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Supplementary material

Appendix 1

Table A1. Comparison of goodness-of-fit statistics for models describing *Dendroctonus frontalis* dynamics in each forest.

Forest	State	Forest Code	Model 1: $\ln(N_t) + \ln(N_{t-1})$			Model 2: $\ln(N_t) + \ln(P_t)$			Model 3: $\ln(N_t) + \ln(P_t) + \ln(P_{t-1})$		
			AICc	R^2	P	AICc	R^2	P	AICc	R^2	P
Abbeville	SC	ABBEVI	51.9	0.37	0.02	55.9	0.45	0.01	50.9	0.53	0.01
Alachua	FL	ALACHU	61.2	-0.03	0.46	63.0	0.32	0.06	62.6	0.12	0.31
Anderson	SC	ANDERS	58.4	0.36	0.04	75.2	0.13	0.17	65.7	0.12	0.27
Angelina	SC	ANGELI_RD	53.7	0.13	0.23	55.8	0.15	0.19	61.3	-0.02	0.47
Armuchee	TX	ARMUCH	82.1	0.21	0.05	81.9	0.28	0.02	82.9	0.27	0.04
Baker	FL	BAKER	60.1	0.00	0.43	58.4	0.69	0.00	58.7	0.28	0.23
Bankhead	FL	BANKHE	89.9	0.13	0.10	90.1	0.32	0.01	91.0	0.19	0.08
Bienville	MS	BIENVI_MS	66.2	-0.02	0.46	69.3	0.30	0.02	64.9	-0.03	0.50
Black Creek	MS	BLACK	70.7	0.22	0.11	61.0	0.54	0.00	56.6	0.57	0.01
Bradford	FL	BRADFO	57.7	0.04	0.36	55.3	0.47	0.02	57.4	0.32	0.17
Caddo	AR	CADDO_AR	54.3	-0.31	0.84	49.8	-0.08	0.53	91.9	0.18	0.34
Cherokee	SC	CHEROK_SC	45.6	-0.20	0.78	45.3	0.45	0.04	52.7	0.01	0.44
Chester	SC	CHESTE_SC	58.3	0.13	0.20	58.4	0.28	0.08	61.3	0.25	0.14
Chester	TN	CHESTE_TN	56.3	0.31	0.04	63.5	0.33	0.04	67.9	0.40	0.04
Chickasawhay	MS	CHICKA	57.0	-0.01	0.43	58.6	0.10	0.24	62.7	-0.12	0.61
Clark	AR	CLARK	57.5	0.03	0.40	57.3	0.31	0.04	58.7	0.04	0.44
Cleveland	NC	CLEVEL	64.8	0.00	0.39	65.8	0.21	0.07	60.9	-0.03	0.48
Colleton	SC	COLLET	42.4	0.08	0.35	42.9	0.03	0.36	51.1	-0.01	0.49
Columbia	AR	COLUMB_AR	48.2	0.98	0.01	51.4	0.26	0.09	50.7	0.97	0.11
Columbia	FL	COLUMB_FL	54.3	0.02	0.36	55.9	0.24	0.10	60.0	0.07	0.34
Croatan	NC	CROATA	65.4	0.38	0.01	70.6	0.29	0.02	66.0	0.47	0.01
Cumberland	VA	CUMBER	63.7	0.16	0.13	61.7	0.37	0.02	63.9	0.34	0.05
Davidson	NC	DAVIDS	78.6	0.03	0.28	80.7	0.19	0.05	81.3	-0.01	0.44
Dorchester	MD	DORCHE_MD	63.6	0.21	0.13	70.6	0.41	0.01	67.2	0.24	0.15
Dorchester	SC	DORCHE_SC	47.9	0.00	0.43	48.5	0.14	0.22	55.8	0.08	0.39
Drew	AR	DREW A	45.1	0.37	0.07	52.1	0.17	0.20	46.1	0.71	0.01
Duval	FL	DUVAL	58.1	0.45	0.03	64.4	0.34	0.05	59.9	0.58	0.02
East Feliciana	LA	EAST F	58.7	0.00	0.50	58.5	0.42	0.03	50.4	-2.46	0.98
Edgefield	SC	EDGEFI	37.0	0.23	0.16	41.2	0.24	0.16	46.8	0.16	0.29
Enoree	SC	ENOREE	50.3	0.34	0.03	50.8	0.44	0.01	53.4	0.28	0.08
Fairfield	SC	FAIRFI	73.4	0.50	0.00	82.9	0.29	0.02	79.5	0.40	0.01
Francis Marion	SC	FRANCI	43.9	0.72	0.00	46.6	0.81	0.00	50.3	0.73	0.01

Forest	State	Forest Code	Model 1: $\ln(N_t) + \ln(N_{t-1})$			Model 2: $\ln(N_t) + \ln(P_t)$			Model 3: $\ln(N_t) + \ln(P_t) + \ln(P_{t-1})$		
			AICc	R^2	P	AICc	R^2	P	AICc	R^2	P
Gadsden	FL	GADSDE	52.9	0.49	0.01	57.3	0.42	0.03	57.6	0.33	0.09
Georgetown	SC	GEORGE	50.8	0.28	0.13	51.6	0.31	0.11	60.4	0.30	0.18
Glenwood	VA	GLENWO	40.6	0.18	0.23	39.3	0.31	0.14	53.9	0.70	0.03
Grandfather	NC	GRANDF	70.8	-0.13	0.77	71.8	0.26	0.04	69.9	0.13	0.24
Greenville	SC	GREENV	51.7	-0.08	0.58	54.4	0.03	0.34	50.6	0.28	0.14
Greenwood	SC	GREENW	52.6	0.16	0.17	55.4	0.10	0.24	55.5	0.28	0.12
Hamilton	FL	HAMILT	56.1	0.02	0.36	51.7	0.48	0.02	55.4	0.40	0.06
Hampton	SC	HAMPTO	43.8	0.24	0.19	26.7	0.83	0.00	31.9	0.87	0.00
Hardin	TX	HARDIN	47.6	0.27	0.16	53.8	-0.09	0.55	61.9	-0.14	0.60
Holly Springs	MS	HOLLY	54.7	0.46	0.02	57.5	0.32	0.05	61.0	0.45	0.04
Holmes	FL	HOLMES	60.3	0.49	0.03	61.4	0.44	0.02	64.4	0.46	0.07
Homochitto	MS	HOMOCH	64.2	0.47	0.01	71.6	0.40	0.01	69.2	0.43	0.02
Horry	SC	HORRY	56.6	-0.11	0.55	50.1	0.54	0.02	57.9	0.60	0.09
Jackson	FL	JACKSO_FL	59.5	0.50	0.02	61.6	0.73	0.00	64.4	0.41	0.07
Jasper	SC	JASPER_SC	51.7	0.10	0.27	49.1	0.45	0.02	53.2	0.63	0.02
Jasper	TX	JASPER_TX	43.7	-0.24	0.74	44.0	0.22	0.17	55.4	-0.52	0.89
Jefferson	FL	JEFFER	60.3	0.28	0.09	60.7	0.42	0.03	64.5	0.39	0.08
Kershaw	SC	KERSHA	49.6	-0.02	0.45	51.1	0.06	0.32	53.7	0.33	0.19
Kisatchie	LA	KISATC	56.3	0.02	0.38	58.3	0.19	0.06	60.0	-0.12	0.60
Lancaster	SC	LANCAS	58.9	-0.14	0.74	59.6	0.35	0.03	60.8	0.00	0.44
Laurens	SC	LAUREN	87.5	0.36	0.01	88.1	0.43	0.00	84.6	0.52	0.00
Leon	FL	LEON F	61.3	0.34	0.12	61.7	0.30	0.05	63.6	0.64	0.04
Lowndes	AL	LOWNDE	52.5	-0.02	0.44	55.5	0.28	0.09	56.1	-0.01	0.45
Madison	FL	MADISO	65.2	-0.07	0.55	63.1	0.31	0.04	65.4	0.15	0.23
Marion	FL	MARION	57.7	-0.09	0.59	59.3	0.37	0.03	58.6	0.30	0.13
Mena	AR	MENA R	63.7	-0.09	0.62	66.6	0.19	0.07	64.7	0.40	0.06
Mccormick	SC	McCORM	48.6	0.21	0.13	53.2	0.24	0.10	54.1	0.17	0.22
Nassau	FL	NASSAU	59.4	0.03	0.37	63.1	0.24	0.09	65.7	-0.18	0.67
Nevada	AR	NEVADA	50.8	0.19	0.30	53.8	0.16	0.18	57.6	-0.59	0.85
New Castle	VA	NEW CA	54.1	-0.16	0.73	49.4	0.41	0.02	52.3	0.38	0.10
Newberry	SC	NEWBER	58.2	0.35	0.03	60.5	0.45	0.01	55.0	0.54	0.01
Nolichucky	TN	NOLICH	83.9	0.06	0.23	85.8	0.09	0.16	85.7	0.09	0.23
Oakmulgee	AL	OAKMUL	70.1	0.20	0.08	73.0	0.31	0.03	62.8	0.60	0.00
Ocoee	TN	OCOEE	77.7	0.12	0.21	75.9	0.44	0.01	74.0	0.15	0.23
Oconee	GA	OCONEE_GA	42.7	0.62	0.00	53.9	0.57	0.00	51.8	0.78	0.00
Oconee	SC	OCONEE_SC	86.7	0.28	0.02	90.9	0.23	0.04	86.1	0.40	0.01

Forest	State	Forest Code	Model 1: $\ln(N_t) + \ln(N_{t-1})$			Model 2: $\ln(N_t) + \ln(P_t)$			Model 3: $\ln(N_t) + \ln(P_t) + \ln(P_{t-1})$		
			AICc	R^2	P	AICc	R^2	P	AICc	R^2	P
Oden	AR	ODEN R	51.6	-0.11	0.59	51.9	0.03	0.36	56.2	0.16	0.29
Okaloosa	FL	OKALOO	66.7	0.13	0.20	69.5	0.16	0.15	69.3	0.24	0.15
Oktibbeha	MS	OKTIBB	63.5	0.23	0.09	70.4	0.13	0.16	68.8	0.18	0.17
Pickens	SC	PICKEN	52.7	0.27	0.10	61.1	0.10	0.24	59.7	0.27	0.15
Prince Edward	VA	PRINCE	41.0	0.25	0.15	46.4	0.06	0.33	59.5	0.11	0.34
Rhea	TN	RHEA T	54.9	0.72	0.02	55.1	0.32	0.11	62.1	0.36	0.21
Richland	SC	RICHLA	64.1	0.22	0.08	70.0	0.42	0.01	68.5	0.25	0.10
Sabine	TX	SABINE_TX	58.0	-0.18	0.70	62.4	0.07	0.25	59.2	0.05	0.42
Saluda	SC	SALUDA	43.4	-0.17	0.78	42.2	0.28	0.11	50.2	-0.21	0.74
Shoal Creek	AL	SHOAL	45.8	0.24	0.16	49.4	0.44	0.05	57.6	0.17	0.28
Somerset	MD	SOMERS	69.9	0.12	0.14	72.7	0.36	0.01	68.8	0.10	0.22
Spartanburg	SC	SPARTA	54.5	-0.04	0.48	52.3	0.40	0.03	55.5	0.39	0.12
St Helena	LA	ST HEL	52.2	-0.34	0.67	53.0	0.27	0.13	61.5	0.37	0.49
Talladega	AL	TALLAD	75.8	0.27	0.05	77.9	0.34	0.02	75.9	0.42	0.02
Tallapoosa	AL	TALLAP	58.5	0.44	0.00	60.8	0.43	0.01	57.6	0.56	0.00
Tallulah	GA	TALLUL	93.9	0.11	0.15	95.3	0.52	0.00	95.5	0.24	0.06
Tishomingo	MS	TISHOM	65.7	0.14	0.16	72.9	0.33	0.02	65.9	0.07	0.31
Tombigbee	MS	TOMBIG	70.8	0.08	0.23	72.2	0.24	0.06	73.0	0.12	0.22
Tusquitee	NC	TUSQUI	76.2	0.15	0.15	71.4	0.42	0.00	71.9	0.41	0.03
Union	SC	UNION_SC	64.1	0.25	0.06	63.3	0.39	0.02	65.9	0.33	0.05
Uwharrie	NC	UWHARR	80.6	0.13	0.11	84.1	0.21	0.04	85.1	0.06	0.28
Walton	FL	WAHIN_FL	63.4	0.18	0.17	63.4	0.42	0.02	66.7	0.20	0.20
Washington	LA	WALTON	59.4	0.62	0.01	61.0	0.49	0.01	64.6	0.47	0.06
Williamsburg	SC	WILLIA	46.3	-0.17	0.63	46.9	0.10	0.31	61.4	0.05	0.44
Winn	LA	WINN R	48.3	0.25	0.25	44.6	0.26	0.20	89.5	0.11	0.43
Worcester	MD	WORCES	62.2	-0.10	0.74	62.0	0.32	0.01	64.0	0.00	0.42
York	SC	YORK S	61.1	-0.16	0.91	67.0	0.22	0.07	65.3	-0.23	0.89

Table A2. Comparison of goodness-of-fit statistics for models describing *Thanasimus dubius* dynamics in each forest.

Forest	State	Forest Code	Model 4: $\ln(P_t) + \ln(P_{t-1})$			Model 5: $\ln(P_t) + \ln(N_t)$			Model 6: $\ln(P_t) + \ln(N_t) + \ln(N_{t-1})$		
			AICc	R^2	P	AICc	R^2	P	AICc	R^2	P
Abbeville	SC	ABBEVI	44.21	0.13	0.17	49.21	0.30	0.04	47.31	0.15	0.21
Alachua	FL	ALACHU	48.45	0.28	0.09	51.56	0.19	0.14	54.65	0.20	0.21
Anderson	SC	ANDERS	48.50	0.10	0.22	52.03	0.24	0.08	48.02	0.33	0.07
Angelina	SC	ANGELI_RD	41.44	0.07	0.31	41.97	0.09	0.26	47.80	0.02	0.42
Armuchee	TX	ARMUCH	69.26	0.22	0.05	67.23	0.43	0.00	66.96	0.39	0.01
Baker	FL	BAKER	47.84	0.26	0.09	48.57	0.58	0.00	48.24	0.45	0.04
Bankhead	FL	BANKHE	66.82	0.29	0.02	66.14	0.36	0.01	67.99	0.32	0.02
Bienville	MS	BIENVI_MS	48.05	0.57	0.00	55.34	0.41	0.00	55.11	0.45	0.01
Black Creek	MS	BLACK	47.31	0.38	0.04	47.73	0.50	0.01	48.99	0.55	0.01
Bradford	FL	BRADFO	39.13	0.46	0.03	39.03	0.53	0.01	43.83	0.47	0.05
Caddo	AR	CADDO_AR	44.12	0.23	0.26	38.68	0.13	0.27	85.04	0.12	0.42
Cherokee	SC	CHEROK_SC	46.28	-0.08	0.52	45.22	0.08	0.31	54.21	-0.08	0.54
Chester	SC	CHESTE_SC	35.17	0.16	0.18	33.98	0.25	0.09	38.92	0.24	0.17
Chester	TN	CHESTE_TN	48.52	0.43	0.01	56.35	0.41	0.01	49.93	0.42	0.04
Chickasawhay	MS	CHICKA	34.91	0.62	0.01	31.31	0.75	0.00	36.98	0.70	0.01
Clark	AR	CLARK	43.97	0.25	0.11	47.07	0.25	0.08	35.99	0.75	0.00
Cleveland	NC	CLEVEL	50.79	0.06	0.28	56.68	-0.03	0.49	59.30	-0.11	0.69
Colleton	SC	COLLET	36.51	0.14	0.24	34.50	0.29	0.11	43.53	0.18	0.27
Columbia	AR	COLUMB_AR	38.07	0.08	0.30	36.75	0.43	0.03	38.43	0.56	0.02
Columbia	FL	COLUMB_FL	54.31	0.29	0.08	50.73	0.54	0.01	50.76	0.65	0.01
Croatan	NC	CROATA	42.15	0.31	0.03	42.67	0.33	0.02	43.94	0.34	0.03
Cumberland	VA	CUMBER	46.48	0.25	0.07	42.49	0.48	0.01	44.72	0.47	0.02
Davidson	NC	DAVIDS	59.05	0.45	0.00	59.68	0.50	0.00	61.87	0.43	0.01
Dorchester	MD	DORCHE_MD	50.87	0.41	0.01	52.46	0.40	0.01	55.64	0.34	0.05
Dorchester	SC	DORCHE_SC	39.92	0.30	0.12	34.80	0.58	0.01	42.25	0.58	0.04
Drew	AR	DREW A	40.17	0.63	0.01	49.39	0.43	0.04	54.55	0.26	0.21
Duval	FL	DUVAL	43.95	0.35	0.06	46.12	0.32	0.06	49.95	0.29	0.13
East Feliciana	LA	EAST F	47.92	0.33	0.10	51.67	0.30	0.08	56.91	0.21	0.22
Edgefield	SC	EDGEFI	29.63	0.42	0.08	30.78	0.25	0.15	42.96	0.19	0.29
Enoree	SC	ENOREE	39.48	0.53	0.00	40.74	0.52	0.00	43.83	0.50	0.01
Fairfield	SC	FAIRFI	52.77	0.25	0.03	51.83	0.42	0.00	52.26	0.35	0.02
Francis Marion	SC	FRANCI	51.87	0.69	0.00	53.55	0.71	0.00	58.83	0.65	0.01
Gadsden	FL	GADSDE	31.89	0.44	0.03	32.11	0.43	0.02	37.97	0.38	0.08
Georgetown	SC	GEORGE	32.69	0.13	0.26	35.47	0.18	0.19	43.91	0.14	0.34

Forest	State	Forest Code	Model 4: $\ln(P_t) + \ln(P_{t-1})$			Model 5: $\ln(P_t) + \ln(N_t)$			Model 6: $\ln(P_t) + \ln(N_t) + \ln(N_{t-1})$		
			AICc	R^2	P	AICc	R^2	P	AICc	R^2	P
Glenwood	VA	GLENWO	40.01	0.29	0.15	35.77	0.62	0.01	54.21	0.56	0.11
Grandfather	NC	GRANDF	53.13	0.15	0.15	50.87	0.39	0.01	53.62	0.35	0.04
Greenville	SC	GREENV	37.19	0.13	0.22	37.29	0.48	0.01	41.52	0.17	0.24
Greenwood	SC	GREENW	36.83	0.31	0.08	38.12	0.27	0.08	43.11	0.22	0.19
Hamilton	FL	HAMILT	36.69	0.31	0.08	36.75	0.39	0.03	42.42	0.26	0.15
Hampton	SC	HAMPTO	36.57	0.20	0.19	35.43	0.29	0.11	42.94	0.28	0.19
Hardin	TX	HARDIN	32.40	0.10	0.30	26.53	0.44	0.05	35.21	0.61	0.05
Holly Springs	MS	HOLLY	31.75	0.58	0.01	39.69	0.49	0.01	39.22	0.46	0.04
Holmes	FL	HOLMES	45.91	0.58	0.01	48.78	0.55	0.01	48.11	0.64	0.01
Homochitto	MS	HOMOCH	37.22	0.44	0.02	40.50	0.44	0.01	41.42	0.42	0.04
Horry	SC	HORRY	38.70	0.38	0.08	44.28	0.00	0.41	49.87	0.11	0.34
Jackson	FL	JACKSO_FL	38.99	0.19	0.14	42.36	0.27	0.07	45.07	0.07	0.34
Jasper	SC	JASPER_SC	38.95	0.16	0.18	37.07	0.36	0.04	42.98	0.22	0.19
Jasper	TX	JASPER_TX	35.02	0.59	0.03	37.21	0.47	0.05	48.57	0.42	0.14
Jefferson	FL	JEFFER	21.82	0.55	0.01	24.42	0.62	0.00	23.62	0.65	0.01
Kershaw	SC	KERSHA	49.55	0.29	0.13	49.28	0.39	0.06	56.10	0.35	0.15
Kisatchie	LA	KISATC	44.33	0.50	0.00	48.58	0.40	0.00	50.09	0.40	0.01
Lancaster	SC	LANCAS	44.41	0.13	0.19	46.29	0.11	0.19	48.31	0.11	0.26
Laurens	SC	LAUREN	62.53	0.24	0.04	67.69	0.19	0.06	66.06	0.19	0.09
Leon	FL	LEON F	41.43	0.27	0.08	45.01	0.20	0.12	46.29	0.23	0.15
Lowndes	AL	LOWNDE	33.73	0.29	0.11	36.84	0.14	0.21	41.94	0.12	0.31
Madison	FL	MADISO	52.31	0.38	0.03	47.21	0.65	0.00	51.09	0.56	0.01
Marion	FL	MARION	49.72	0.24	0.10	48.23	0.42	0.02	50.50	0.42	0.05
Mena	AR	MENA R	32.77	0.36	0.05	76.02	0.33	0.02	37.35	0.38	0.08
McCormick	SC	McCORM	74.45	0.30	0.03	33.15	0.34	0.05	77.01	0.30	0.05
Nassau	FL	NASSAU	50.92	0.14	0.19	50.38	0.26	0.08	50.19	0.41	0.05
Nevada	AR	NEVADA	40.03	0.24	0.13	40.68	0.27	0.10	46.97	0.17	0.26
New Castle	VA	NEW CA	53.05	0.20	0.12	45.78	0.57	0.00	48.44	0.56	0.01
Newberry	SC	NEWBER	30.34	0.53	0.01	32.67	0.64	0.00	31.94	0.59	0.01
Nolichucky	TN	NOLICH	75.05	0.20	0.06	71.76	0.39	0.00	73.50	0.35	0.02
Oakmulgee	AL	OAKMUL	48.73	0.43	0.01	56.63	0.23	0.06	58.09	0.16	0.19
Ocoee	TN	OCOEE	62.90	0.21	0.08	64.75	0.29	0.03	64.11	0.30	0.06
Oconee	GA	OCONEE_GA	15.35	0.55	0.00	16.66	0.66	0.00	18.58	0.61	0.01
Oconee	SC	OCONEE_SC	55.35	0.30	0.02	57.13	0.28	0.02	57.88	0.29	0.04
Oden	AR	ODEN R	40.40	0.14	0.25	39.71	0.22	0.15	42.36	0.50	0.07
Okaloosa	FL	OKALOO	31.61	0.41	0.03	33.23	0.49	0.01	36.32	0.39	0.06

Forest	State	Forest Code	Model 4: $\ln(P_t) + \ln(P_{t-1})$			Model 5: $\ln(P_t) + \ln(N_t)$			Model 6: $\ln(P_t) + \ln(N_t) + \ln(N_{t-1})$		
			AICc	R^2	P	AICc	R^2	P	AICc	R^2	P
Oktibbeha	MS	OKTIBB	42.83	0.35	0.04	46.64	0.30	0.04	47.44	0.31	0.09
Pickens	SC	PICKEN	46.08	0.01	0.40	38.65	0.66	0.00	40.77	0.57	0.02
Prince Edward	VA	PRINCE	42.64	0.12	0.31	42.49	0.12	0.27	59.46	0.13	0.38
Rhea	TN	RHEA T	50.87	0.11	0.30	46.81	0.46	0.05	50.49	0.73	0.02
Richland	SC	RICHLA	52.33	0.34	0.03	54.29	0.49	0.01	56.45	0.31	0.07
Sabine	TX	SABINE_TX	38.19	0.32	0.04	35.10	0.49	0.00	37.81	0.47	0.02
Saluda	SC	SALUDA	28.83	0.04	0.36	29.39	-0.06	0.52	37.48	-0.08	0.55
Shoal Creek	AL	SHOAL	32.81	0.16	0.25	34.15	0.29	0.12	43.73	0.10	0.37
Somerset	MD	SOMERS	54.36	0.33	0.01	56.88	0.29	0.02	59.01	0.25	0.06
Spartanburg	SC	SPARTA	33.46	0.51	0.02	36.19	0.40	0.03	36.18	0.59	0.02
St Helena	LA	ST HEL	29.17	0.56	0.04	29.69	0.50	0.04	26.02	0.90	0.00
Talladega	AL	TALLAD	51.77	0.43	0.01	53.78	0.43	0.01	56.17	0.38	0.03
Tallapoosa	AL	TALLAP	35.57	0.73	0.00	42.77	0.62	0.00	41.78	0.68	0.00
Tallulah	GA	TALLUL	71.15	0.23	0.04	70.79	0.31	0.01	71.98	0.28	0.03
Tishomingo	MS	TISHOM	37.93	0.28	0.06	40.43	0.19	0.10	40.18	0.34	0.05
Tombigbee	MS	TOMBIG	51.99	0.38	0.02	50.93	0.46	0.00	54.23	0.41	0.02
Tusquitee	NC	TUSQUI	66.54	0.14	0.13	64.26	0.34	0.01	63.51	0.37	0.02
Union	SC	UNION_SC	48.35	0.20	0.10	45.29	0.40	0.01	40.50	0.62	0.00
Uwharrie	NC	UWHARR	52.25	0.42	0.00	53.01	0.43	0.00	52.67	0.47	0.00
Walton	FL	WAHIN_FL	47.26	0.22	0.12	47.78	0.39	0.03	51.04	0.25	0.15
Washington	LA	WALTON	43.28	0.45	0.02	46.65	0.34	0.04	48.05	0.42	0.05
Williamsburg	SC	WILLIA	36.50	0.36	0.14	34.73	0.34	0.12	46.28	0.74	0.04
Winn	LA	WINN R	35.31	0.59	0.07	27.96	0.69	0.02	74.81	0.62	0.13
Worcester	MD	WORCES	54.18	0.32	0.02	52.13	0.45	0.00	54.42	0.39	0.01
York	SC	YORK S	46.47	0.15	0.13	46.57	0.23	0.07	47.00	0.28	0.08

Table A3. Estimated coefficients (model 2) describing dynamics of *Dendroctonus frontalis* in 95 forests.

Forest	State	Forest Code	Longitude	Latitude	Elevation (m)	Model fit		Model coefficients			
						R^2	P	Intercept (β_0)	β_1:ln(N_t)	B_2:ln(P_t)	σ_ϵ
Abbeville	SC	ABBEVI	-82.4	34.2	176	0.45	0.01	3.1 ± 1.3	-0.9 ± 0.3	0.3 ± 0.4	1.0
Alachua	FL	ALACHU	-82.3	29.7	49	0.32	0.06	2.6 ± 1	-0.3 ± 0.3	-0.7 ± 0.5	1.7
Anderson	SC	ANDERS	-82.6	34.5	245	0.13	0.17	0.9 ± 2.7	-0.6 ± 0.4	0.2 ± 0.8	2.0
Angelina	SC	ANGELI_RD	-94.2	31.2	78	0.15	0.19	-3.4 ± 6.2	-1.8 ± 0.9	1.9 ± 1.6	1.4
Armuchee	TX	ARMUCH	-85.1	34.6	460	0.28	0.02	3.9 ± 1.4	-0.2 ± 0.2	-0.6 ± 0.3	1.3
Baker	FL	BAKER	-82.3	30.3	39	0.69	0.00	2.7 ± 0.8	-0.3 ± 0.2	-1.2 ± 0.5	1.2
Bankhead	FL	BANKHE	-87.3	34.2	230	0.32	0.01	5.6 ± 1.8	-0.5 ± 0.3	-0.6 ± 0.4	1.5
Bienville	MS	BIENVI_MS	-89.5	32.3	134	0.30	0.02	3.6 ± 2.6	-1 ± 0.3	0.2 ± 0.5	1.0
Black Creek	MS	BLACK	-89.1	31.1	50	0.54	0.00	9.9 ± 2.3	0.2 ± 0.3	-1.9 ± 0.5	1.1
Bradford	FL	BRADFO	-82.2	30.0	42	0.47	0.02	2.9 ± 1	-0.5 ± 0.3	-1.4 ± 0.7	1.2
Caddo	AR	CADDO_AR	-93.7	34.4	233	-0.08	0.53	2.2 ± 2.9	0 ± 0.6	-0.7 ± 0.7	1.4
Cherokee	SC	CHEROK_SC	-81.6	35.1	208	0.45	0.04	1.7 ± 1.2	-1 ± 0.3	0.6 ± 0.4	1.0
Chester	SC	CHESTE_SC	-81.2	34.7	169	0.28	0.08	-1.6 ± 2.7	-0.7 ± 0.3	1 ± 0.7	1.4
Chester	TN	CHESTE_TN	-88.6	35.5	122	0.33	0.04	3 ± 1.9	-0.6 ± 0.3	-0.3 ± 0.5	1.3
Chickasawhay	MS	CHICKA	-88.8	31.5	84	0.10	0.24	6.3 ± 4.3	-0.2 ± 0.3	-1 ± 0.8	1.4
Clark	AR	CLARK	-93.2	34.2	114	0.31	0.04	-1.3 ± 1.9	-0.6 ± 0.3	0.5 ± 0.4	1.1
Cleveland	NC	CLEVEL	-81.6	35.3	244	0.21	0.07	1.5 ± 1.1	-0.8 ± 0.4	0.4 ± 0.4	1.1
Colleton	SC	COLLET	-80.7	32.9	26	0.03	0.36	0.1 ± 1.2	-0.6 ± 0.5	0.3 ± 0.8	0.9
Columbia	AR	COLUMB_AR	-93.3	33.2	80	0.26	0.09	0.8 ± 1.9	-0.8 ± 0.3	0 ± 0.4	1.1
Columbia	FL	COLUMB_FL	-82.6	30.2	54	0.24	0.10	2.1 ± 1	-0.5 ± 0.4	-0.3 ± 0.4	1.3
Croatan	NC	CROATA	-77.0	34.9	11	0.29	0.02	3.7 ± 2.3	-0.7 ± 0.2	-0.2 ± 0.4	1.2
Cumberland	VA	CUMBER	-78.3	37.5	91	0.37	0.02	5.1 ± 1.7	-0.2 ± 0.2	-0.9 ± 0.4	1.2
Davidson	NC	DAVIDS	-80.2	35.8	236	0.19	0.05	2.9 ± 1.4	-0.4 ± 0.3	-0.3 ± 0.4	1.2
Dorchester	MD	DORCHE_MD	-76.0	38.5	1	0.41	0.01	1.5 ± 1.5	-0.9 ± 0.3	0 ± 0.5	1.4
Dorchester	SC	DORCHE_SC	-80.5	33.2	27	0.14	0.22	2.2 ± 1.4	0.1 ± 0.5	-1.1 ± 0.8	1.1
Drew	AR	DREW A	-91.8	33.6	70	0.17	0.20	3.5 ± 2.1	-0.3 ± 0.5	-0.3 ± 0.6	1.3
Duval	FL	DUVAL	-81.7	30.4	6	0.34	0.05	2.5 ± 1.6	-0.9 ± 0.3	0.2 ± 0.6	1.7
East Feliciana	LA	EAST F	-91.0	30.8	65	0.42	0.03	2.4 ± 1.7	-0.9 ± 0.3	-0.1 ± 0.5	1.4
Edgefield	SC	EDGEFI	-81.9	33.8	157	0.24	0.16	6.1 ± 3.8	-1 ± 0.4	0.1 ± 0.6	0.9
Enoree	SC	ENOREE	-81.6	34.5	99	0.44	0.01	3.9 ± 2.1	-1.2 ± 0.3	0.6 ± 0.5	0.8
Fairfield	SC	FAIRFI	-81.1	34.4	135	0.29	0.02	4.4 ± 2.3	-0.6 ± 0.3	-0.2 ± 0.7	1.3
Francis Marion	SC	FRANCI	-79.7	33.2	8	0.81	0.00	6 ± 0.9	-1.1 ± 0.5	-0.5 ± 0.5	1.0
Gadsden	FL	GADSDE	-84.5	30.5	23	0.42	0.03	1.8 ± 1.9	-1.1 ± 0.3	1.1 ± 0.9	1.3
Georgetown	SC	GEORGE	-79.5	33.5	4	0.31	0.11	1.5 ± 3	-0.9 ± 0.6	0.2 ± 1.2	1.4

Forest	State	Forest Code	Longitude	Latitude	Elevation (m)	Model fit		Model coefficients			
						R^2	P	Intercept (β_0)	β_1:ln(N_t)	B_2:ln(P_t)	σ_ϵ
Glenwood	VA	GLENWO	-79.6	37.6	618	0.31	0.14	3.5 ± 1.5	-0.3 ± 0.3	-0.8 ± 0.4	0.8
Grandfather	NC	GRANDF	-81.9	35.9	751	0.26	0.04	4.2 ± 1.6	-0.1 ± 0.2	-0.8 ± 0.4	1.3
Greenville	SC	GREENV	-82.4	34.8	256	0.03	0.34	1.3 ± 2.2	-0.4 ± 0.3	0 ± 0.5	1.2
Greenwood	SC	GREENW	-82.1	34.2	157	0.10	0.24	4.4 ± 3.3	-0.3 ± 0.3	-0.7 ± 0.7	1.2
Hamilton	FL	HAMILT	-82.9	30.6	43	0.48	0.02	5.6 ± 1.7	-0.2 ± 0.2	-1.5 ± 0.6	1.1
Hampton	SC	HAMPTO	-81.3	32.8	38	0.83	0.00	-2.6 ± 0.7	-1.7 ± 0.2	1.8 ± 0.3	0.4
Hardin	TX	HARDIN	-94.3	30.4	20	-0.09	0.55	7.1 ± 7	-0.1 ± 0.3	-1.3 ± 1.4	1.6
Holly Springs	MS	HOLLY	-89.3	34.6	139	0.32	0.05	4.8 ± 2.7	-0.7 ± 0.3	-0.5 ± 0.6	1.2
Holmes	FL	HOLMES	-85.8	30.9	24	0.44	0.02	0.2 ± 1.6	-1 ± 0.3	0.5 ± 0.5	1.4
Homochitto	MS	HOMOCH	-91.0	31.5	107	0.40	0.01	6.4 ± 3.4	-0.9 ± 0.3	-0.5 ± 0.7	1.6
Horry	SC	HORRY	-79.1	33.9	22	0.54	0.02	-1.8 ± 1.1	-1.3 ± 0.3	1.7 ± 0.5	1.2
Jackson	FL	JACKSO_FL	-85.2	30.8	25	0.73	0.00	-0.9 ± 2	-1.5 ± 0.3	1.3 ± 0.7	1.4
Jasper	SC	JASPER_SC	-81.0	32.6	22	0.45	0.02	-1.8 ± 1.5	-1.2 ± 0.4	1.4 ± 0.7	1.0
Jasper	TX	JASPER_TX	-94.0	30.9	48	0.22	0.17	1.8 ± 2.4	-0.8 ± 0.4	0.1 ± 0.5	1.0
Jefferson	FL	JEFFER	-83.9	30.4	28	0.42	0.03	3.7 ± 1.6	-0.6 ± 0.3	-1.9 ± 1.2	1.5
Kershaw	SC	KERSHA	-80.6	34.4	100	0.06	0.32	1.9 ± 1.3	-0.1 ± 0.3	-0.5 ± 0.4	1.3
Kisatchie	LA	KISATC	-93.1	31.5	47	0.19	0.06	1.6 ± 1.2	-0.5 ± 0.2	-0.2 ± 0.3	0.8
Lancaster	SC	LANCAS	-80.8	34.8	167	0.35	0.03	-1.4 ± 1.8	-0.8 ± 0.3	1 ± 0.6	1.2
Laurens	SC	LAUREN	-82.0	34.5	193	0.43	0.00	-0.3 ± 1.8	-1.1 ± 0.3	1 ± 0.5	1.5
Leon	FL	LEON F	-84.2	30.5	13	0.30	0.05	0 ± 1.1	-1 ± 0.4	0.8 ± 0.6	1.4
Lowndes	AL	LOWNDE	-86.6	32.1	66	0.28	0.09	7.4 ± 5.7	-0.8 ± 0.7	-0.5 ± 1.5	1.4
Madison	FL	MADISO	-83.4	30.5	33	0.31	0.04	3.4 ± 1.3	0 ± 0.2	-1.1 ± 0.5	1.3
Marion	FL	MARION	-82.0	29.3	17	0.37	0.03	2.4 ± 0.8	-0.1 ± 0.3	-1 ± 0.5	1.3
Mena	AR	MENA R	-94.3	34.7	405	0.19	0.07	1.3 ± 0.6	-0.3 ± 0.2	-0.3 ± 0.2	1.0
Mccormick	SC	McCORM	-82.3	33.9	155	0.24	0.10	0.1 ± 3.5	-0.8 ± 0.3	0.8 ± 0.7	1.1
Nassau	FL	NASSAU	-81.8	30.6	5	0.24	0.09	0.7 ± 1	-0.7 ± 0.4	0.2 ± 0.6	1.5
Nevada	AR	NEVADA	-93.3	33.7	74	0.16	0.18	2 ± 3.1	-0.6 ± 0.3	-0.2 ± 0.6	1.3
New Castle	VA	NEW CA	-80.1	37.5	487	0.41	0.02	2.9 ± 0.9	0.1 ± 0.2	-0.7 ± 0.2	0.8
Newberry	SC	NEWBER	-81.7	34.3	141	0.45	0.01	4.5 ± 3.6	-1.4 ± 0.4	0.6 ± 0.6	1.2
Nolichucky	TN	NOLICH	-82.8	36.0	463	0.09	0.16	1.5 ± 0.9	-0.1 ± 0.2	-0.3 ± 0.3	1.5
Oakmulgee	AL	OAKMUL	-87.3	32.9	93	0.31	0.03	0.9 ± 3.3	-1 ± 0.3	0.7 ± 0.5	1.5
Ocoee	TN	OCOEE	-84.6	35.2	547	0.44	0.01	3.8 ± 1.1	-0.2 ± 0.2	-1 ± 0.3	1.6
Oconee	GA	OCONEE_GA	-83.5	33.3	154	0.57	0.00	4 ± 5.3	-1.1 ± 0.2	0.3 ± 0.9	1.0
Oconee	SC	OCONEE_SC	-83.1	34.8	323	0.23	0.04	2.7 ± 2.2	-0.6 ± 0.2	-0.1 ± 0.5	1.6
Oden	AR	ODEN R	-93.8	34.6	231	0.03	0.36	2.4 ± 1.8	0 ± 0.6	-0.8 ± 0.8	1.3
Okaloosa	FL	OKALOO	-86.6	30.9	38	0.16	0.15	2.6 ± 5.2	-0.7 ± 0.3	0 ± 1	1.9

Forest	State	Forest Code	Longitude	Latitude	Elevation (m)	Model fit		Model coefficients			
						R^2	P	Intercept (β_0)	β_1:ln(N_t)	B_2:ln(P_t)	σ_ϵ
Oktibbeha	MS	OKTIBB	-88.8	33.5	106	0.13	0.16	-2.4 ± 3.8	-0.5 ± 0.3	0.7 ± 0.7	1.5
Pickens	SC	PICKEN	-82.7	34.9	326	0.10	0.24	3.2 ± 2.1	-0.1 ± 0.3	-0.6 ± 0.6	1.5
Prince Edward	VA	PRINCE	-78.6	37.3	166	0.06	0.33	2.6 ± 1.9	-0.1 ± 0.2	-0.5 ± 0.4	1.1
Rhea	TN	RHEA T	-85.0	35.6	539	0.32	0.11	3.1 ± 1.5	0.1 ± 0.3	-1.1 ± 0.5	1.7
Richland	SC	RICHLA	-80.8	34.0	61	0.42	0.01	4.8 ± 1.8	-0.7 ± 0.4	-0.6 ± 0.6	1.5
Sabine	TX	SABINE_TX	-93.8	31.4	113	0.07	0.25	2.2 ± 3.1	-0.3 ± 0.4	-0.2 ± 0.8	1.2
Saluda	SC	SALUDA	-81.8	34.0	133	0.28	0.11	-2.2 ± 3.8	-0.8 ± 0.3	1.1 ± 0.8	0.8
Shoal Creek	AL	SHOAL	-85.6	33.7	343	0.44	0.05	9.9 ± 4.7	-0.6 ± 0.6	-1.1 ± 1.1	1.3
Somerset	MD	SOMERS	-75.7	38.2	5	0.36	0.01	2 ± 1.2	-0.9 ± 0.3	0 ± 0.4	1.1
Spartanburg	SC	SPARTA	-82.0	34.7	201	0.40	0.03	5.9 ± 2	-0.2 ± 0.2	-1.1 ± 0.5	1.1
St Helena	LA	ST HEL	-90.7	30.8	70	0.27	0.13	-2.6 ± 3.9	-0.7 ± 0.3	1.3 ± 1.1	1.5
Talladega	AL	TALLAD	-85.9	33.5	272	0.34	0.02	7.2 ± 2.8	-0.4 ± 0.4	-1 ± 0.8	1.7
Tallapoosa	AL	TALLAP	-85.8	32.9	235	0.43	0.01	6.6 ± 2.1	-0.7 ± 0.3	-0.6 ± 0.4	1.0
Tallulah	GA	TALLUL	-83.4	34.9	828	0.52	0.00	6.8 ± 2.1	-0.9 ± 0.3	-0.5 ± 0.5	1.7
Tishomingo	MS	TISHOM	-88.2	34.7	143	0.33	0.02	3.8 ± 1.9	-0.7 ± 0.3	-0.4 ± 0.5	1.5
Tombigbee	MS	TOMBIG	-89.0	33.2	140	0.24	0.06	5.8 ± 3	-0.3 ± 0.4	-0.9 ± 0.7	1.4
Tusquitee	NC	TUSQUI	-83.9	35.1	921	0.42	0.00	2.7 ± 0.8	0 ± 0.1	-0.7 ± 0.2	1.2
Union	SC	UNION_SC	-81.7	34.7	167	0.39	0.02	5.7 ± 2	-0.4 ± 0.3	-0.8 ± 0.5	1.2
Uwharrie	NC	UWHARR	-80.0	35.3	204	0.21	0.04	3 ± 1.8	-0.5 ± 0.2	-0.2 ± 0.5	1.3
Walton	FL	WAHIN_FL	-85.7	30.6	31	0.42	0.02	-1.1 ± 1.6	-0.9 ± 0.3	0.8 ± 0.5	1.5
Washington	LA	WALTON	-86.2	30.6	20	0.49	0.01	4.4 ± 2.1	-1.1 ± 0.3	-0.3 ± 0.6	1.4
Williamsburg	SC	WILLIA	-79.8	33.7	17	0.10	0.31	2.6 ± 1.8	0 ± 0.6	-0.9 ± 0.9	1.2
Winn	LA	WINN R	-92.8	32.0	54	0.26	0.20	15.8 ± 7.8	0 ± 0.4	-3 ± 1.4	1.0
Worcester	MD	WORCES	-75.4	38.2	9	0.32	0.01	2.6 ± 0.9	-0.4 ± 0.2	-0.4 ± 0.3	0.8
York	SC	YORK S	-81.2	35.0	221	0.22	0.07	0.6 ± 2.2	-0.6 ± 0.3	0.4 ± 0.6	1.2

Table A4. Estimated coefficients (model 5) describing dynamics of *Thanasimus dubius* in 95 forests.

Forest	State	Forest Code	Longitude	Latitude	Elevation (m)	Model		Model coefficients			
						R^2	P	Intercept (β_0)	β_1: ln(Nt)	β_2: ln(Pt)	σ_ϵ
Abbeville	SC	ABBEVI	-82.4	34.2	176	0.30	0.04	3.1 ± 1.1	0.1 ± 0.2	-0.7 ± 0.3	0.8
Alachua	FL	ALACHU	-82.3	29.7	49	0.19	0.14	1.2 ± 0.7	0.1 ± 0.2	-0.7 ± 0.3	1.1
Anderson	SC	ANDERS	-82.6	34.5	245	0.24	0.08	3.1 ± 1.3	0.2 ± 0.2	-0.9 ± 0.4	0.9
Angelina	SC	ANGELI_RD	-94.2	31.2	78	0.09	0.26	2.6 ± 3.5	-0.5 ± 0.5	-0.1 ± 0.9	0.8
Armuchee	TX	ARMUCH	-85.1	34.6	460	0.43	0.00	2.9 ± 1	0.5 ± 0.2	-1 ± 0.2	0.9
Baker	FL	BAKER	-82.3	30.3	39	0.58	0.00	2.1 ± 0.6	0.2 ± 0.2	-1.3 ± 0.3	0.9
Bankhead	FL	BANKHE	-87.3	34.2	230	0.36	0.01	2.8 ± 1.1	0.3 ± 0.2	-0.9 ± 0.2	0.9
Bienville	MS	BIENVI_MS	-89.5	32.3	134	0.41	0.00	6.9 ± 1.8	0 ± 0.2	-1.2 ± 0.3	0.7
Black Creek	MS	BLACK	-89.1	31.1	50	0.50	0.01	7.2 ± 1.8	0.3 ± 0.2	-1.5 ± 0.4	0.8
Bradford	FL	BRADFO	-82.2	30.0	42	0.53	0.01	2.1 ± 0.5	0.1 ± 0.1	-1.4 ± 0.4	0.7
Caddo	AR	CADDO_AR	-93.7	34.4	233	0.13	0.27	1.3 ± 1.6	0.3 ± 0.3	-0.7 ± 0.4	0.8
Cherokee	SC	CHEROK_SC	-81.6	35.1	208	0.08	0.31	1.1 ± 1.4	0.7 ± 0.6	-0.9 ± 0.6	1.0
Chester	SC	CHESTE_SC	-81.2	34.7	169	0.25	0.09	2.3 ± 1.1	0.1 ± 0.1	-0.6 ± 0.3	0.5
Chester	TN	CHESTE_TN	-88.6	35.5	122	0.41	0.01	3.8 ± 1.1	-0.1 ± 0.2	-0.8 ± 0.3	0.9
Chickasawhay	MS	CHICKA	-88.8	31.5	84	0.75	0.00	9.2 ± 1.5	0.2 ± 0.1	-1.7 ± 0.3	0.5
Clark	AR	CLARK	-93.2	34.2	114	0.25	0.08	3.5 ± 1.5	-0.1 ± 0.2	-0.7 ± 0.3	0.8
Cleveland	NC	CLEVEL	-81.6	35.3	244	-0.03	0.49	1.1 ± 1	0.1 ± 0.4	-0.3 ± 0.4	0.9
Colleton	SC	COLLET	-80.7	32.9	26	0.29	0.11	2 ± 0.8	0.4 ± 0.3	-1.2 ± 0.5	0.6
Columbia	AR	COLUMB_AR	-93.3	33.2	80	0.43	0.03	3.2 ± 1.2	-0.3 ± 0.2	-0.6 ± 0.3	0.6
Columbia	FL	COLUMB_FL	-82.6	30.2	54	0.54	0.01	2.3 ± 0.8	0.7 ± 0.3	-1.3 ± 0.3	1.0
Croatan	NC	CROATA	-77.0	34.9	11	0.33	0.02	3.7 ± 1.1	-0.1 ± 0.1	-0.6 ± 0.2	0.6
Cumberland	VA	CUMBER	-78.3	37.5	91	0.48	0.01	2.5 ± 0.9	0.4 ± 0.1	-0.8 ± 0.2	0.6
Davidson	NC	DAVIDS	-80.2	35.8	236	0.50	0.00	4 ± 0.9	0.1 ± 0.2	-1.2 ± 0.3	0.7
Dorchester	MD	DORCHE_MD	-76.0	38.5	1	0.40	0.01	3.1 ± 0.9	0 ± 0.2	-1 ± 0.3	0.8
Dorchester	SC	DORCHE_SC	-80.5	33.2	27	0.58	0.01	2.9 ± 0.7	0.7 ± 0.2	-1.8 ± 0.5	0.6
Drew	AR	DREW A	-91.8	33.6	70	0.43	0.04	5.1 ± 1.8	0.7 ± 0.5	-1.4 ± 0.5	1.2
Duval	FL	DUVAL	-81.7	30.4	6	0.32	0.06	1.9 ± 0.8	0.1 ± 0.2	-0.9 ± 0.3	0.9
East Feliciana	LA	EAST F	-91.0	30.8	65	0.30	0.08	4.1 ± 1.5	0 ± 0.3	-1 ± 0.4	1.2
Edgefield	SC	EDGEFI	-81.9	33.8	157	0.25	0.15	3.2 ± 2.3	0.2 ± 0.3	-0.8 ± 0.3	0.5
Enoree	SC	ENOREE	-81.6	34.5	99	0.52	0.00	6.4 ± 1.5	0.2 ± 0.2	-1.3 ± 0.3	0.6
Fairfield	SC	FAIRFI	-81.1	34.4	135	0.42	0.00	4.8 ± 1.1	0.3 ± 0.2	-1.3 ± 0.4	0.6
Francis Marion	SC	FRANCI	-79.7	33.2	8	0.71	0.00	4.7 ± 1.2	0.6 ± 0.7	-1.9 ± 0.6	1.3

Forest	State	Forest Code	Longitude	Latitude	Elevation (m)	Model		Model coefficients			
						R^2	P	Intercept (β_0)	β_1: ln(Nt)	β_2: ln(Pt)	σ_ϵ
Gadsden	FL	GADSDE	-84.5	30.5	23	0.43	0.02	2.4 ± 0.7	0 ± 0.1	-1 ± 0.3	0.5
Georgetown	SC	GEORGE	-79.5	33.5	4	0.18	0.19	1.6 ± 1.3	-0.1 ± 0.2	-0.5 ± 0.5	0.6
Glenwood	VA	GLENWO	-79.6	37.6	618	0.62	0.01	4.6 ± 1.2	-0.4 ± 0.2	-1.1 ± 0.3	0.7
Grandfather	NC	GRANDF	-81.9	35.9	751	0.39	0.01	2.5 ± 1	0.2 ± 0.1	-0.7 ± 0.2	0.8
Greenville	SC	GREENV	-82.4	34.8	256	0.48	0.01	3.4 ± 1.1	0.2 ± 0.1	-0.9 ± 0.3	0.6
Greenwood	SC	GREENW	-82.1	34.2	157	0.27	0.08	4.3 ± 1.7	0.1 ± 0.2	-0.8 ± 0.4	0.6
Hamilton	FL	HAMILT	-82.9	30.6	43	0.39	0.03	3 ± 1	0.1 ± 0.1	-1 ± 0.3	0.6
Hampton	SC	HAMPTO	-81.3	32.8	38	0.29	0.11	1.5 ± 1	-0.4 ± 0.4	-0.3 ± 0.5	0.6
Hardin	TX	HARDIN	-94.3	30.4	20	0.44	0.05	3.6 ± 1.8	0.2 ± 0.1	-0.9 ± 0.4	0.4
Holly Springs	MS	HOLLY	-89.3	34.6	139	0.49	0.01	5.4 ± 1.4	0.1 ± 0.2	-1.2 ± 0.3	0.6
Holmes	FL	HOLMES	-85.8	30.9	24	0.55	0.01	3.9 ± 1	0.1 ± 0.2	-1.2 ± 0.3	0.9
Homochitto	MS	HOMOCH	-91.0	31.5	107	0.44	0.01	4.7 ± 1.3	0 ± 0.1	-0.9 ± 0.3	0.6
Horry	SC	HORRY	-79.1	33.9	22	0.00	0.41	1 ± 0.8	0 ± 0.3	-0.3 ± 0.4	0.9
Jackson	FL	JACKSO_FL	-85.2	30.8	25	0.27	0.07	1.6 ± 1	-0.2 ± 0.1	-0.3 ± 0.3	0.7
Jasper	SC	JASPER_SC	-81.0	32.6	22	0.36	0.04	0.7 ± 0.9	-0.4 ± 0.2	0.1 ± 0.5	0.6
Jasper	TX	JASPER_TX	-94.0	30.9	48	0.47	0.05	5.3 ± 1.7	0.1 ± 0.3	-1.1 ± 0.4	0.7
Jefferson	FL	JEFFER	-83.9	30.4	28	0.62	0.00	1.6 ± 0.4	0.1 ± 0.1	-1.3 ± 0.3	0.4
Kershaw	SC	KERSHA	-80.6	34.4	100	0.39	0.06	3.2 ± 1.2	0.3 ± 0.2	-1.1 ± 0.4	1.2
Kisatchie	LA	KISATC	-93.1	31.5	47	0.40	0.00	3.6 ± 1	0.1 ± 0.2	-0.9 ± 0.2	0.6
Lancaster	SC	LANCAS	-80.8	34.8	167	0.11	0.19	2.2 ± 1.1	0.1 ± 0.2	-0.6 ± 0.4	0.8
Laurens	SC	LAUREN	-82.0	34.5	193	0.19	0.06	2.6 ± 1.1	0 ± 0.2	-0.5 ± 0.3	0.9
Leon	FL	LEON F	-84.2	30.5	13	0.20	0.12	1.2 ± 0.6	-0.1 ± 0.2	-0.5 ± 0.3	0.8
Lowndes	AL	LOWNDE	-86.6	32.1	66	0.14	0.21	4.7 ± 2.6	0.1 ± 0.3	-1 ± 0.7	0.6
Madison	FL	MADISO	-83.4	30.5	33	0.65	0.00	3.5 ± 0.7	0.4 ± 0.1	-1.6 ± 0.3	0.8
Marion	FL	MARION	-82.0	29.3	17	0.42	0.02	1.2 ± 0.6	0.5 ± 0.2	-1.2 ± 0.4	0.9
Mena	AR	McCORM	-94.3	34.7	405	0.34	0.05	4.5 ± 1.6	0.1 ± 0.2	-1 ± 0.3	0.5
Mccormick	SC	MENA R	-82.3	33.9	155	0.33	0.02	1.4 ± 0.8	0.4 ± 0.3	-0.9 ± 0.3	1.3
Nassau	FL	NASSAU	-81.8	30.6	5	0.26	0.08	1.3 ± 0.6	0.3 ± 0.2	-0.9 ± 0.4	0.9
Nevada	AR	NEVADA	-93.3	33.7	74	0.27	0.10	4.3 ± 1.8	0 ± 0.2	-0.9 ± 0.4	0.7
New Castle	VA	NEW CA	-80.1	37.5	487	0.57	0.00	2.4 ± 0.8	0.7 ± 0.2	-1 ± 0.2	0.7
Newberry	SC	NEWBER	-81.7	34.3	141	0.64	0.00	6.8 ± 1.4	0 ± 0.2	-1.3 ± 0.3	0.5
Nolichucky	TN	NOLICH	-82.8	36.0	463	0.39	0.00	1.3 ± 0.6	0.4 ± 0.1	-0.7 ± 0.2	1.0
Oakmulgee	AL	OAKMUL	-87.3	32.9	93	0.23	0.06	4.7 ± 2	0 ± 0.2	-0.8 ± 0.3	0.9
Ocoee	TN	OCOEE	-84.6	35.2	547	0.29	0.03	1.7 ± 0.8	0.3 ± 0.2	-0.7 ± 0.2	1.2

Forest	State	Forest Code	Longitude	Latitude	Elevation (m)	Model		Model coefficients			
						R^2	P	Intercept (β_0)	β_1: ln(Nt)	β_2: ln(Pt)	σ_ϵ
Oconee	GA	OCONEE_GA	-83.5	33.3	154	0.66	0.00	7.5 ± 1.3	0.1 ± 0.1	-1.3 ± 0.2	0.3
Oconee	SC	OCONEE_SC	-83.1	34.8	323	0.28	0.02	2.9 ± 1	0.1 ± 0.1	-0.7 ± 0.2	0.7
Oden	AR	ODEN R	-93.8	34.6	231	0.22	0.15	1.9 ± 1	0.3 ± 0.4	-0.9 ± 0.5	0.8
Okaloosa	FL	OKALOO	-86.6	30.9	38	0.49	0.01	5.1 ± 1.4	0.1 ± 0.1	-1 ± 0.3	0.5
Oktibbeha	MS	OKTIBB	-88.8	33.5	106	0.30	0.04	5.2 ± 1.8	0.1 ± 0.1	-0.9 ± 0.3	0.7
Pickens	SC	PICKEN	-82.7	34.9	326	0.66	0.00	3.4 ± 0.9	0.5 ± 0.1	-1.2 ± 0.2	0.6
Prince Edward	VA	PRINCE	-78.6	37.3	166	0.12	0.27	2.9 ± 1.6	0 ± 0.2	-0.6 ± 0.4	0.9
Rhea	TN	RHEA T	-85.0	35.6	539	0.46	0.05	2.5 ± 1	0.5 ± 0.2	-1.1 ± 0.4	1.1
Richland	SC	RICHLA	-80.8	34.0	61	0.49	0.01	4.2 ± 1.1	0.3 ± 0.2	-1.2 ± 0.4	0.9
Sabine	TX	SABINE_TX	-93.8	31.4	113	0.49	0.00	5.4 ± 1.3	0.4 ± 0.2	-1.3 ± 0.3	0.5
Saluda	SC	SALUDA	-81.8	34.0	133	-0.06	0.52	2.4 ± 2.1	0.1 ± 0.2	-0.5 ± 0.4	0.5
Shoal Creek	AL	SHOAL	-85.6	33.7	343	0.29	0.12	5.2 ± 2.2	0.3 ± 0.3	-1.2 ± 0.5	0.6
Somerset	MD	SOMERS	-75.7	38.2	5	0.29	0.02	2.6 ± 0.9	0.1 ± 0.2	-0.8 ± 0.3	0.7
Spartanburg	SC	SPARTA	-82.0	34.7	201	0.40	0.03	3 ± 1.1	0.2 ± 0.1	-0.8 ± 0.3	0.6
St Helena	LA	ST HEL	-90.7	30.8	70	0.50	0.04	3.7 ± 1.2	-0.2 ± 0.1	-0.9 ± 0.3	0.5
Talladega	AL	TALLAD	-85.9	33.5	272	0.43	0.01	5.2 ± 1.4	0.2 ± 0.2	-1.3 ± 0.4	0.8
Tallapoosa	AL	TALLAP	-85.8	32.9	235	0.62	0.00	6.5 ± 1.3	0.2 ± 0.2	-1.4 ± 0.3	0.6
Tallulah	GA	TALLUL	-83.4	34.9	828	0.31	0.01	3.7 ± 1.2	0.2 ± 0.2	-0.9 ± 0.3	1.0
Tishomingo	MS	TISHOM	-88.2	34.7	143	0.19	0.10	2.4 ± 1	0.1 ± 0.1	-0.6 ± 0.3	0.6
Tombigbee	MS	TOMBIG	-89.0	33.2	140	0.46	0.00	6.3 ± 1.6	0.3 ± 0.2	-1.4 ± 0.4	0.8
Tusquitee	NC	TUSQUI	-83.9	35.1	921	0.34	0.01	1.4 ± 0.7	0.3 ± 0.1	-0.6 ± 0.2	1.0
Union	SC	UNION_SC	-81.7	34.7	167	0.40	0.01	3.4 ± 1.2	0.3 ± 0.2	-1 ± 0.3	0.7
Uwharrie	NC	UWHARR	-80.0	35.3	204	0.43	0.00	3.5 ± 0.9	0.2 ± 0.1	-1 ± 0.2	0.6
Walton	FL	WAHIN_FL	-85.7	30.6	31	0.39	0.03	3.1 ± 0.9	-0.1 ± 0.2	-0.8 ± 0.3	0.9
Washington	LA	WALTON	-86.2	30.6	20	0.34	0.04	3.6 ± 1.2	-0.1 ± 0.2	-0.9 ± 0.3	0.8
Williamsburg	SC	WILLIA	-79.8	33.7	17	0.34	0.12	2 ± 0.9	0.6 ± 0.3	-1.1 ± 0.4	0.6
Winn	LA	WINN R	-92.8	32.0	54	0.69	0.02	3.4 ± 2.8	0.5 ± 0.1	-1.1 ± 0.5	0.4
Worcester	MD	WORCES	-75.4	38.2	9	0.45	0.00	2.2 ± 0.7	0.5 ± 0.2	-0.8 ± 0.2	0.7
York	SC	YORK S	-81.2	35.0	221	0.23	0.07	3.1 ± 1.2	0.2 ± 0.1	-0.8 ± 0.3	0.7

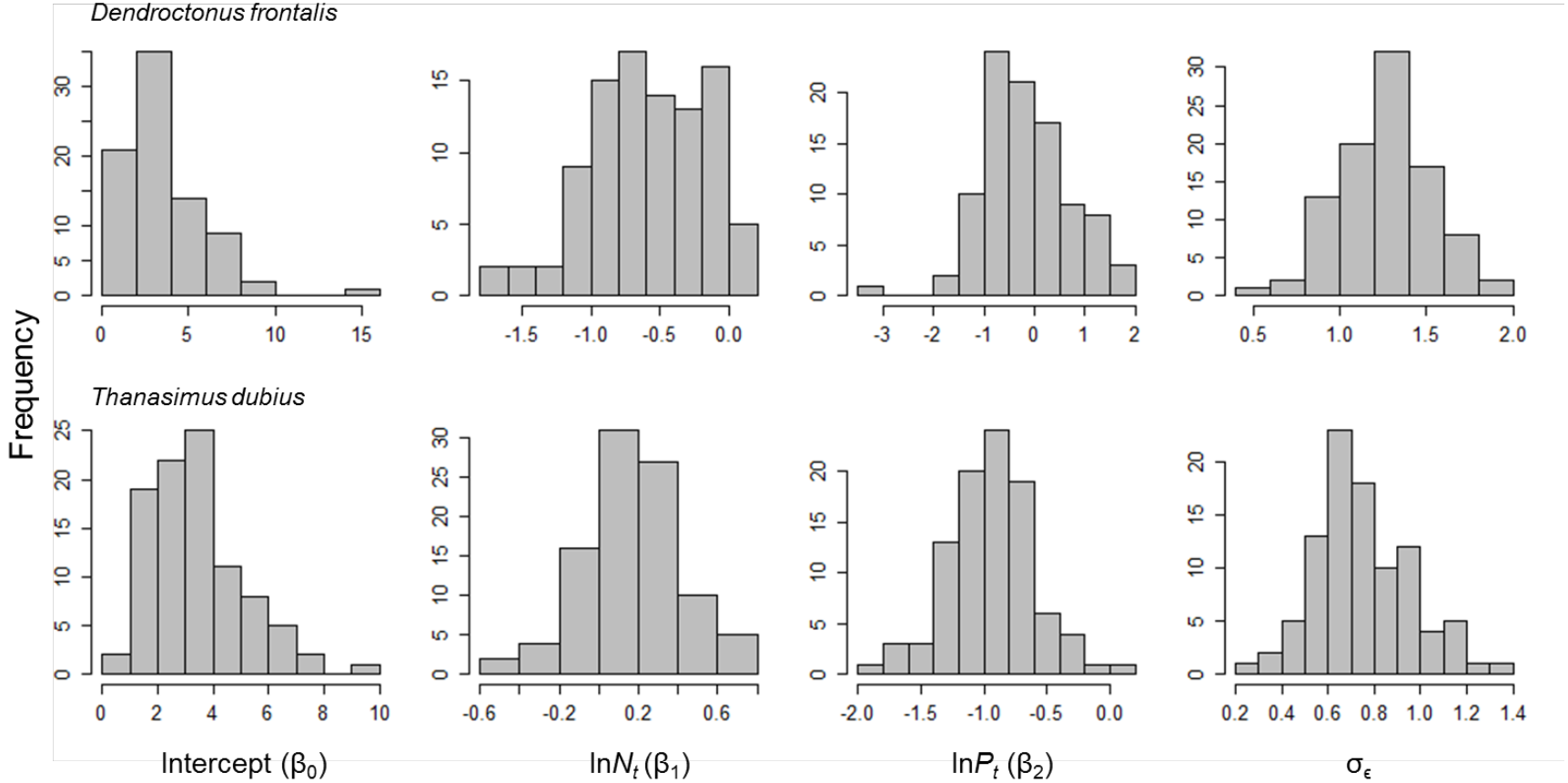

Figure A1. Frequency distributions of final estimated model parameters from Tables S3 and S4 describing dynamics of *Dendroctonus frontalis* and *Thanasimus dubius* in 95 forests.