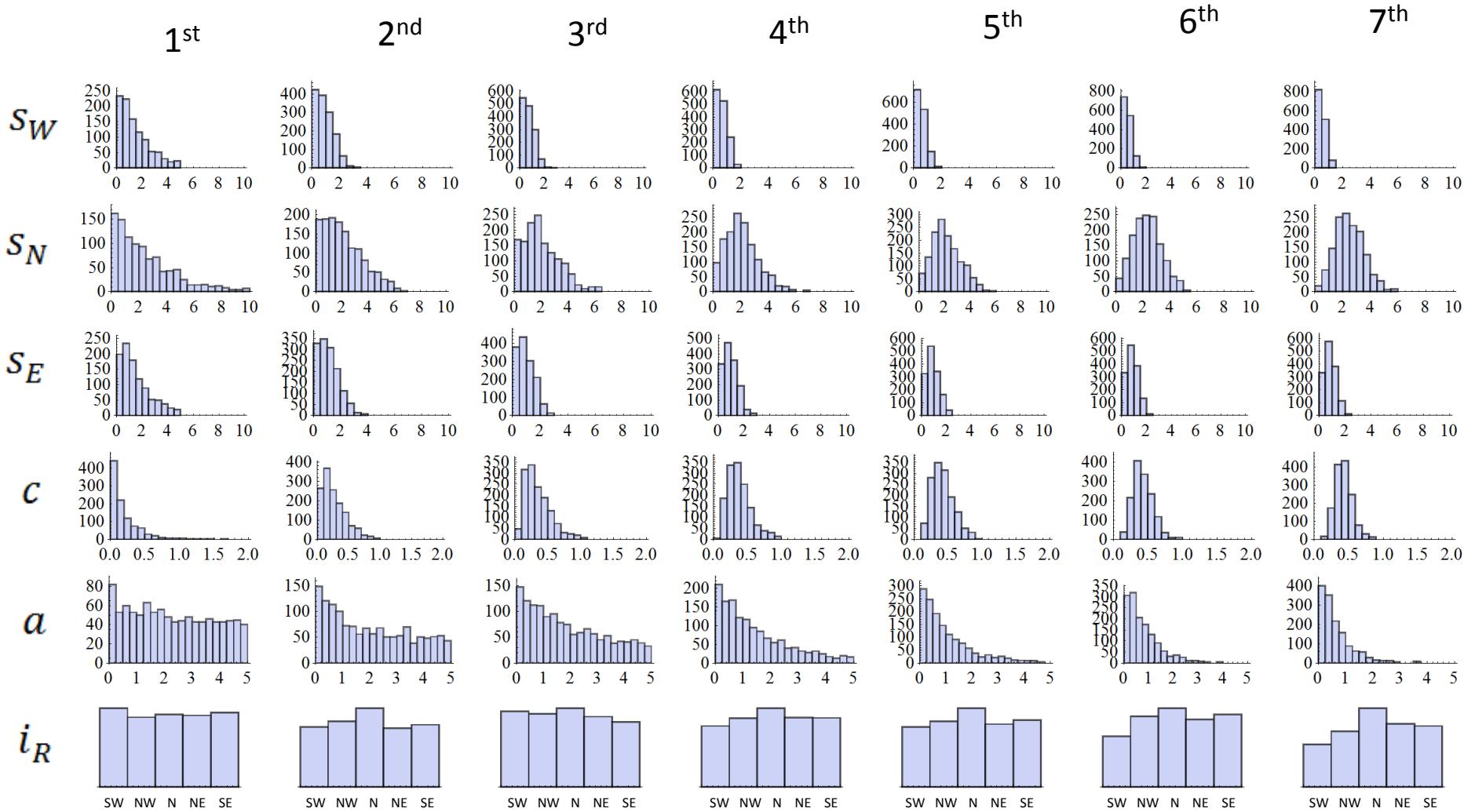


Figure SA5: $T = 8$, maximum number of lineages = 100

Generations

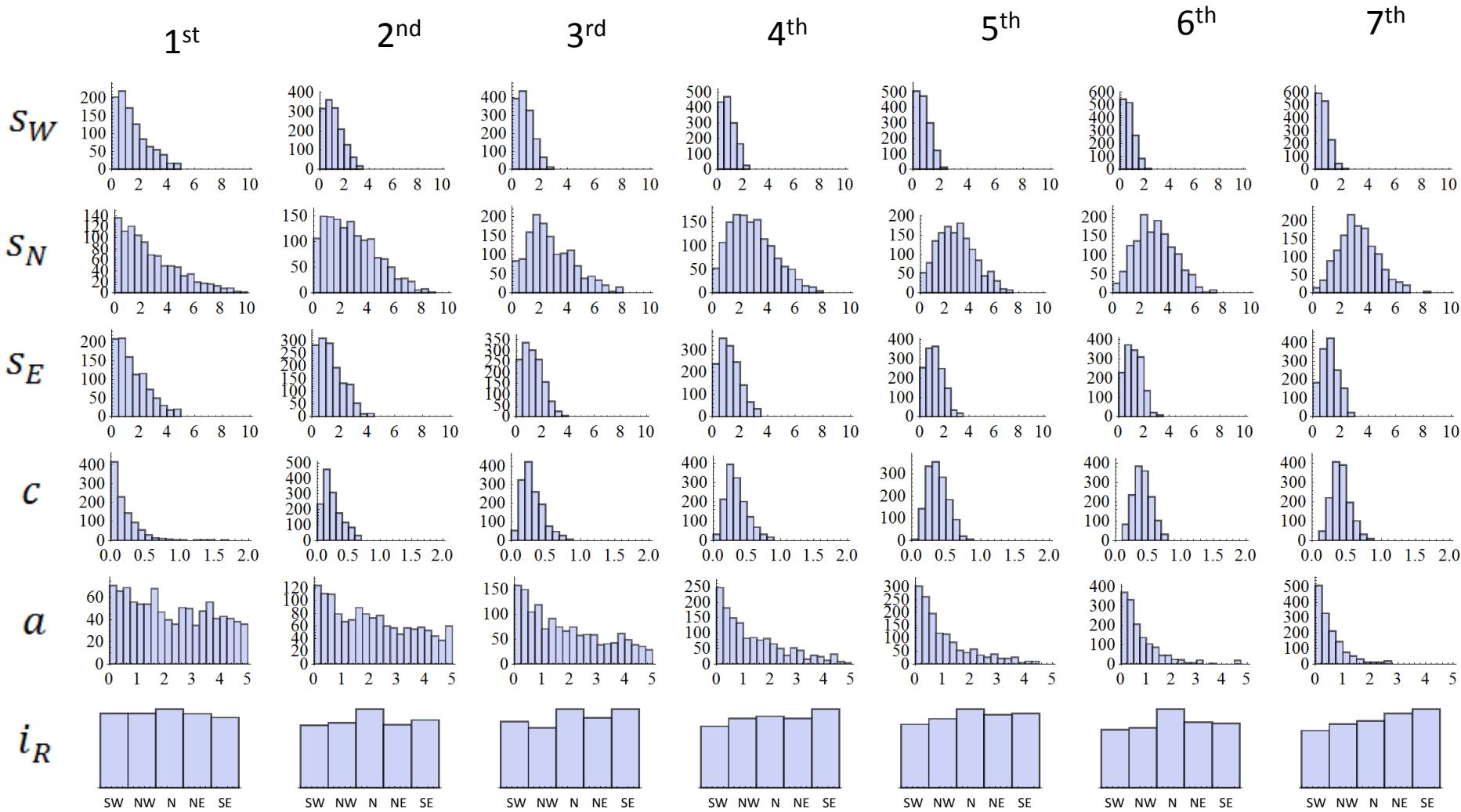


Figure SA6: T = 16, maximum number of lineages = 150

Generations

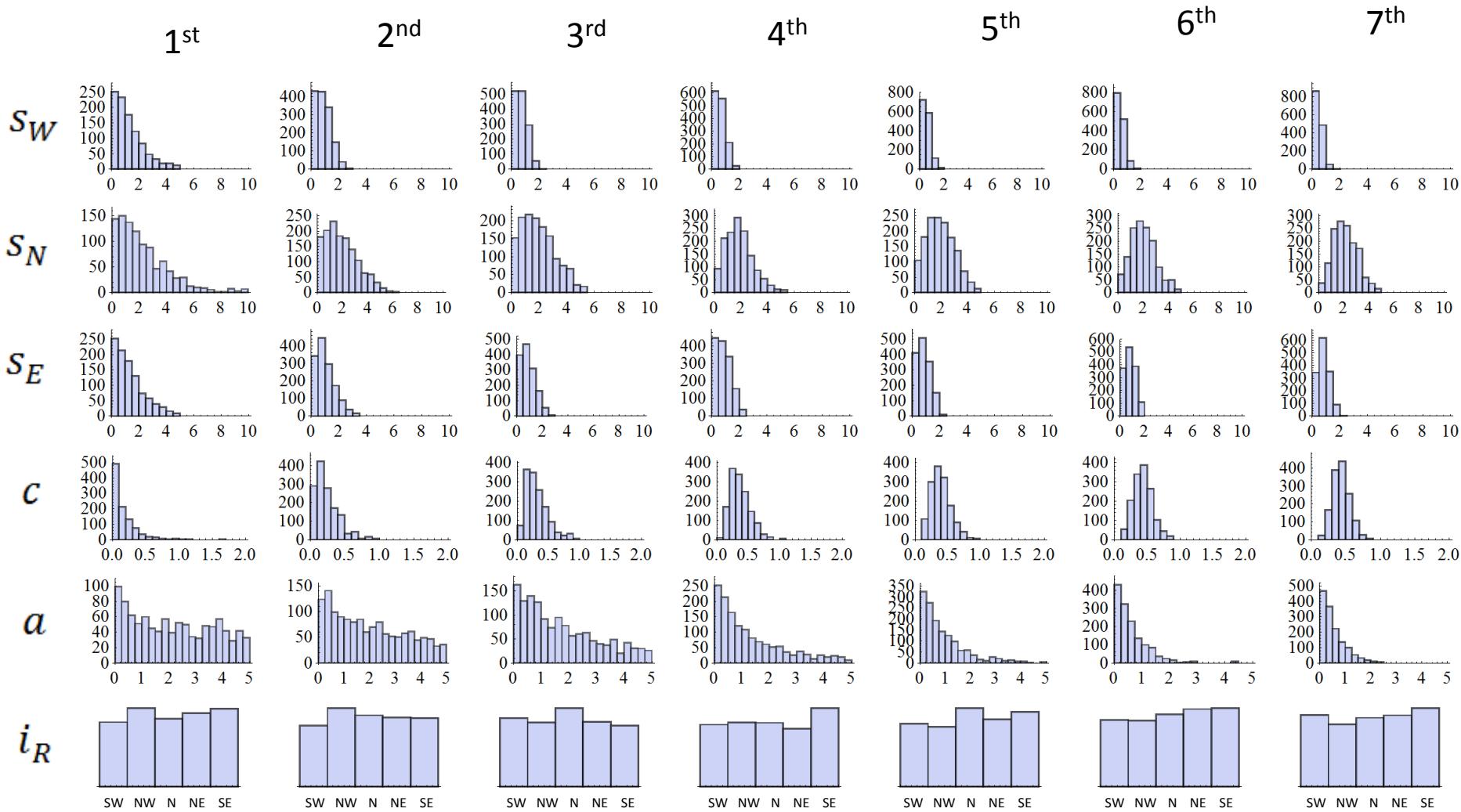


Figure SA7: T = 16, maximum number of lineages = 100

Fixing initial range

In this case, the fourth statistic has
not been used

Generations

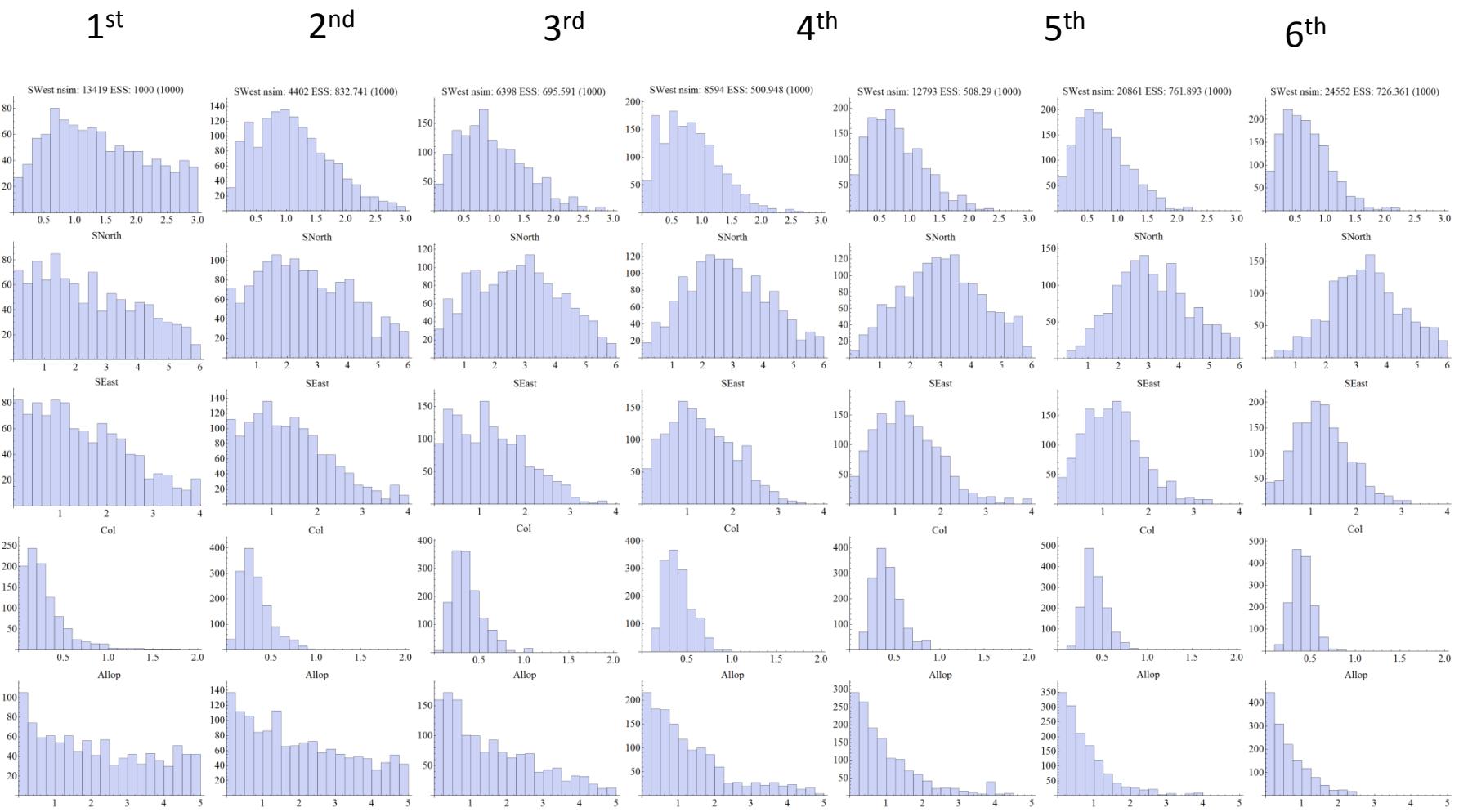


Figure SA8: T= 8, fixing initial range to South West

Generations

1st

2nd

3rd

4th

5th

6th

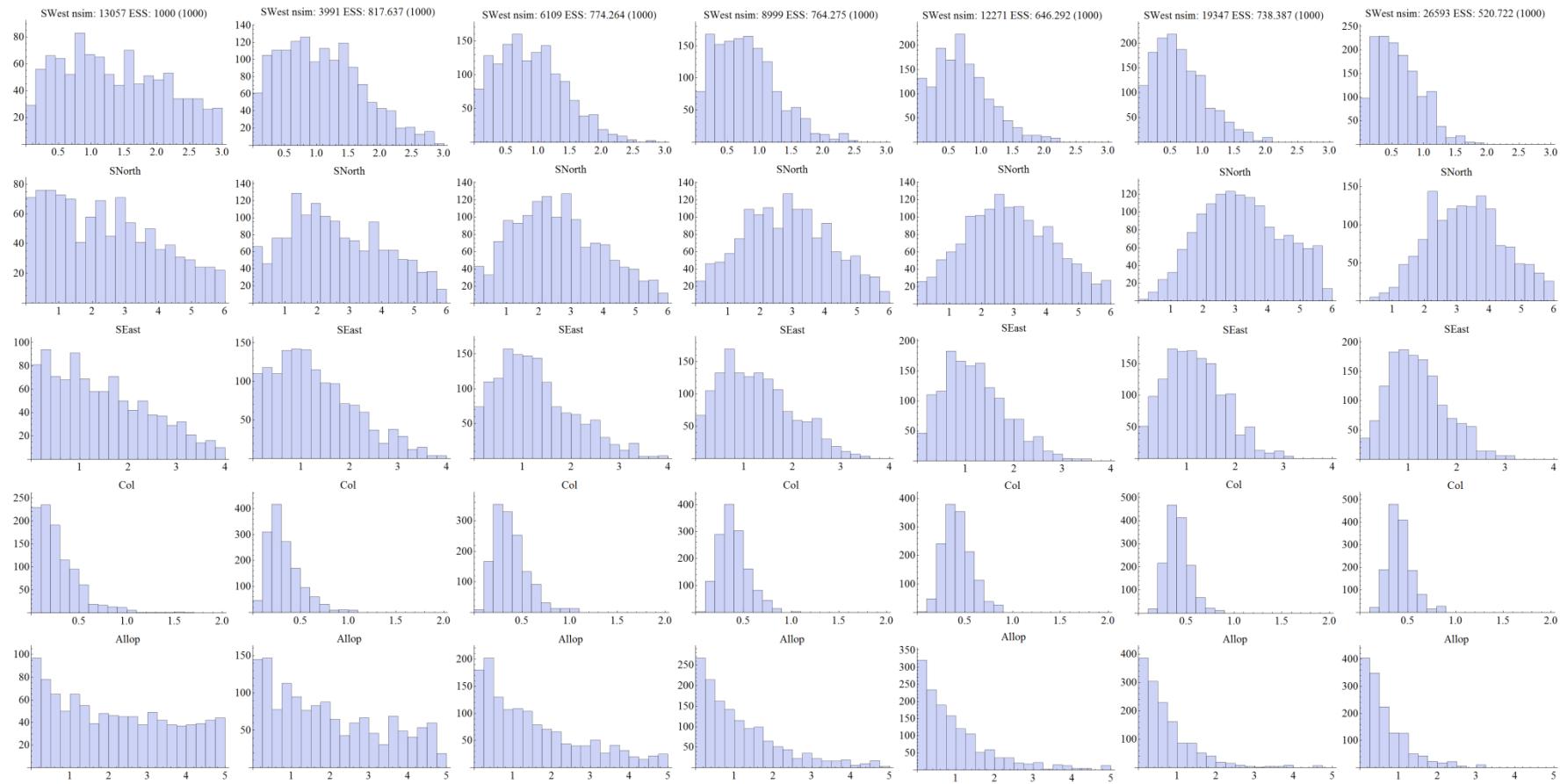


Figure SA9: T = 8, fixing initial range to North West

Generations

1st

2nd

3rd

4th

5th

6th

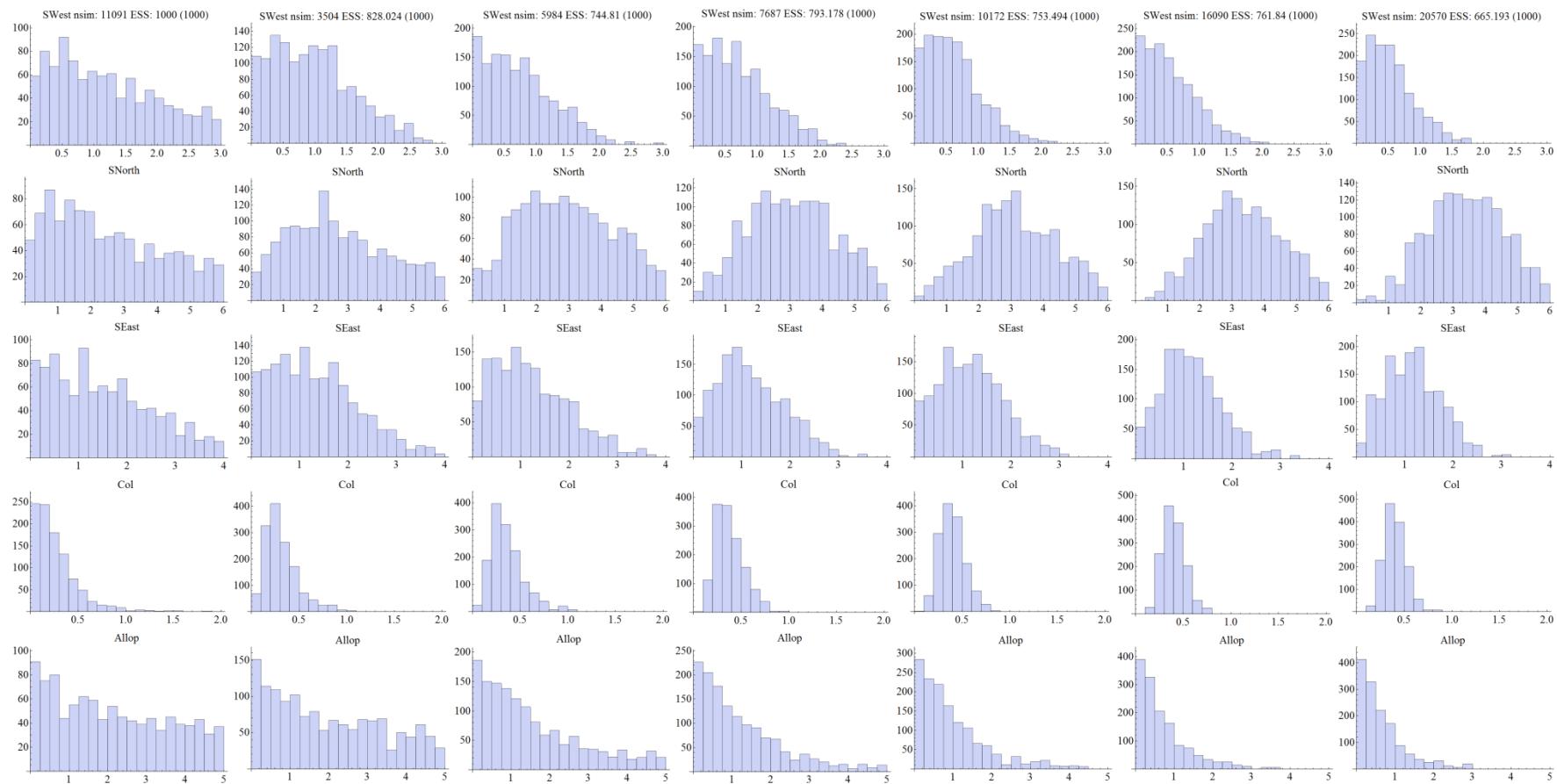


Figure SA10: T= 8, fixing initial range to North

Generations

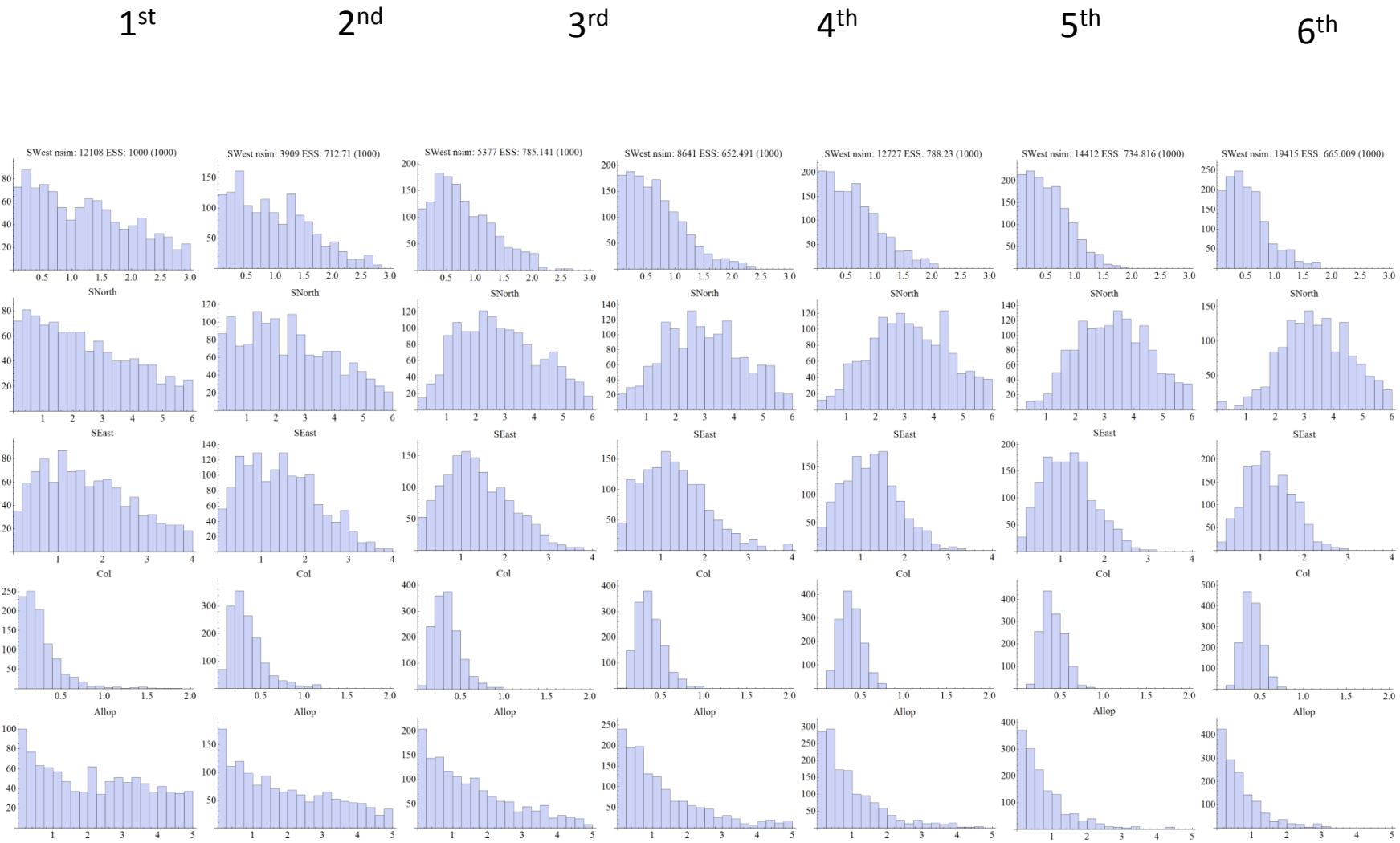


Figure SA11: $T = 8$, fixing initial range to North East

Generations

1st

2nd

3rd

4th

5th

6th

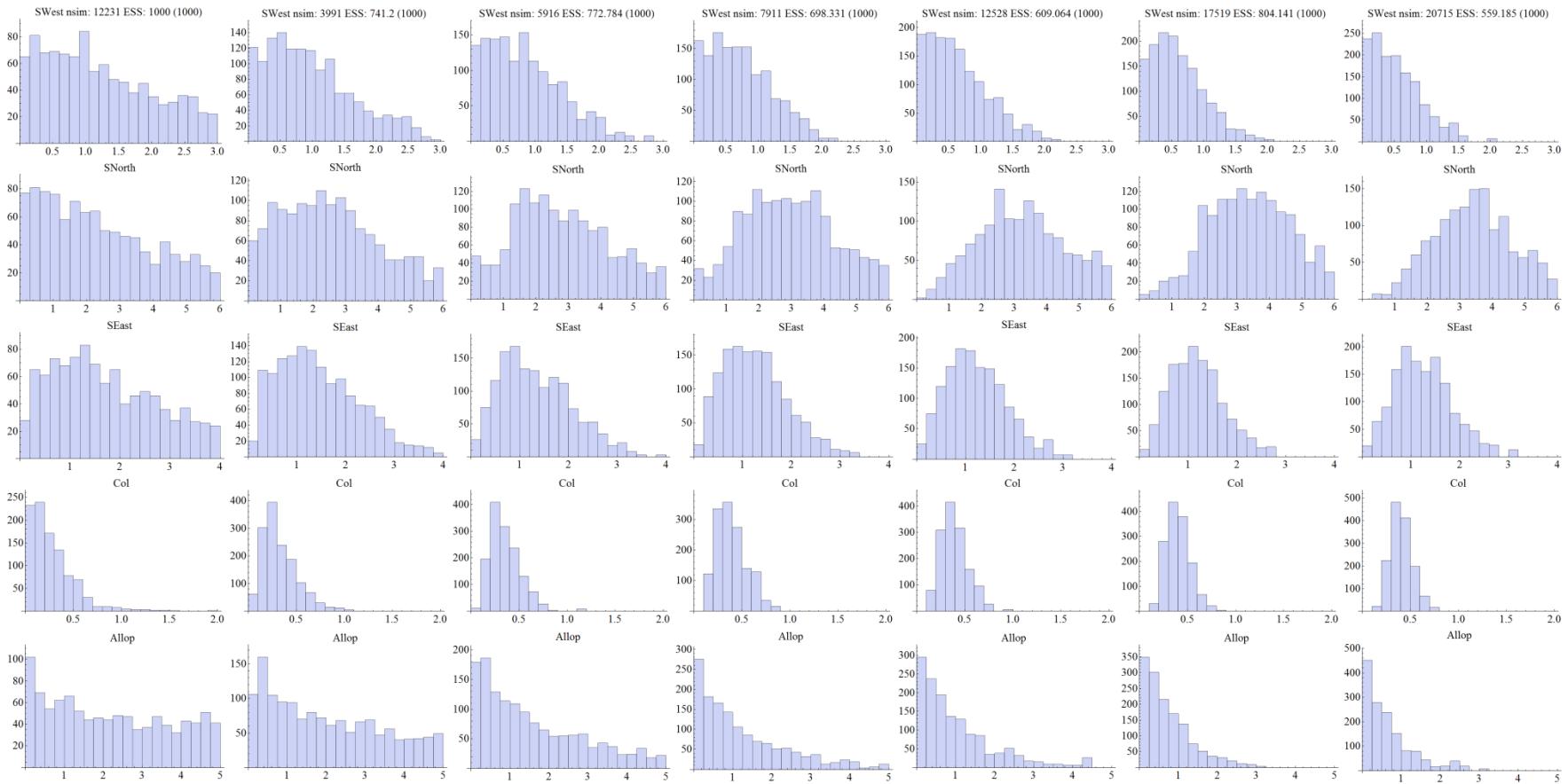


Figure SA12: T= 8, fixing initial range to South East

Generations

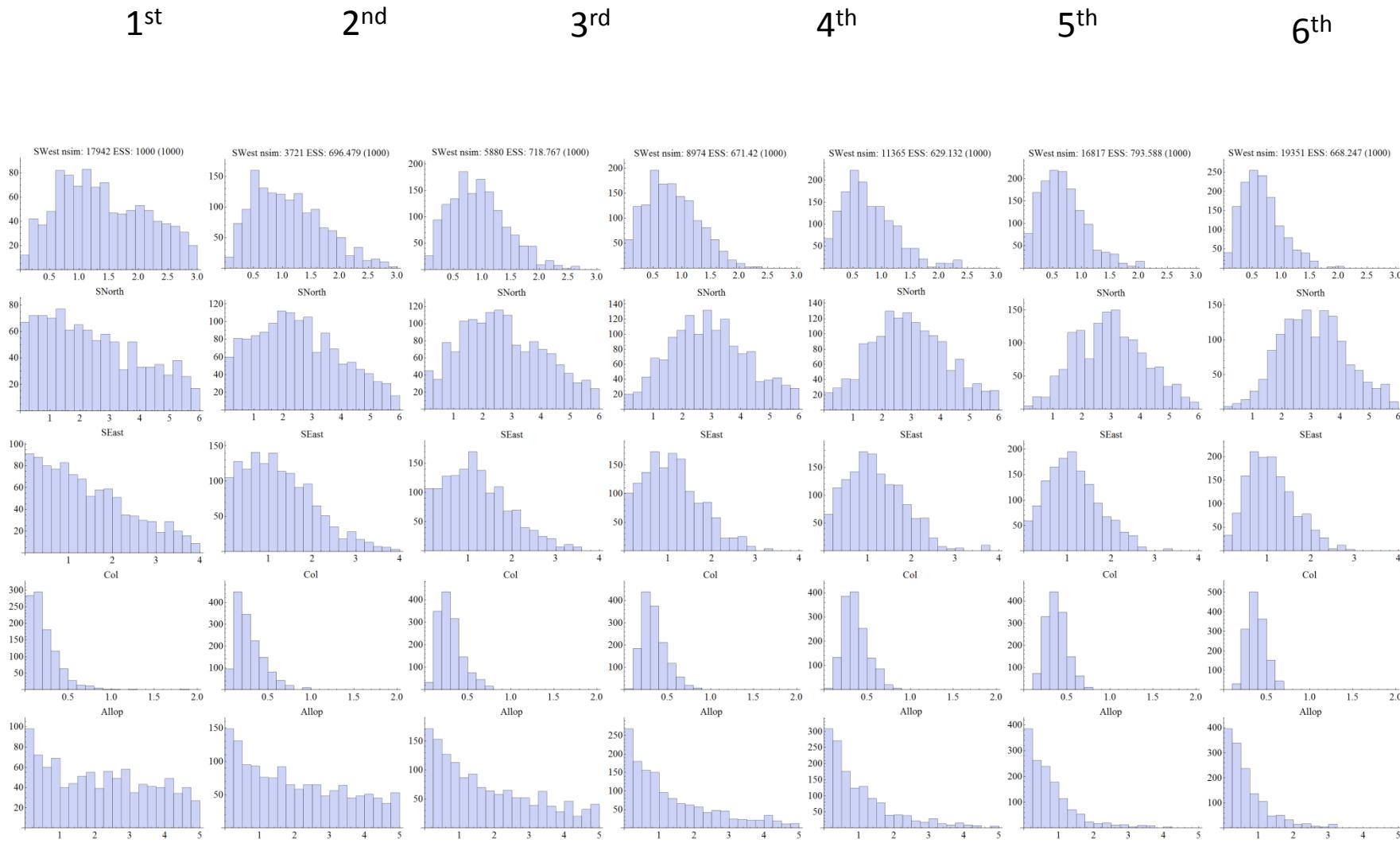


Figure SA13: T= 16, fixing initial range to South West

Generations

1st

2nd

3rd

4th

5th

6th

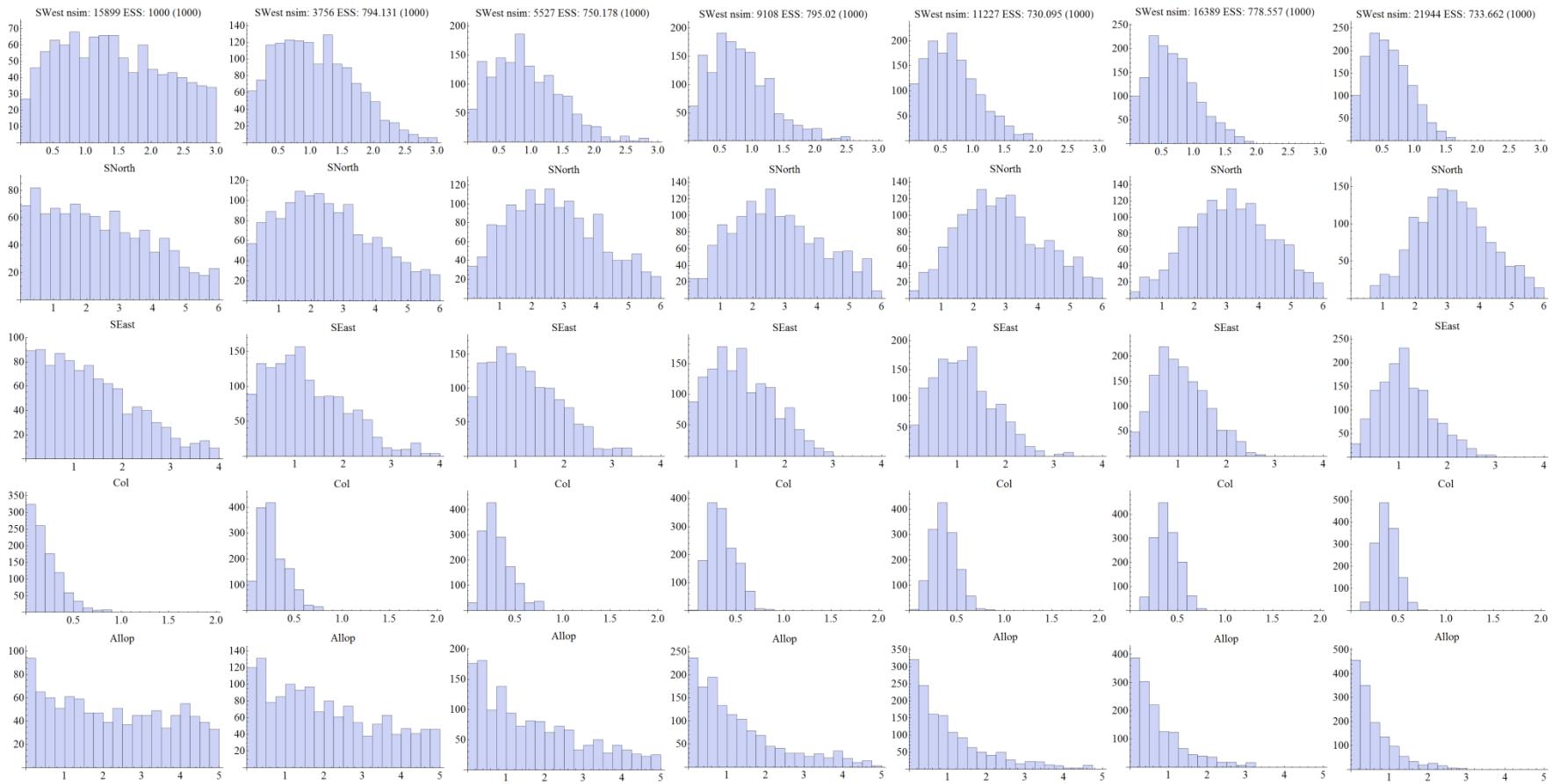


Figure SA14: T= 16, fixing initial range to North West

Generations

1st

2nd

3rd

4th

5th

6th

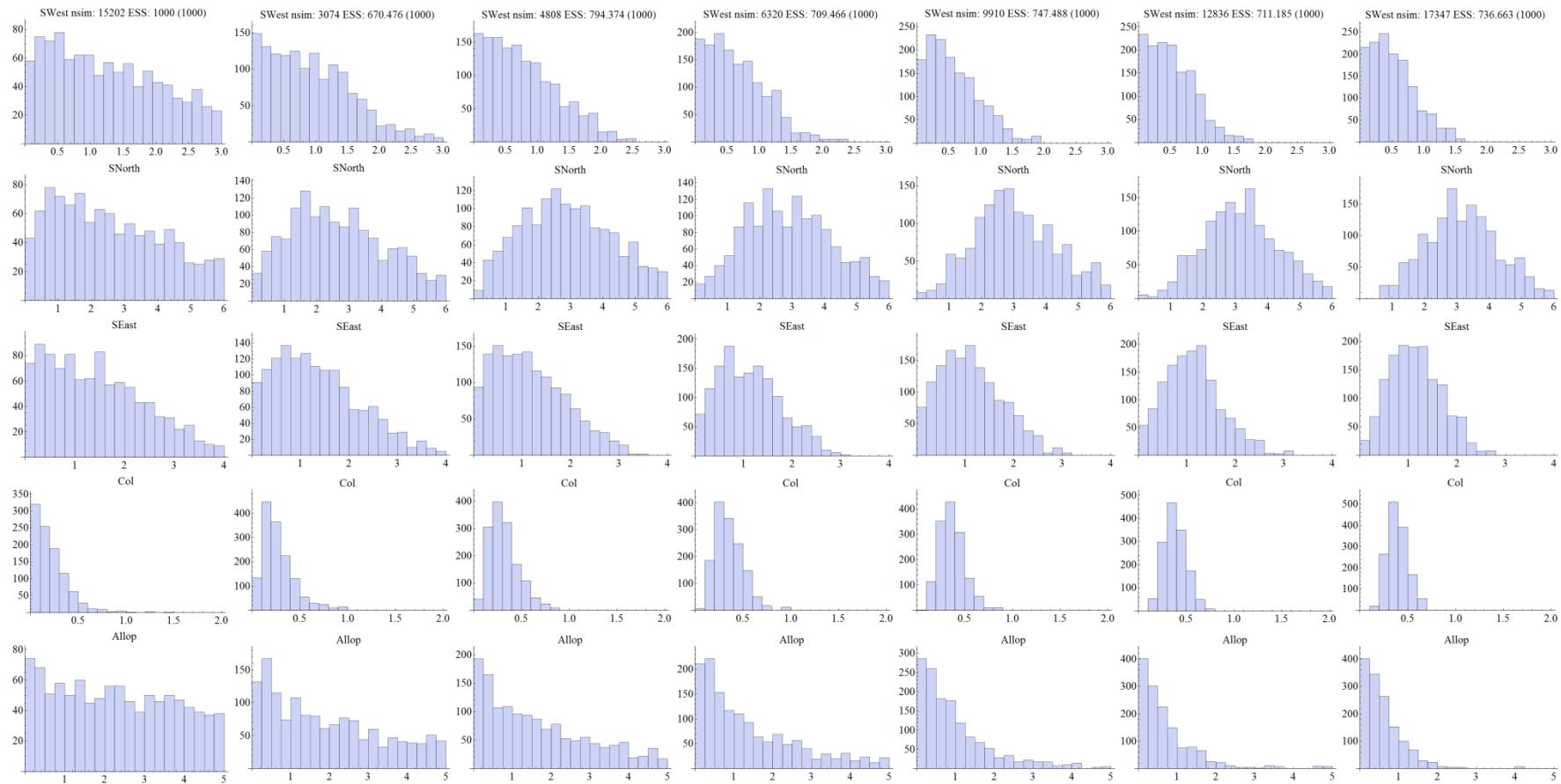


Figure SA15: T= 16, fixing initial range to North

Generations

1st

2nd

3rd

4th

5th

6th

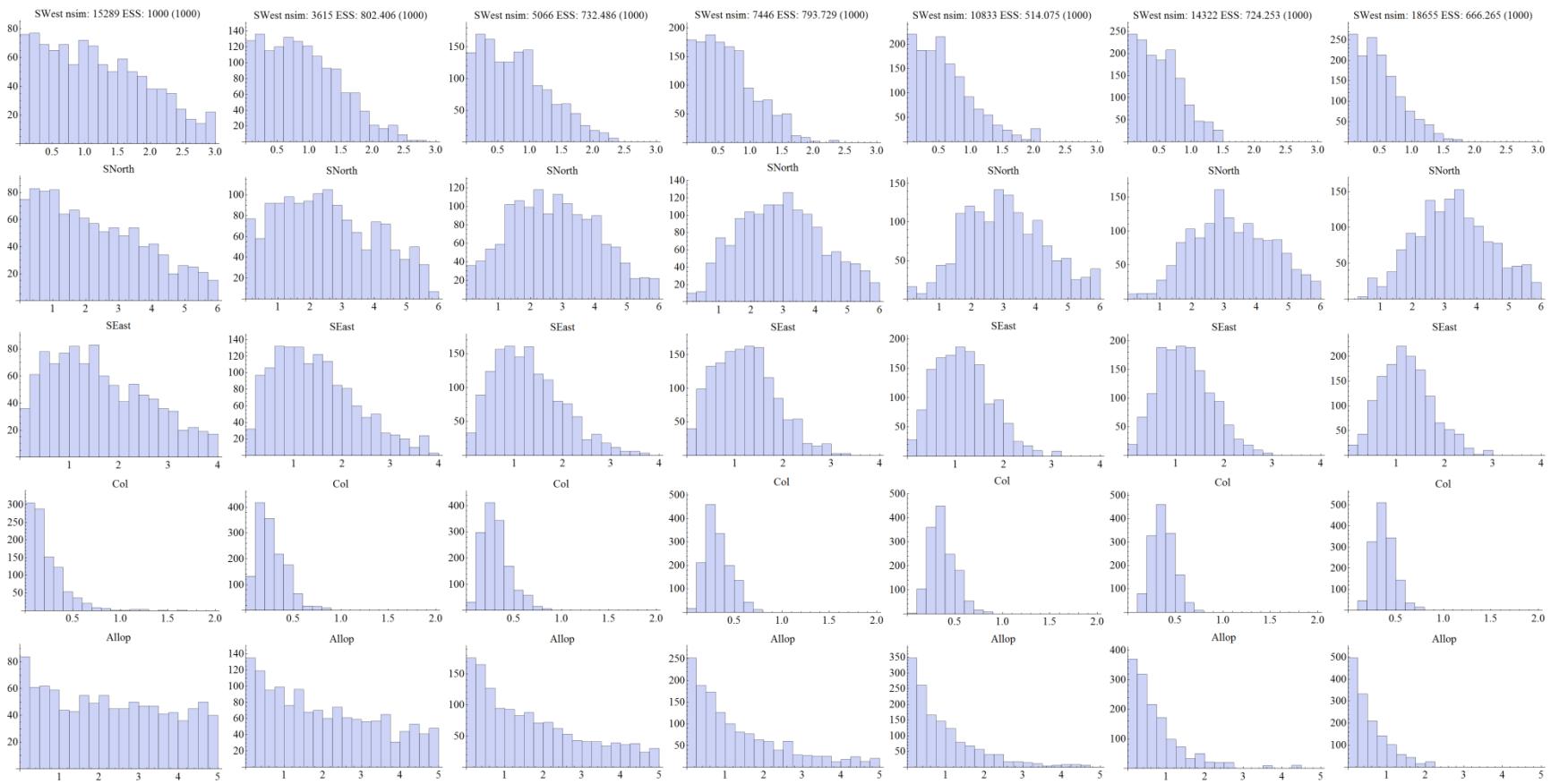


Figure SA16: T=16, fixing initial range to North East

Generations

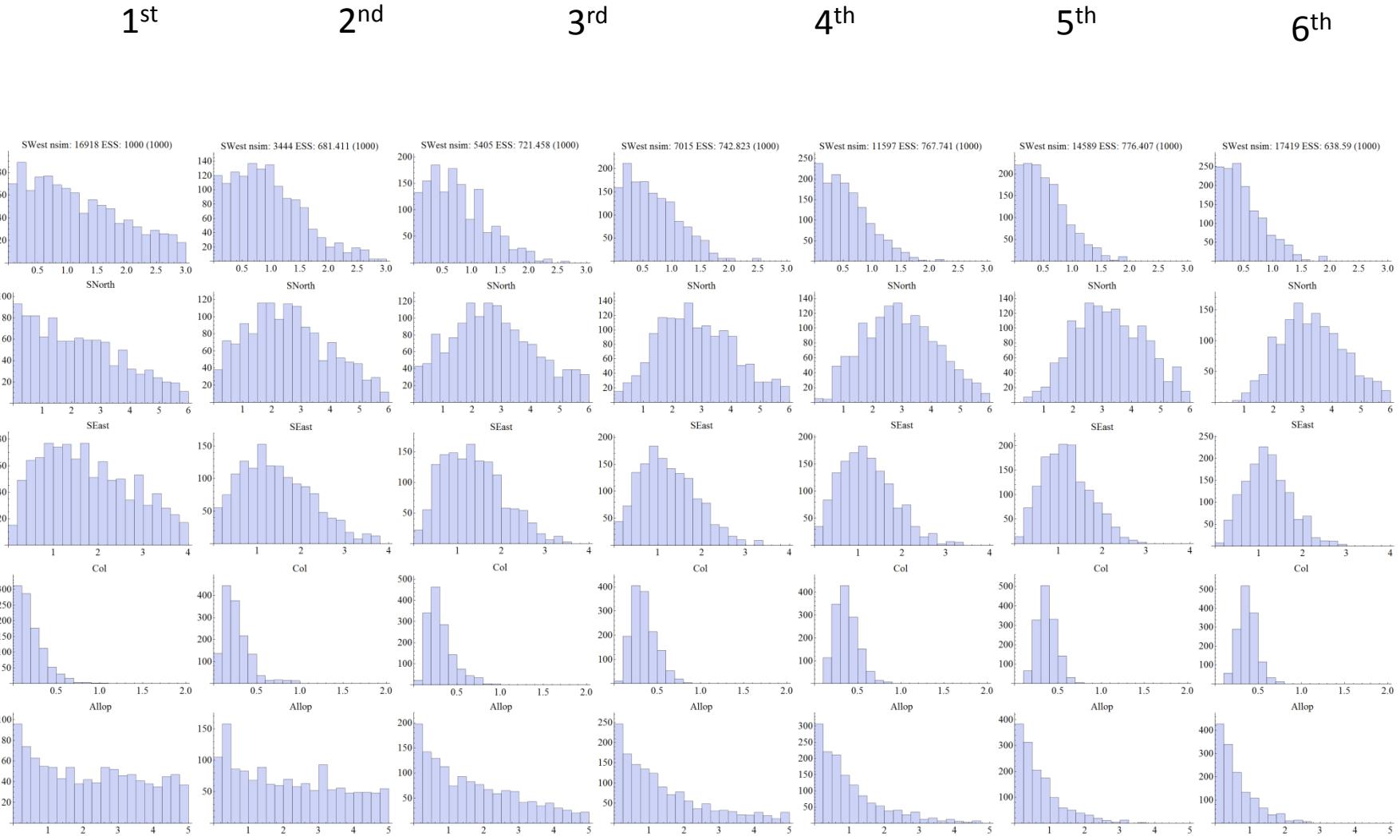


Figure SA17, T= 16, fixing initial range to South East

Scenario 3

Inference validation for model B

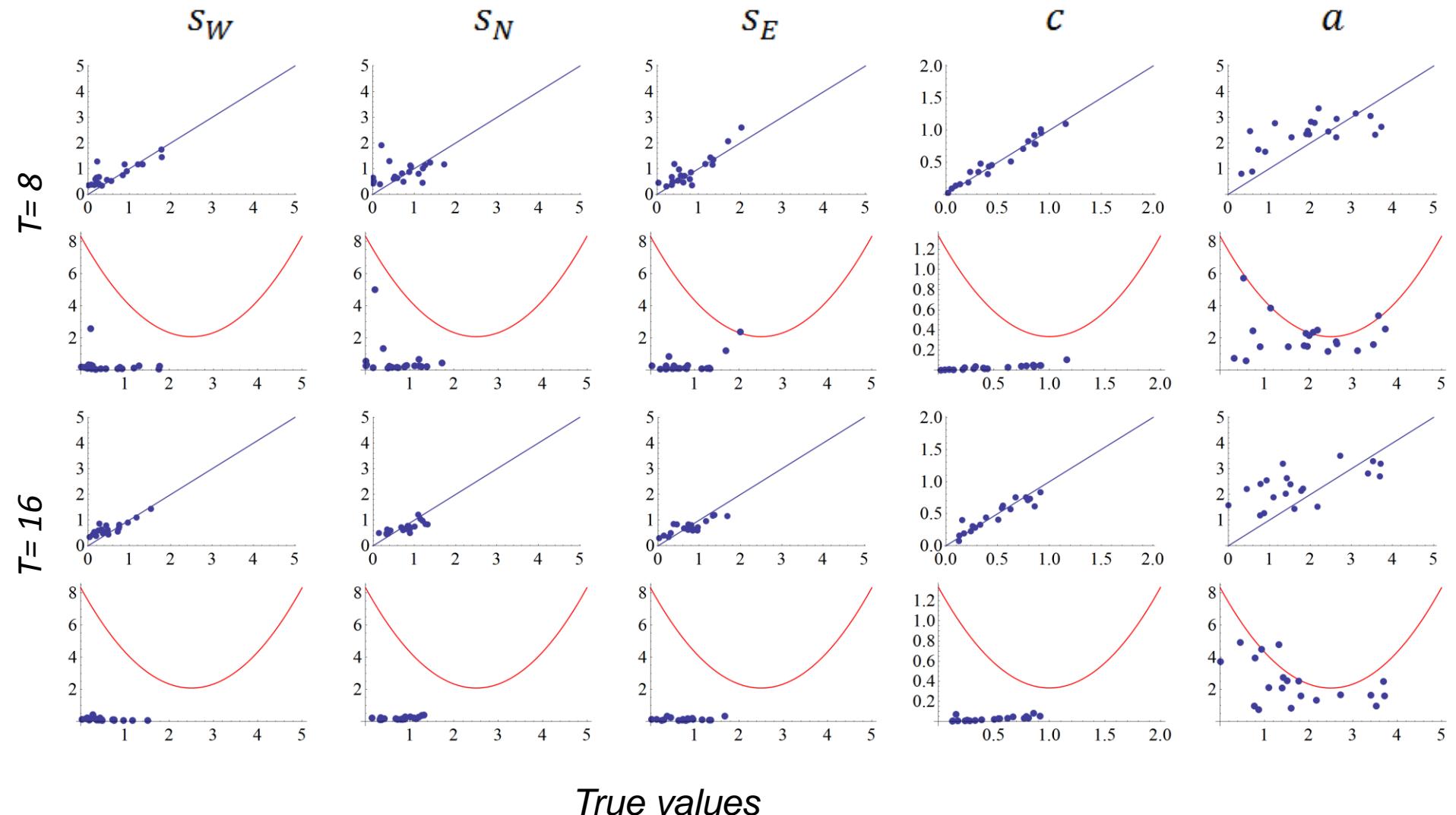
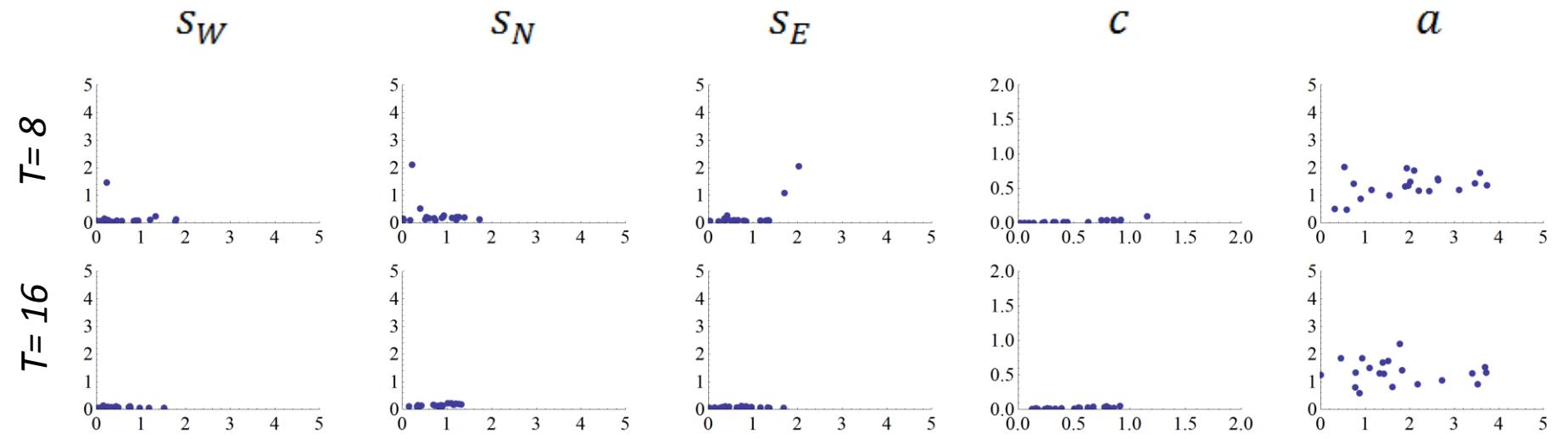
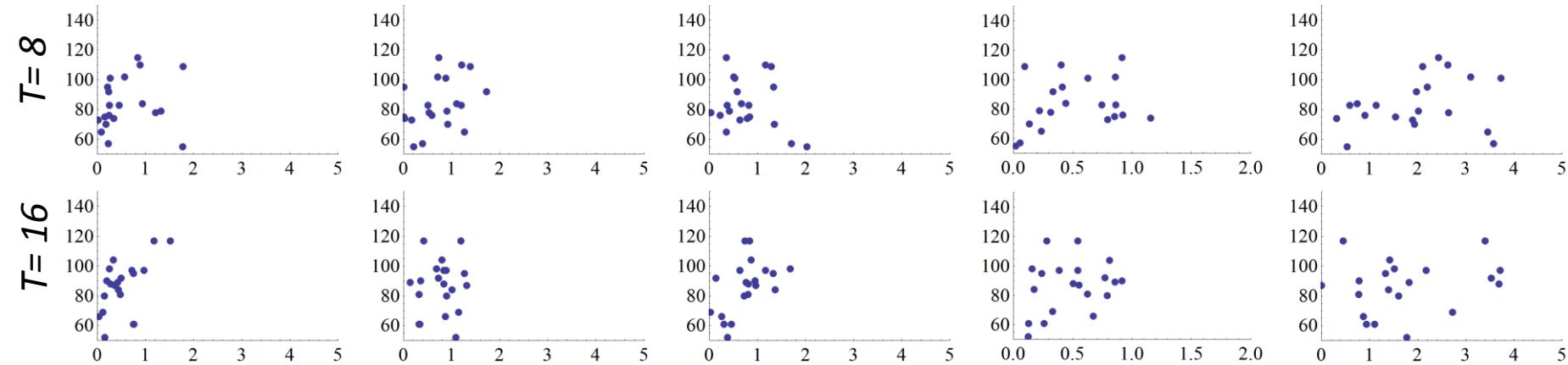


Figure SB1

Variance of posterior distribution



Number of species



True values

Figure SB2

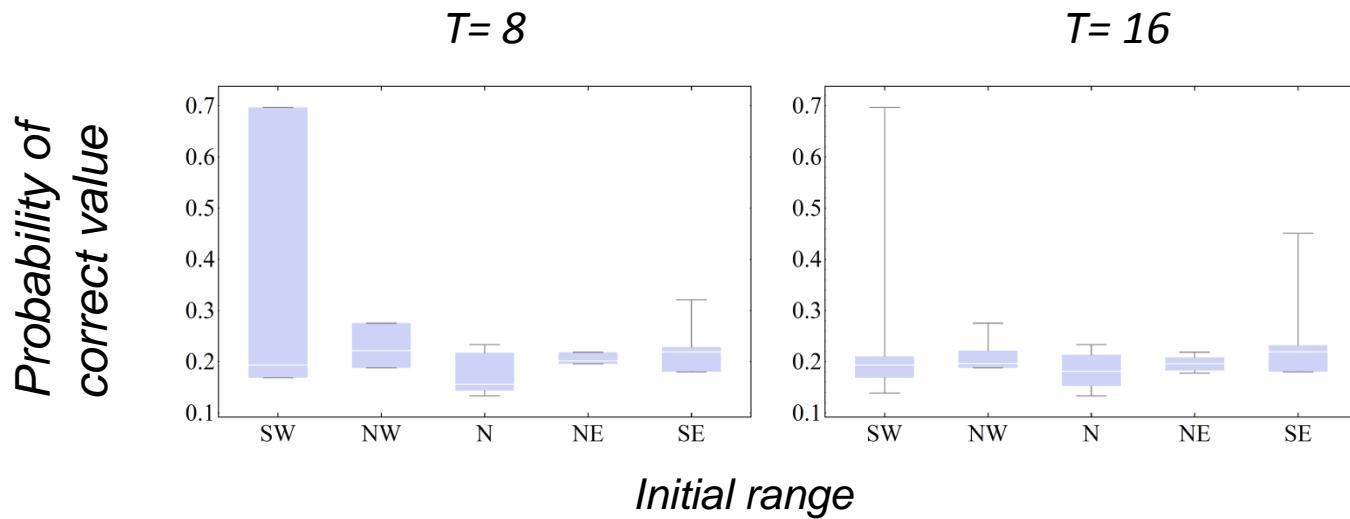


Figure SB3

Scenario 3

Estimates from Empirical data
Model B

Generations

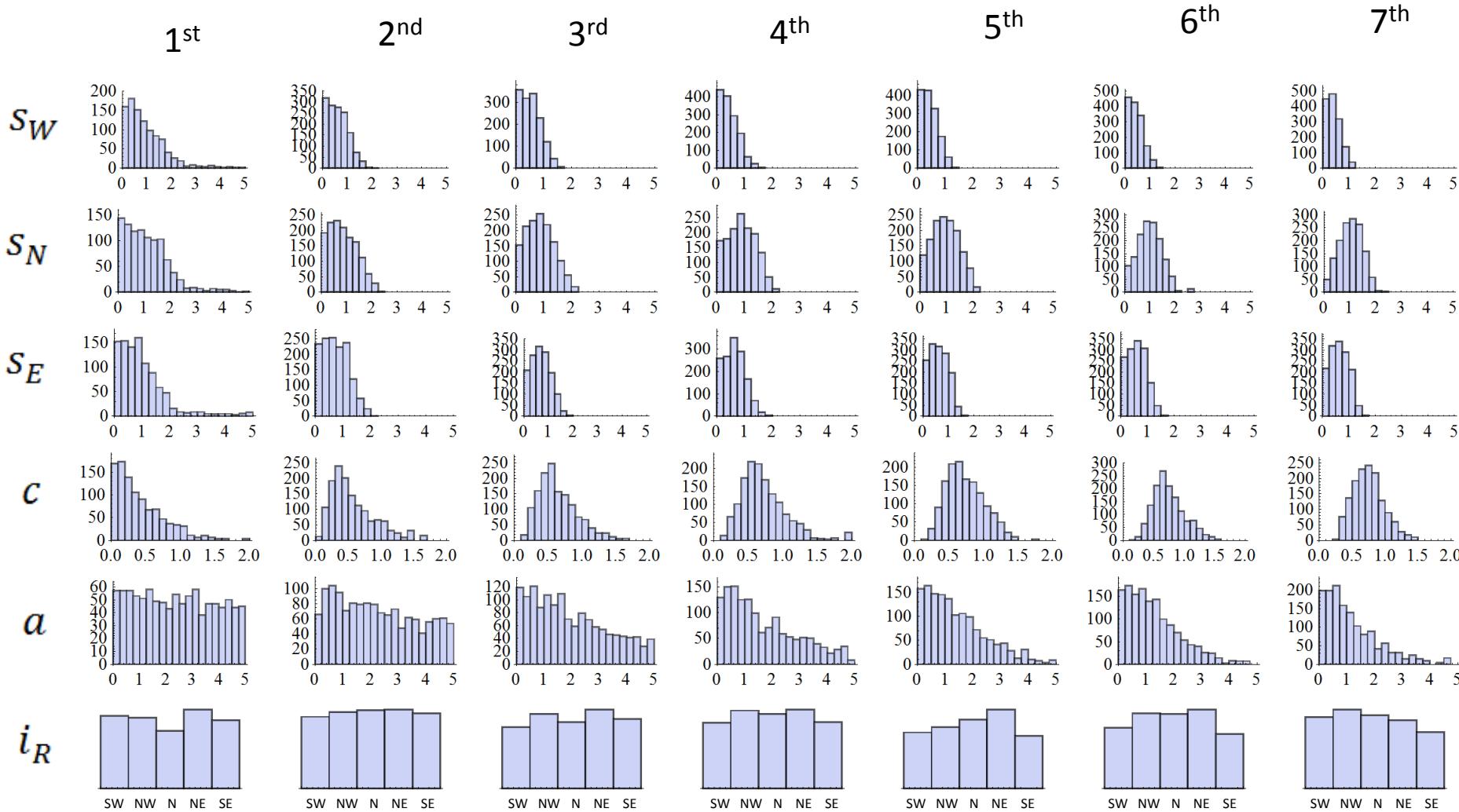


Figure SB4: $T = 8$, maximum number of lineages = 150

Generations

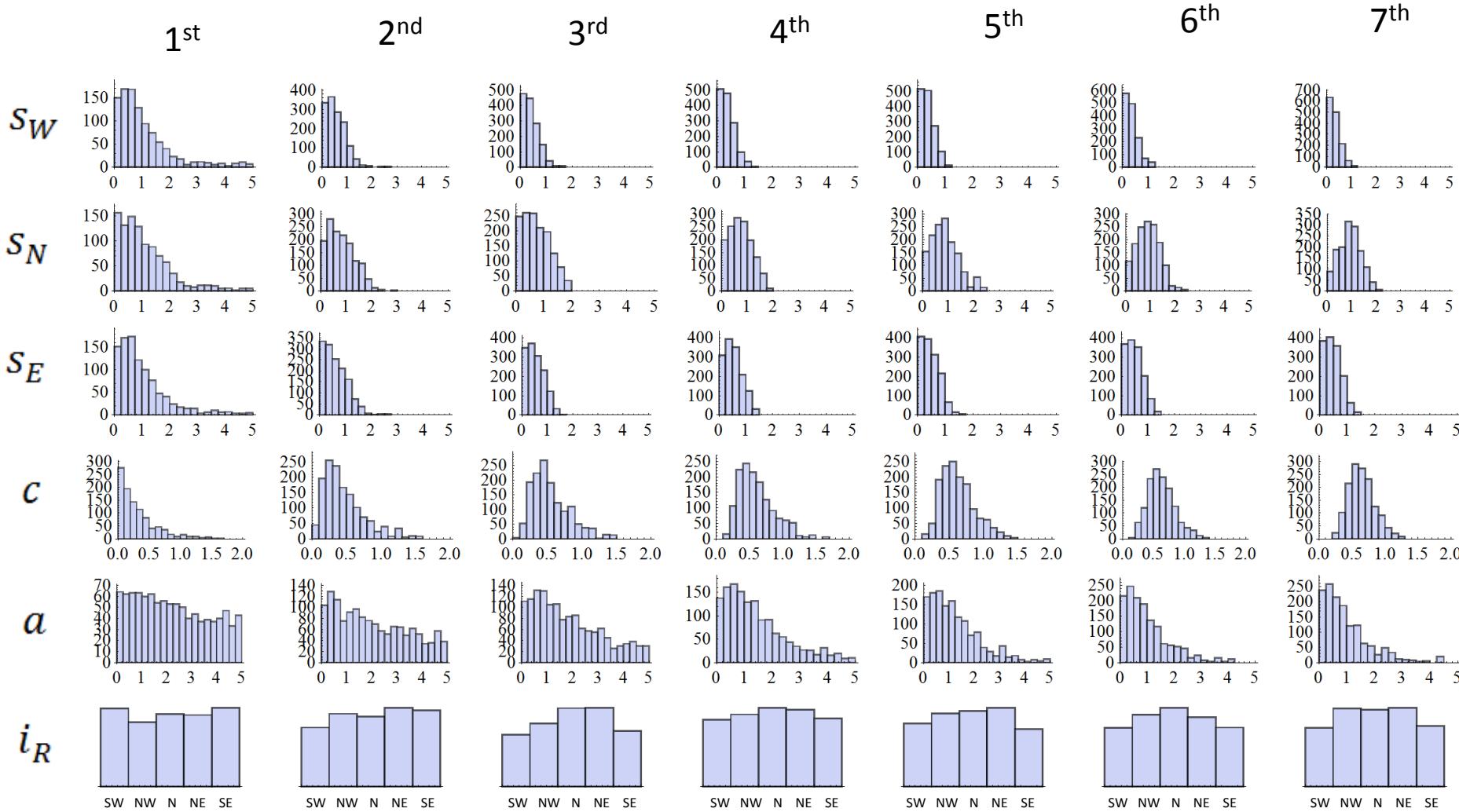


Figure SB5: T = 8, maximum number of lineages = 100

Generations

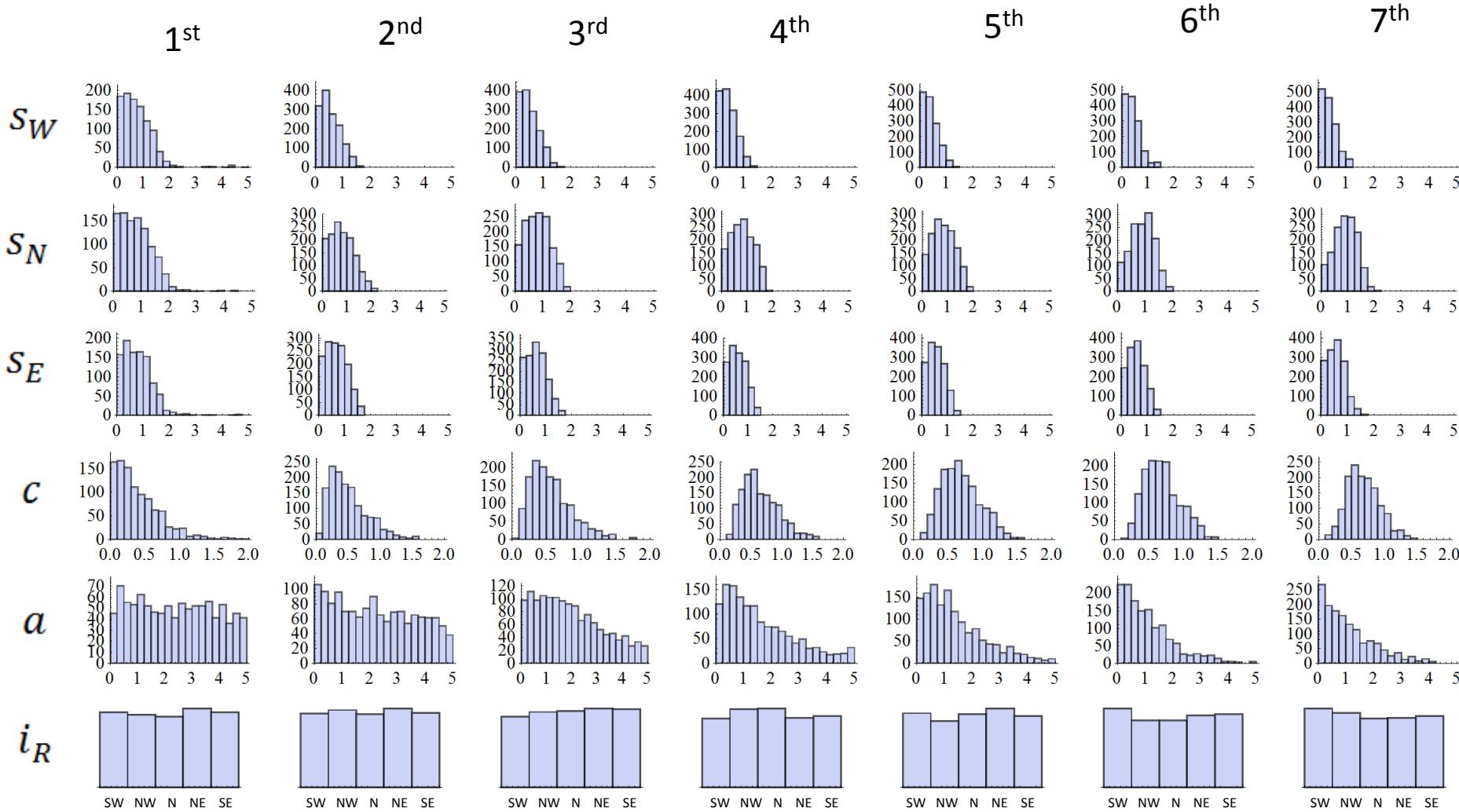


Figure SB6: T = 16, maximum number of lineages = 150

Generations

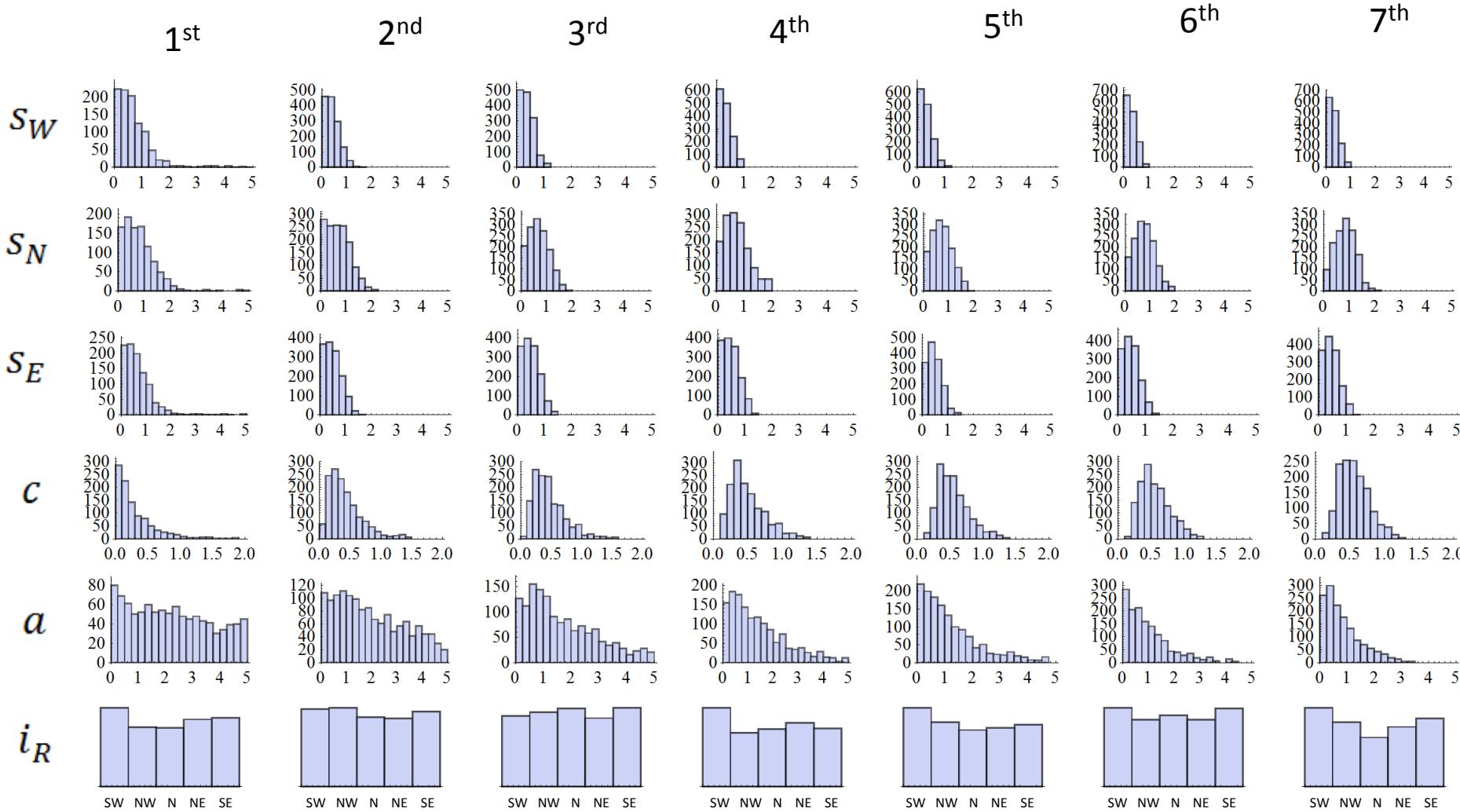


Figure SB7: $T = 16$, maximum number of lineages = 100

Initial range fixed

In this case, the fourth statistic has
not been used

Generations

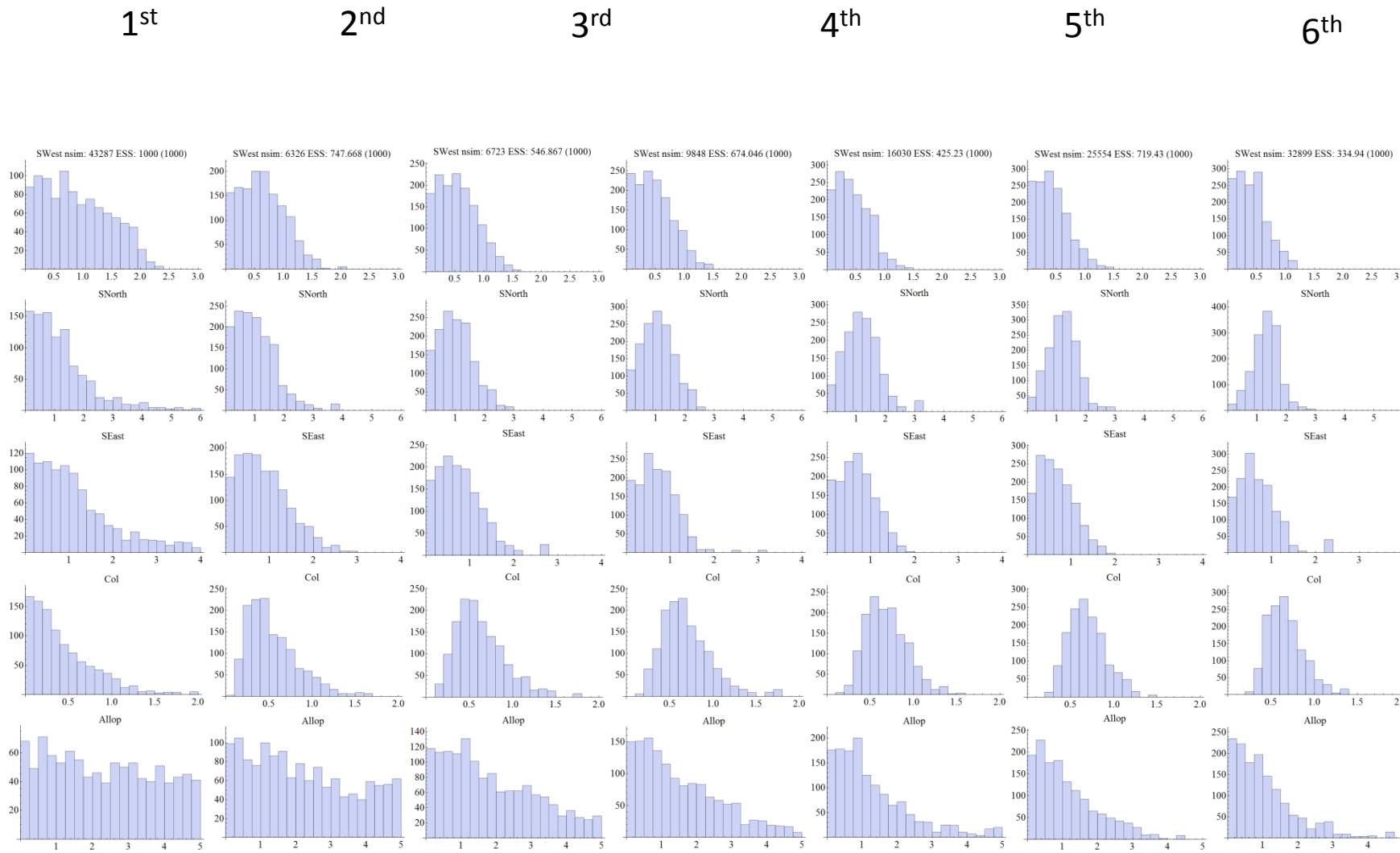


Figure SB8: T= 8 fixing initial range to **South West**

Generations

1st

2nd

3rd

4th

5th

6th

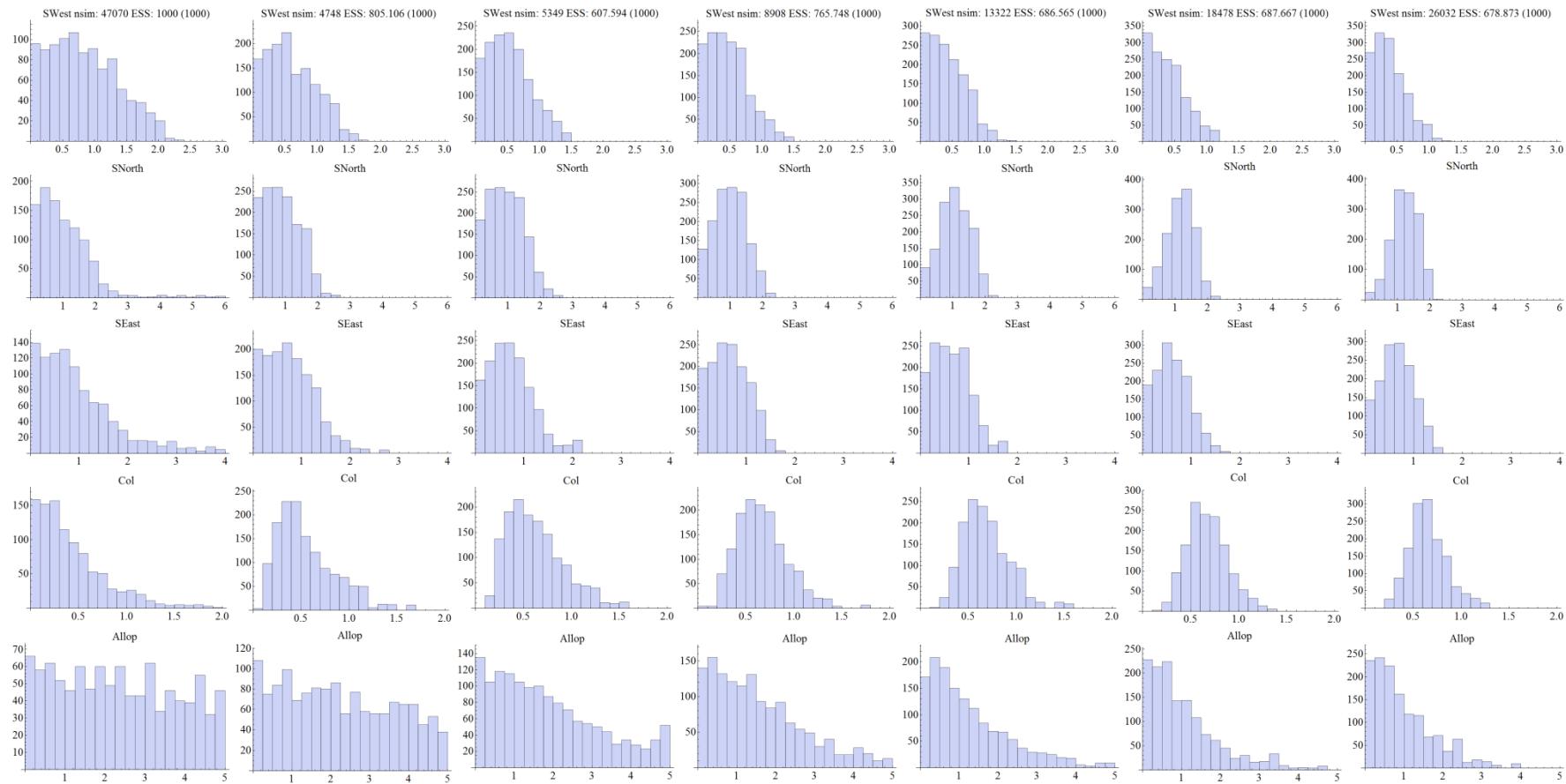


Figure SB9: T= 8 fixing initial range to **North West**

Generations

1st

2nd

3rd

4th

5th

6th

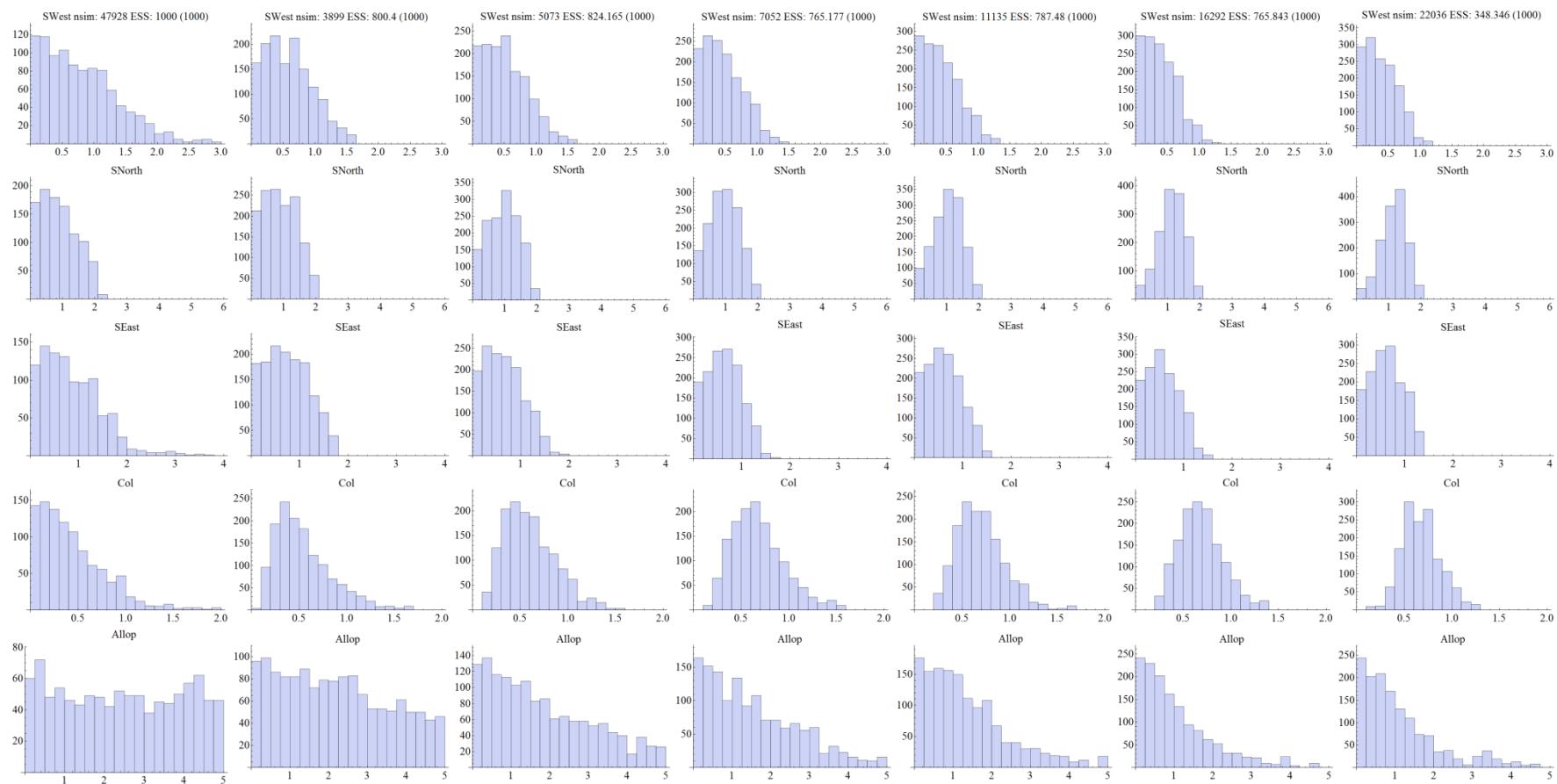


Figure SB10: T= 8 fixing initial range to North

Generations

1st

2nd

3rd

4th

5th

6th

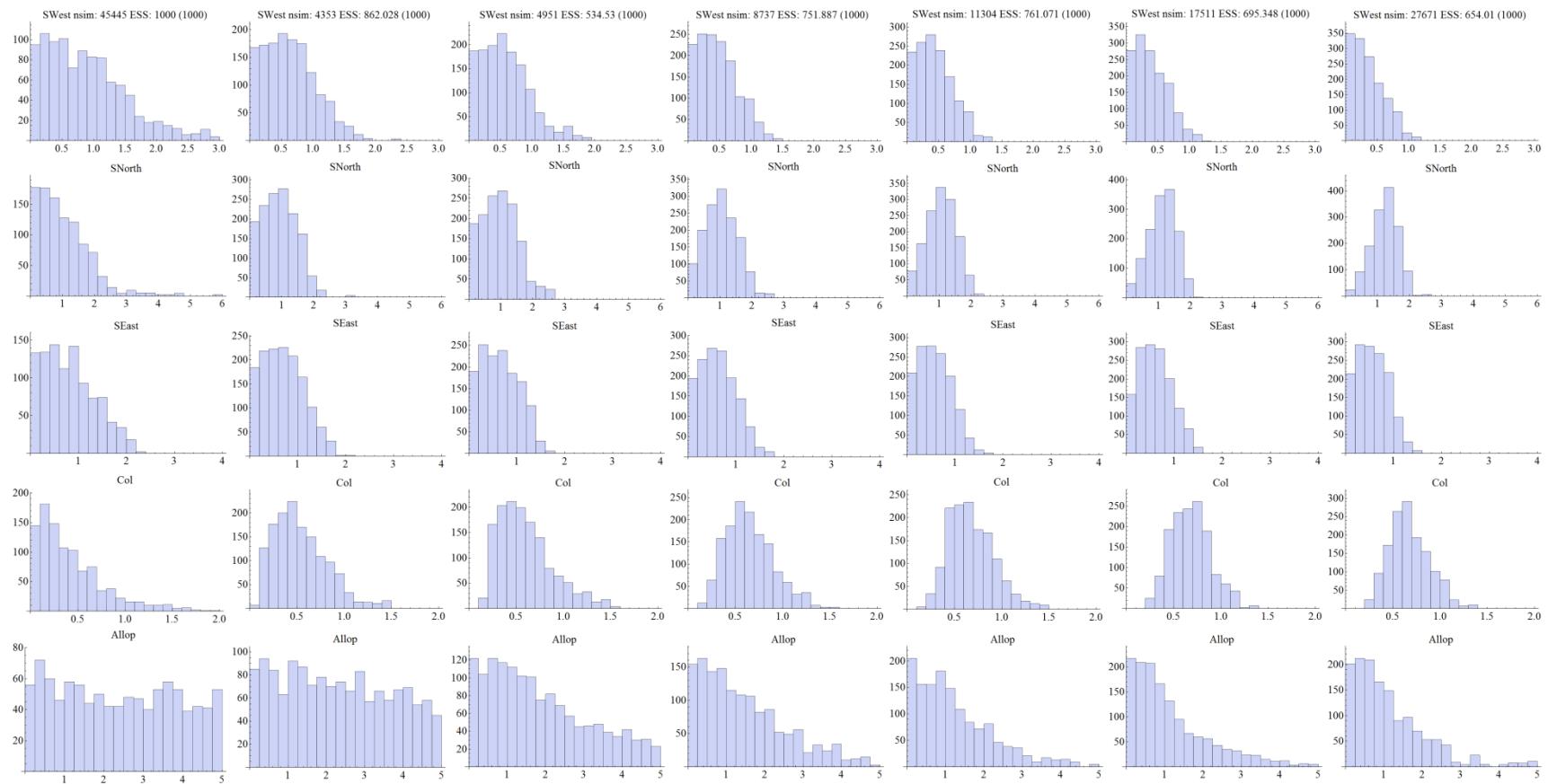


Figure SB11: T= 8 fixing initial range to North East

Generations

1st

2nd

3rd

4th

5th

6th

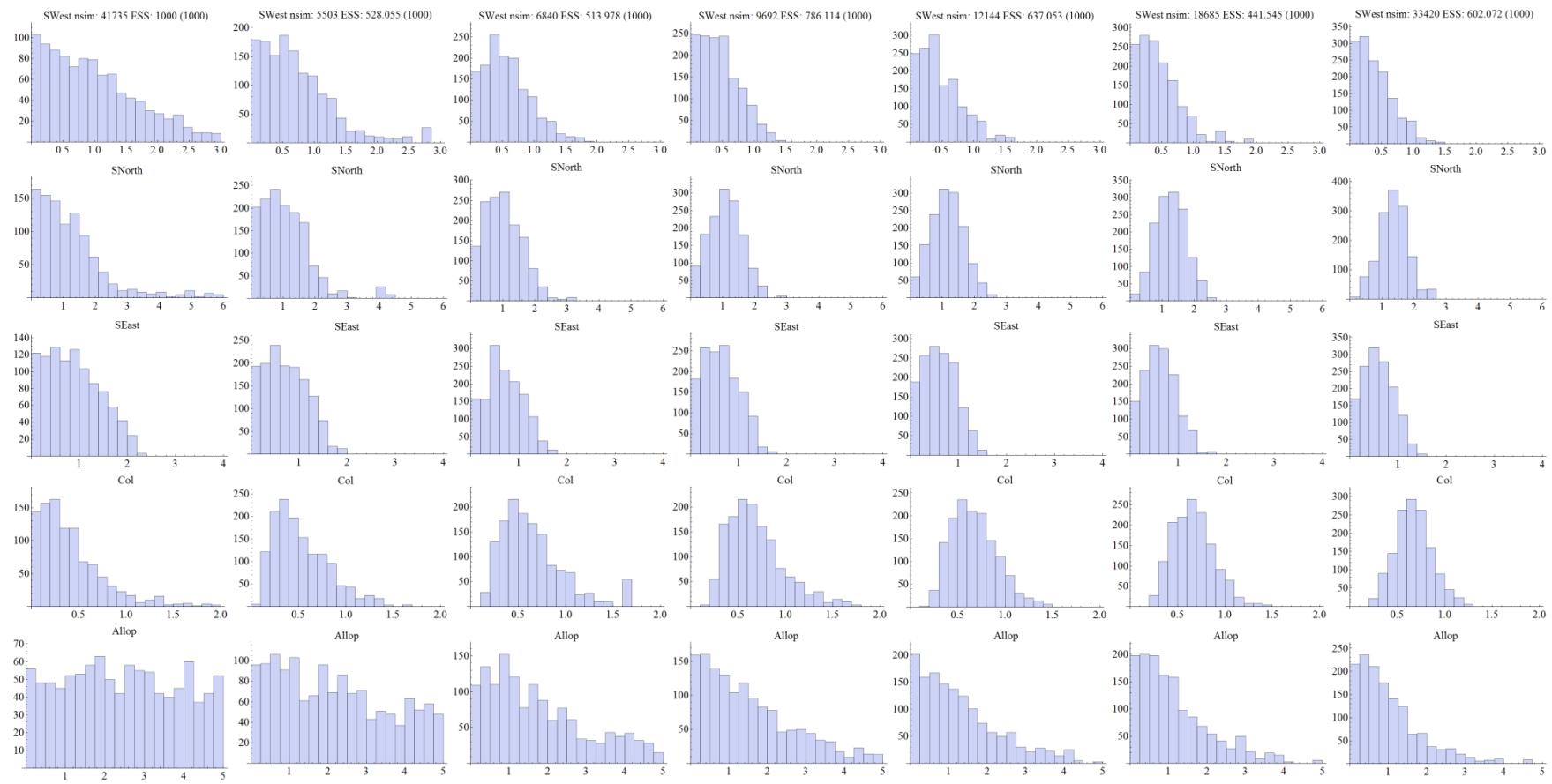


Figure SB12: T= 8 fixing initial range to South East

Generations

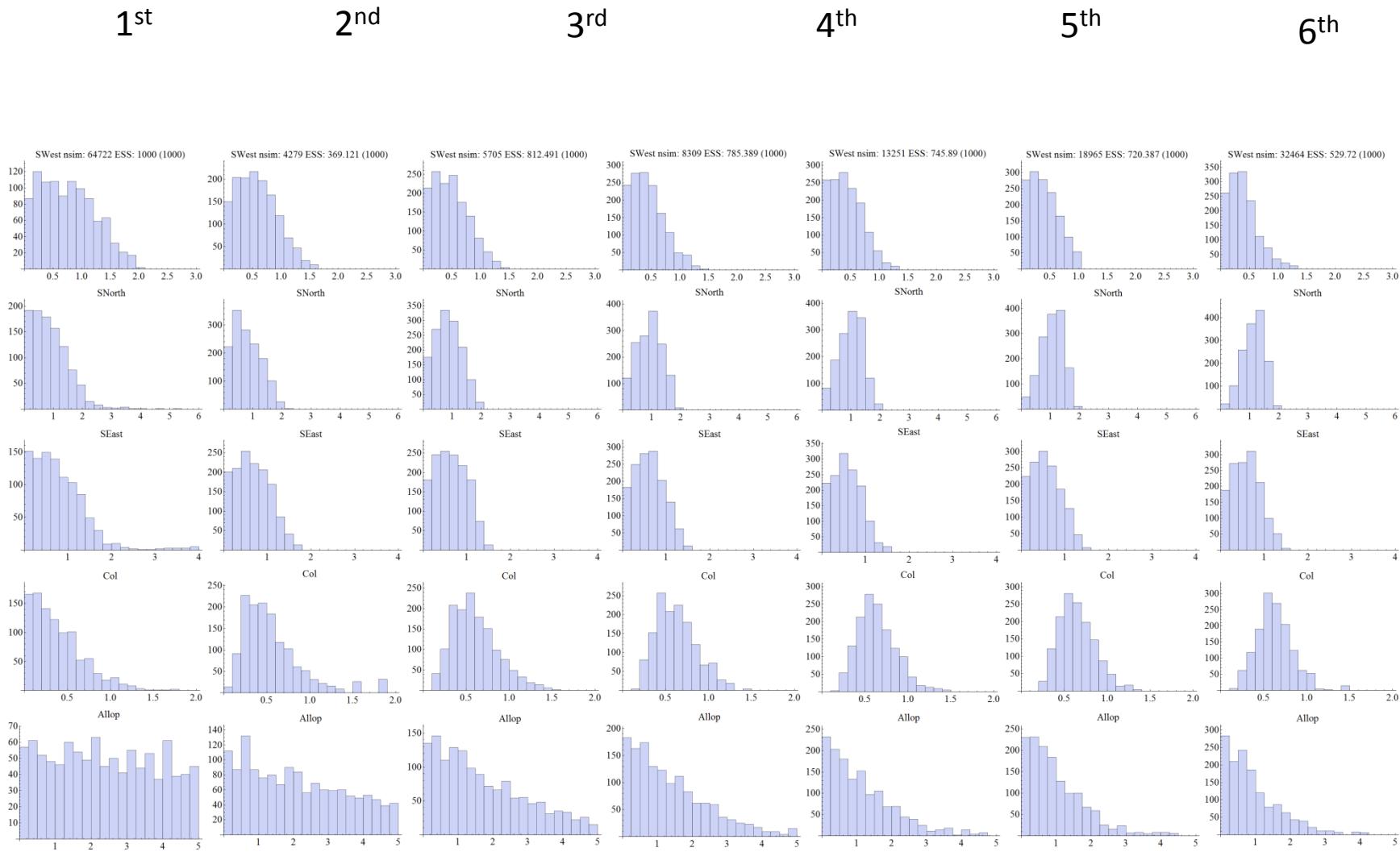


Figure SB13: T= 16, fixing initial range to **South West**

Generations

1st

2nd

3rd

4th

5th

6th

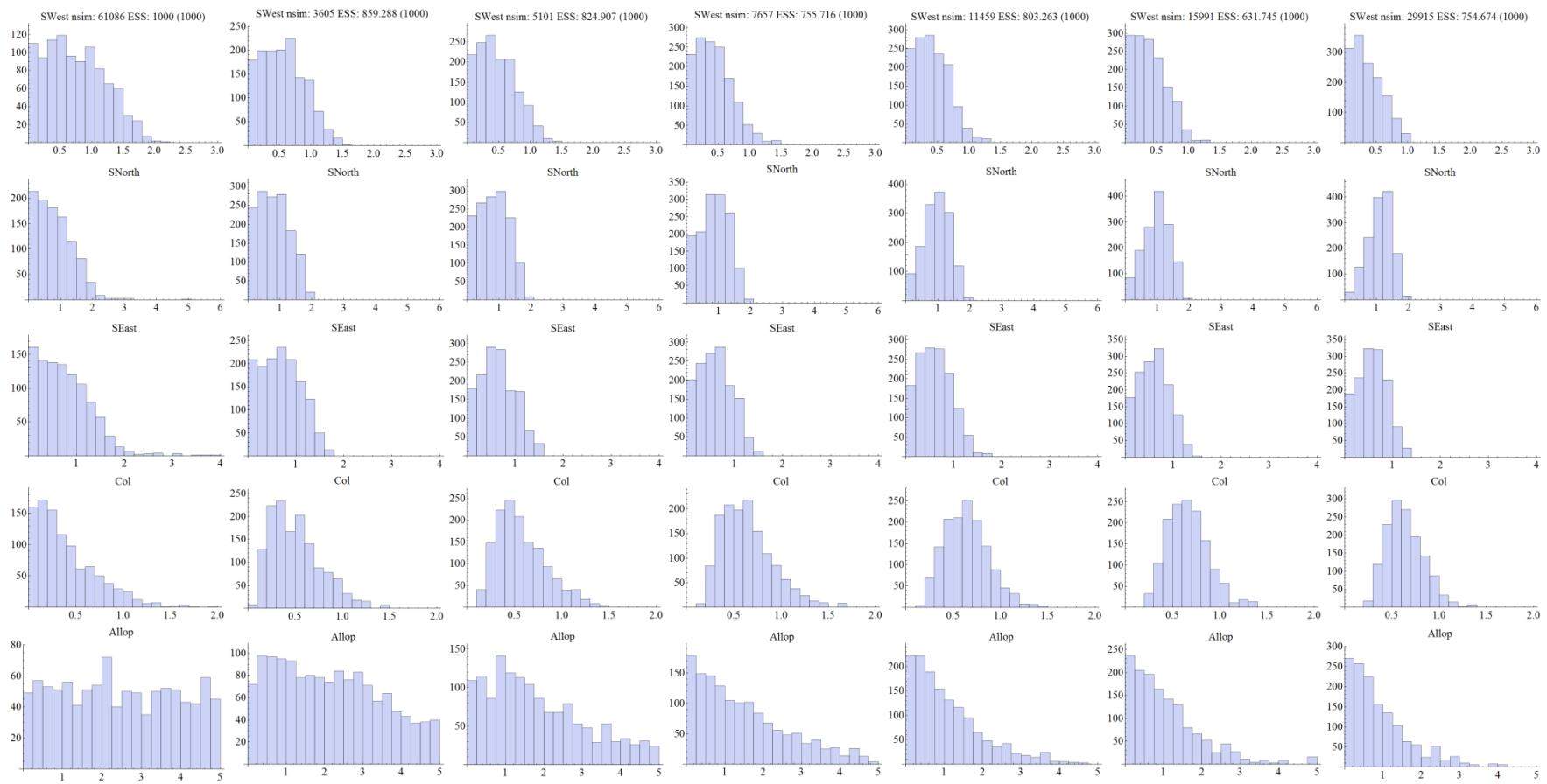


Figure SB14: T= 16, fixing initial range to North West

Generations

1st

2nd

3rd

4th

5th

6th

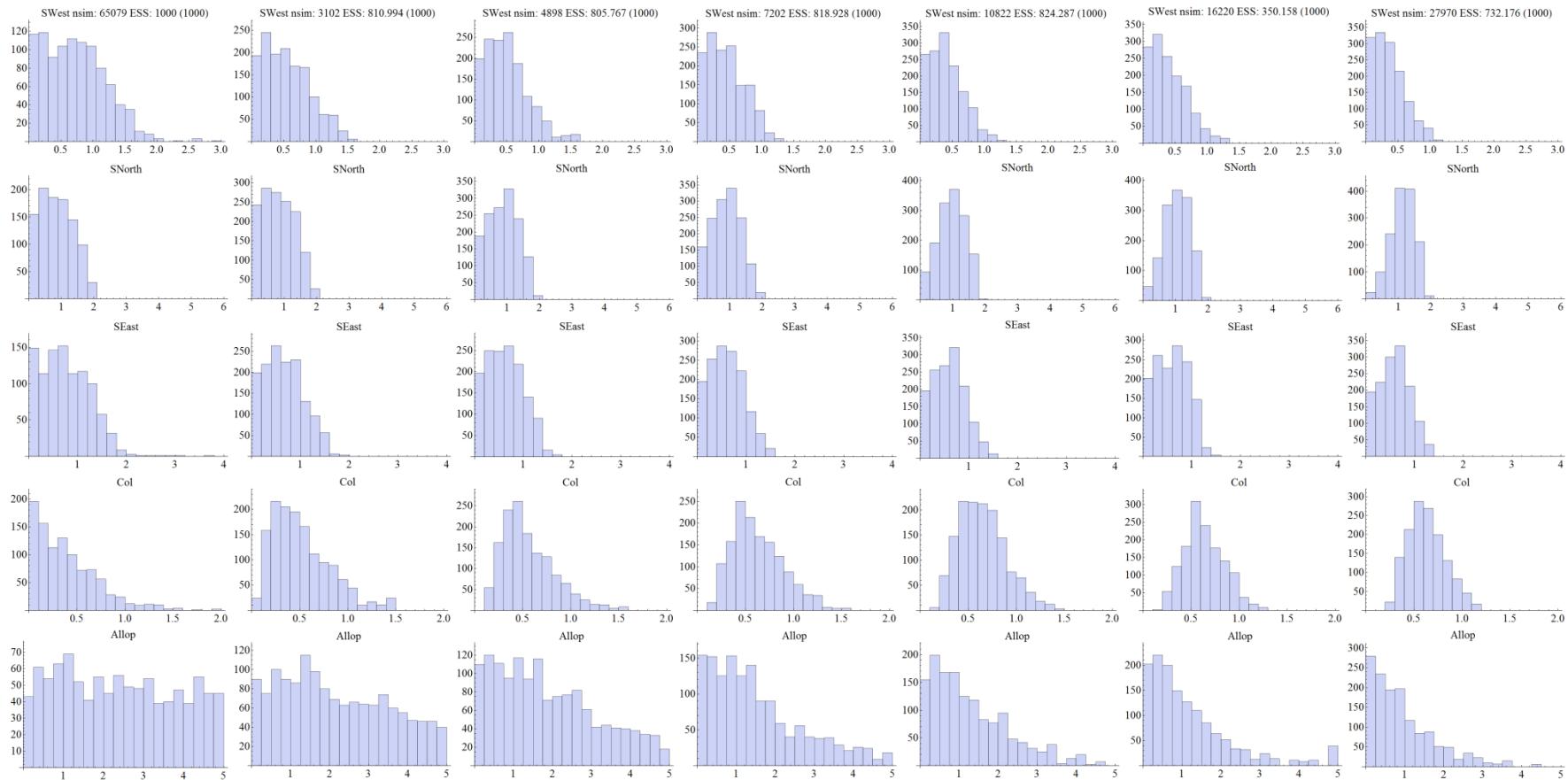


Figure SB15: T= 16, fixing initial range to North

Generations

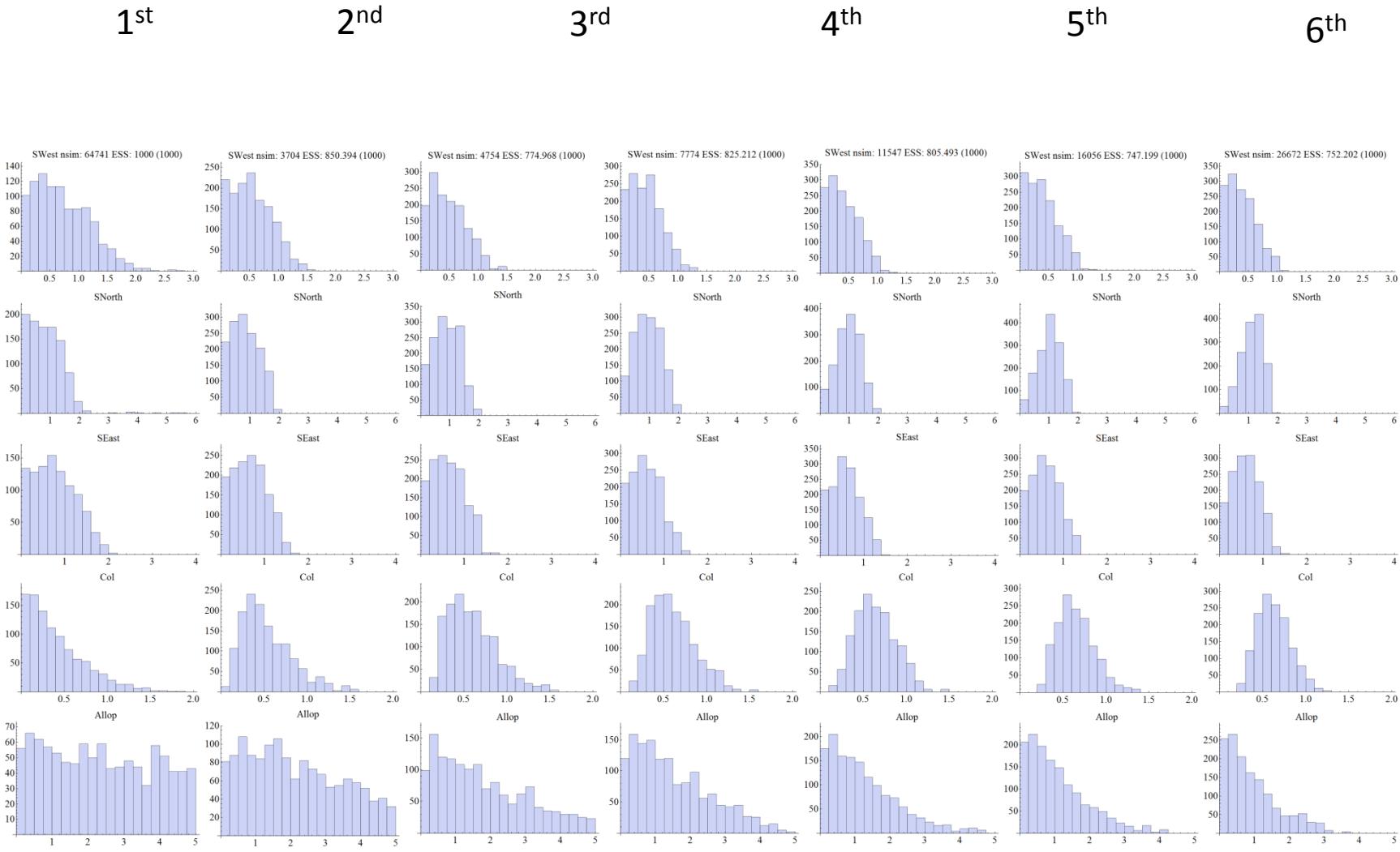


Figure SB16: T= 16, fixing initial range to **North East**

Generations

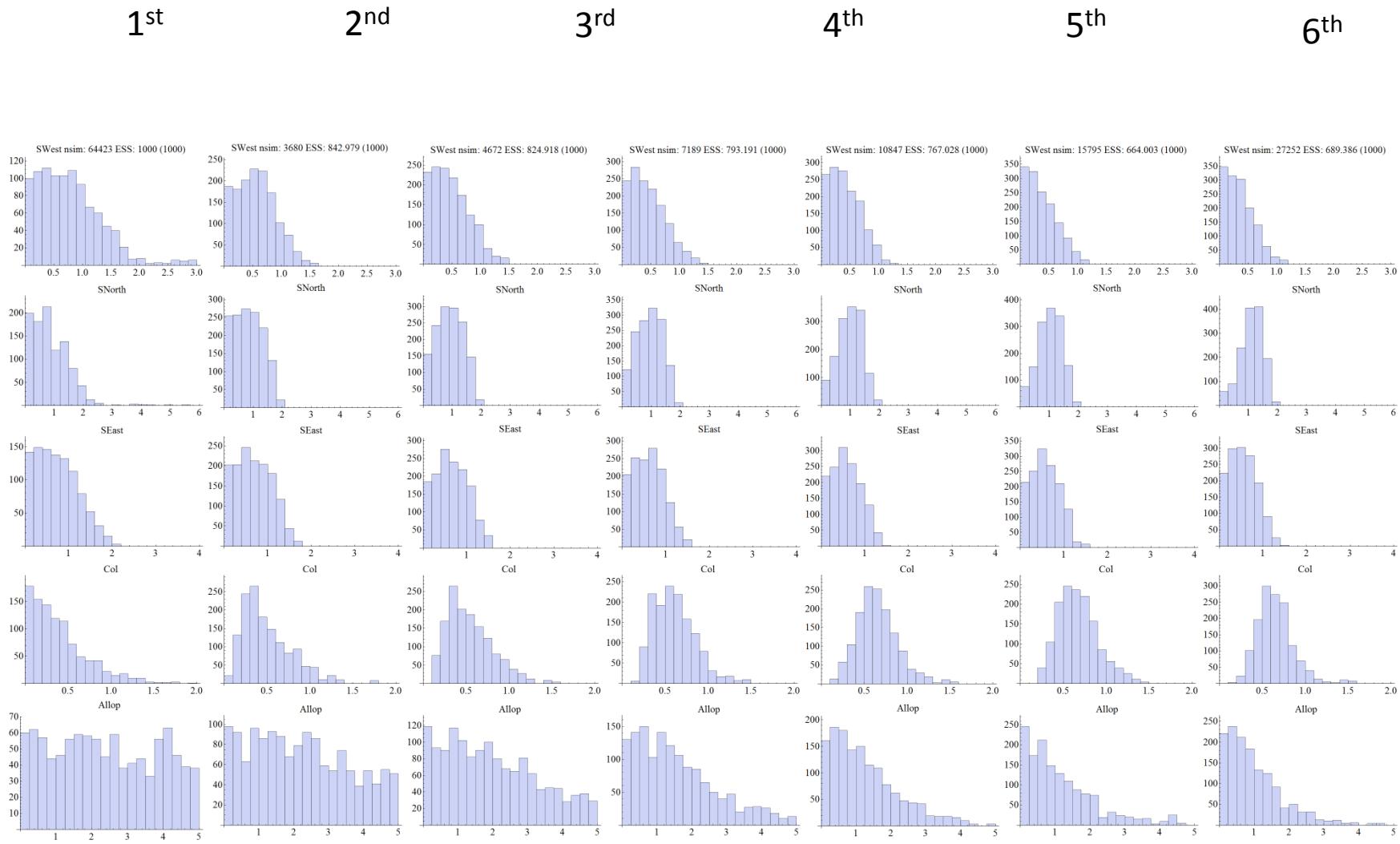


Figure SB17: T= 16, fixing initial range to South East