Online Supporting Information

Dynamic spatiotemporal modeling of a habitat defining plant species to support wildlife management at regional scales

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Contents

Potential scale reduction factors

Potential scale reduction factors ($\hat{R}$) help diagnose MCMC convergence. MCMC algorithms have reached convergence when $\hat{R} < 1.1$.

Table S1: Potential scale reduction factors ($\hat{R}$) for all parameters in the model for the Bear River core area.

	Point est.	Upper C.I.
Beta[1]	1.01	1.03
Beta[2]	1.01	1.03
Beta[3]	1.00	1.00
Beta[4]	1.00	1.00
gamma[1]	1.00	1.00
gamma[2]	1.00	1.00
gamma[3]	1.00	1.01
gamma[4]	1.00	1.00
gamma[5]	1.00	1.01
gamma[6]	1.00	1.00
gamma[7]	1.00	1.01
gamma[8]	1.01	1.01
gamma[9]	1.00	1.00
gamma[10]	1.00	1.00
gamma[11]	1.00	1.00
gamma[12]	1.00	1.00
gamma[13]	1.00	1.01
gamma[14]	1.00	1.01
gamma[15]	1.00	1.00
gamma[16]	1.00	1.00
gamma[17]	1.01	1.01
gamma[18]	1.00	1.00
gamma[19]	1.00	1.00
gamma[20]	1.00	1.00
gamma[21]	1.00	1.00
gamma[22]	1.00	1.00
gamma[23]	1.00	1.00
gamma[24]	1.00	1.00
gamma[25]	1.00	1.00
gamma[26]	1.00	1.00
gamma[27]	1.00	1.00
gamma[28]	1.00	1.00
gamma[29]	1.00	1.00
gamma[30]	1.00	1.00
gamma[31]	1.00	1.00
gamma[32]	1.00	1.00
sigma_y	1.01	1.03
lp___	1.00	1.02

Table S2: Potential scale reduction factors ($\hat{R}$) for all parameters in the model for the Blacks Fork core area.

	Point est.	Upper C.I.
Beta[1]	1.00	1.00
Beta[2]	1.00	1.01
Beta[3]	1.01	1.03
Beta[4]	1.02	1.05
gamma[1]	1.01	1.02
gamma[2]	1.00	1.01
gamma[3]	1.00	1.01
gamma[4]	1.01	1.02
gamma[5]	1.01	1.03
gamma[6]	1.01	1.02
gamma[7]	1.01	1.04
gamma[8]	1.01	1.03
gamma[9]	1.01	1.03
gamma[10]	1.01	1.03
gamma[11]	1.02	1.05
gamma[12]	1.00	1.00
gamma[13]	1.01	1.05
gamma[14]	1.01	1.04
gamma[15]	1.01	1.03
gamma[16]	1.01	1.02
gamma[17]	1.01	1.03
gamma[18]	1.00	1.01
gamma[19]	1.00	1.01
gamma[20]	1.00	1.00
gamma[21]	1.00	1.01
gamma[22]	1.01	1.04
gamma[23]	1.02	1.07
gamma[24]	1.01	1.02
gamma[25]	1.01	1.03
gamma[26]	1.01	1.03
gamma[27]	1.01	1.04
gamma[28]	1.01	1.04
gamma[29]	1.00	1.00
gamma[30]	1.01	1.01
gamma[31]	1.00	1.01
gamma[32]	1.01	1.02
sigma_y	1.00	1.01
lp___	1.00	1.00

Table S3: Potential scale reduction factors ($\hat{R}$) for all parameters in the model for the Buffalo core area.

	Point est.	Upper C.I.
Beta[1]	1.01	1.03
Beta[2]	1.01	1.03
Beta[3]	1.01	1.02
Beta[4]	1.00	1.00
gamma[1]	1.00	1.00
gamma[2]	1.00	1.01
gamma[3]	1.00	1.00
gamma[4]	1.01	1.01
gamma[5]	1.00	1.01
gamma[6]	1.00	1.00
gamma[7]	1.00	1.00
gamma[8]	1.00	1.00
gamma[9]	1.00	1.01
gamma[10]	1.01	1.02
gamma[11]	1.00	1.01
gamma[12]	1.00	1.00
gamma[13]	1.00	1.01
gamma[14]	1.00	1.01
gamma[15]	1.00	1.01
gamma[16]	1.00	1.00
gamma[17]	1.00	1.01
gamma[18]	1.00	1.00
gamma[19]	1.00	1.01
gamma[20]	1.00	1.01
gamma[21]	1.01	1.03
gamma[22]	1.01	1.02
gamma[23]	1.00	1.00
gamma[24]	1.01	1.01
gamma[25]	1.00	1.00
gamma[26]	1.00	1.01
gamma[27]	1.00	1.01
gamma[28]	1.00	1.01
gamma[29]	1.00	1.01
gamma[30]	1.00	1.01
gamma[31]	1.00	1.00
gamma[32]	1.00	1.01
sigma_y	1.01	1.01
lp___	1.00	1.02

Table S4: Potential scale reduction factors ($\hat{R}$) for all parameters in the model for the Continental Divide core area.

	Point est.	Upper C.I.
Beta[1]	1	1.00
Beta[2]	1	1.00
Beta[3]	1	1.01
Beta[4]	1	1.00
gamma[1]	1	1.01
gamma[2]	1	1.00
gamma[3]	1	1.00
gamma[4]	1	1.01
gamma[5]	1	1.00
gamma[6]	1	1.00
gamma[7]	1	1.01
gamma[8]	1	1.00
gamma[9]	1	1.00
gamma[10]	1	1.01
gamma[11]	1	1.01
gamma[12]	1	1.00
gamma[13]	1	1.00
gamma[14]	1	1.01
gamma[15]	1	1.00
gamma[16]	1	1.00
gamma[17]	1	1.01
gamma[18]	1	1.01
gamma[19]	1	1.00
gamma[20]	1	1.00
gamma[21]	1	1.00
gamma[22]	1	1.01
gamma[23]	1	1.00
gamma[24]	1	1.00
gamma[25]	1	1.00
gamma[26]	1	1.01
gamma[27]	1	1.00
gamma[28]	1	1.00
gamma[29]	1	1.01
gamma[30]	1	1.01
gamma[31]	1	1.00
gamma[32]	1	1.00
sigma_y	1	1.00
lp___	1	1.00

Table S5: Potential scale reduction factors ($\hat{R}$) for all parameters in the model for the Crowheart core area.

	Point est.	Upper C.I.
Beta[1]	1.01	1.03
Beta[2]	1.01	1.03
Beta[3]	1.01	1.01
Beta[4]	1.00	1.00
gamma[1]	1.01	1.01
gamma[2]	1.00	1.00
gamma[3]	1.00	1.00
gamma[4]	1.00	1.01
gamma[5]	1.00	1.00
gamma[6]	1.00	1.00
gamma[7]	1.00	1.00
gamma[8]	1.00	1.01
gamma[9]	1.01	1.02
gamma[10]	1.00	1.01
gamma[11]	1.00	1.01
gamma[12]	1.00	1.00
gamma[13]	1.00	1.00
gamma[14]	1.00	1.00
gamma[15]	1.00	1.00
gamma[16]	1.00	1.00
gamma[17]	1.00	1.02
gamma[18]	1.00	1.01
gamma[19]	1.01	1.02
gamma[20]	1.00	1.00
gamma[21]	1.00	1.00
gamma[22]	1.00	1.00
gamma[23]	1.00	1.00
gamma[24]	1.00	1.00
gamma[25]	1.00	1.00
gamma[26]	1.00	1.00
gamma[27]	1.00	1.01
gamma[28]	1.00	1.00
gamma[29]	1.00	1.00
gamma[30]	1.01	1.02
gamma[31]	1.00	1.01
gamma[32]	1.00	1.01
sigma_y	1.00	1.01
lp___	1.01	1.02

Table S6: Potential scale reduction factors ($\hat{R}$) for all parameters in the model for the Daniel core area.

	Point est.	Upper C.I.
Beta[1]	1.01	1.04
Beta[2]	1.01	1.04
Beta[3]	1.00	1.00
Beta[4]	1.00	1.00
gamma[1]	1.00	1.00
gamma[2]	1.00	1.00
gamma[3]	1.00	1.00
gamma[4]	1.00	1.00
gamma[5]	1.00	1.00
gamma[6]	1.01	1.01
gamma[7]	1.00	1.00
gamma[8]	1.00	1.00
gamma[9]	1.00	1.00
gamma[10]	1.00	1.00
gamma[11]	1.00	1.00
gamma[12]	1.00	1.00
gamma[13]	1.00	1.00
gamma[14]	1.00	1.00
gamma[15]	1.00	1.00
gamma[16]	1.00	1.00
gamma[17]	1.00	1.00
gamma[18]	1.00	1.00
gamma[19]	1.00	1.00
gamma[20]	1.00	1.00
gamma[21]	1.00	1.00
gamma[22]	1.00	1.00
gamma[23]	1.00	1.00
gamma[24]	1.00	1.00
gamma[25]	1.00	1.00
gamma[26]	1.00	1.01
gamma[27]	1.00	1.00
gamma[28]	1.00	1.00
gamma[29]	1.00	1.00
gamma[30]	1.00	1.01
gamma[31]	1.00	1.00
gamma[32]	1.01	1.01
sigma_y	1.03	1.11
lp___	1.00	1.01

Table S7: Potential scale reduction factors ($\hat{R}$) for all parameters in the model for the Douglas core area.

	Point est.	Upper C.I.
Beta[1]	1.00	1.00
Beta[2]	1.00	1.00
Beta[3]	1.00	1.01
Beta[4]	1.01	1.02
gamma[1]	1.00	1.01
gamma[2]	1.00	1.01
gamma[3]	1.00	1.01
gamma[4]	1.00	1.01
gamma[5]	1.00	1.00
gamma[6]	1.00	1.00
gamma[7]	1.00	1.00
gamma[8]	1.01	1.02
gamma[9]	1.00	1.01
gamma[10]	1.00	1.01
gamma[11]	1.00	1.01
gamma[12]	1.00	1.01
gamma[13]	1.00	1.02
gamma[14]	1.00	1.01
gamma[15]	1.00	1.00
gamma[16]	1.00	1.01
gamma[17]	1.00	1.01
gamma[18]	1.00	1.00
gamma[19]	1.00	1.00
gamma[20]	1.00	1.00
gamma[21]	1.00	1.00
gamma[22]	1.01	1.02
gamma[23]	1.01	1.02
gamma[24]	1.00	1.01
gamma[25]	1.01	1.02
gamma[26]	1.00	1.01
gamma[27]	1.00	1.01
gamma[28]	1.00	1.00
gamma[29]	1.00	1.00
gamma[30]	1.00	1.00
gamma[31]	1.00	1.00
gamma[32]	1.00	1.00
sigma_y	1.01	1.02
lp___	1.00	1.00

Table S8: Potential scale reduction factors ($\hat{R}$) for all parameters in the model for the Elk Basin East core area.

	Point est.	Upper C.I.
Beta[1]	1.01	1.01
Beta[2]	1.01	1.01
Beta[3]	1.02	1.06
Beta[4]	1.01	1.01
gamma[1]	1.01	1.03
gamma[2]	1.01	1.03
gamma[3]	1.01	1.04
gamma[4]	1.01	1.02
gamma[5]	1.00	1.00
gamma[6]	1.00	1.00
gamma[7]	1.00	1.01
gamma[8]	1.01	1.03
gamma[9]	1.01	1.04
gamma[10]	1.01	1.03
gamma[11]	1.00	1.01
gamma[12]	1.01	1.02
gamma[13]	1.02	1.05
gamma[14]	1.00	1.01
gamma[15]	1.00	1.01
gamma[16]	1.00	1.01
gamma[17]	1.00	1.01
gamma[18]	1.01	1.02
gamma[19]	1.01	1.03
gamma[20]	1.01	1.02
gamma[21]	1.02	1.05
gamma[22]	1.02	1.06
gamma[23]	1.01	1.02
gamma[24]	1.00	1.01
gamma[25]	1.01	1.02
gamma[26]	1.01	1.01
gamma[27]	1.01	1.03
gamma[28]	1.00	1.00
gamma[29]	1.00	1.01
gamma[30]	1.00	1.01
gamma[31]	1.01	1.02
gamma[32]	1.01	1.02
sigma_y	1.00	1.00
lp___	1.00	1.00

Table S9: Potential scale reduction factors ($\hat{R}$) for all parameters in the model for the Elk Basin West core area.

	Point est.	Upper C.I.
Beta[1]	1.00	1.01
Beta[2]	1.00	1.01
Beta[3]	1.04	1.14
Beta[4]	1.15	1.44
gamma[1]	1.00	1.00
gamma[2]	1.05	1.15
gamma[3]	1.06	1.20
gamma[4]	1.11	1.33
gamma[5]	1.04	1.14
gamma[6]	1.00	1.00
gamma[7]	1.03	1.09
gamma[8]	1.06	1.19
gamma[9]	1.05	1.16
gamma[10]	1.02	1.07
gamma[11]	1.10	1.31
gamma[12]	1.11	1.32
gamma[13]	1.00	1.00
gamma[14]	1.03	1.11
gamma[15]	1.01	1.03
gamma[16]	1.05	1.17
gamma[17]	1.05	1.15
gamma[18]	1.12	1.36
gamma[19]	1.01	1.03
gamma[20]	1.03	1.09
gamma[21]	1.02	1.07
gamma[22]	1.02	1.07
gamma[23]	1.12	1.34
gamma[24]	1.10	1.31
gamma[25]	1.11	1.33
gamma[26]	1.05	1.16
gamma[27]	1.04	1.13
gamma[28]	1.00	1.00
gamma[29]	1.03	1.11
gamma[30]	1.05	1.16
gamma[31]	1.06	1.19
gamma[32]	1.06	1.18
sigma_y	1.04	1.11
lp___	1.00	1.02

Table S10: Potential scale reduction factors ($\hat{R}$) for all parameters in the model for the Fontenelle core area.

	Point est.	Upper C.I.
Beta[1]	1.00	1.00
Beta[2]	1.00	1.00
Beta[3]	1.01	1.02
Beta[4]	1.01	1.03
gamma[1]	1.00	1.01
gamma[2]	1.00	1.01
gamma[3]	1.00	1.00
gamma[4]	1.00	1.00
gamma[5]	1.00	1.00
gamma[6]	1.01	1.01
gamma[7]	1.00	1.00
gamma[8]	1.00	1.00
gamma[9]	1.00	1.01
gamma[10]	1.00	1.01
gamma[11]	1.00	1.00
gamma[12]	1.00	1.01
gamma[13]	1.00	1.00
gamma[14]	1.00	1.01
gamma[15]	1.00	1.00
gamma[16]	1.00	1.00
gamma[17]	1.00	1.00
gamma[18]	1.00	1.00
gamma[19]	1.00	1.00
gamma[20]	1.00	1.00
gamma[21]	1.00	1.00
gamma[22]	1.00	1.00
gamma[23]	1.01	1.02
gamma[24]	1.01	1.02
gamma[25]	1.00	1.00
gamma[26]	1.00	1.01
gamma[27]	1.01	1.02
gamma[28]	1.00	1.00
gamma[29]	1.00	1.00
gamma[30]	1.00	1.01
gamma[31]	1.00	1.01
gamma[32]	1.01	1.02
sigma_y	1.01	1.04
lp___	1.00	1.01

Table S11: Potential scale reduction factors ($\hat{R}$) for all parameters in the model for the Grass Creek core area.

	Point est.	Upper C.I.
Beta[1]	1.00	1.00
Beta[2]	1.00	1.00
Beta[3]	1.01	1.02
Beta[4]	1.00	1.01
gamma[1]	1.00	1.01
gamma[2]	1.00	1.01
gamma[3]	1.00	1.01
gamma[4]	1.00	1.00
gamma[5]	1.00	1.00
gamma[6]	1.00	1.01
gamma[7]	1.00	1.01
gamma[8]	1.01	1.02
gamma[9]	1.00	1.01
gamma[10]	1.00	1.01
gamma[11]	1.00	1.01
gamma[12]	1.00	1.01
gamma[13]	1.00	1.00
gamma[14]	1.00	1.00
gamma[15]	1.00	1.00
gamma[16]	1.00	1.00
gamma[17]	1.00	1.00
gamma[18]	1.00	1.01
gamma[19]	1.00	1.01
gamma[20]	1.00	1.01
gamma[21]	1.00	1.01
gamma[22]	1.01	1.02
gamma[23]	1.00	1.00
gamma[24]	1.00	1.00
gamma[25]	1.00	1.01
gamma[26]	1.00	1.01
gamma[27]	1.00	1.01
gamma[28]	1.00	1.00
gamma[29]	1.00	1.00
gamma[30]	1.00	1.00
gamma[31]	1.00	1.00
gamma[32]	1.00	1.00
sigma_y	1.00	1.01
lp___	1.01	1.03

Table S12: Potential scale reduction factors ($\hat{R}$) for all parameters in the model for the Greater South Pass 1 core area.

	Point est.	Upper C.I.
Beta[1]	1.00	1.00
Beta[2]	1.00	1.00
Beta[3]	1.00	1.00
Beta[4]	1.00	1.01
gamma[1]	1.00	1.00
gamma[2]	1.00	1.00
gamma[3]	1.00	1.00
gamma[4]	1.00	1.01
gamma[5]	1.00	1.01
gamma[6]	1.00	1.00
gamma[7]	1.00	1.00
gamma[8]	1.00	1.00
gamma[9]	1.00	1.00
gamma[10]	1.00	1.00
gamma[11]	1.00	1.00
gamma[12]	1.00	1.00
gamma[13]	1.00	1.01
gamma[14]	1.00	1.00
gamma[15]	1.00	1.00
gamma[16]	1.00	1.00
gamma[17]	1.00	1.00
gamma[18]	1.00	1.00
gamma[19]	1.00	1.00
gamma[20]	1.00	1.00
gamma[21]	1.00	1.00
gamma[22]	1.00	1.00
gamma[23]	1.00	1.01
gamma[24]	1.00	1.02
gamma[25]	1.00	1.00
gamma[26]	1.00	1.00
gamma[27]	1.00	1.00
gamma[28]	1.00	1.00
gamma[29]	1.00	1.00
gamma[30]	1.00	1.00
gamma[31]	1.00	1.01
gamma[32]	1.01	1.01
sigma_y	1.07	1.18
lp___	1.01	1.05

Table S13: Potential scale reduction factors ($\hat{R}$) for all parameters in the model for the Greater South Pass 2 core area.

	Point est.	Upper C.I.
Beta[1]	1.00	1.00
Beta[2]	1.00	1.00
Beta[3]	1.01	1.05
Beta[4]	1.00	1.01
gamma[1]	1.01	1.02
gamma[2]	1.00	1.01
gamma[3]	1.00	1.01
gamma[4]	1.01	1.03
gamma[5]	1.00	1.01
gamma[6]	1.00	1.00
gamma[7]	1.01	1.03
gamma[8]	1.00	1.00
gamma[9]	1.01	1.02
gamma[10]	1.00	1.02
gamma[11]	1.01	1.04
gamma[12]	1.00	1.01
gamma[13]	1.00	1.01
gamma[14]	1.01	1.02
gamma[15]	1.01	1.02
gamma[16]	1.00	1.01
gamma[17]	1.01	1.02
gamma[18]	1.00	1.01
gamma[19]	1.00	1.01
gamma[20]	1.00	1.00
gamma[21]	1.00	1.00
gamma[22]	1.01	1.04
gamma[23]	1.00	1.01
gamma[24]	1.00	1.01
gamma[25]	1.00	1.02
gamma[26]	1.00	1.01
gamma[27]	1.00	1.01
gamma[28]	1.01	1.03
gamma[29]	1.00	1.00
gamma[30]	1.01	1.02
gamma[31]	1.01	1.04
gamma[32]	1.00	1.00
sigma_y	1.01	1.03
lp___	1.01	1.03

Table S14: Potential scale reduction factors ($\hat{R}$) for all parameters in the model for the Greater South Pass 3 core area.

	Point est.	Upper C.I.
Beta[1]	1.00	1.00
Beta[2]	1.00	1.00
Beta[3]	1.00	1.01
Beta[4]	1.00	1.00
gamma[1]	1.00	1.00
gamma[2]	1.00	1.01
gamma[3]	1.00	1.01
gamma[4]	1.00	1.00
gamma[5]	1.00	1.00
gamma[6]	1.00	1.00
gamma[7]	1.00	1.00
gamma[8]	1.00	1.00
gamma[9]	1.00	1.01
gamma[10]	1.00	1.01
gamma[11]	1.00	1.01
gamma[12]	1.00	1.00
gamma[13]	1.00	1.00
gamma[14]	1.00	1.00
gamma[15]	1.00	1.00
gamma[16]	1.00	1.00
gamma[17]	1.00	1.01
gamma[18]	1.00	1.01
gamma[19]	1.00	1.00
gamma[20]	1.01	1.01
gamma[21]	1.00	1.00
gamma[22]	1.00	1.01
gamma[23]	1.00	1.00
gamma[24]	1.00	1.00
gamma[25]	1.00	1.00
gamma[26]	1.00	1.00
gamma[27]	1.00	1.00
gamma[28]	1.00	1.00
gamma[29]	1.00	1.00
gamma[30]	1.00	1.00
gamma[31]	1.00	1.00
gamma[32]	1.00	1.00
sigma_y	1.05	1.15
lp___	1.00	1.00

Table S15: Potential scale reduction factors ($\hat{R}$) for all parameters in the model for the Greater South Pass 4 core area.

	Point est.	Upper C.I.
Beta[1]	1.00	1.02
Beta[2]	1.01	1.02
Beta[3]	1.01	1.02
Beta[4]	1.00	1.01
gamma[1]	1.01	1.01
gamma[2]	1.00	1.00
gamma[3]	1.00	1.00
gamma[4]	1.01	1.02
gamma[5]	1.00	1.00
gamma[6]	1.00	1.00
gamma[7]	1.00	1.00
gamma[8]	1.00	1.00
gamma[9]	1.00	1.02
gamma[10]	1.00	1.01
gamma[11]	1.00	1.01
gamma[12]	1.00	1.01
gamma[13]	1.01	1.01
gamma[14]	1.01	1.01
gamma[15]	1.00	1.00
gamma[16]	1.00	1.00
gamma[17]	1.01	1.02
gamma[18]	1.00	1.00
gamma[19]	1.00	1.01
gamma[20]	1.00	1.00
gamma[21]	1.00	1.00
gamma[22]	1.01	1.02
gamma[23]	1.00	1.01
gamma[24]	1.00	1.00
gamma[25]	1.00	1.01
gamma[26]	1.00	1.01
gamma[27]	1.00	1.00
gamma[28]	1.01	1.02
gamma[29]	1.00	1.00
gamma[30]	1.00	1.01
gamma[31]	1.00	1.01
gamma[32]	1.00	1.01
sigma_y	1.01	1.02
lp___	1.00	1.00

Table S16: Potential scale reduction factors ($\hat{R}$) for all parameters in the model for the Greater South Pass 5 core area.

	Point est.	Upper C.I.
Beta[1]	1.00	1.01
Beta[2]	1.00	1.01
Beta[3]	1.01	1.03
Beta[4]	1.00	1.01
gamma[1]	1.00	1.01
gamma[2]	1.00	1.01
gamma[3]	1.00	1.00
gamma[4]	1.00	1.01
gamma[5]	1.00	1.00
gamma[6]	1.00	1.00
gamma[7]	1.00	1.00
gamma[8]	1.00	1.00
gamma[9]	1.00	1.00
gamma[10]	1.00	1.01
gamma[11]	1.00	1.01
gamma[12]	1.00	1.00
gamma[13]	1.00	1.01
gamma[14]	1.00	1.00
gamma[15]	1.00	1.00
gamma[16]	1.00	1.00
gamma[17]	1.00	1.00
gamma[18]	1.00	1.01
gamma[19]	1.00	1.01
gamma[20]	1.00	1.00
gamma[21]	1.00	1.01
gamma[22]	1.00	1.00
gamma[23]	1.00	1.00
gamma[24]	1.00	1.01
gamma[25]	1.01	1.02
gamma[26]	1.00	1.01
gamma[27]	1.00	1.00
gamma[28]	1.00	1.01
gamma[29]	1.00	1.00
gamma[30]	1.00	1.01
gamma[31]	1.00	1.01
gamma[32]	1.00	1.00
sigma_y	1.03	1.08
lp___	1.00	1.01

Table S17: Potential scale reduction factors ($\hat{R}$) for all parameters in the model for the Hanna core area.

	Point est.	Upper C.I.
Beta[1]	1.00	1.00
Beta[2]	1.00	1.00
Beta[3]	1.00	1.01
Beta[4]	1.00	1.01
gamma[1]	1.00	1.00
gamma[2]	1.00	1.00
gamma[3]	1.00	1.01
gamma[4]	1.01	1.02
gamma[5]	1.00	1.00
gamma[6]	1.00	1.00
gamma[7]	1.00	1.01
gamma[8]	1.00	1.00
gamma[9]	1.00	1.00
gamma[10]	1.00	1.00
gamma[11]	1.00	1.01
gamma[12]	1.00	1.00
gamma[13]	1.00	1.00
gamma[14]	1.00	1.00
gamma[15]	1.00	1.00
gamma[16]	1.00	1.00
gamma[17]	1.00	1.00
gamma[18]	1.00	1.01
gamma[19]	1.01	1.01
gamma[20]	1.00	1.01
gamma[21]	1.00	1.00
gamma[22]	1.00	1.00
gamma[23]	1.00	1.02
gamma[24]	1.00	1.01
gamma[25]	1.00	1.00
gamma[26]	1.00	1.00
gamma[27]	1.00	1.01
gamma[28]	1.00	1.01
gamma[29]	1.00	1.00
gamma[30]	1.00	1.01
gamma[31]	1.00	1.00
gamma[32]	1.00	1.01
sigma_y	1.04	1.13
lp___	1.00	1.00

Table S18: Potential scale reduction factors ($\hat{R}$) for all parameters in the model for the Heart Mountain core area.

	Point est.	Upper C.I.
Beta[1]	1.00	1.01
Beta[2]	1.01	1.01
Beta[3]	1.01	1.03
Beta[4]	1.01	1.04
gamma[1]	1.00	1.02
gamma[2]	1.00	1.01
gamma[3]	1.01	1.02
gamma[4]	1.00	1.01
gamma[5]	1.00	1.00
gamma[6]	1.00	1.01
gamma[7]	1.00	1.00
gamma[8]	1.01	1.03
gamma[9]	1.00	1.00
gamma[10]	1.00	1.00
gamma[11]	1.00	1.01
gamma[12]	1.00	1.01
gamma[13]	1.00	1.00
gamma[14]	1.00	1.01
gamma[15]	1.00	1.00
gamma[16]	1.00	1.00
gamma[17]	1.00	1.01
gamma[18]	1.00	1.01
gamma[19]	1.00	1.00
gamma[20]	1.00	1.02
gamma[21]	1.00	1.00
gamma[22]	1.00	1.01
gamma[23]	1.00	1.01
gamma[24]	1.00	1.01
gamma[25]	1.00	1.00
gamma[26]	1.00	1.01
gamma[27]	1.00	1.02
gamma[28]	1.00	1.00
gamma[29]	1.00	1.02
gamma[30]	1.00	1.01
gamma[31]	1.00	1.01
gamma[32]	1.00	1.01
sigma_y	1.00	1.02
lp___	1.01	1.03

Table S19: Potential scale reduction factors ($\hat{R}$) for all parameters in the model for the Hyattville core area.

	Point est.	Upper C.I.
Beta[1]	1.00	1.00
Beta[2]	1.00	1.00
Beta[3]	1.00	1.00
Beta[4]	1.00	1.00
gamma[1]	1.00	1.00
gamma[2]	1.00	1.00
gamma[3]	1.00	1.00
gamma[4]	1.00	1.01
gamma[5]	1.00	1.00
gamma[6]	1.00	1.01
gamma[7]	1.00	1.02
gamma[8]	1.00	1.00
gamma[9]	1.00	1.01
gamma[10]	1.00	1.00
gamma[11]	1.00	1.00
gamma[12]	1.00	1.00
gamma[13]	1.00	1.00
gamma[14]	1.01	1.01
gamma[15]	1.00	1.01
gamma[16]	1.01	1.01
gamma[17]	1.01	1.01
gamma[18]	1.00	1.01
gamma[19]	1.00	1.01
gamma[20]	1.00	1.00
gamma[21]	1.00	1.00
gamma[22]	1.00	1.00
gamma[23]	1.00	1.00
gamma[24]	1.00	1.00
gamma[25]	1.00	1.00
gamma[26]	1.00	1.00
gamma[27]	1.00	1.00
gamma[28]	1.00	1.00
gamma[29]	1.00	1.00
gamma[30]	1.00	1.00
gamma[31]	1.00	1.00
gamma[32]	1.00	1.01
sigma_y	1.01	1.02
lp___	1.00	1.01

Table S20: Potential scale reduction factors ($\hat{R}$) for all parameters in the model for the Jackson core area.

	Point est.	Upper C.I.
Beta[1]	1.00	1.01
Beta[2]	1.00	1.01
Beta[3]	1.00	1.01
Beta[4]	1.00	1.00
gamma[1]	1.00	1.00
gamma[2]	1.00	1.00
gamma[3]	1.00	1.00
gamma[4]	1.00	1.00
gamma[5]	1.00	1.01
gamma[6]	1.00	1.00
gamma[7]	1.00	1.00
gamma[8]	1.00	1.00
gamma[9]	1.00	1.00
gamma[10]	1.00	1.00
gamma[11]	1.00	1.00
gamma[12]	1.00	1.00
gamma[13]	1.00	1.00
gamma[14]	1.00	1.00
gamma[15]	1.00	1.00
gamma[16]	1.00	1.00
gamma[17]	1.00	1.00
gamma[18]	1.00	1.01
gamma[19]	1.00	1.00
gamma[20]	1.00	1.01
gamma[21]	1.00	1.00
gamma[22]	1.00	1.00
gamma[23]	1.00	1.01
gamma[24]	1.00	1.01
gamma[25]	1.00	1.00
gamma[26]	1.00	1.00
gamma[27]	1.00	1.00
gamma[28]	1.00	1.00
gamma[29]	1.00	1.00
gamma[30]	1.00	1.00
gamma[31]	1.00	1.00
gamma[32]	1.00	1.01
sigma_y	1.02	1.05
lp___	1.00	1.02

Table S21: Potential scale reduction factors ($\hat{R}$) for all parameters in the model for the Little Mountain core area.

	Point est.	Upper C.I.
Beta[1]	1.00	1.00
Beta[2]	1.00	1.00
Beta[3]	1.01	1.03
Beta[4]	1.00	1.01
gamma[1]	1.00	1.00
gamma[2]	1.00	1.01
gamma[3]	1.00	1.01
gamma[4]	1.00	1.00
gamma[5]	1.00	1.00
gamma[6]	1.00	1.01
gamma[7]	1.00	1.00
gamma[8]	1.01	1.02
gamma[9]	1.00	1.01
gamma[10]	1.00	1.00
gamma[11]	1.00	1.00
gamma[12]	1.00	1.01
gamma[13]	1.00	1.00
gamma[14]	1.00	1.00
gamma[15]	1.00	1.00
gamma[16]	1.00	1.00
gamma[17]	1.01	1.03
gamma[18]	1.00	1.01
gamma[19]	1.00	1.00
gamma[20]	1.00	1.01
gamma[21]	1.00	1.01
gamma[22]	1.00	1.00
gamma[23]	1.00	1.01
gamma[24]	1.00	1.00
gamma[25]	1.00	1.01
gamma[26]	1.00	1.01
gamma[27]	1.01	1.02
gamma[28]	1.00	1.00
gamma[29]	1.00	1.00
gamma[30]	1.00	1.00
gamma[31]	1.01	1.01
gamma[32]	1.00	1.00
sigma_y	1.00	1.00
lp___	1.00	1.01

Table S22: Potential scale reduction factors ($\hat{R}$) for all parameters in the model for the Natrona 1 core area.

	Point est.	Upper C.I.
Beta[1]	1.00	1.00
Beta[2]	1.00	1.00
Beta[3]	1.00	1.00
Beta[4]	1.00	1.00
gamma[1]	1.00	1.00
gamma[2]	1.00	1.00
gamma[3]	1.00	1.01
gamma[4]	1.00	1.00
gamma[5]	1.00	1.00
gamma[6]	1.00	1.00
gamma[7]	1.00	1.01
gamma[8]	1.00	1.00
gamma[9]	1.00	1.01
gamma[10]	1.00	1.00
gamma[11]	1.00	1.01
gamma[12]	1.00	1.00
gamma[13]	1.00	1.00
gamma[14]	1.00	1.00
gamma[15]	1.00	1.00
gamma[16]	1.00	1.01
gamma[17]	1.00	1.00
gamma[18]	1.01	1.01
gamma[19]	1.00	1.01
gamma[20]	1.00	1.00
gamma[21]	1.00	1.00
gamma[22]	1.00	1.01
gamma[23]	1.00	1.00
gamma[24]	1.00	1.00
gamma[25]	1.00	1.00
gamma[26]	1.00	1.00
gamma[27]	1.00	1.00
gamma[28]	1.00	1.00
gamma[29]	1.00	1.00
gamma[30]	1.00	1.00
gamma[31]	1.00	1.00
gamma[32]	1.00	1.00
sigma_y	1.01	1.02
lp___	1.00	1.01

Table S23: Potential scale reduction factors ($\hat{R}$) for all parameters in the model for the Natrona 2 core area.

	Point est.	Upper C.I.
Beta[1]	1.01	1.02
Beta[2]	1.01	1.02
Beta[3]	1.00	1.02
Beta[4]	1.01	1.02
gamma[1]	1.00	1.00
gamma[2]	1.00	1.01
gamma[3]	1.00	1.01
gamma[4]	1.00	1.00
gamma[5]	1.00	1.01
gamma[6]	1.00	1.00
gamma[7]	1.00	1.00
gamma[8]	1.00	1.00
gamma[9]	1.00	1.00
gamma[10]	1.00	1.00
gamma[11]	1.00	1.00
gamma[12]	1.00	1.01
gamma[13]	1.00	1.00
gamma[14]	1.00	1.00
gamma[15]	1.00	1.01
gamma[16]	1.00	1.00
gamma[17]	1.00	1.01
gamma[18]	1.00	1.01
gamma[19]	1.00	1.01
gamma[20]	1.00	1.01
gamma[21]	1.00	1.00
gamma[22]	1.00	1.01
gamma[23]	1.00	1.02
gamma[24]	1.00	1.00
gamma[25]	1.00	1.00
gamma[26]	1.00	1.00
gamma[27]	1.00	1.00
gamma[28]	1.00	1.00
gamma[29]	1.00	1.01
gamma[30]	1.00	1.01
gamma[31]	1.00	1.01
gamma[32]	1.00	1.01
sigma_y	1.02	1.07
lp___	1.01	1.01

Table S24: Potential scale reduction factors ($\hat{R}$) for all parameters in the model for the Natrona 3 core area.

	Point est.	Upper C.I.
Beta[1]	1.00	1.01
Beta[2]	1.00	1.01
Beta[3]	1.00	1.00
Beta[4]	1.00	1.01
gamma[1]	1.00	1.00
gamma[2]	1.01	1.01
gamma[3]	1.00	1.00
gamma[4]	1.01	1.03
gamma[5]	1.00	1.01
gamma[6]	1.01	1.01
gamma[7]	1.00	1.00
gamma[8]	1.00	1.00
gamma[9]	1.00	1.01
gamma[10]	1.00	1.01
gamma[11]	1.00	1.00
gamma[12]	1.00	1.00
gamma[13]	1.00	1.00
gamma[14]	1.00	1.00
gamma[15]	1.00	1.00
gamma[16]	1.00	1.00
gamma[17]	1.00	1.01
gamma[18]	1.00	1.01
gamma[19]	1.00	1.00
gamma[20]	1.00	1.00
gamma[21]	1.00	1.00
gamma[22]	1.00	1.00
gamma[23]	1.00	1.00
gamma[24]	1.00	1.00
gamma[25]	1.01	1.02
gamma[26]	1.00	1.01
gamma[27]	1.00	1.01
gamma[28]	1.00	1.01
gamma[29]	1.00	1.00
gamma[30]	1.00	1.00
gamma[31]	1.00	1.00
gamma[32]	1.00	1.00
sigma_y	1.02	1.07
lp___	1.01	1.02

Table S25: Potential scale reduction factors ($\hat{R}$) for all parameters in the model for the Newcastle core area.

	Point est.	Upper C.I.
Beta[1]	1.00	1.02
Beta[2]	1.00	1.01
Beta[3]	1.00	1.01
Beta[4]	1.01	1.04
gamma[1]	1.00	1.01
gamma[2]	1.00	1.00
gamma[3]	1.00	1.01
gamma[4]	1.01	1.03
gamma[5]	1.00	1.00
gamma[6]	1.00	1.00
gamma[7]	1.00	1.00
gamma[8]	1.00	1.00
gamma[9]	1.00	1.01
gamma[10]	1.00	1.00
gamma[11]	1.00	1.01
gamma[12]	1.01	1.03
gamma[13]	1.00	1.01
gamma[14]	1.01	1.02
gamma[15]	1.00	1.00
gamma[16]	1.00	1.02
gamma[17]	1.00	1.01
gamma[18]	1.00	1.01
gamma[19]	1.00	1.01
gamma[20]	1.00	1.00
gamma[21]	1.00	1.01
gamma[22]	1.00	1.02
gamma[23]	1.01	1.02
gamma[24]	1.00	1.01
gamma[25]	1.00	1.01
gamma[26]	1.00	1.00
gamma[27]	1.00	1.00
gamma[28]	1.00	1.02
gamma[29]	1.00	1.01
gamma[30]	1.00	1.01
gamma[31]	1.00	1.00
gamma[32]	1.00	1.00
sigma_y	1.01	1.04
lp___	1.00	1.01

Table S26: Potential scale reduction factors ($\hat{R}$) for all parameters in the model for the North Gillette core area.

	Point est.	Upper C.I.
Beta[1]	1.00	1.01
Beta[2]	1.00	1.01
Beta[3]	1.01	1.05
Beta[4]	1.01	1.02
gamma[1]	1.00	1.01
gamma[2]	1.00	1.02
gamma[3]	1.01	1.02
gamma[4]	1.01	1.02
gamma[5]	1.00	1.01
gamma[6]	1.01	1.01
gamma[7]	1.00	1.01
gamma[8]	1.00	1.01
gamma[9]	1.00	1.01
gamma[10]	1.00	1.02
gamma[11]	1.01	1.02
gamma[12]	1.01	1.02
gamma[13]	1.01	1.04
gamma[14]	1.00	1.01
gamma[15]	1.00	1.01
gamma[16]	1.00	1.01
gamma[17]	1.00	1.01
gamma[18]	1.01	1.03
gamma[19]	1.00	1.00
gamma[20]	1.01	1.04
gamma[21]	1.00	1.01
gamma[22]	1.00	1.00
gamma[23]	1.01	1.03
gamma[24]	1.01	1.02
gamma[25]	1.01	1.02
gamma[26]	1.01	1.02
gamma[27]	1.00	1.02
gamma[28]	1.01	1.04
gamma[29]	1.00	1.01
gamma[30]	1.01	1.03
gamma[31]	1.00	1.01
gamma[32]	1.00	1.01
sigma_y	1.01	1.03
lp___	1.00	1.01

Table S27: Potential scale reduction factors ($\hat{R}$) for all parameters in the model for the North Glenrock core area.

	Point est.	Upper C.I.
Beta[1]	1.00	1.00
Beta[2]	1.00	1.00
Beta[3]	1.01	1.02
Beta[4]	1.01	1.01
gamma[1]	1.01	1.01
gamma[2]	1.00	1.00
gamma[3]	1.00	1.01
gamma[4]	1.00	1.02
gamma[5]	1.01	1.03
gamma[6]	1.00	1.00
gamma[7]	1.00	1.01
gamma[8]	1.00	1.00
gamma[9]	1.00	1.00
gamma[10]	1.00	1.01
gamma[11]	1.00	1.01
gamma[12]	1.01	1.01
gamma[13]	1.00	1.00
gamma[14]	1.00	1.00
gamma[15]	1.00	1.00
gamma[16]	1.00	1.00
gamma[17]	1.00	1.01
gamma[18]	1.01	1.02
gamma[19]	1.00	1.00
gamma[20]	1.00	1.01
gamma[21]	1.00	1.00
gamma[22]	1.00	1.01
gamma[23]	1.01	1.01
gamma[24]	1.00	1.01
gamma[25]	1.00	1.00
gamma[26]	1.00	1.01
gamma[27]	1.00	1.01
gamma[28]	1.00	1.00
gamma[29]	1.00	1.00
gamma[30]	1.00	1.01
gamma[31]	1.00	1.01
gamma[32]	1.00	1.01
sigma_y	1.01	1.01
lp___	1.00	1.01

Table S28: Potential scale reduction factors ($\hat{R}$) for all parameters in the model for the North Laramie core area.

	Point est.	Upper C.I.
Beta[1]	1.00	1.01
Beta[2]	1.00	1.01
Beta[3]	1.01	1.02
Beta[4]	1.00	1.02
gamma[1]	1.00	1.01
gamma[2]	1.00	1.00
gamma[3]	1.00	1.00
gamma[4]	1.00	1.01
gamma[5]	1.00	1.01
gamma[6]	1.00	1.00
gamma[7]	1.00	1.01
gamma[8]	1.00	1.00
gamma[9]	1.00	1.00
gamma[10]	1.00	1.00
gamma[11]	1.01	1.01
gamma[12]	1.00	1.00
gamma[13]	1.00	1.00
gamma[14]	1.00	1.01
gamma[15]	1.00	1.00
gamma[16]	1.00	1.00
gamma[17]	1.00	1.01
gamma[18]	1.00	1.00
gamma[19]	1.00	1.02
gamma[20]	1.00	1.00
gamma[21]	1.00	1.00
gamma[22]	1.00	1.00
gamma[23]	1.00	1.01
gamma[24]	1.00	1.00
gamma[25]	1.00	1.00
gamma[26]	1.00	1.01
gamma[27]	1.00	1.01
gamma[28]	1.00	1.00
gamma[29]	1.00	1.00
gamma[30]	1.00	1.01
gamma[31]	1.01	1.01
gamma[32]	1.01	1.01
sigma_y	1.01	1.02
lp___	1.00	1.00

Table S29: Potential scale reduction factors ($\hat{R}$) for all parameters in the model for the Oregon Basin core area.

	Point est.	Upper C.I.
Beta[1]	1.00	1.00
Beta[2]	1.00	1.00
Beta[3]	1.00	1.01
Beta[4]	1.00	1.01
gamma[1]	1.00	1.00
gamma[2]	1.00	1.00
gamma[3]	1.00	1.00
gamma[4]	1.00	1.00
gamma[5]	1.00	1.00
gamma[6]	1.00	1.00
gamma[7]	1.00	1.00
gamma[8]	1.01	1.01
gamma[9]	1.00	1.00
gamma[10]	1.00	1.00
gamma[11]	1.00	1.00
gamma[12]	1.00	1.01
gamma[13]	1.00	1.00
gamma[14]	1.00	1.00
gamma[15]	1.00	1.01
gamma[16]	1.00	1.00
gamma[17]	1.00	1.00
gamma[18]	1.00	1.00
gamma[19]	1.00	1.00
gamma[20]	1.00	1.00
gamma[21]	1.00	1.00
gamma[22]	1.00	1.00
gamma[23]	1.00	1.00
gamma[24]	1.00	1.00
gamma[25]	1.00	1.01
gamma[26]	1.00	1.00
gamma[27]	1.00	1.01
gamma[28]	1.00	1.00
gamma[29]	1.00	1.00
gamma[30]	1.00	1.00
gamma[31]	1.00	1.01
gamma[32]	1.00	1.01
sigma_y	1.01	1.03
lp___	1.00	1.01

Table S30: Potential scale reduction factors ($\hat{R}$) for all parameters in the model for the Powder core area.

	Point est.	Upper C.I.
Beta[1]	1.01	1.01
Beta[2]	1.01	1.02
Beta[3]	1.01	1.05
Beta[4]	1.00	1.00
gamma[1]	1.00	1.02
gamma[2]	1.01	1.04
gamma[3]	1.00	1.01
gamma[4]	1.02	1.05
gamma[5]	1.01	1.05
gamma[6]	1.01	1.02
gamma[7]	1.01	1.02
gamma[8]	1.00	1.01
gamma[9]	1.01	1.03
gamma[10]	1.01	1.03
gamma[11]	1.01	1.04
gamma[12]	1.01	1.03
gamma[13]	1.01	1.02
gamma[14]	1.01	1.02
gamma[15]	1.01	1.04
gamma[16]	1.01	1.03
gamma[17]	1.01	1.02
gamma[18]	1.02	1.05
gamma[19]	1.00	1.01
gamma[20]	1.01	1.03
gamma[21]	1.00	1.00
gamma[22]	1.01	1.03
gamma[23]	1.01	1.02
gamma[24]	1.00	1.02
gamma[25]	1.01	1.04
gamma[26]	1.01	1.02
gamma[27]	1.01	1.04
gamma[28]	1.01	1.03
gamma[29]	1.00	1.00
gamma[30]	1.01	1.03
gamma[31]	1.01	1.03
gamma[32]	1.00	1.02
sigma_y	1.00	1.01
lp___	1.00	1.00

Table S31: Potential scale reduction factors ($\hat{R}$) for all parameters in the model for the Sage core area.

	Point est.	Upper C.I.
Beta[1]	1.01	1.03
Beta[2]	1.01	1.02
Beta[3]	1.01	1.02
Beta[4]	1.01	1.02
gamma[1]	1.00	1.01
gamma[2]	1.00	1.01
gamma[3]	1.00	1.00
gamma[4]	1.00	1.01
gamma[5]	1.00	1.00
gamma[6]	1.00	1.01
gamma[7]	1.00	1.00
gamma[8]	1.00	1.01
gamma[9]	1.00	1.00
gamma[10]	1.00	1.01
gamma[11]	1.00	1.00
gamma[12]	1.00	1.01
gamma[13]	1.00	1.00
gamma[14]	1.00	1.01
gamma[15]	1.00	1.00
gamma[16]	1.00	1.00
gamma[17]	1.00	1.00
gamma[18]	1.00	1.00
gamma[19]	1.00	1.00
gamma[20]	1.00	1.00
gamma[21]	1.00	1.01
gamma[22]	1.00	1.00
gamma[23]	1.00	1.00
gamma[24]	1.01	1.02
gamma[25]	1.00	1.00
gamma[26]	1.00	1.00
gamma[27]	1.00	1.00
gamma[28]	1.00	1.00
gamma[29]	1.00	1.01
gamma[30]	1.00	1.01
gamma[31]	1.00	1.01
gamma[32]	1.00	1.00
sigma_y	1.05	1.18
lp___	1.00	1.01

Table S32: Potential scale reduction factors ($\hat{R}$) for all parameters in the model for the Salt Wells core area.

	Point est.	Upper C.I.
Beta[1]	1.00	1.01
Beta[2]	1.00	1.01
Beta[3]	1.00	1.00
Beta[4]	1.01	1.01
gamma[1]	1.00	1.00
gamma[2]	1.00	1.00
gamma[3]	1.00	1.00
gamma[4]	1.00	1.00
gamma[5]	1.00	1.00
gamma[6]	1.00	1.01
gamma[7]	1.00	1.00
gamma[8]	1.00	1.00
gamma[9]	1.00	1.00
gamma[10]	1.00	1.00
gamma[11]	1.00	1.00
gamma[12]	1.00	1.00
gamma[13]	1.00	1.00
gamma[14]	1.00	1.00
gamma[15]	1.00	1.00
gamma[16]	1.00	1.00
gamma[17]	1.00	1.00
gamma[18]	1.00	1.00
gamma[19]	1.00	1.01
gamma[20]	1.00	1.00
gamma[21]	1.00	1.00
gamma[22]	1.01	1.01
gamma[23]	1.00	1.00
gamma[24]	1.00	1.00
gamma[25]	1.00	1.00
gamma[26]	1.00	1.00
gamma[27]	1.00	1.00
gamma[28]	1.00	1.01
gamma[29]	1.00	1.00
gamma[30]	1.00	1.00
gamma[31]	1.00	1.00
gamma[32]	1.00	1.00
sigma_y	1.02	1.05
lp___	1.00	1.01

Table S33: Potential scale reduction factors ($\hat{R}$) for all parameters in the model for the Seedskadee core area.

	Point est.	Upper C.I.
Beta[1]	1.01	1.01
Beta[2]	1.01	1.01
Beta[3]	1.02	1.07
Beta[4]	1.00	1.00
gamma[1]	1.02	1.08
gamma[2]	1.02	1.06
gamma[3]	1.02	1.06
gamma[4]	1.02	1.06
gamma[5]	1.01	1.05
gamma[6]	1.01	1.02
gamma[7]	1.02	1.06
gamma[8]	1.01	1.03
gamma[9]	1.01	1.04
gamma[10]	1.02	1.07
gamma[11]	1.02	1.06
gamma[12]	1.01	1.05
gamma[13]	1.01	1.04
gamma[14]	1.02	1.06
gamma[15]	1.01	1.04
gamma[16]	1.02	1.06
gamma[17]	1.01	1.05
gamma[18]	1.02	1.07
gamma[19]	1.01	1.02
gamma[20]	1.01	1.02
gamma[21]	1.01	1.03
gamma[22]	1.02	1.07
gamma[23]	1.01	1.04
gamma[24]	1.02	1.07
gamma[25]	1.01	1.05
gamma[26]	1.01	1.03
gamma[27]	1.02	1.06
gamma[28]	1.01	1.05
gamma[29]	1.01	1.03
gamma[30]	1.02	1.07
gamma[31]	1.02	1.07
gamma[32]	1.01	1.03
sigma_y	1.00	1.00
lp___	1.00	1.00

Table S34: Potential scale reduction factors ($\hat{R}$) for all parameters in the model for the Shell core area.

	Point est.	Upper C.I.
Beta[1]	1.00	1.00
Beta[2]	1.00	1.00
Beta[3]	1.02	1.07
Beta[4]	1.02	1.07
gamma[1]	1.00	1.02
gamma[2]	1.00	1.01
gamma[3]	1.02	1.05
gamma[4]	1.00	1.00
gamma[5]	1.01	1.02
gamma[6]	1.00	1.00
gamma[7]	1.00	1.00
gamma[8]	1.01	1.05
gamma[9]	1.01	1.02
gamma[10]	1.01	1.01
gamma[11]	1.00	1.00
gamma[12]	1.00	1.02
gamma[13]	1.01	1.03
gamma[14]	1.00	1.02
gamma[15]	1.00	1.00
gamma[16]	1.00	1.01
gamma[17]	1.01	1.02
gamma[18]	1.01	1.04
gamma[19]	1.00	1.00
gamma[20]	1.01	1.02
gamma[21]	1.01	1.02
gamma[22]	1.01	1.02
gamma[23]	1.01	1.05
gamma[24]	1.00	1.00
gamma[25]	1.00	1.00
gamma[26]	1.00	1.00
gamma[27]	1.01	1.02
gamma[28]	1.01	1.03
gamma[29]	1.01	1.01
gamma[30]	1.00	1.00
gamma[31]	1.00	1.01
gamma[32]	1.01	1.01
sigma_y	1.01	1.03
lp___	1.00	1.01

Table S35: Potential scale reduction factors ($\hat{R}$) for all parameters in the model for the South Rawlins core area.

	Point est.	Upper C.I.
Beta[1]	1.00	1.00
Beta[2]	1.00	1.00
Beta[3]	1.00	1.01
Beta[4]	1.00	1.01
gamma[1]	1.00	1.00
gamma[2]	1.00	1.00
gamma[3]	1.00	1.01
gamma[4]	1.00	1.00
gamma[5]	1.00	1.00
gamma[6]	1.00	1.00
gamma[7]	1.00	1.01
gamma[8]	1.00	1.00
gamma[9]	1.00	1.01
gamma[10]	1.00	1.00
gamma[11]	1.00	1.00
gamma[12]	1.00	1.00
gamma[13]	1.01	1.01
gamma[14]	1.00	1.00
gamma[15]	1.01	1.01
gamma[16]	1.01	1.01
gamma[17]	1.00	1.00
gamma[18]	1.00	1.01
gamma[19]	1.00	1.00
gamma[20]	1.00	1.00
gamma[21]	1.00	1.00
gamma[22]	1.00	1.00
gamma[23]	1.00	1.00
gamma[24]	1.00	1.01
gamma[25]	1.00	1.01
gamma[26]	1.00	1.00
gamma[27]	1.00	1.00
gamma[28]	1.00	1.00
gamma[29]	1.00	1.00
gamma[30]	1.00	1.00
gamma[31]	1.00	1.00
gamma[32]	1.00	1.00
sigma_y	1.01	1.03
lp___	1.00	1.00

Table S36: Potential scale reduction factors ($\hat{R}$) for all parameters in the model for the Thermopolis core area.

	Point est.	Upper C.I.
Beta[1]	1.00	1.00
Beta[2]	1.00	1.00
Beta[3]	1.01	1.03
Beta[4]	1.01	1.02
gamma[1]	1.00	1.01
gamma[2]	1.00	1.01
gamma[3]	1.00	1.00
gamma[4]	1.00	1.00
gamma[5]	1.00	1.01
gamma[6]	1.00	1.00
gamma[7]	1.00	1.02
gamma[8]	1.01	1.03
gamma[9]	1.00	1.00
gamma[10]	1.00	1.01
gamma[11]	1.00	1.00
gamma[12]	1.01	1.03
gamma[13]	1.00	1.01
gamma[14]	1.00	1.01
gamma[15]	1.00	1.00
gamma[16]	1.00	1.01
gamma[17]	1.00	1.01
gamma[18]	1.01	1.02
gamma[19]	1.00	1.00
gamma[20]	1.00	1.00
gamma[21]	1.00	1.01
gamma[22]	1.00	1.01
gamma[23]	1.01	1.01
gamma[24]	1.01	1.01
gamma[25]	1.00	1.01
gamma[26]	1.00	1.01
gamma[27]	1.01	1.02
gamma[28]	1.01	1.02
gamma[29]	1.01	1.02
gamma[30]	1.00	1.02
gamma[31]	1.00	1.01
gamma[32]	1.01	1.03
sigma_y	1.00	1.01
lp___	1.00	1.01

Table S37: Potential scale reduction factors ($\hat{R}$) for all parameters in the model for the Thunder Basin core area.

	Point est.	Upper C.I.
Beta[1]	1.00	1.01
Beta[2]	1.00	1.01
Beta[3]	1.01	1.02
Beta[4]	1.00	1.00
gamma[1]	1.00	1.00
gamma[2]	1.00	1.00
gamma[3]	1.00	1.01
gamma[4]	1.00	1.01
gamma[5]	1.00	1.01
gamma[6]	1.00	1.00
gamma[7]	1.00	1.00
gamma[8]	1.01	1.01
gamma[9]	1.00	1.01
gamma[10]	1.00	1.00
gamma[11]	1.00	1.00
gamma[12]	1.00	1.00
gamma[13]	1.00	1.00
gamma[14]	1.00	1.01
gamma[15]	1.00	1.00
gamma[16]	1.00	1.01
gamma[17]	1.00	1.01
gamma[18]	1.00	1.00
gamma[19]	1.00	1.01
gamma[20]	1.00	1.01
gamma[21]	1.00	1.00
gamma[22]	1.00	1.00
gamma[23]	1.00	1.00
gamma[24]	1.00	1.00
gamma[25]	1.00	1.01
gamma[26]	1.00	1.00
gamma[27]	1.00	1.01
gamma[28]	1.00	1.00
gamma[29]	1.00	1.00
gamma[30]	1.00	1.01
gamma[31]	1.00	1.00
gamma[32]	1.00	1.00
sigma_y	1.01	1.04
lp___	1.00	1.01

Table S38: Potential scale reduction factors ($\hat{R}$) for all parameters in the model for the Uinta core area.

	Point est.	Upper C.I.
Beta[1]	1.00	1.02
Beta[2]	1.01	1.02
Beta[3]	1.02	1.06
Beta[4]	1.01	1.04
gamma[1]	1.01	1.03
gamma[2]	1.01	1.02
gamma[3]	1.00	1.00
gamma[4]	1.00	1.00
gamma[5]	1.00	1.01
gamma[6]	1.00	1.01
gamma[7]	1.00	1.02
gamma[8]	1.00	1.01
gamma[9]	1.00	1.00
gamma[10]	1.01	1.01
gamma[11]	1.00	1.00
gamma[12]	1.00	1.02
gamma[13]	1.00	1.00
gamma[14]	1.00	1.01
gamma[15]	1.00	1.00
gamma[16]	1.00	1.01
gamma[17]	1.00	1.00
gamma[18]	1.01	1.02
gamma[19]	1.00	1.01
gamma[20]	1.00	1.00
gamma[21]	1.00	1.01
gamma[22]	1.00	1.01
gamma[23]	1.00	1.00
gamma[24]	1.01	1.03
gamma[25]	1.00	1.01
gamma[26]	1.00	1.00
gamma[27]	1.01	1.02
gamma[28]	1.00	1.00
gamma[29]	1.00	1.01
gamma[30]	1.01	1.03
gamma[31]	1.00	1.01
gamma[32]	1.00	1.01
sigma_y	1.00	1.02
lp___	1.01	1.02

Table S39: Potential scale reduction factors ($\hat{R}$) for all parameters in the model for the Washakie core area.

	Point est.	Upper C.I.
Beta[1]	1.00	1.00
Beta[2]	1.00	1.00
Beta[3]	1.02	1.05
Beta[4]	1.00	1.02
gamma[1]	1.00	1.01
gamma[2]	1.00	1.00
gamma[3]	1.00	1.01
gamma[4]	1.00	1.01
gamma[5]	1.00	1.01
gamma[6]	1.00	1.00
gamma[7]	1.00	1.01
gamma[8]	1.01	1.02
gamma[9]	1.01	1.03
gamma[10]	1.00	1.01
gamma[11]	1.00	1.00
gamma[12]	1.00	1.01
gamma[13]	1.01	1.01
gamma[14]	1.00	1.00
gamma[15]	1.00	1.01
gamma[16]	1.00	1.00
gamma[17]	1.00	1.02
gamma[18]	1.00	1.01
gamma[19]	1.01	1.04
gamma[20]	1.00	1.01
gamma[21]	1.00	1.00
gamma[22]	1.00	1.01
gamma[23]	1.00	1.00
gamma[24]	1.00	1.01
gamma[25]	1.00	1.00
gamma[26]	1.00	1.01
gamma[27]	1.00	1.02
gamma[28]	1.00	1.02
gamma[29]	1.00	1.00
gamma[30]	1.00	1.00
gamma[31]	1.00	1.00
gamma[32]	1.01	1.03
sigma_y	1.04	1.12
lp___	1.00	1.01

Bayesian P-values

Table S40: Bayesian P-values for each core area. P-values greater than 0.95 or less than 0.05 indicate lack of fit. See main text for description of the P-value calculations.

Core area	Spatial Bayesian P-value	Temporal Bayesian P-value
Bear River	0.71	0.73
Blacks Fork	0.30	0.64
Buffalo	0.42	0.75
Continental Divide	0.50	0.81
Crowheart	0.20	0.81
Daniel	0.34	0.71
Douglas	0.46	0.81
Elk Basin East	0.30	0.92
Elk Basin West	0.91	0.97
Fontenelle	0.30	0.72
Grass Creek	0.49	0.80
Greater South Pass 1	0.35	0.74
Greater South Pass 3	0.22	0.81
Greater South Pass 4	0.19	0.81
Greater South Pass 5	0.68	0.85
Hanna	0.10	0.83
Heart Mountain	0.06	0.66
Hyattville	0.19	0.57
Jackson	0.09	0.60
Little Mountain	0.13	0.27
Natrona 1	0.09	0.73
Natrona 2	0.22	0.90
Natrona 3	0.19	0.78
Newcastle	0.66	0.68
North Gillette	0.25	0.65
North Glenrock	0.55	0.62
North Laramie	0.73	0.76
Oregon Basin	0.12	0.71
Powder	0.04	0.05
Sage	0.00	0.54
Salt Wells	0.07	0.71
Seedskadee	0.02	0.26
Shell	0.06	0.79
South Rawlins	0.09	0.73
Thermopolis	0.59	0.65
Thunder Basin	0.19	0.69
Washakie	0.34	0.64
Greater South Pass 2	0.25	0.76
Uinta	0.02	0.49

Posterior distributions

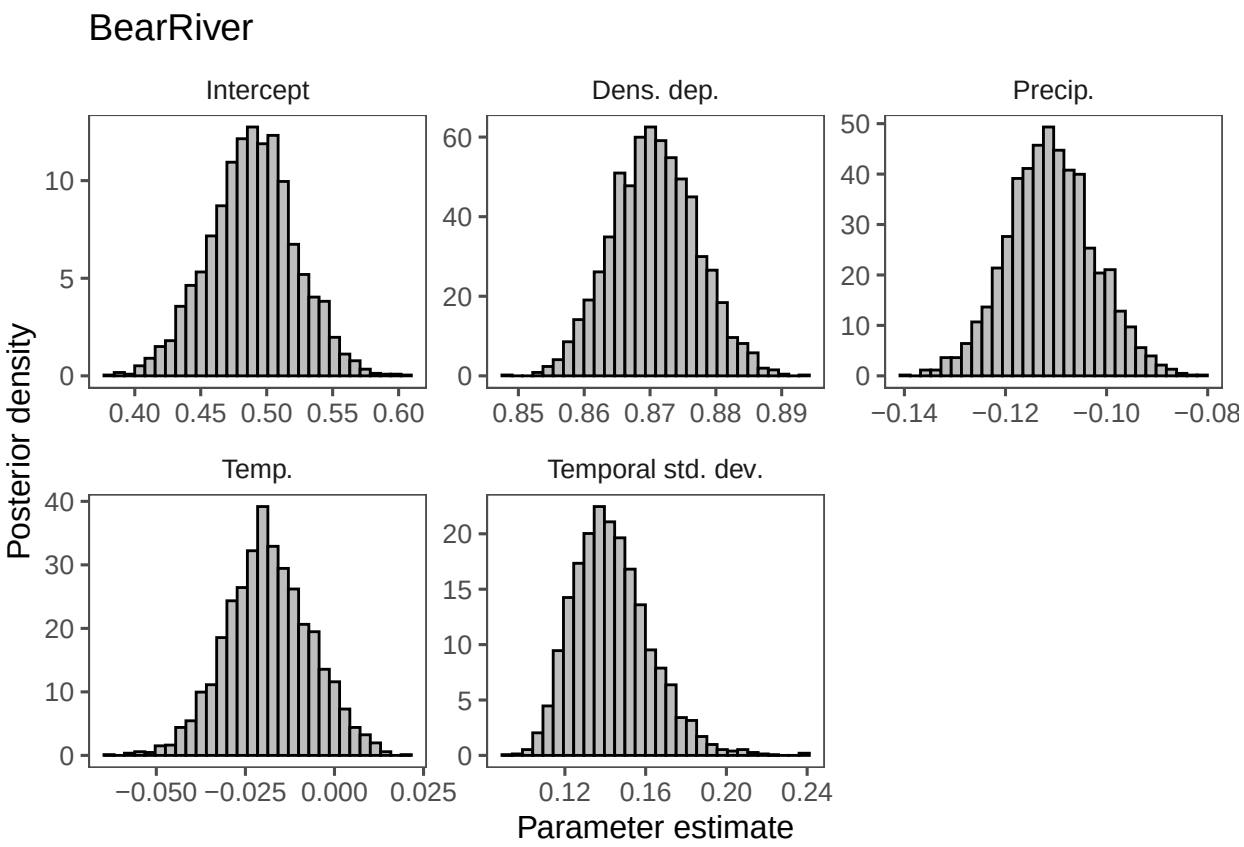

Figure S1: Caption 1

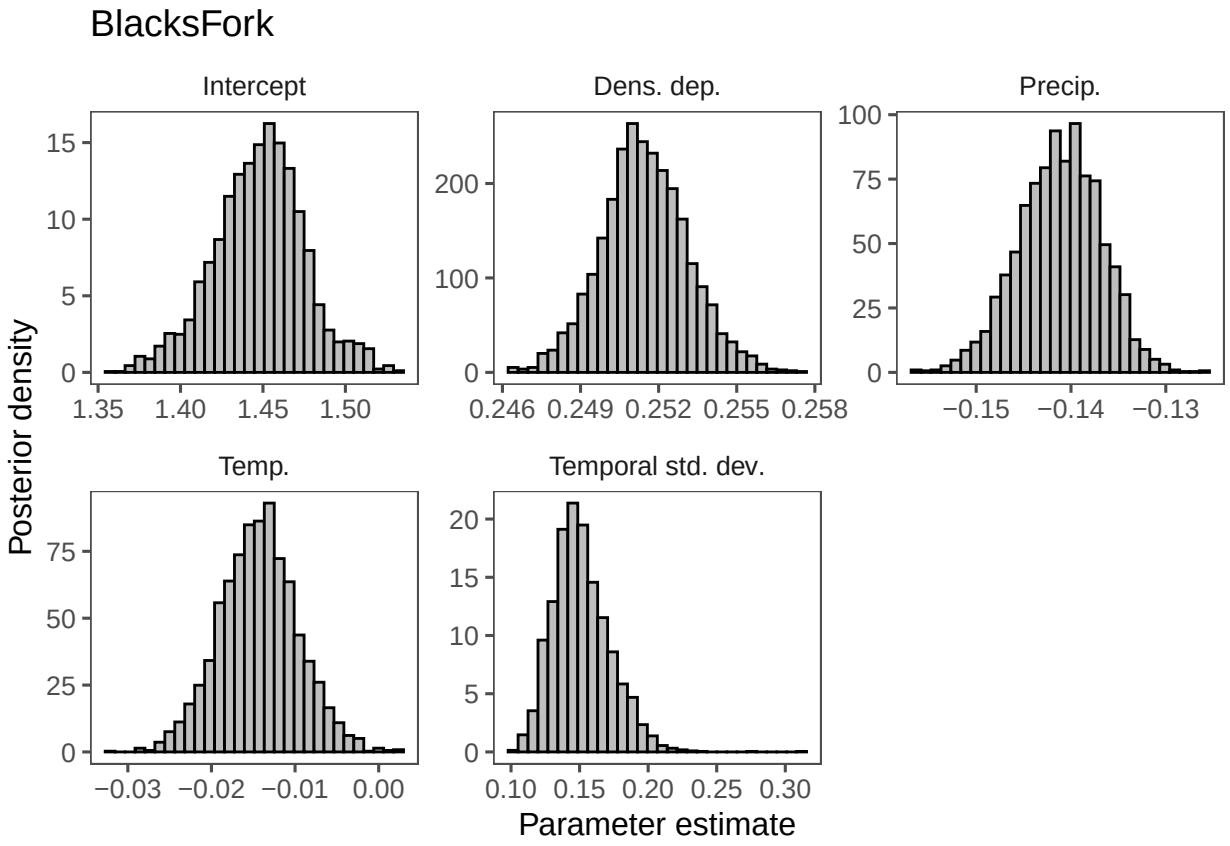

Figure S2: Caption 2

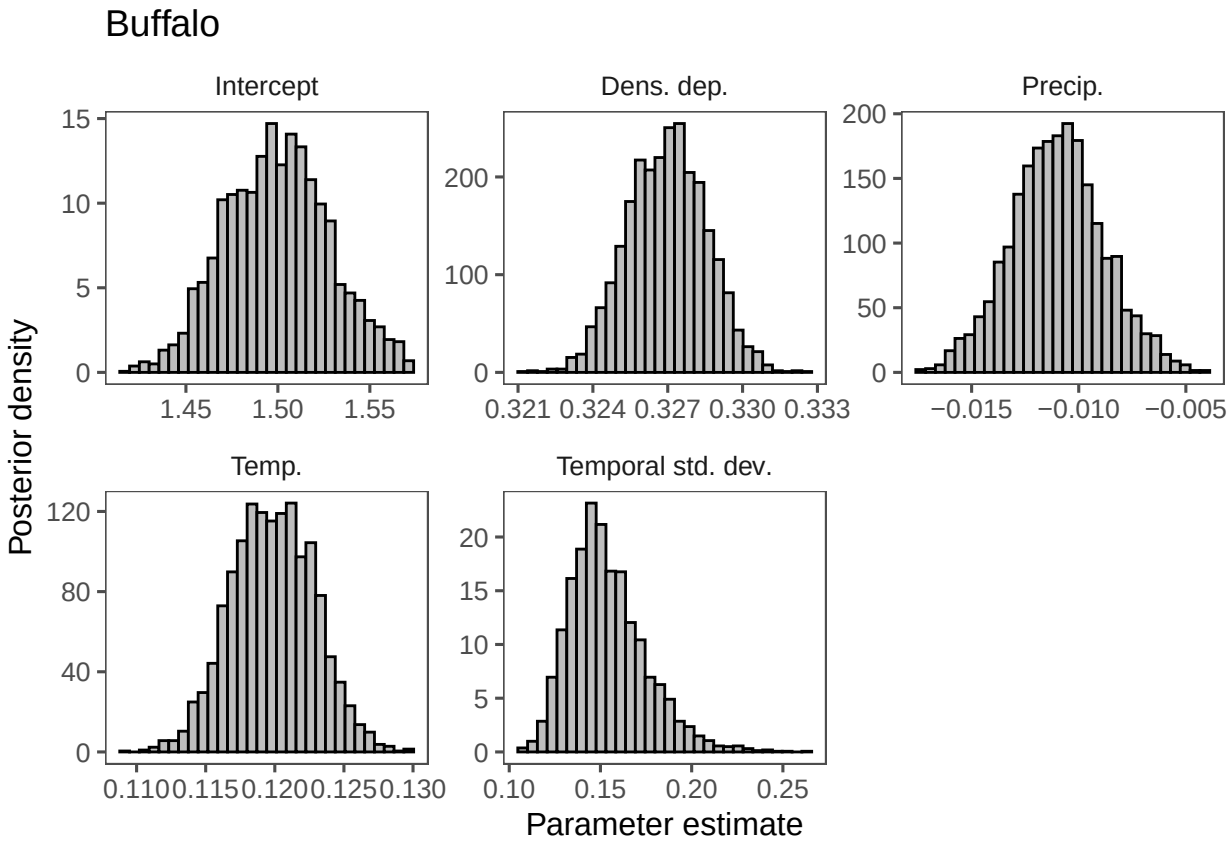

Figure S3: Caption 3

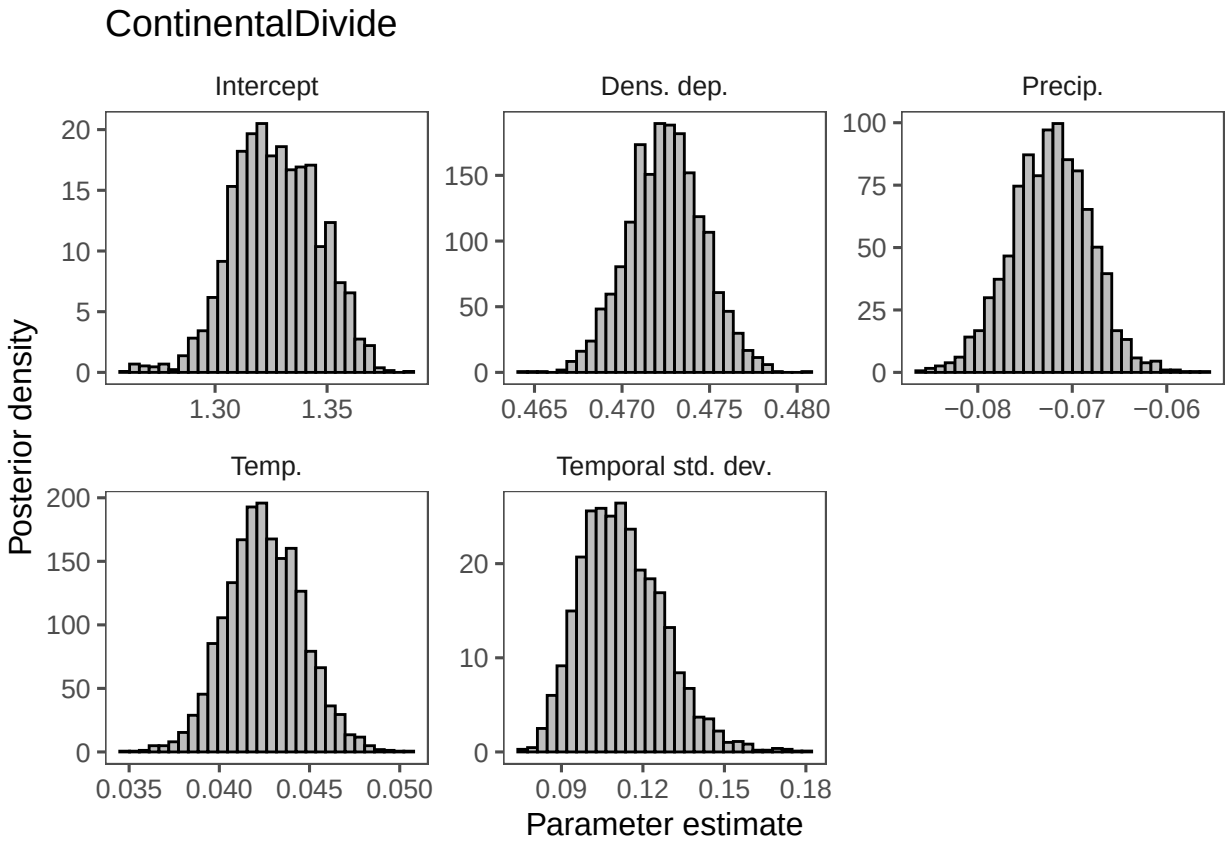

Figure S4: Caption 4

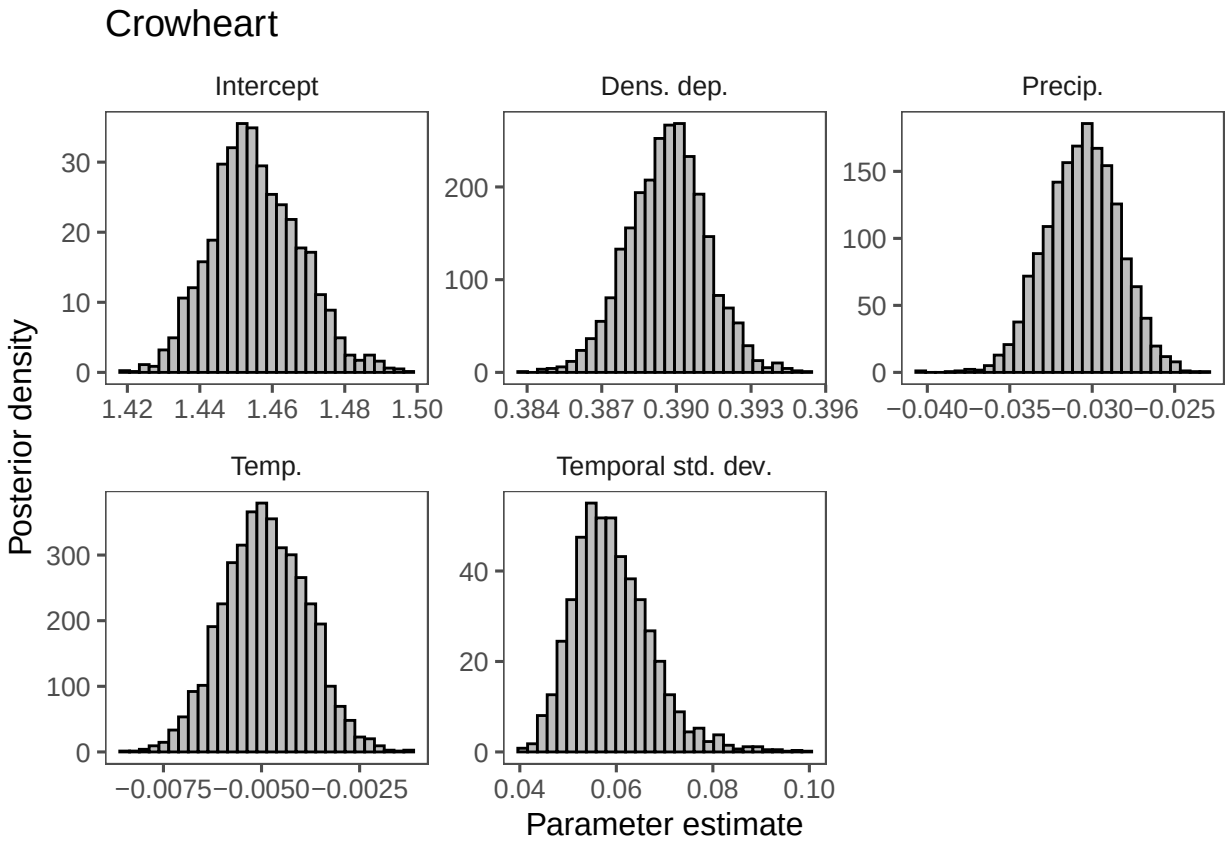

Figure S5: Caption 5

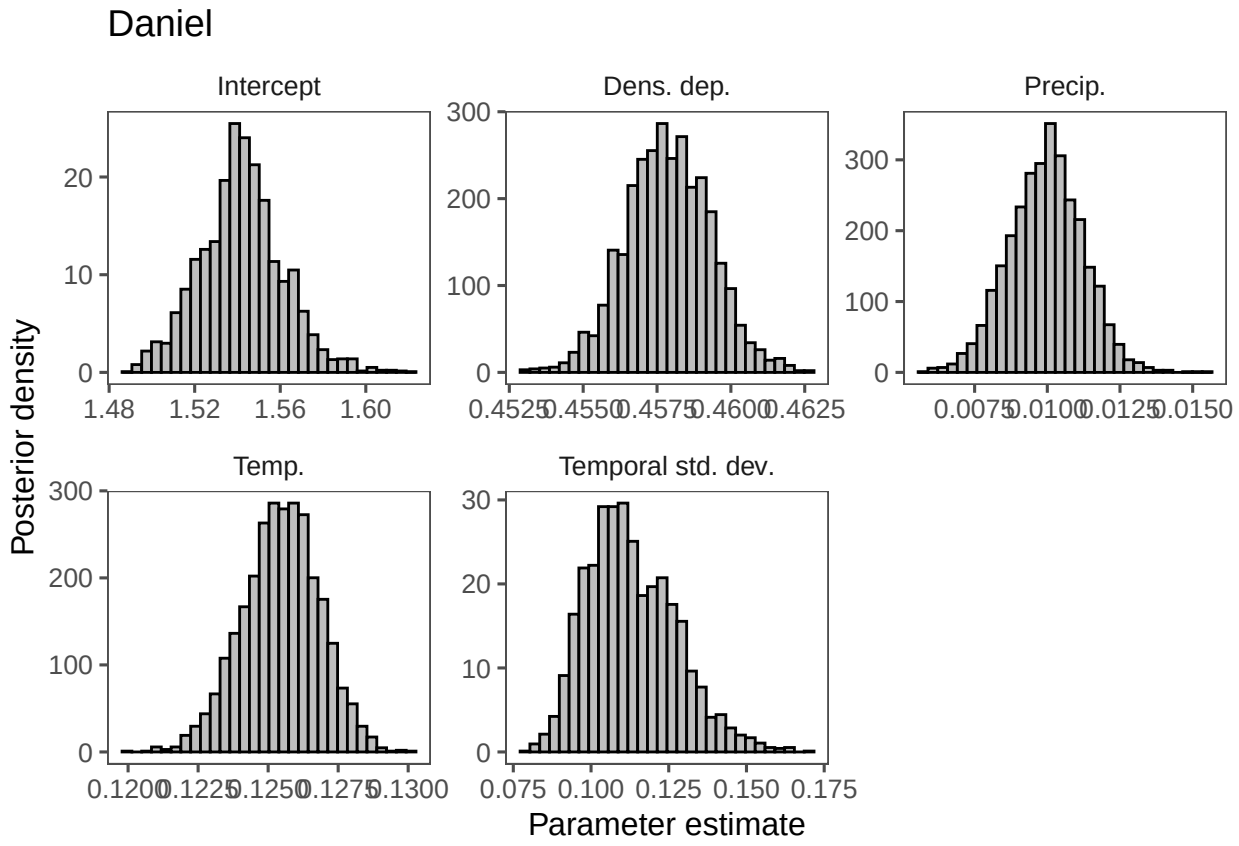

Figure S6: Caption 6

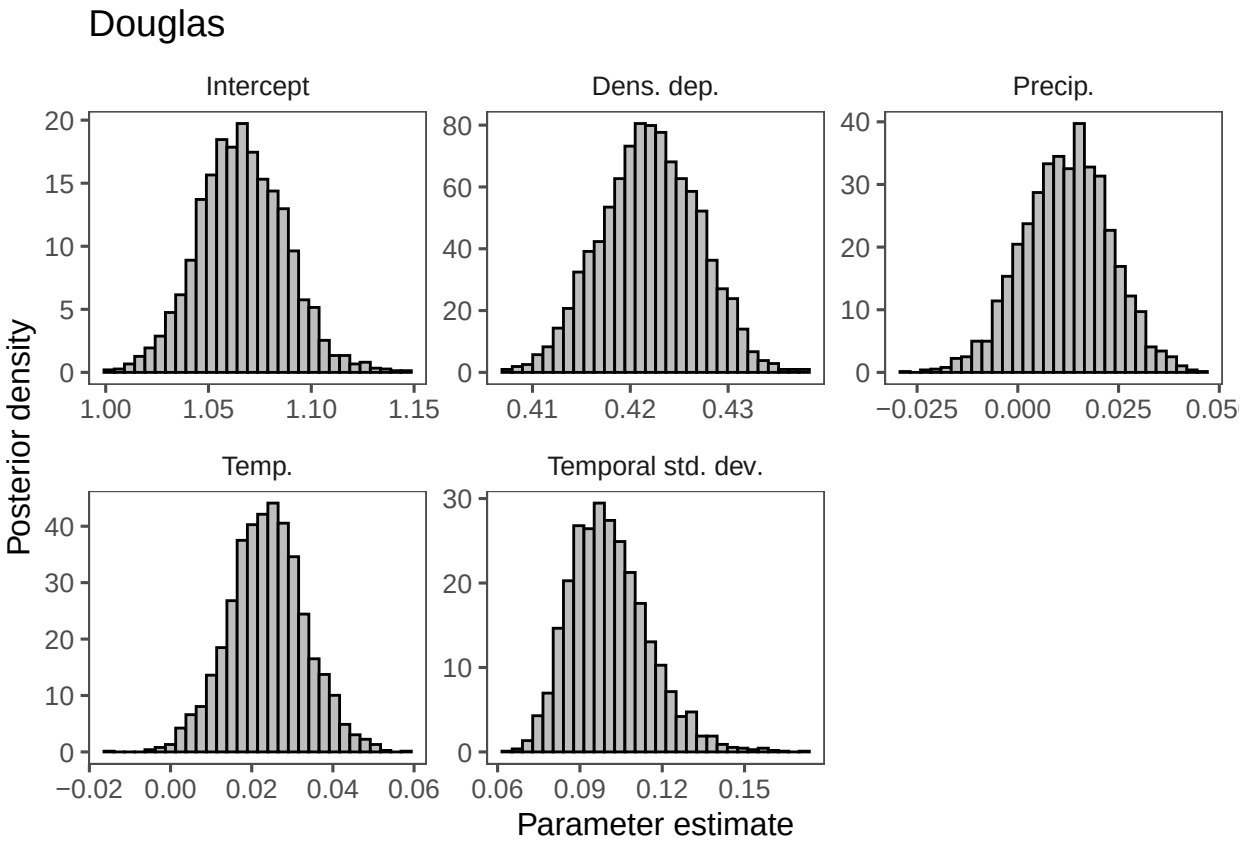

Figure S7: Caption 7

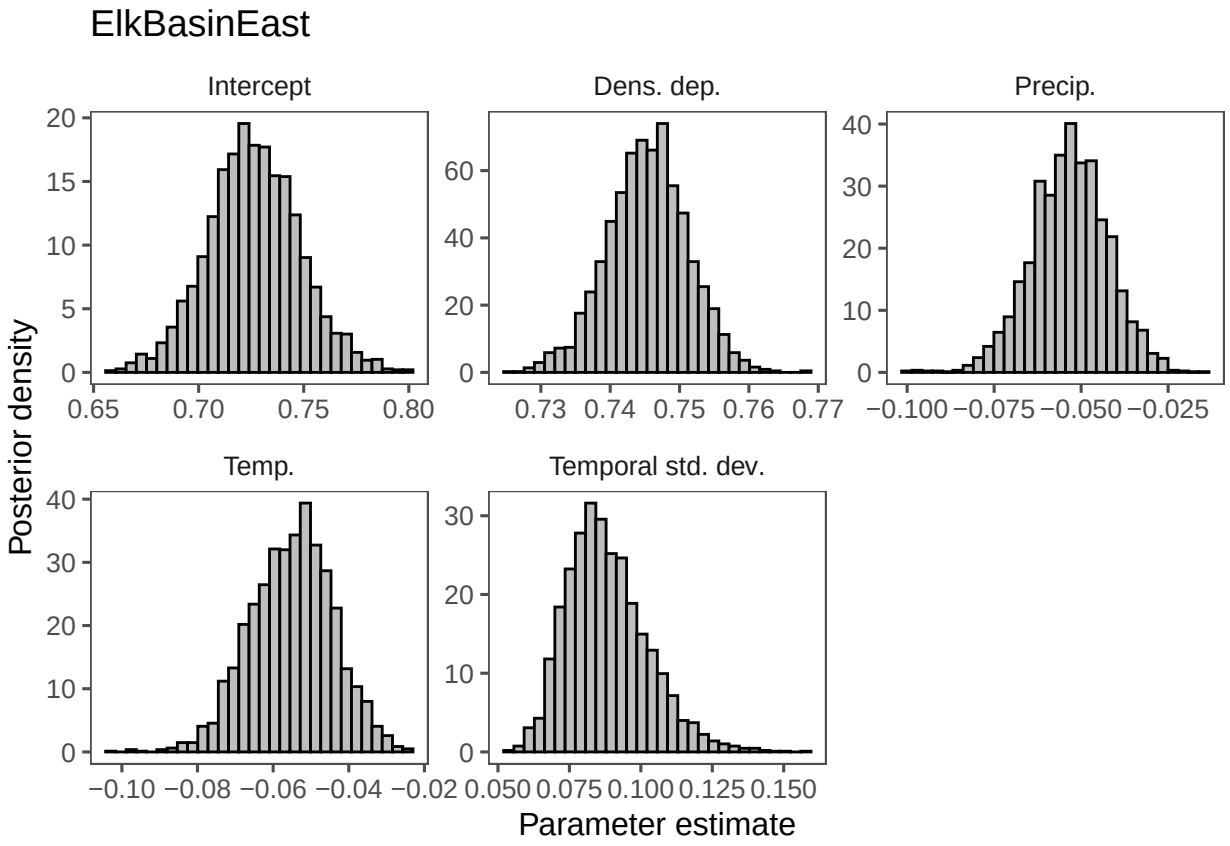

Figure S8: Caption 8

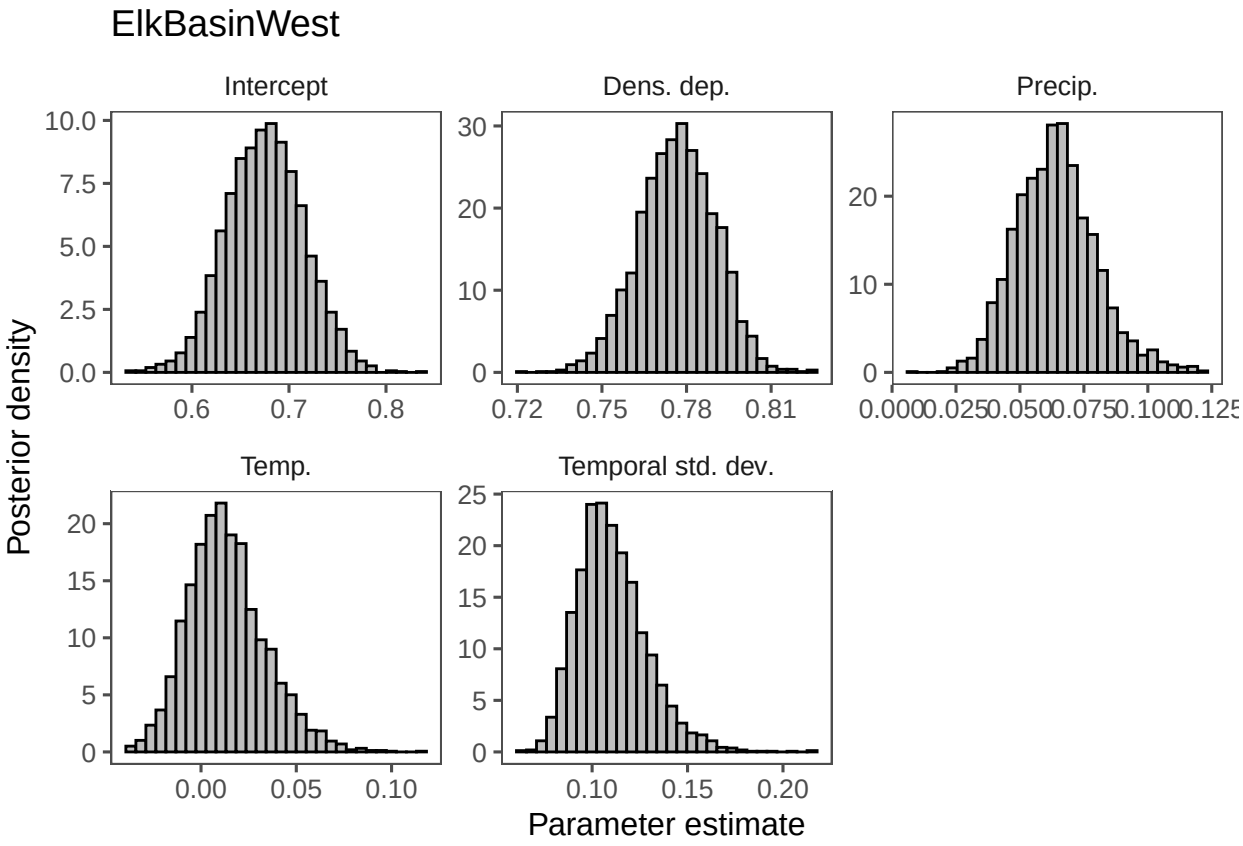

Figure S9: Caption 9

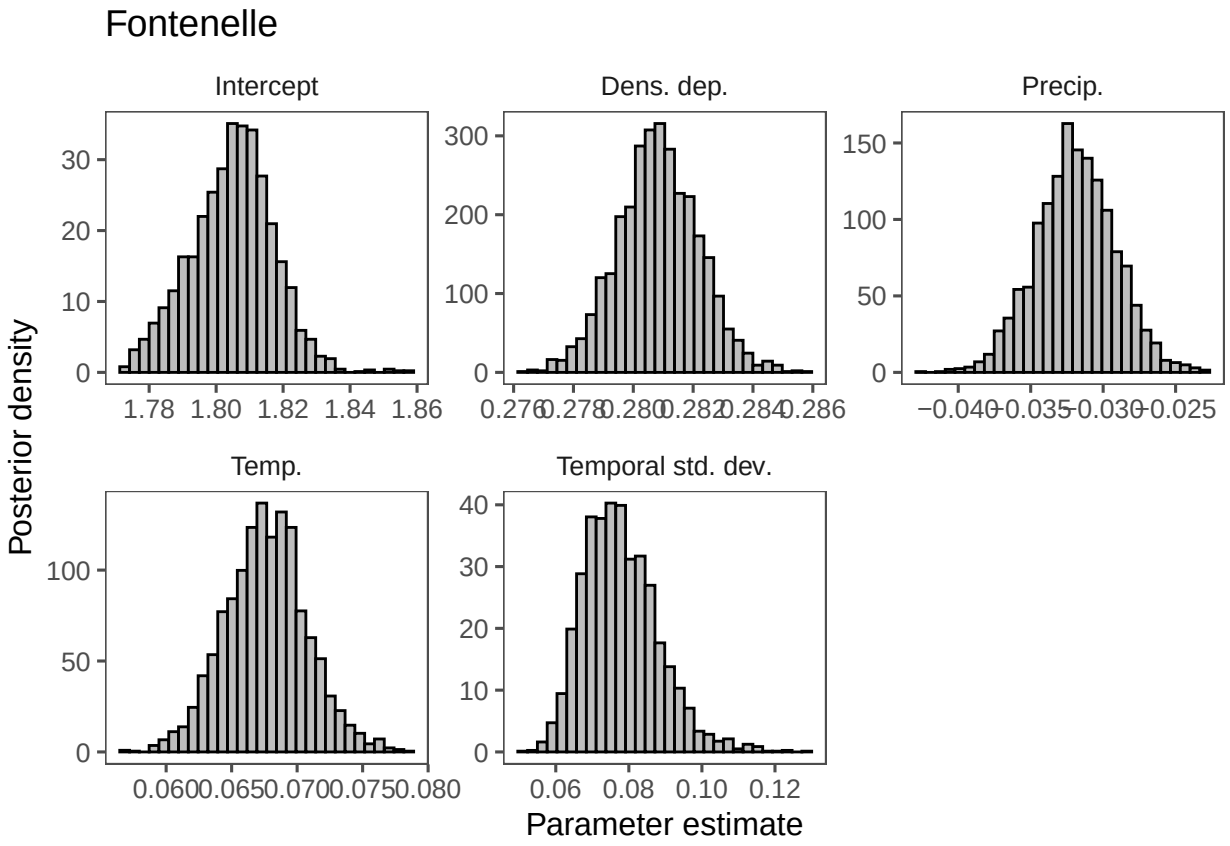

Figure S10: Caption 10

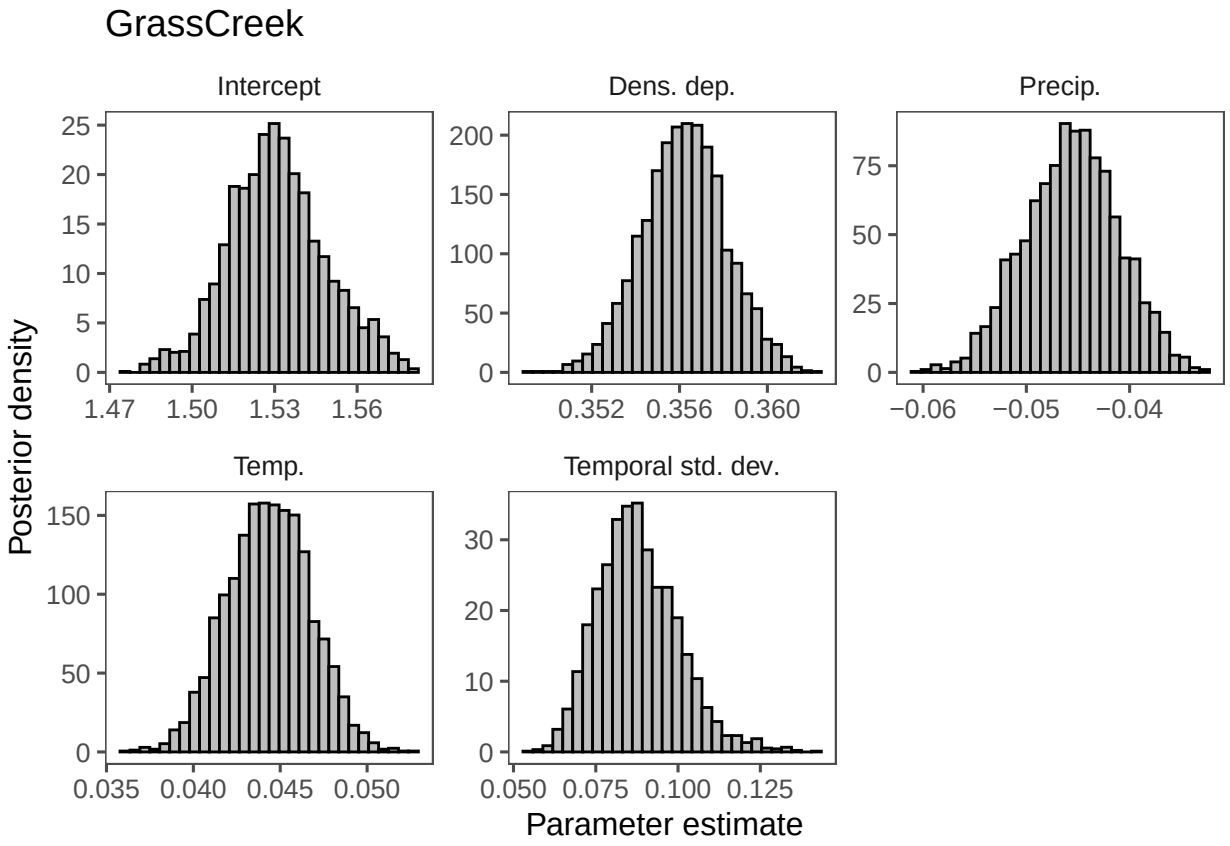

Figure S11: Caption 11

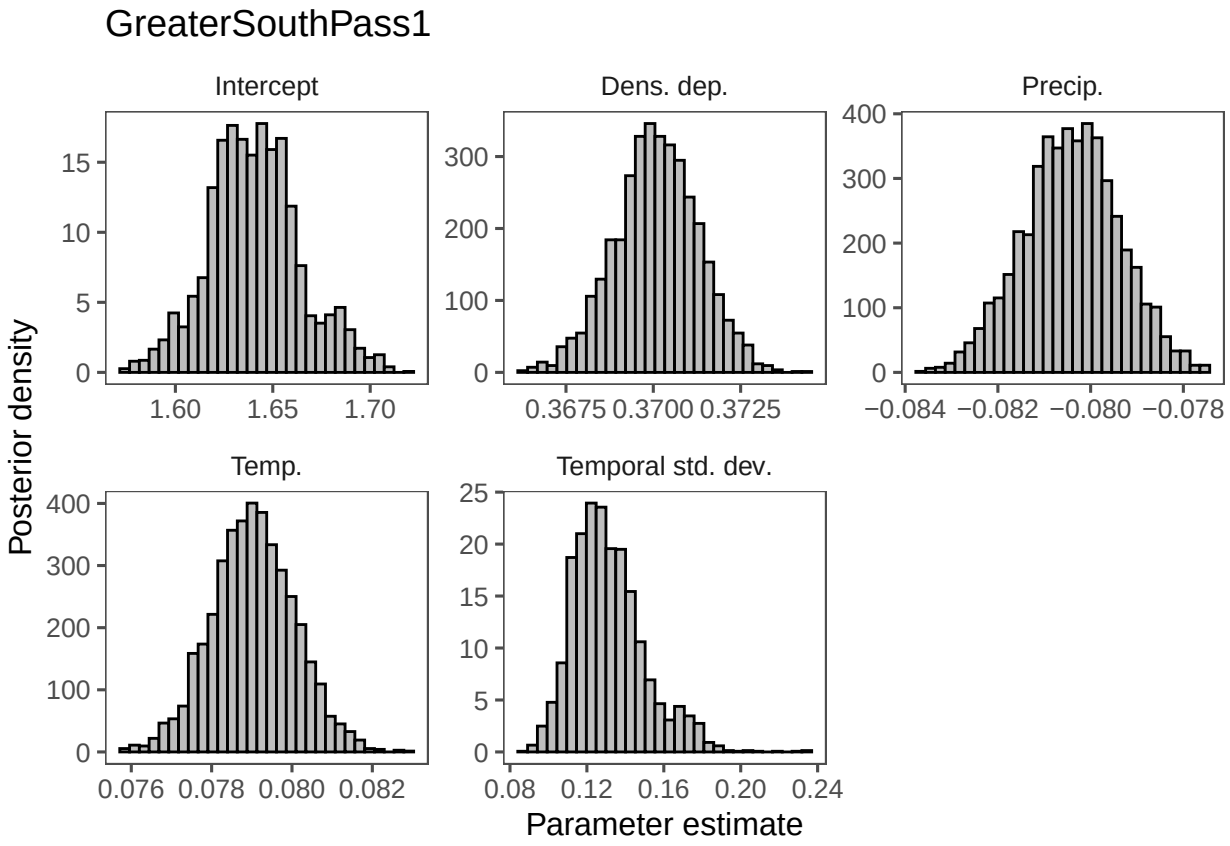

Figure S12: Caption 12

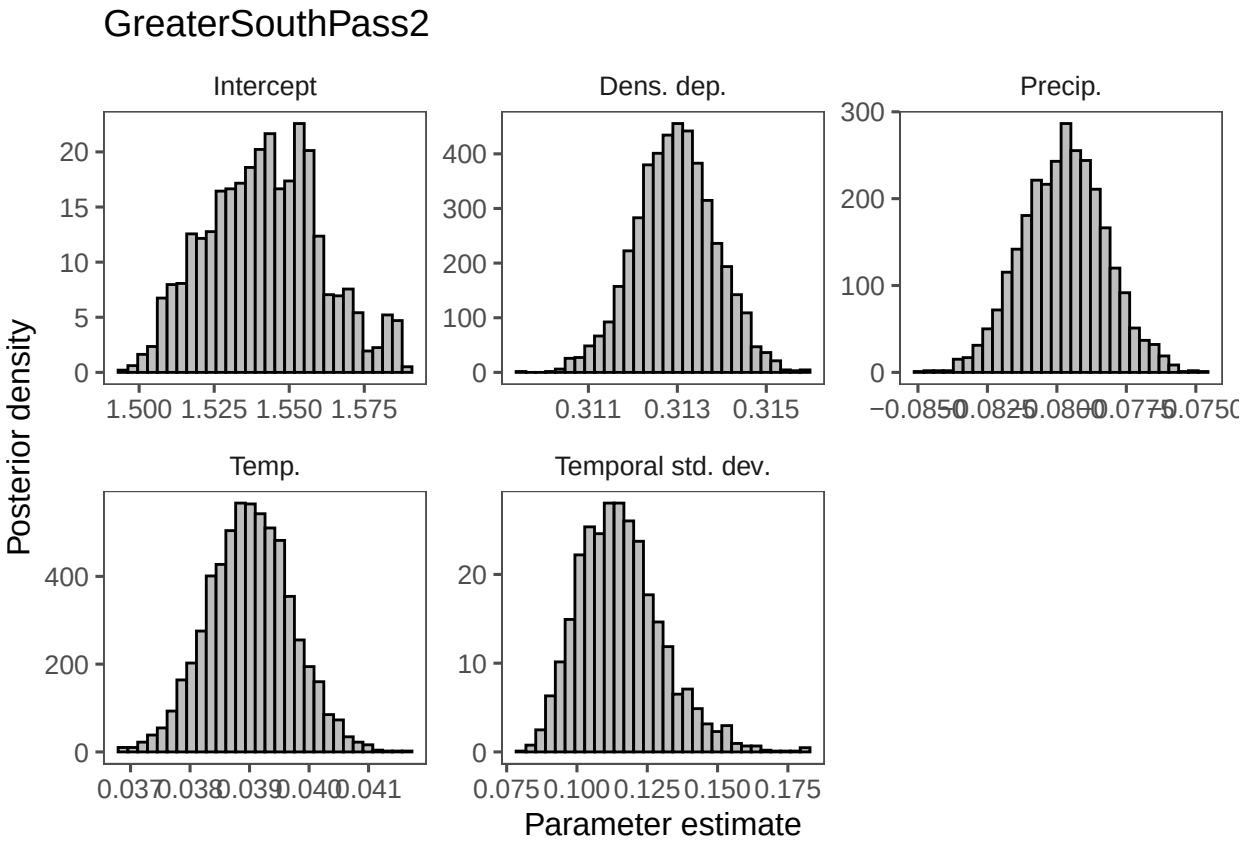

Figure S13: Caption 13

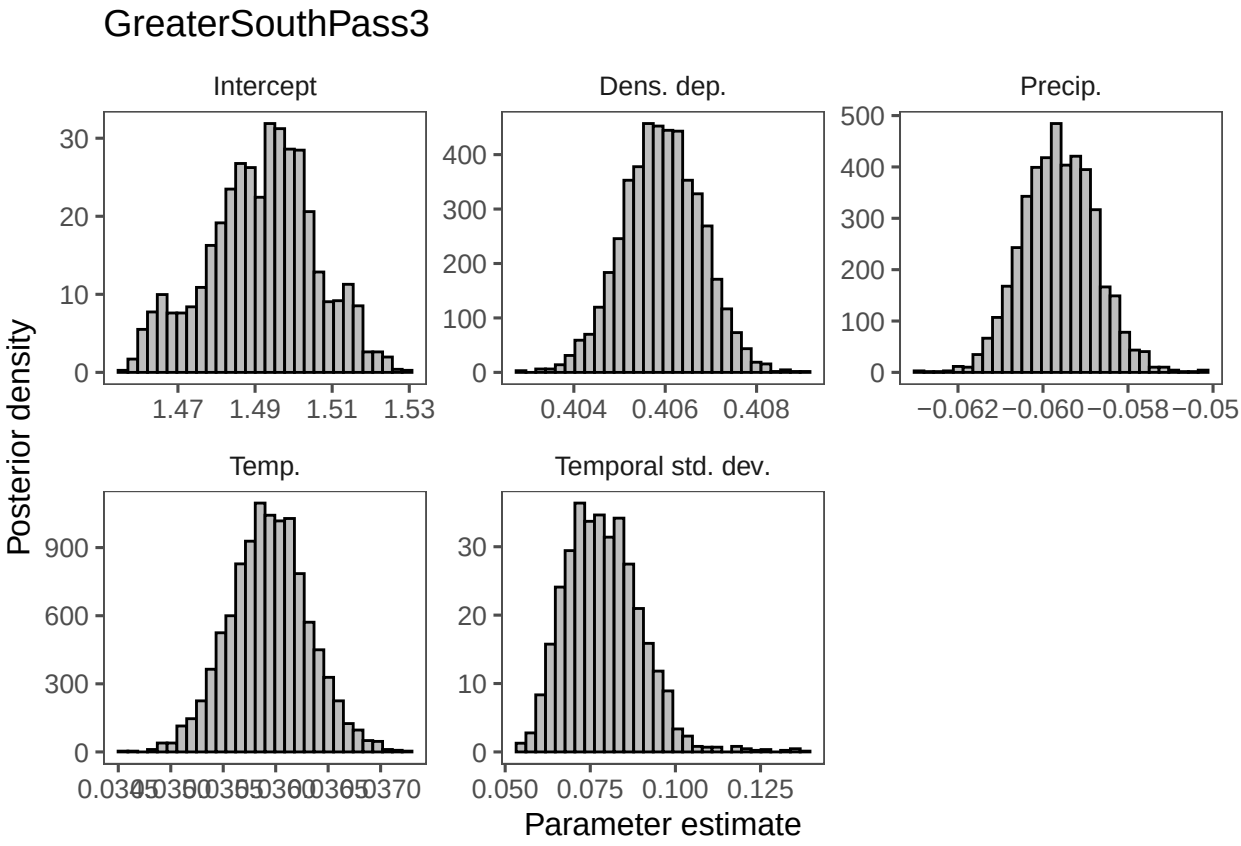

Figure S14: Caption 14

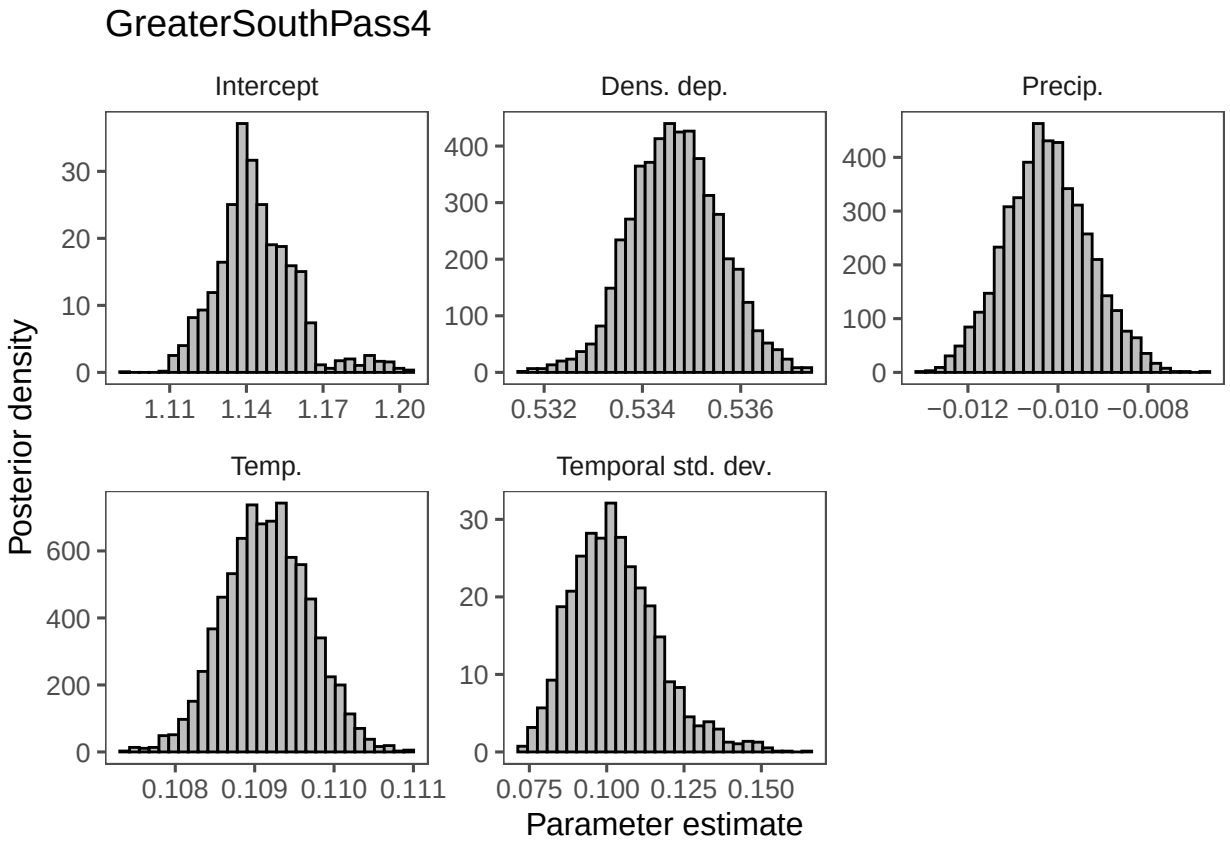

Figure S15: Caption 15

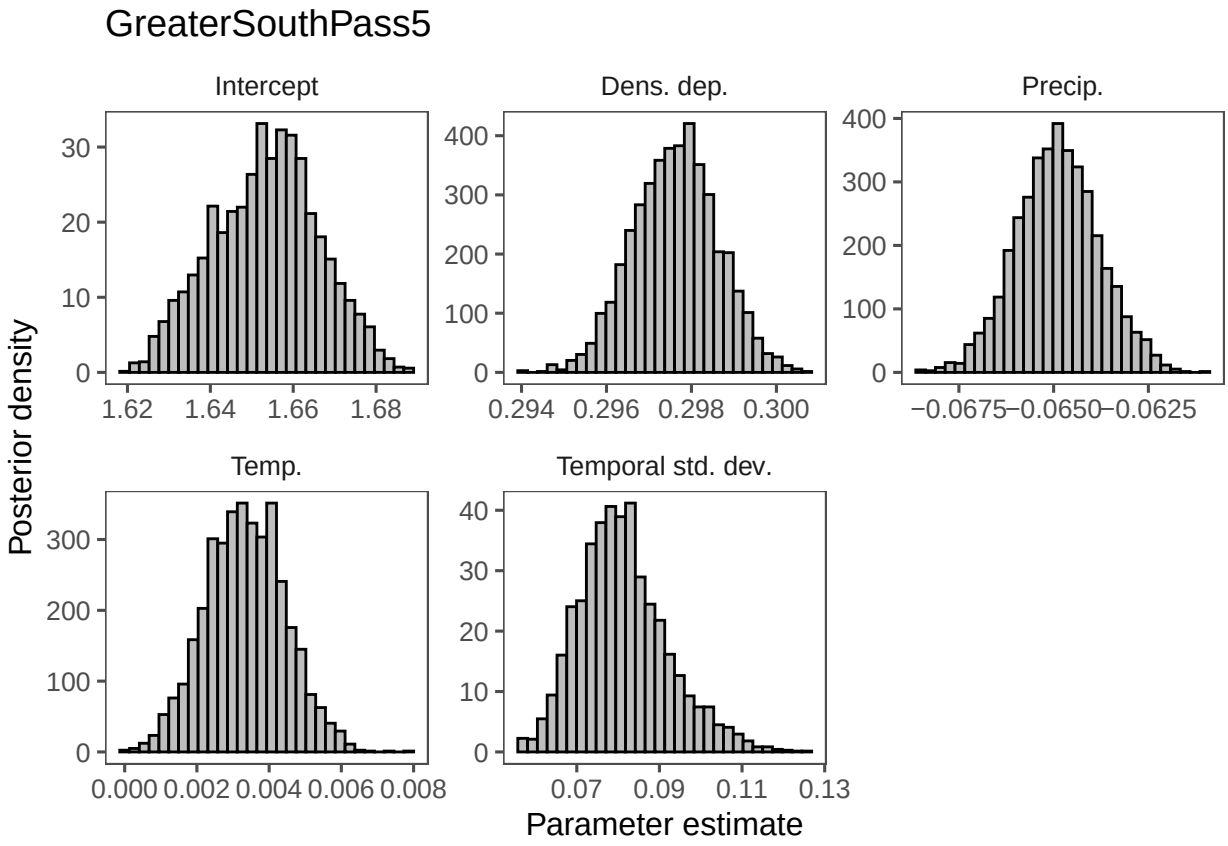

Figure S16: Caption 16

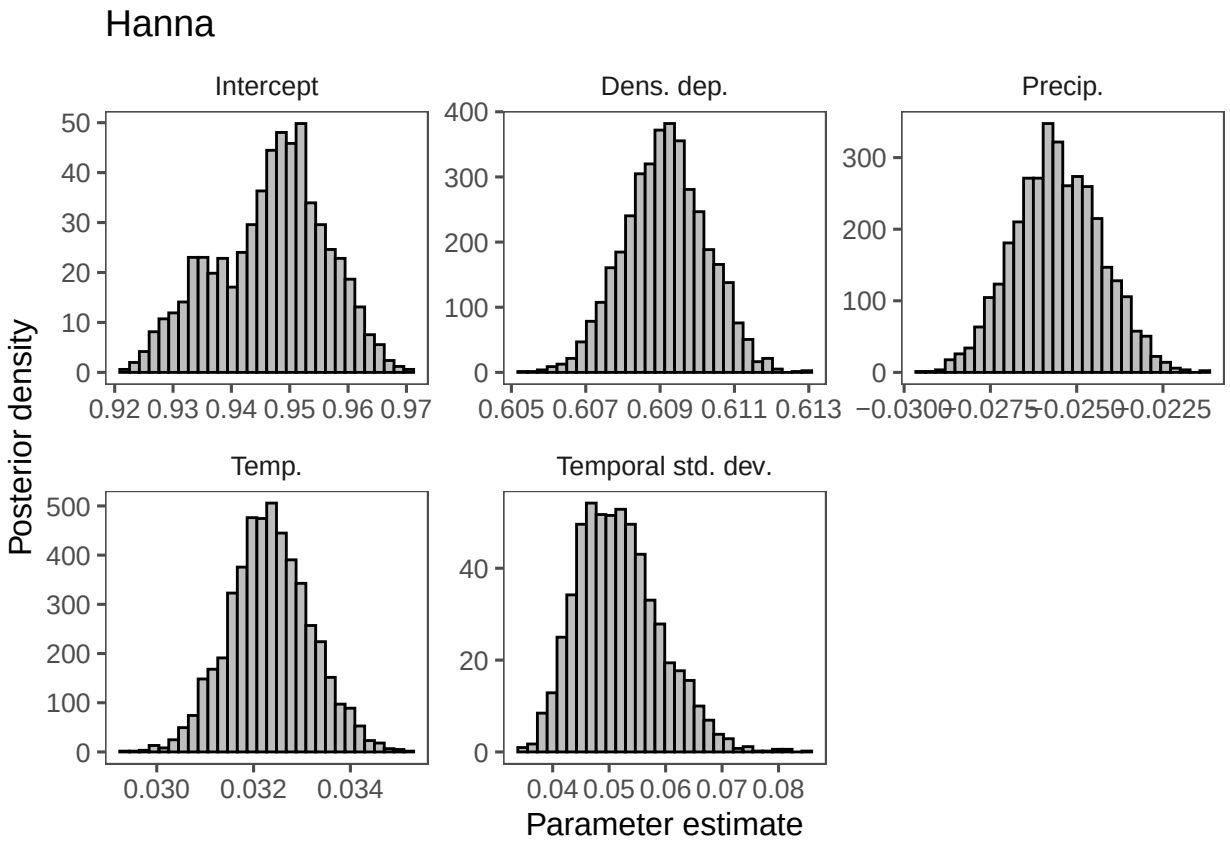

Figure S17: Caption 17

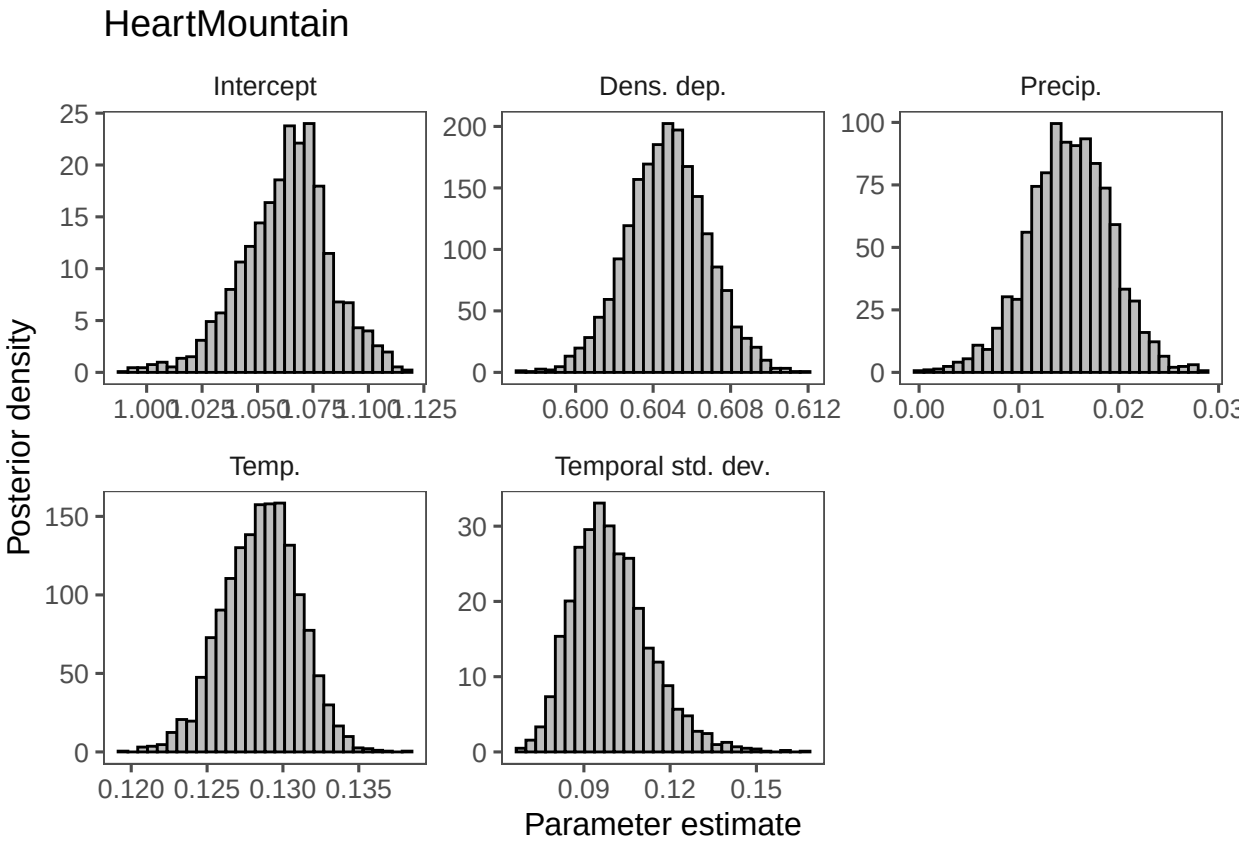

Figure S18: Caption 18

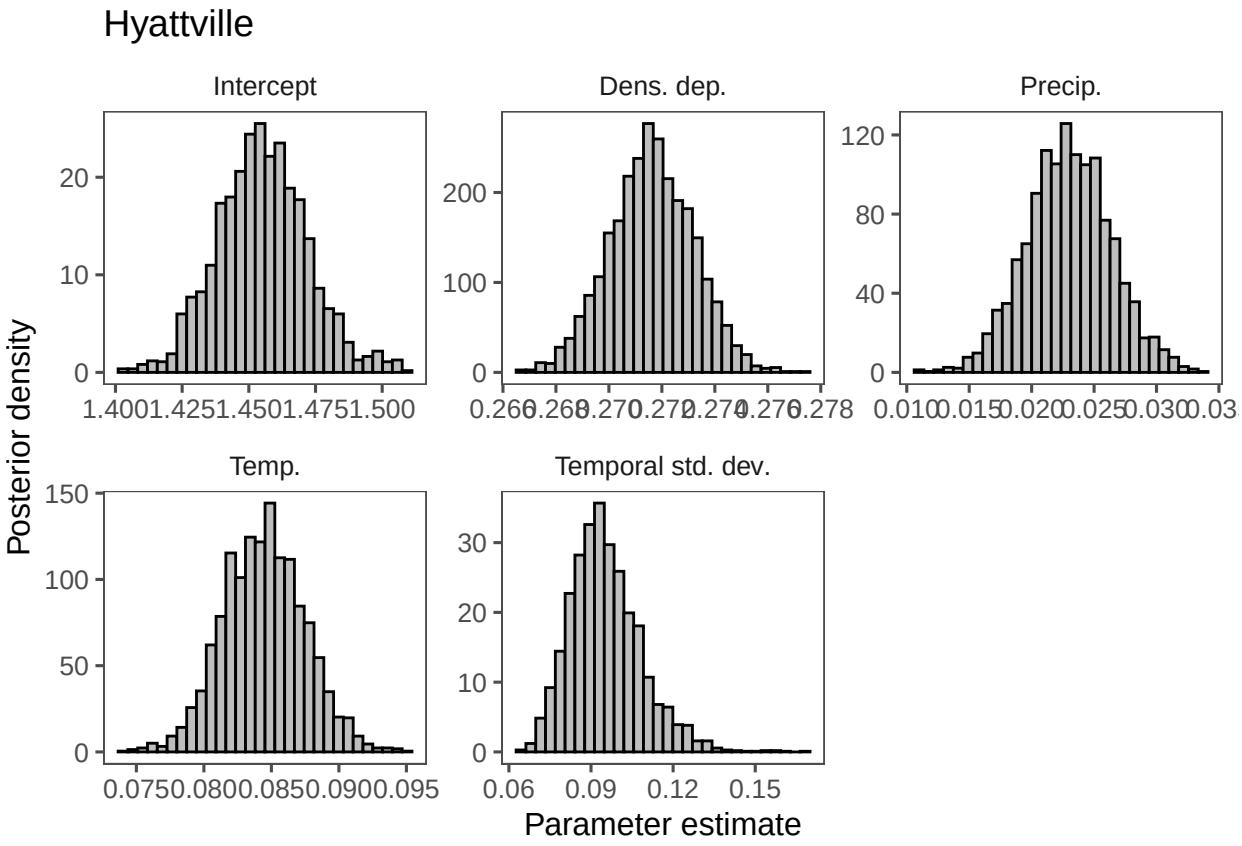

Figure S19: Caption 19

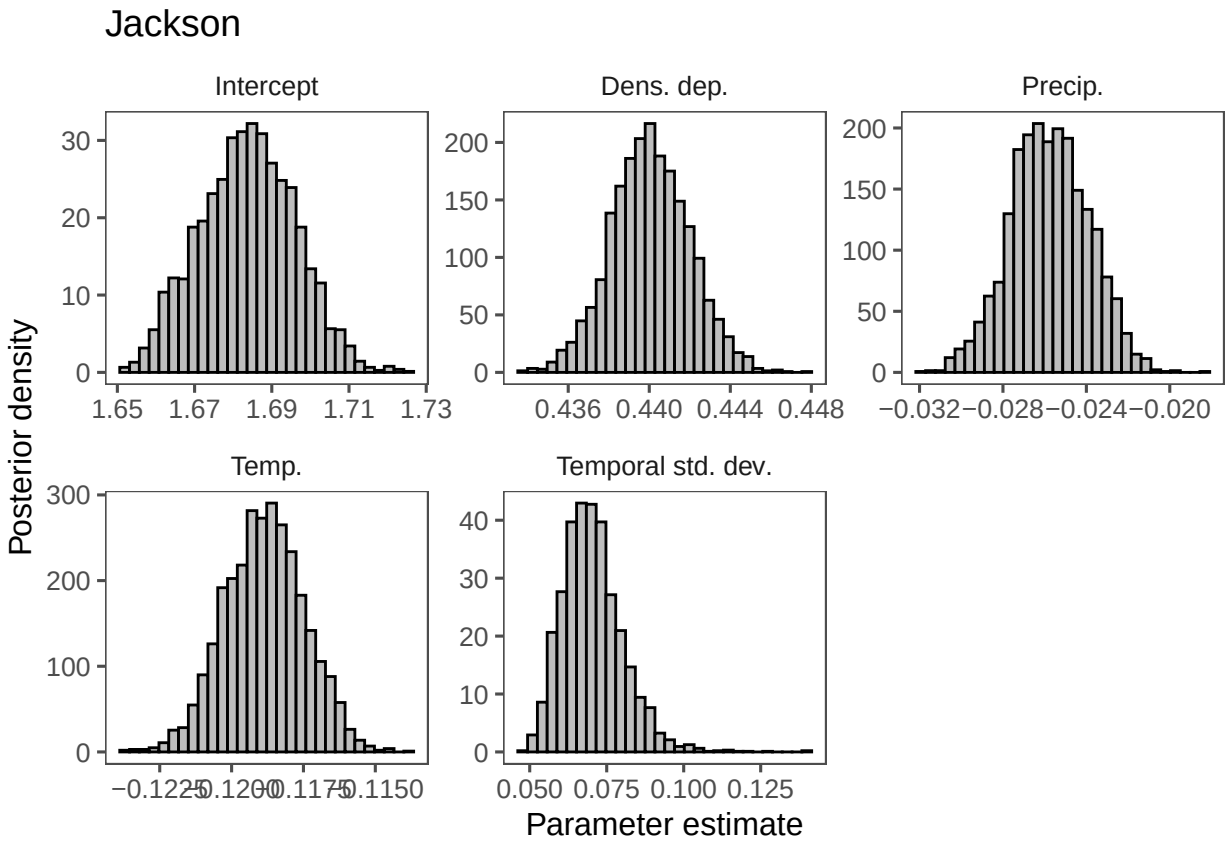

Figure S20: Caption 20

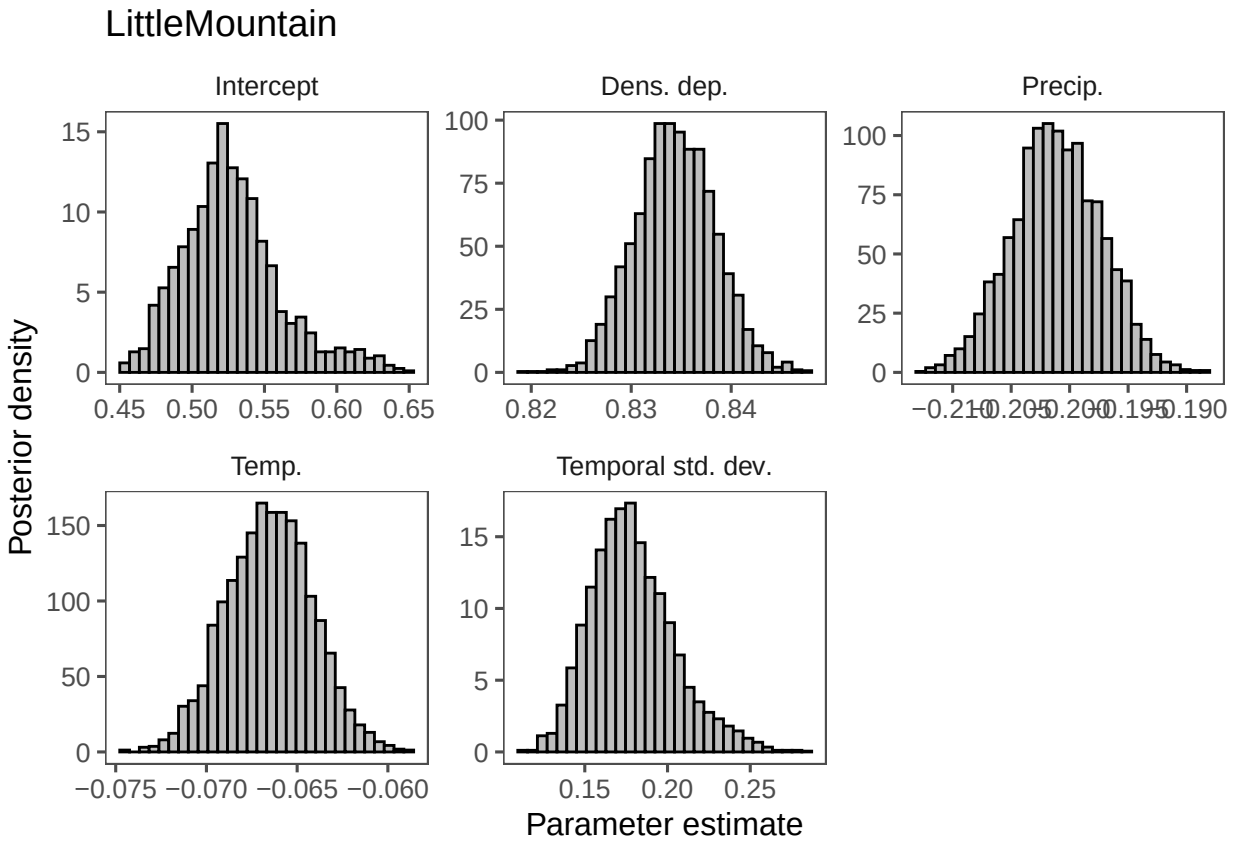

Figure S21: Caption 21

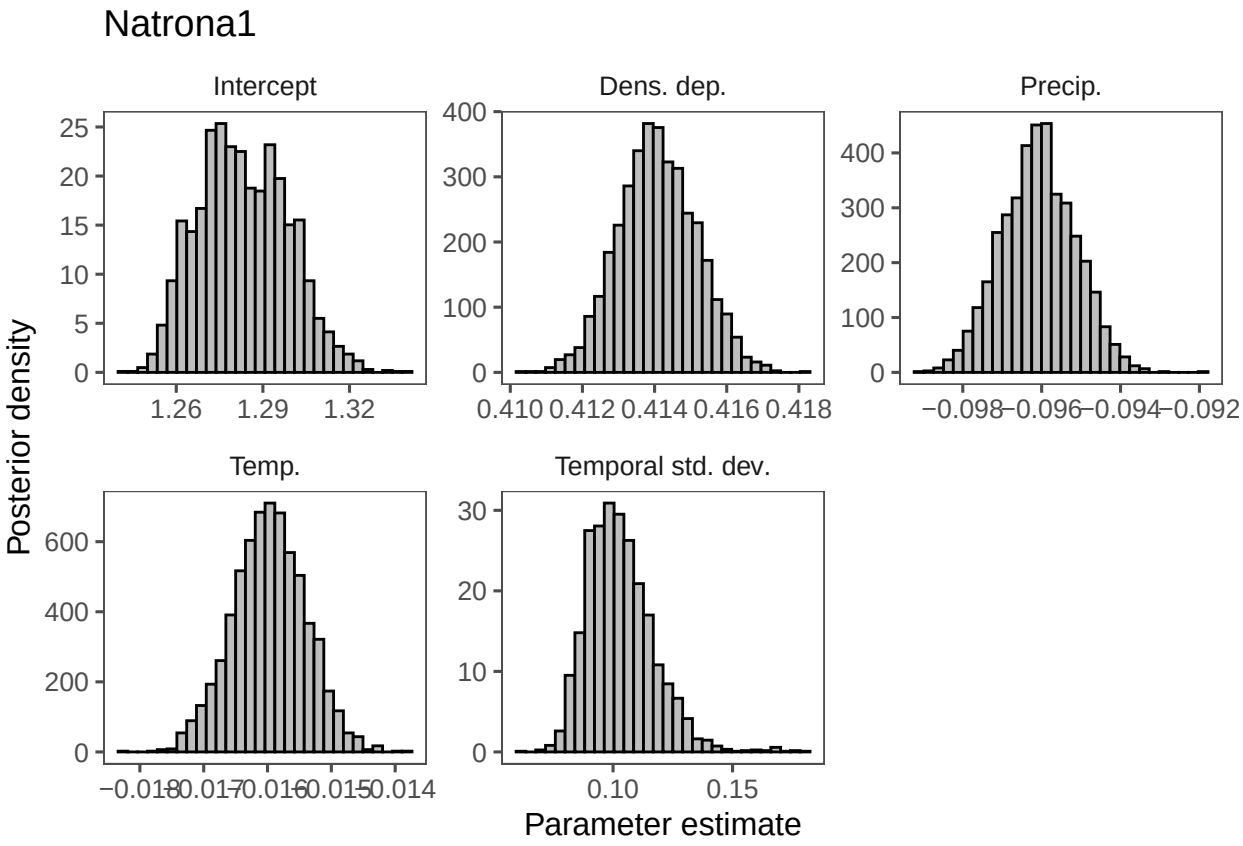

Figure S22: Caption 22

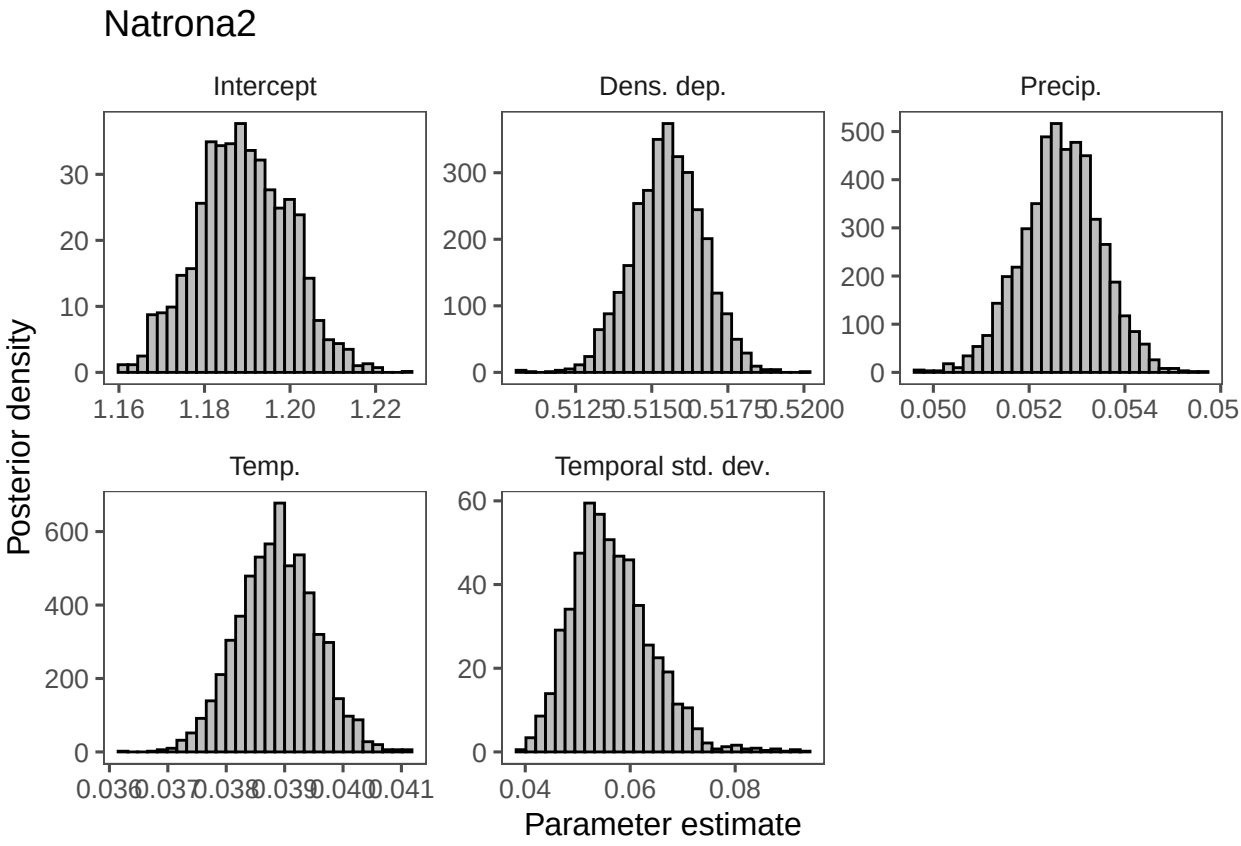

Figure S23: Caption 23

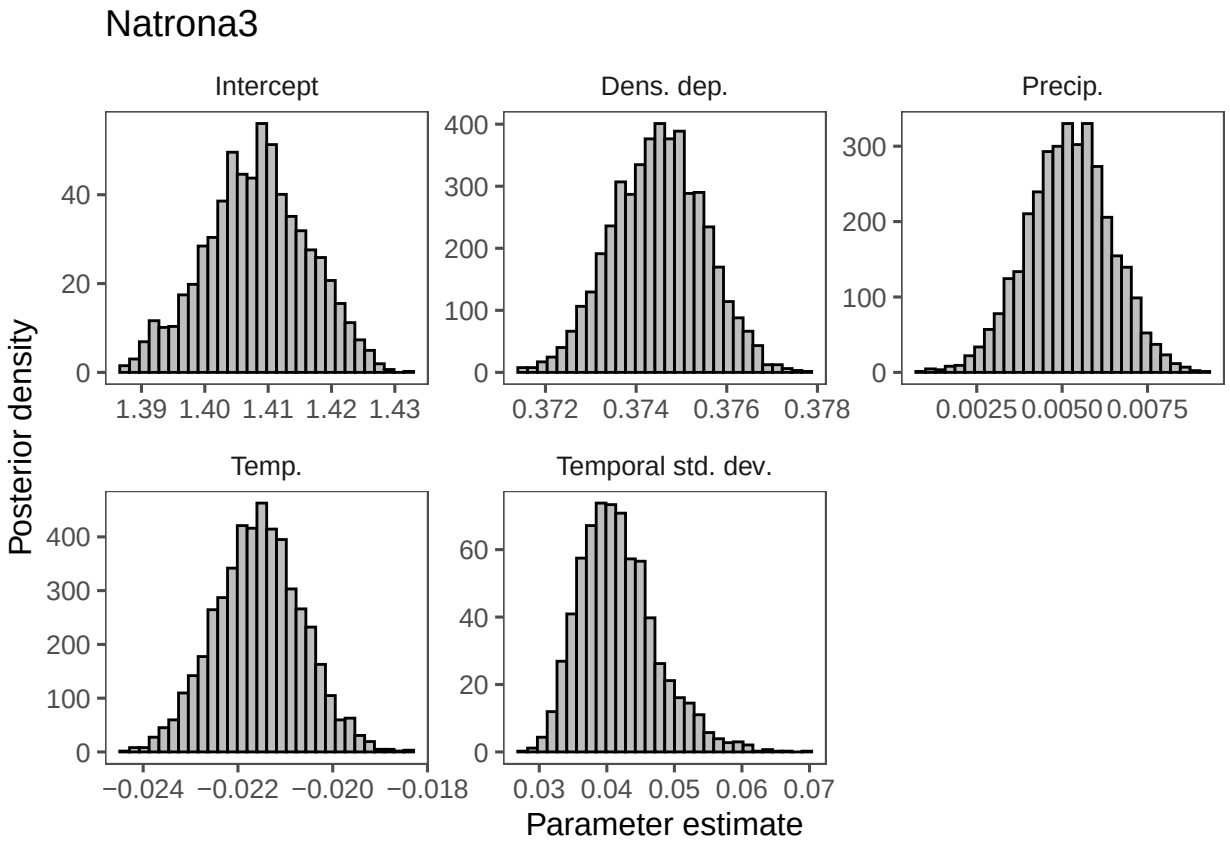

Figure S24: Caption 24

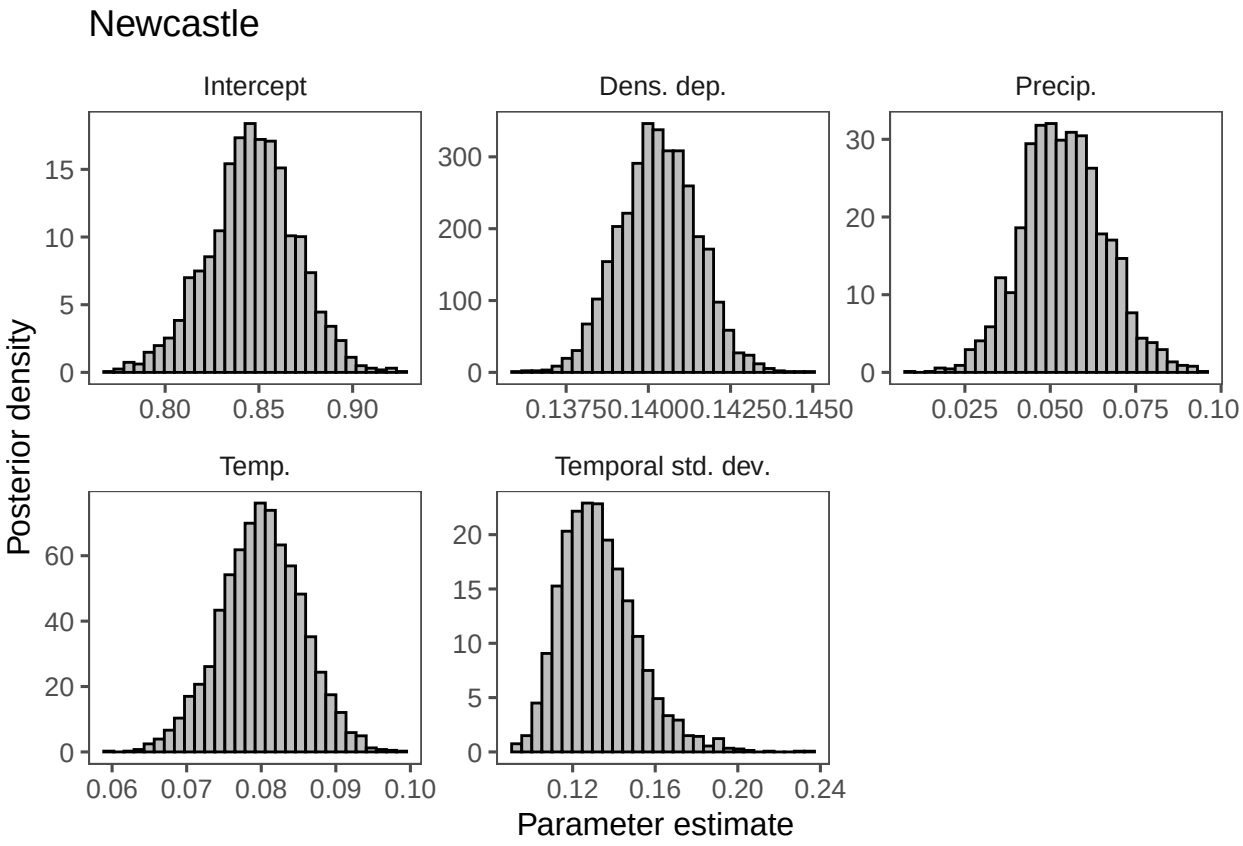

Figure S25: Caption 25

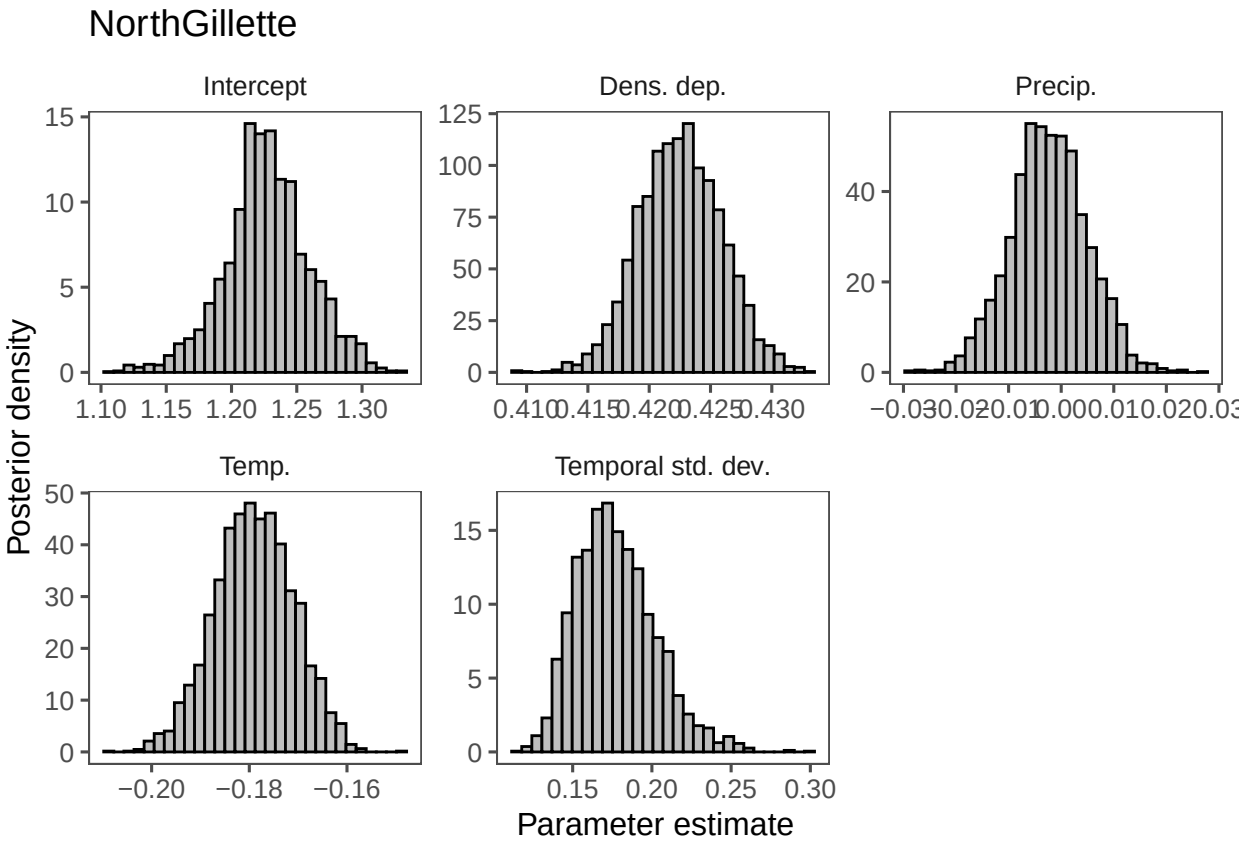

Figure S26: Caption 26

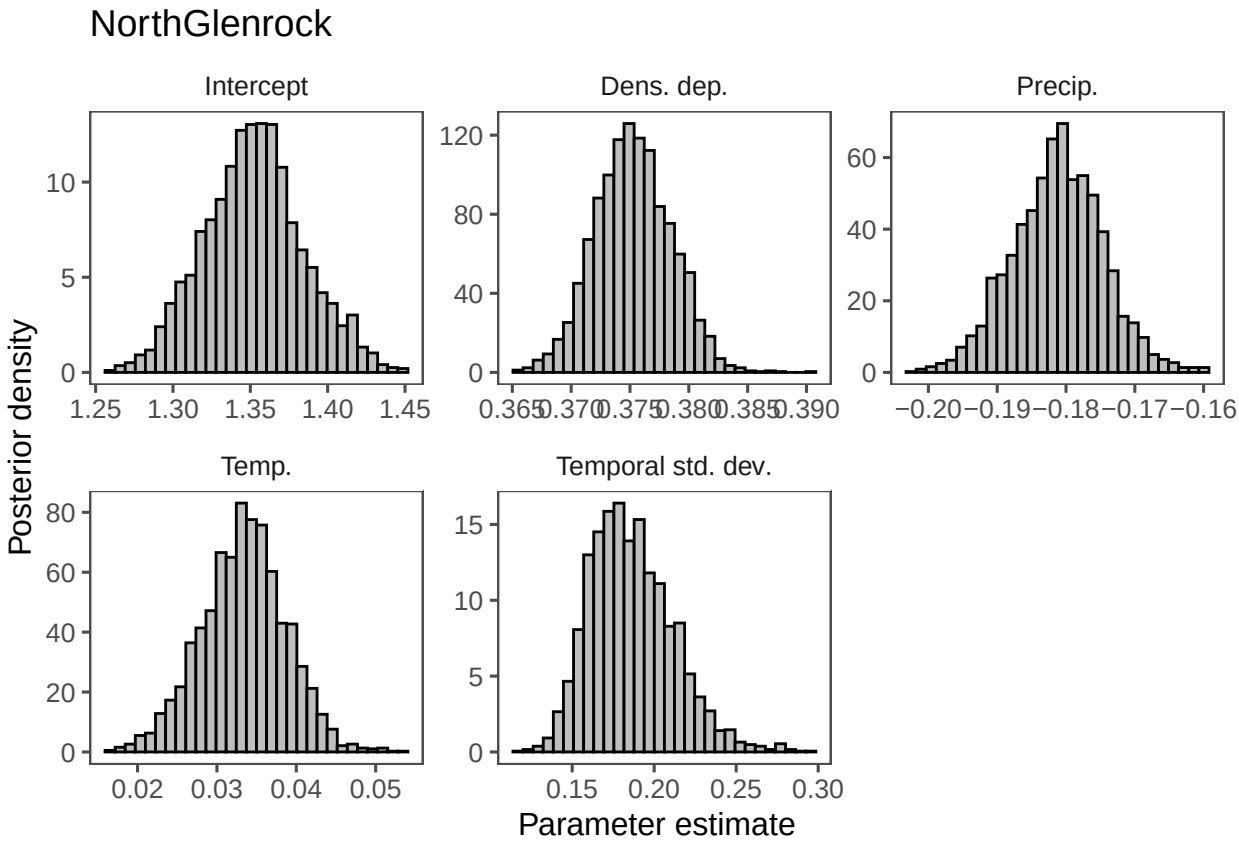

Figure S27: Caption 27

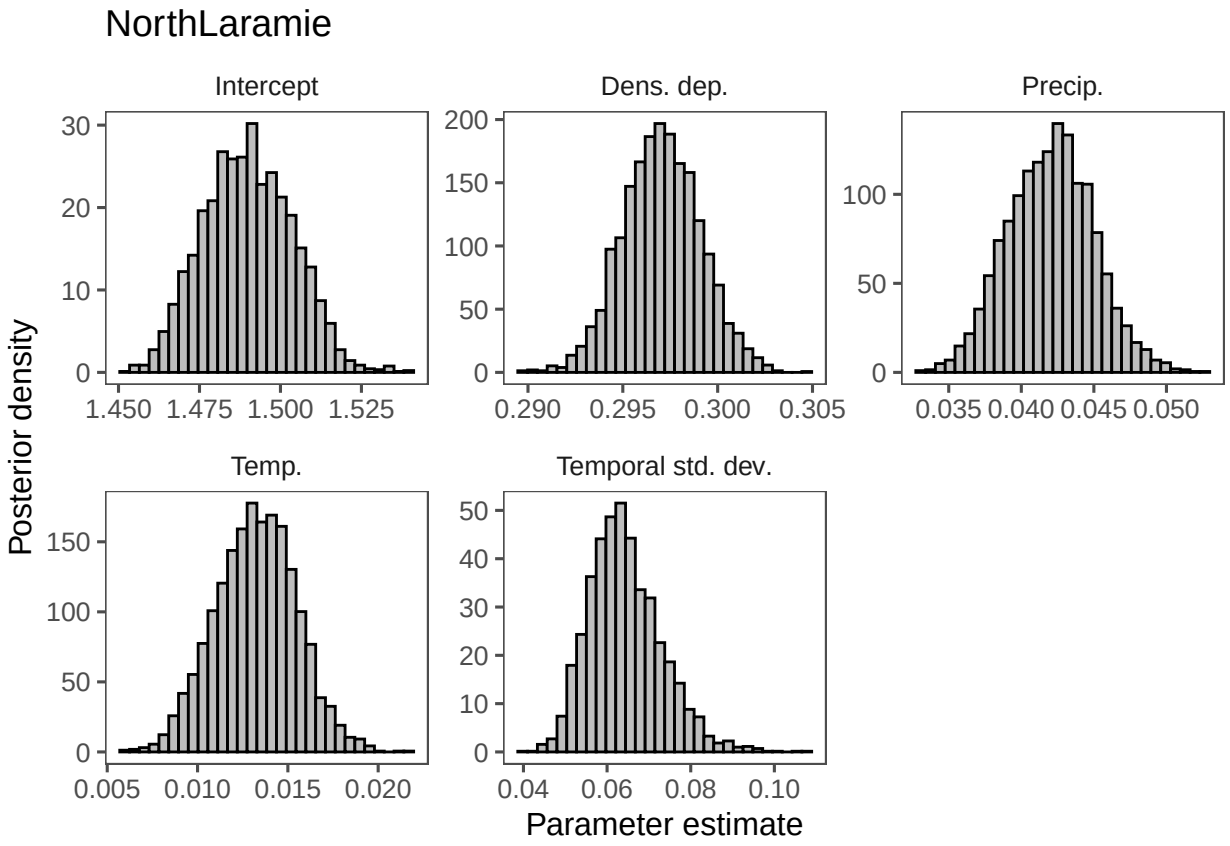

Figure S28: Caption 28

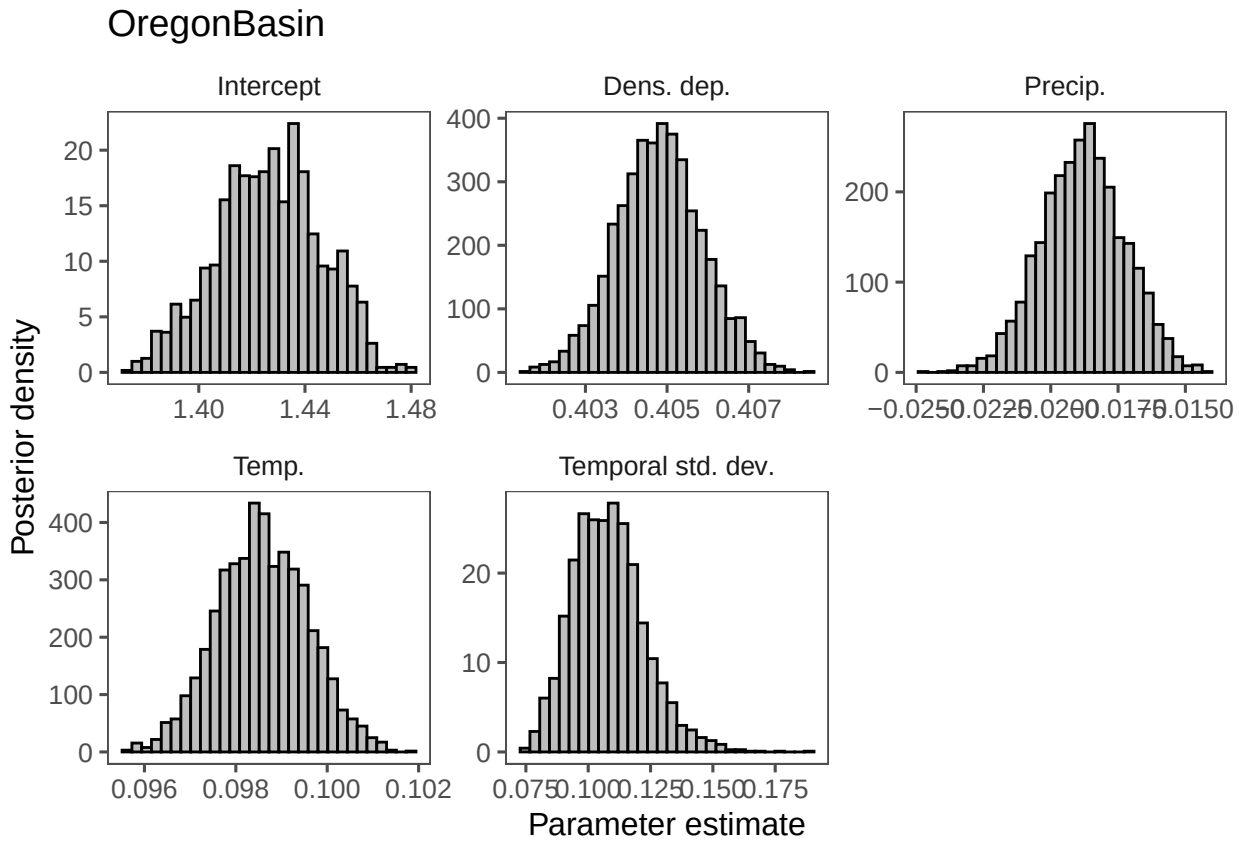

Figure S29: Caption 29

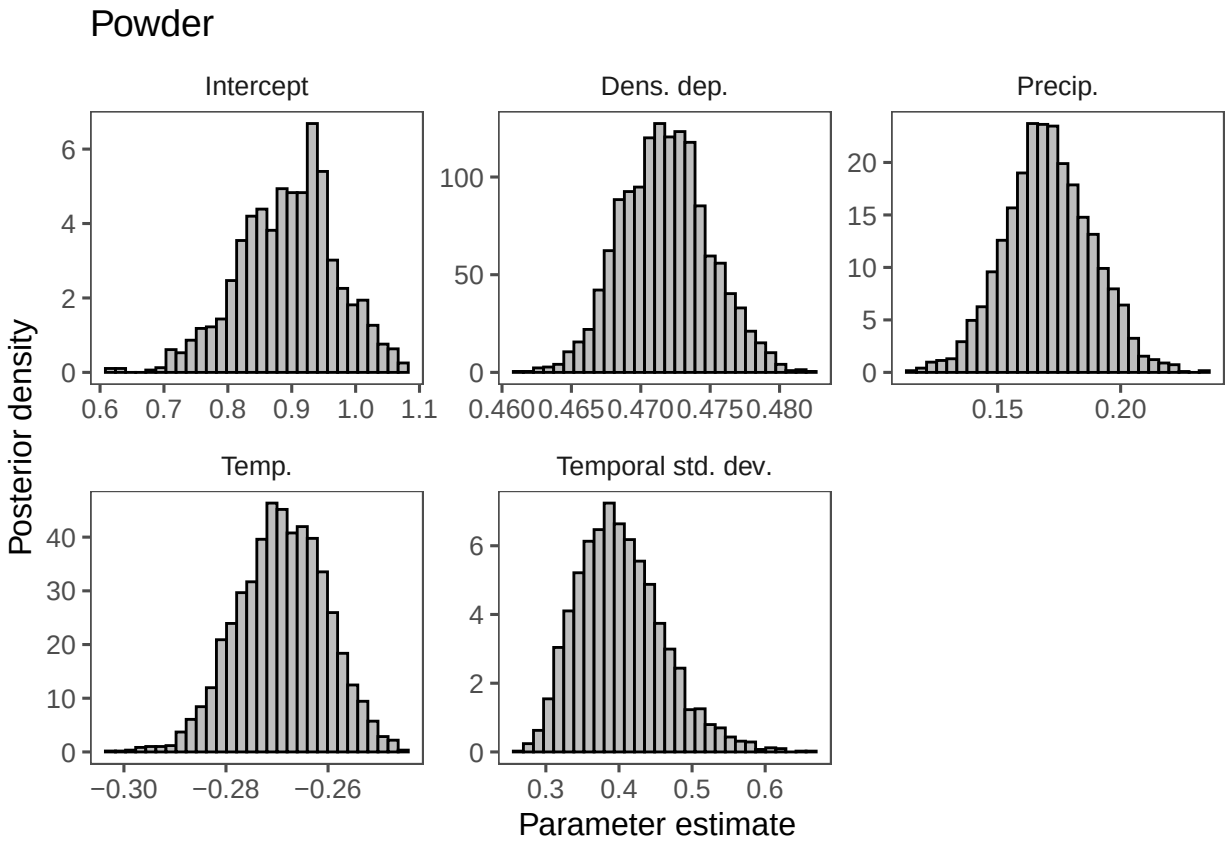

Figure S30: Caption 30

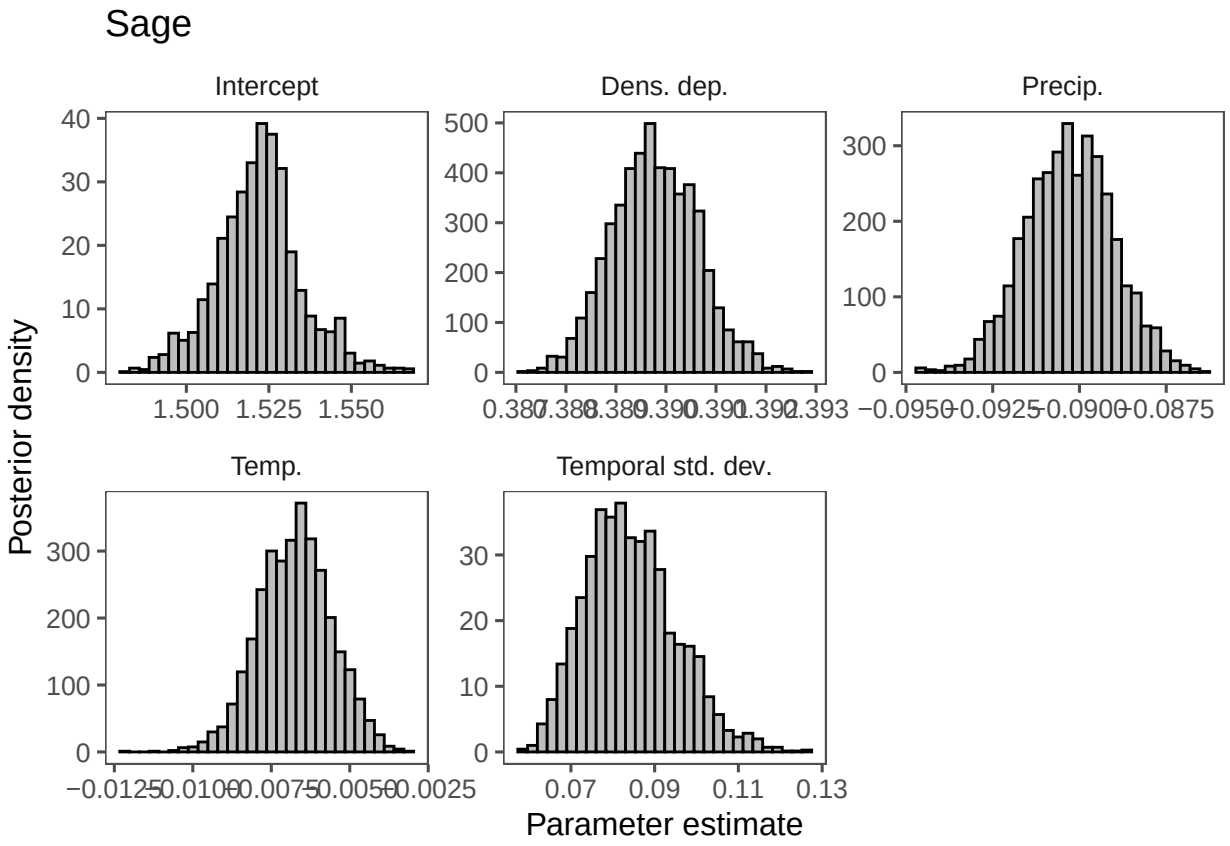

Figure S31: Caption 31

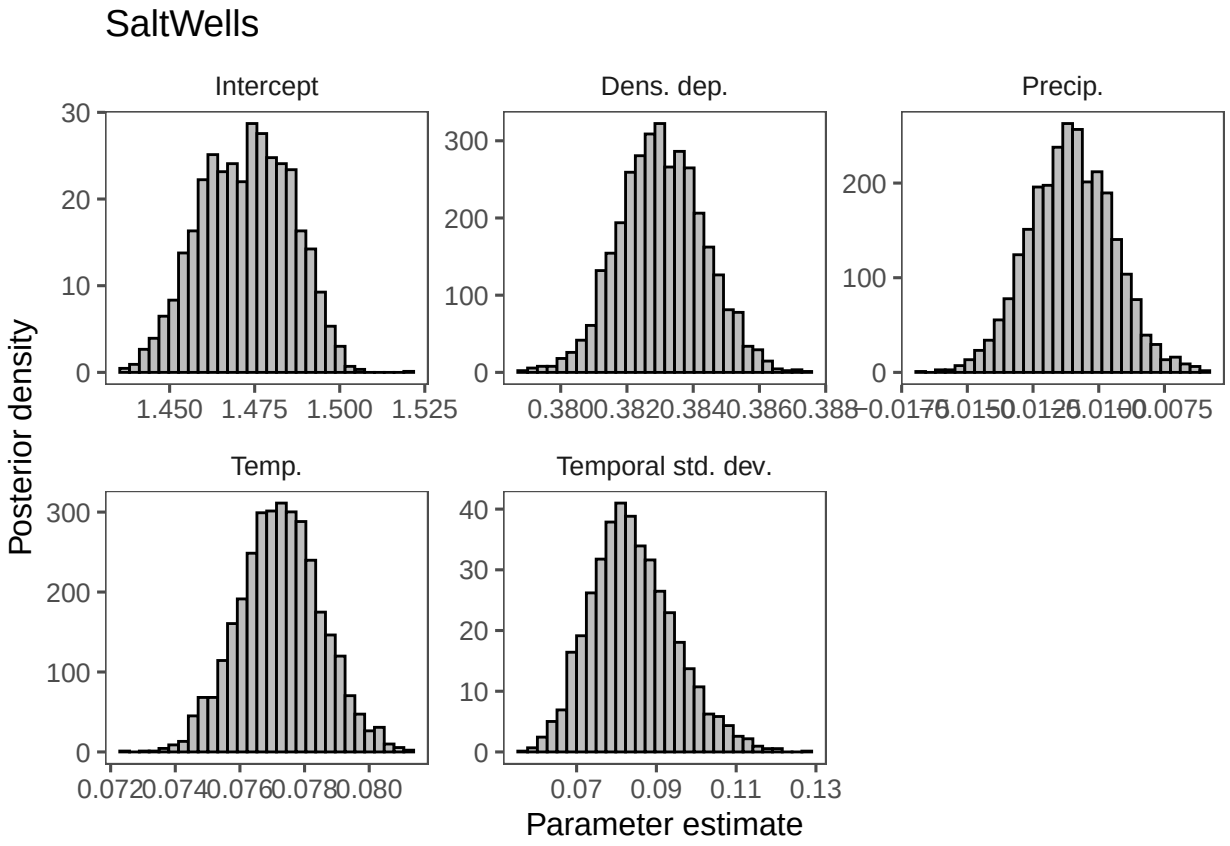

Figure S32: Caption 32

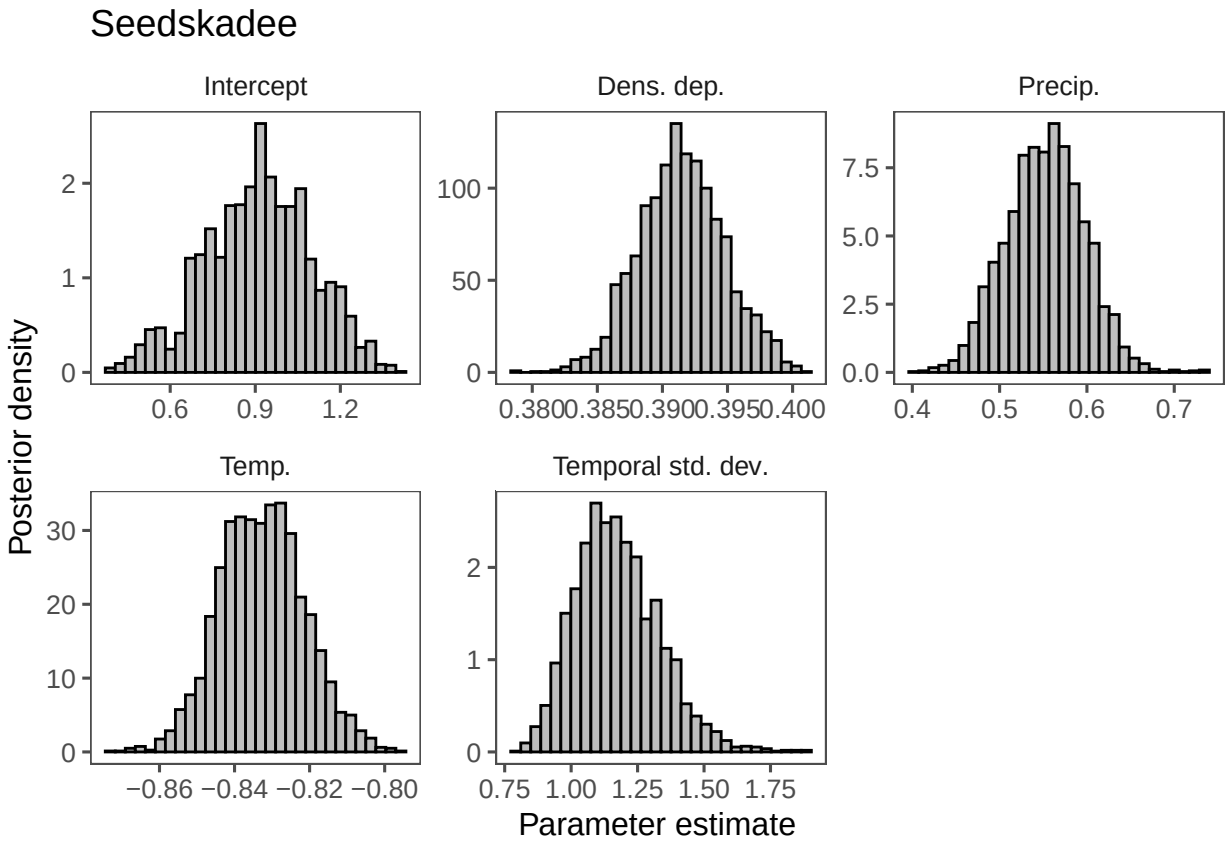

Figure S33: Caption 33

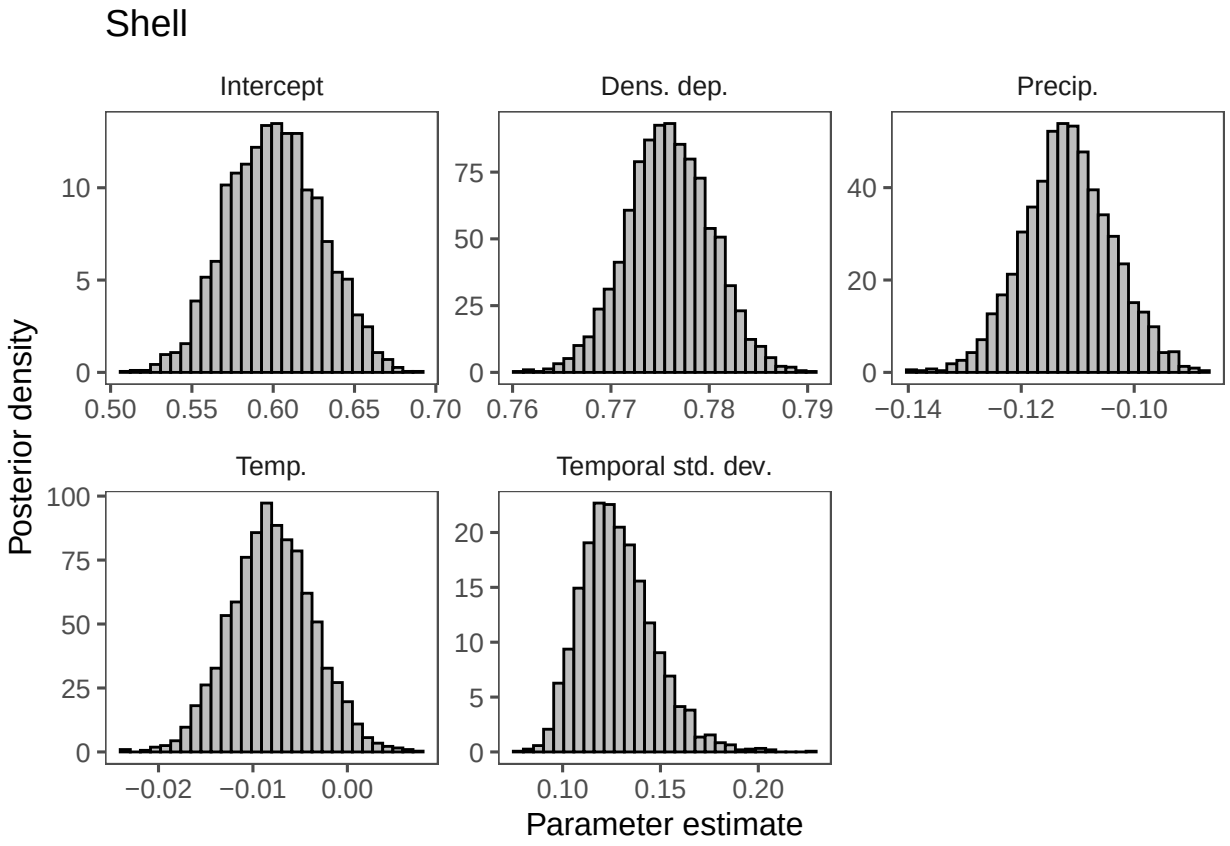

Figure S34: Caption 34

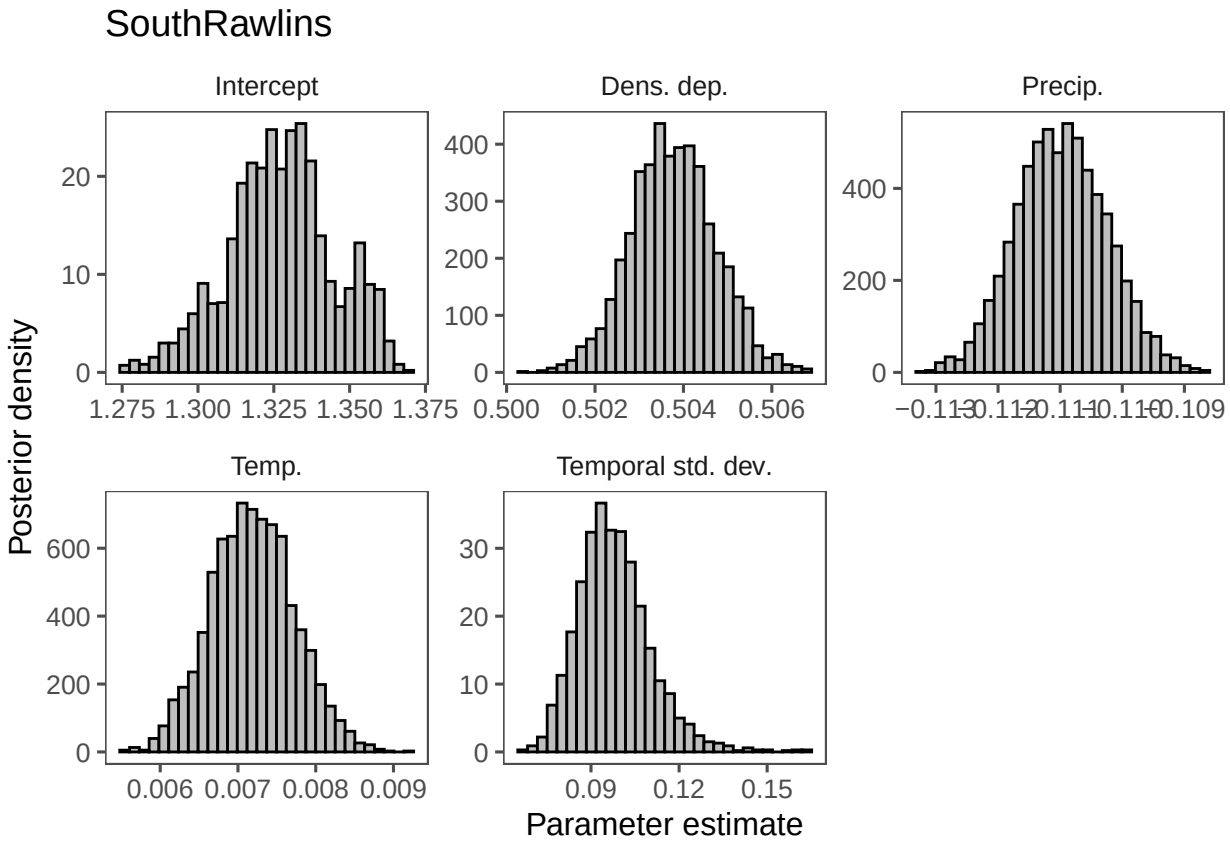

Figure S35: Caption 35

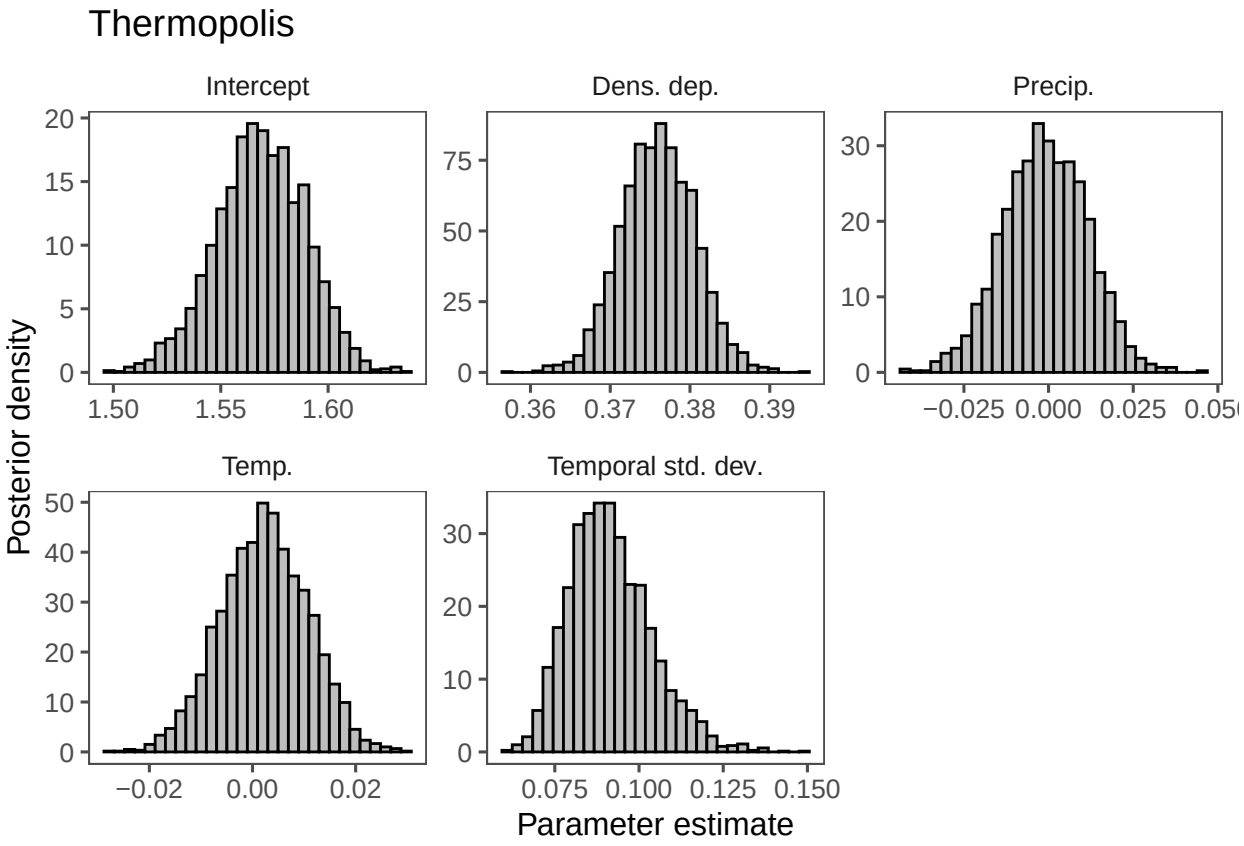

Figure S36: Caption 36

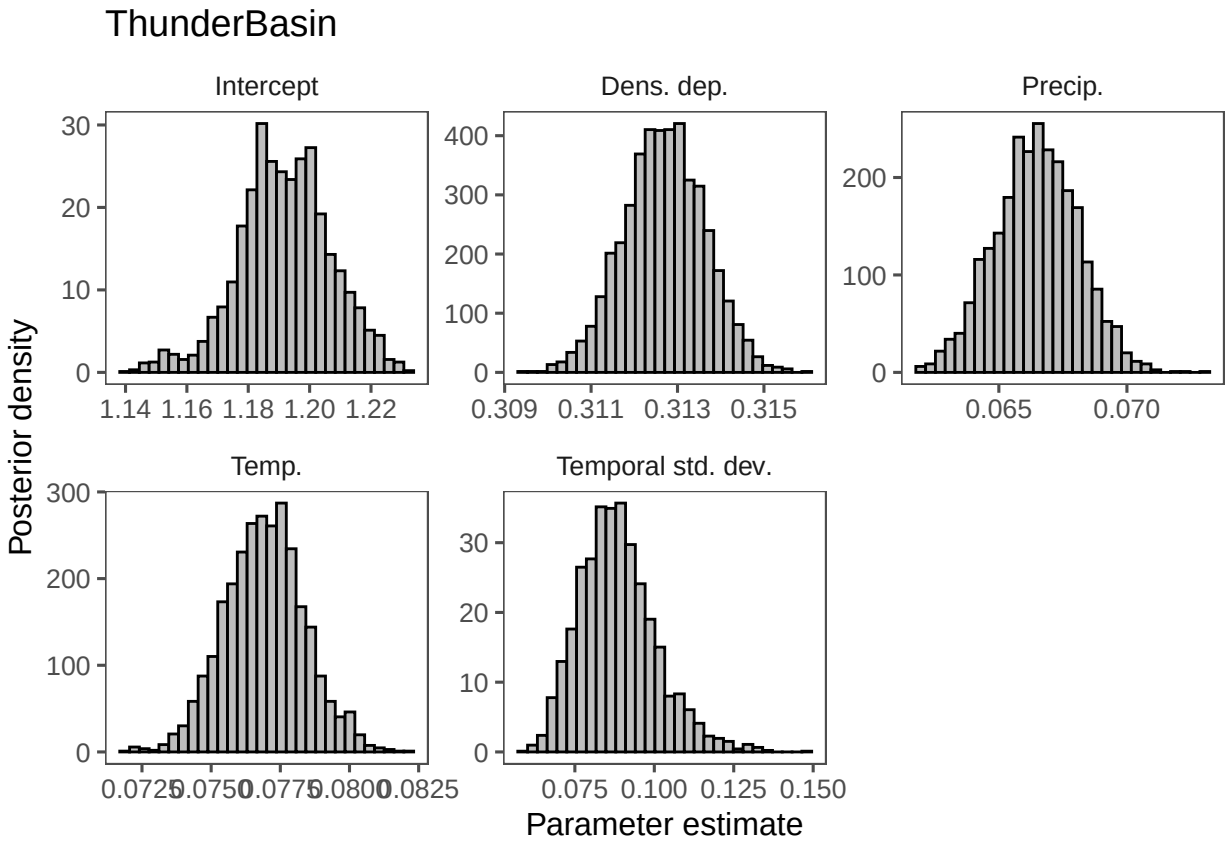

Figure S37: Caption 37

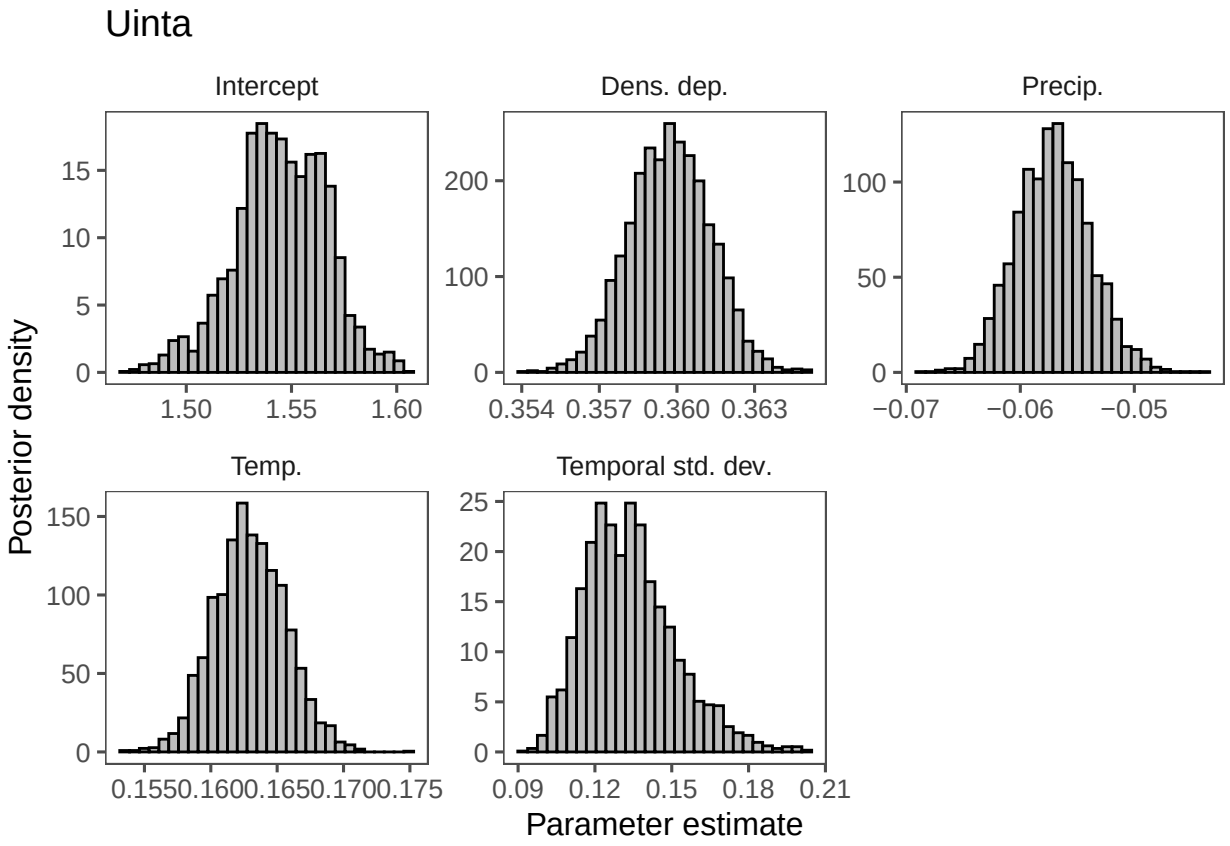

Figure S38: Caption 38

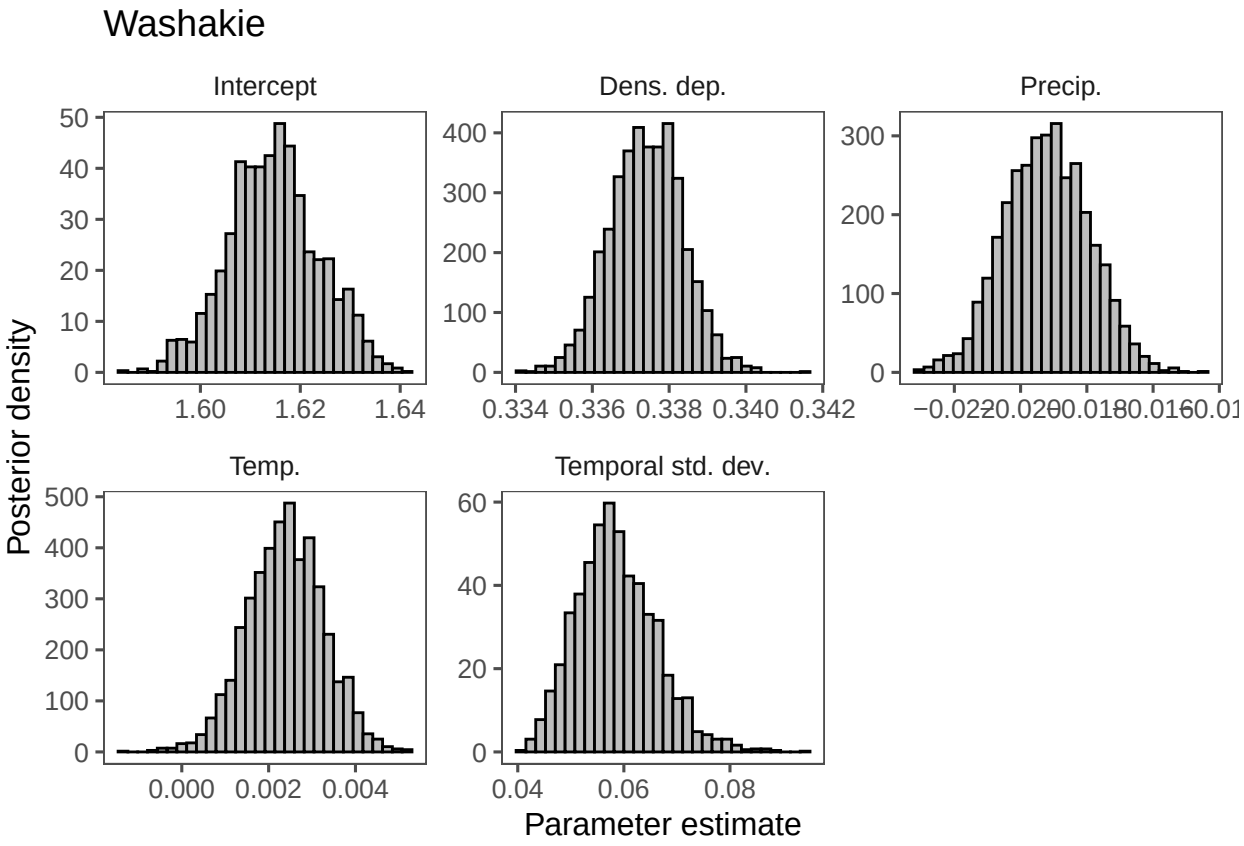

Figure S39: Caption 39

Elk Basin West traceplots

Estimated equilibrium cover

Posterior distributions of equilibrium cover calculated from fitted model parameters. The vertical black lines show the observed mean cover for each core area from 1985-2018.

Estimated colonization probabilities

Results from colonization model for each core area. Pr(colonize | cover = 0) reads, "the probability of colonizition given that current cover is zero."

Nesting and summer cover thresholds

Summer habitat cover targets compared to projections

Projections of the proportion of 100-meter cells within a core area where sagebrush percent cover exceeds the sage-grouse summer cover threshold defined for each core area. The solid line is the median of the posterior predictive distribution; light shaded ribbon bounds the 68% BCI; very light shaded ribbon bounds the 95% BCI. The dashed horizontal line shows where the proportion of cells is equal to 50% of the area.