The Mixed Procedure

Model Information	
Data Set	WORK.MYDATA3
Dependent Variable	tree_volume
Covariance Structure	Variance Components
Estimation Method	REML
Residual Variance Method	Profile
Fixed Effects SE Method	Model-Based
Degrees of Freedom Method	Containment

Class Level Information		
Class	**Levels**	**Values**
blocks	3	1 2 3
geo_num	10	1 2 3 4 5 6 7 8 9 10
origin	2	Intro Nat

Dimensions	
Covariance Parameters	3
Columns in X	31
Columns in Z	33
Subjects	1
Max Obs per Subject	105

Number of Observations	
Number of Observations Read	240
Number of Observations Used	105
Number of Observations Not Used	135

Iteration History			
Iteration	**Evaluations**	**-2 Res Log Like**	**Criterion**
0	1	-428.80734560	
1	3	-433.99103781	0.00010234
2	1	-434.02635204	0.00000939
3	1	-434.02931980	0.00000010
4	1	-434.02935058	0.00000000

Convergence criteria met.

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Covariance Parameter Estimates	
Cov Parm	**Estimate**
blocks	0.000045
blocks*geo_num	0
Residual	0.000275

Fit Statistics	
-2 Res Log Likelihood	-434.0
AIC (Smaller is Better)	-430.0
AICC (Smaller is Better)	-429.9
BIC (Smaller is Better)	-431.8

Type 3 Tests of Fixed Effects				
Effect	**Num DF**	**Den DF**	**F Value**	**Pr > F**
geo_num	9	10	3.75	0.0256
origin	1	75	0.04	0.8367
geo_num*origin	7	75	3.37	0.0035

Least Squares Means							
Effect	**origin**	**geo_num**	**Estimate**	**Standard Error**	**DF**	**t Value**	**Pr > |t|**
geo_num		1	Non-est	.	.	.	.
geo_num		2	0.04741	0.006450	10	7.35	<.0001
geo_num		3	0.02235	0.006880	10	3.25	0.0087
geo_num		4	0.02786	0.007248	10	3.84	0.0032
geo_num		5	0.02305	0.006970	10	3.31	0.0079
geo_num		6	0.04237	0.007086	10	5.98	0.0001
geo_num		7	Non-est	.	.	.	.
geo_num		8	0.02629	0.006880	10	3.82	0.0034
geo_num		9	0.04356	0.006880	10	6.33	<.0001
geo_num		10	0.04504	0.006880	10	6.55	<.0001
origin	Intro		Non-est	.	.	.	.
origin	Nat		Non-est	.	.	.	.
geo_num*origin	Nat	1	0.04950	0.006155	75	8.04	<.0001
geo_num*origin	Intro	2	0.02692	0.007266	75	3.71	0.0004
geo_num*origin	Nat	2	0.06790	0.009877	75	6.88	<.0001
geo_num*origin	Intro	3	0.03155	0.007266	75	4.34	<.0001

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Least Squares Means							
Effect	**origin**	**geo_num**	**Estimate**	**Standard Error**	**DF**	**t Value**	**Pr > |t|**
geo_num*origin	Nat	3	0.01315	0.01098	75	1.20	0.2345
geo_num*origin	Intro	4	0.03123	0.008578	75	3.64	0.0005
geo_num*origin	Nat	4	0.02449	0.01098	75	2.23	0.0287
geo_num*origin	Intro	5	0.03182	0.01098	75	2.90	0.0049
geo_num*origin	Nat	5	0.01428	0.007600	75	1.88	0.0642
geo_num*origin	Intro	6	0.03682	0.01098	75	3.35	0.0012
geo_num*origin	Nat	6	0.04792	0.008016	75	5.98	<.0001
geo_num*origin	Intro	7	0.03554	0.006522	75	5.45	<.0001
geo_num*origin	Intro	8	0.03615	0.01098	75	3.29	0.0015
geo_num*origin	Nat	8	0.01642	0.007266	75	2.26	0.0267
geo_num*origin	Intro	9	0.04382	0.01098	75	3.99	0.0002
geo_num*origin	Nat	9	0.04330	0.007266	75	5.96	<.0001
geo_num*origin	Intro	10	0.04292	0.007266	75	5.91	<.0001
geo_num*origin	Nat	10	0.04715	0.01098	75	4.30	<.0001

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Differences of Least Squares Means									
Effect	**origin**	**geo_num**	**_origin**	**_geo_num**	**Estimate**	**Standard Error**	**DF**	**t Value**	**Pr > |t|**
geo_num		1		2	Non-est	.	.	.	.
geo_num		1		3	Non-est	.	.	.	.
geo_num		1		4	Non-est	.	.	.	.
geo_num		1		5	Non-est	.	.	.	.
geo_num		1		6	Non-est	.	.	.	.
geo_num		1		7	Non-est	.	.	.	.
geo_num		1		8	Non-est	.	.	.	.
geo_num		1		9	Non-est	.	.	.	.
geo_num		1		10	Non-est	.	.	.	.
geo_num		2		3	0.02506	0.007571	10	3.31	0.0079
geo_num		2		4	0.01956	0.007907	10	2.47	0.0329
geo_num		2		5	0.02436	0.007653	10	3.18	0.0098
geo_num		2		6	0.005042	0.007758	10	0.65	0.5304
geo_num		2		7	Non-est	.	.	.	.
geo_num		2		8	0.02113	0.007571	10	2.79	0.0191
geo_num		2		9	0.003854	0.007571	10	0.51	0.6218
geo_num		2		10	0.002375	0.007571	10	0.31	0.7602
geo_num		3		4	-0.00551	0.008261	10	-0.67	0.5202
geo_num		3		5	-0.00070	0.008019	10	-0.09	0.9323
geo_num		3		6	-0.02002	0.008119	10	-2.47	0.0333
geo_num		3		7	Non-est	.	.	.	.
geo_num		3		8	-0.00394	0.007941	10	-0.50	0.6307
geo_num		3		9	-0.02121	0.007941	10	-2.67	0.0235
geo_num		3		10	-0.02269	0.007941	10	-2.86	0.0170
geo_num		4		5	0.004808	0.008339	10	0.58	0.5770
geo_num		4		6	-0.01451	0.008433	10	-1.72	0.1159
geo_num		4		7	Non-est	.	.	.	.
geo_num		4		8	0.001568	0.008261	10	0.19	0.8532
geo_num		4		9	-0.01570	0.008261	10	-1.90	0.0865
geo_num		4		10	-0.01718	0.008261	10	-2.08	0.0642
geo_num		5		6	-0.01932	0.008196	10	-2.36	0.0401
geo_num		5		7	Non-est	.	.	.	.
geo_num		5		8	-0.00324	0.008019	10	-0.40	0.6947
geo_num		5		9	-0.02051	0.008019	10	-2.56	0.0285
geo_num		5		10	-0.02199	0.008019	10	-2.74	0.0208

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						Standard			
Effect	**origin**	**geo_num**	**_origin**	**_geo_num**	**Estimate**	**Error**	**DF**	**t Value**	**Pr > |t|**
geo_num		6		7	Non-est	.	.	.	.
geo_num		6		8	0.01608	0.008119	10	1.98	0.0758
geo_num		6		9	-0.00119	0.008119	10	-0.15	0.8866
geo_num		6		10	-0.00267	0.008119	10	-0.33	0.7494
geo_num		7		8	Non-est	.	.	.	.
geo_num		7		9	Non-est	.	.	.	.
geo_num		7		10	Non-est	.	.	.	.
geo_num		8		9	-0.01727	0.007941	10	-2.17	0.0547
geo_num		8		10	-0.01875	0.007941	10	-2.36	0.0399
geo_num		9		10	-0.00148	0.007941	10	-0.19	0.8560
origin	Intro		Nat		Non-est	.	.	.	.
geo_num*origin	Nat	1	Intro	2	0.02258	0.007796	75	2.90	0.0049
geo_num*origin	Nat	1	Nat	2	-0.01840	0.01027	75	-1.79	0.0772
geo_num*origin	Nat	1	Intro	3	0.01795	0.007796	75	2.30	0.0241
geo_num*origin	Nat	1	Nat	3	0.03635	0.01133	75	3.21	0.0020
geo_num*origin	Nat	1	Intro	4	0.01827	0.009031	75	2.02	0.0466
geo_num*origin	Nat	1	Nat	4	0.02501	0.01133	75	2.21	0.0304
geo_num*origin	Nat	1	Intro	5	0.01768	0.01133	75	1.56	0.1230
geo_num*origin	Nat	1	Nat	5	0.03522	0.008108	75	4.34	<.0001
geo_num*origin	Nat	1	Intro	6	0.01268	0.01133	75	1.12	0.2669
geo_num*origin	Nat	1	Nat	6	0.001577	0.008500	75	0.19	0.8533
geo_num*origin	Nat	1	Intro	7	0.01396	0.007107	75	1.96	0.0532
geo_num*origin	Nat	1	Intro	8	0.01335	0.01133	75	1.18	0.2427
geo_num*origin	Nat	1	Nat	8	0.03308	0.007796	75	4.24	<.0001
geo_num*origin	Nat	1	Intro	9	0.005679	0.01133	75	0.50	0.6178
geo_num*origin	Nat	1	Nat	9	0.006202	0.007796	75	0.80	0.4288
geo_num*origin	Nat	1	Intro	10	0.006577	0.007796	75	0.84	0.4015
geo_num*origin	Nat	1	Nat	10	0.002345	0.01133	75	0.21	0.8366
geo_num*origin	Intro	2	Nat	2	-0.04098	0.01159	75	-3.54	0.0007
geo_num*origin	Intro	2	Intro	3	-0.00462	0.008294	75	-0.56	0.5788
geo_num*origin	Intro	2	Nat	3	0.01377	0.01254	75	1.10	0.2756
geo_num*origin	Intro	2	Intro	4	-0.00430	0.009463	75	-0.45	0.6506
geo_num*origin	Intro	2	Nat	4	0.002435	0.01254	75	0.19	0.8465
geo_num*origin	Intro	2	Intro	5	-0.00490	0.01254	75	-0.39	0.6971
geo_num*origin	Intro	2	Nat	5	0.01265	0.008589	75	1.47	0.1451

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Differences of Least Squares Means									
Effect	**origin**	**geo_num**	**_origin**	**_geo_num**	**Estimate**	**Standard Error**	**DF**	**t Value**	**Pr > |t|**
geo_num*origin	Intro	2	Intro	6	-0.00990	0.01254	75	-0.79	0.4323
geo_num*origin	Intro	2	Nat	6	-0.02100	0.008959	75	-2.34	0.0217
geo_num*origin	Intro	2	Intro	7	-0.00862	0.008047	75	-1.07	0.2876
geo_num*origin	Intro	2	Intro	8	-0.00923	0.01254	75	-0.74	0.4638
geo_num*origin	Intro	2	Nat	8	0.01050	0.008294	75	1.27	0.2094
geo_num*origin	Intro	2	Intro	9	-0.01690	0.01254	75	-1.35	0.1818
geo_num*origin	Intro	2	Nat	9	-0.01638	0.008294	75	-1.97	0.0520
geo_num*origin	Intro	2	Intro	10	-0.01600	0.008294	75	-1.93	0.0575
geo_num*origin	Intro	2	Nat	10	-0.02023	0.01254	75	-1.61	0.1108
geo_num*origin	Nat	2	Intro	3	0.03636	0.01159	75	3.14	0.0024
geo_num*origin	Nat	2	Nat	3	0.05475	0.01267	75	4.32	<.0001
geo_num*origin	Nat	2	Intro	4	0.03668	0.01245	75	2.95	0.0043
geo_num*origin	Nat	2	Nat	4	0.04342	0.01267	75	3.43	0.0010
geo_num*origin	Nat	2	Intro	5	0.03608	0.01267	75	2.85	0.0057
geo_num*origin	Nat	2	Nat	5	0.05363	0.01180	75	4.55	<.0001
geo_num*origin	Nat	2	Intro	6	0.03108	0.01267	75	2.45	0.0165
geo_num*origin	Nat	2	Nat	6	0.01998	0.01207	75	1.66	0.1020
geo_num*origin	Nat	2	Intro	7	0.03236	0.01056	75	3.06	0.0030
geo_num*origin	Nat	2	Intro	8	0.03175	0.01267	75	2.51	0.0144
geo_num*origin	Nat	2	Nat	8	0.05148	0.01159	75	4.44	<.0001
geo_num*origin	Nat	2	Intro	9	0.02408	0.01267	75	1.90	0.0612
geo_num*origin	Nat	2	Nat	9	0.02461	0.01159	75	2.12	0.0370
geo_num*origin	Nat	2	Intro	10	0.02498	0.01159	75	2.16	0.0343
geo_num*origin	Nat	2	Nat	10	0.02075	0.01267	75	1.64	0.1056
geo_num*origin	Intro	3	Nat	3	0.01839	0.01254	75	1.47	0.1465
geo_num*origin	Intro	3	Intro	4	0.000322	0.009463	75	0.03	0.9730
geo_num*origin	Intro	3	Nat	4	0.007060	0.01254	75	0.56	0.5750
geo_num*origin	Intro	3	Intro	5	-0.00027	0.01254	75	-0.02	0.9827
geo_num*origin	Intro	3	Nat	5	0.01727	0.008589	75	2.01	0.0479
geo_num*origin	Intro	3	Intro	6	-0.00527	0.01254	75	-0.42	0.6752
geo_num*origin	Intro	3	Nat	6	-0.01638	0.008959	75	-1.83	0.0715
geo_num*origin	Intro	3	Intro	7	-0.00399	0.008047	75	-0.50	0.6212
geo_num*origin	Intro	3	Intro	8	-0.00461	0.01254	75	-0.37	0.7143
geo_num*origin	Intro	3	Nat	8	0.01513	0.008294	75	1.82	0.0722
geo_num*origin	Intro	3	Intro	9	-0.01227	0.01254	75	-0.98	0.3308

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Effect	origin	geo_num	_origin	_geo_num	Estimate	Standard Error	DF	t Value	Pr > |t|
Differences of Least Squares Means									
geo_num*origin	Intro	3	Nat	9	-0.01175	0.008294	75	-1.42	0.1607
geo_num*origin	Intro	3	Intro	10	-0.01138	0.008294	75	-1.37	0.1743
geo_num*origin	Intro	3	Nat	10	-0.01561	0.01254	75	-1.24	0.2171
geo_num*origin	Nat	3	Intro	4	-0.01807	0.01334	75	-1.35	0.1796
geo_num*origin	Nat	3	Nat	4	-0.01133	0.01354	75	-0.84	0.4054
geo_num*origin	Nat	3	Intro	5	-0.01867	0.01354	75	-1.38	0.1722
geo_num*origin	Nat	3	Nat	5	-0.00112	0.01273	75	-0.09	0.9300
geo_num*origin	Nat	3	Intro	6	-0.02367	0.01354	75	-1.75	0.0847
geo_num*origin	Nat	3	Nat	6	-0.03477	0.01299	75	-2.68	0.0091
geo_num*origin	Nat	3	Intro	7	-0.02239	0.01160	75	-1.93	0.0573
geo_num*origin	Nat	3	Intro	8	-0.02300	0.01354	75	-1.70	0.0936
geo_num*origin	Nat	3	Nat	8	-0.00327	0.01254	75	-0.26	0.7951
geo_num*origin	Nat	3	Intro	9	-0.03067	0.01354	75	-2.26	0.0265
geo_num*origin	Nat	3	Nat	9	-0.03014	0.01254	75	-2.40	0.0187
geo_num*origin	Nat	3	Intro	10	-0.02977	0.01254	75	-2.37	0.0201
geo_num*origin	Nat	3	Nat	10	-0.03400	0.01354	75	-2.51	0.0142
geo_num*origin	Intro	4	Nat	4	0.006738	0.01334	75	0.51	0.6150
geo_num*origin	Intro	4	Intro	5	-0.00059	0.01334	75	-0.04	0.9645
geo_num*origin	Intro	4	Nat	5	0.01695	0.009733	75	1.74	0.0857
geo_num*origin	Intro	4	Intro	6	-0.00559	0.01334	75	-0.42	0.6761
geo_num*origin	Intro	4	Nat	6	-0.01670	0.01005	75	-1.66	0.1009
geo_num*origin	Intro	4	Intro	7	-0.00431	0.009255	75	-0.47	0.6425
geo_num*origin	Intro	4	Intro	8	-0.00493	0.01334	75	-0.37	0.7129
geo_num*origin	Intro	4	Nat	8	0.01480	0.009463	75	1.56	0.1220
geo_num*origin	Intro	4	Intro	9	-0.01259	0.01334	75	-0.94	0.3482
geo_num*origin	Intro	4	Nat	9	-0.01207	0.009463	75	-1.28	0.2060
geo_num*origin	Intro	4	Intro	10	-0.01170	0.009463	75	-1.24	0.2203
geo_num*origin	Intro	4	Nat	10	-0.01593	0.01334	75	-1.19	0.2363
geo_num*origin	Nat	4	Intro	5	-0.00733	0.01354	75	-0.54	0.5898
geo_num*origin	Nat	4	Nat	5	0.01021	0.01273	75	0.80	0.4252
geo_num*origin	Nat	4	Intro	6	-0.01233	0.01354	75	-0.91	0.3654
geo_num*origin	Nat	4	Nat	6	-0.02343	0.01299	75	-1.80	0.0752
geo_num*origin	Nat	4	Intro	7	-0.01105	0.01160	75	-0.95	0.3436
geo_num*origin	Nat	4	Intro	8	-0.01167	0.01354	75	-0.86	0.3918
geo_num*origin	Nat	4	Nat	8	0.008065	0.01254	75	0.64	0.5220

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Effect	origin	geo_num	_origin	_geo_num	Estimate	Error	DF	t Value	Pr > |t|
geo_num*origin	Nat	4	Intro	9	-0.01933	0.01354	75	-1.43	0.1576
geo_num*origin	Nat	4	Nat	9	-0.01881	0.01254	75	-1.50	0.1377
geo_num*origin	Nat	4	Intro	10	-0.01843	0.01254	75	-1.47	0.1456
geo_num*origin	Nat	4	Nat	10	-0.02267	0.01354	75	-1.67	0.0984
geo_num*origin	Intro	5	Nat	5	0.01754	0.01273	75	1.38	0.1724
geo_num*origin	Intro	5	Intro	6	-0.00500	0.01354	75	-0.37	0.7130
geo_num*origin	Intro	5	Nat	6	-0.01610	0.01299	75	-1.24	0.2189
geo_num*origin	Intro	5	Intro	7	-0.00372	0.01160	75	-0.32	0.7493
geo_num*origin	Intro	5	Intro	8	-0.00433	0.01354	75	-0.32	0.7499
geo_num*origin	Intro	5	Nat	8	0.01540	0.01254	75	1.23	0.2232
geo_num*origin	Intro	5	Intro	9	-0.01200	0.01354	75	-0.89	0.3785
geo_num*origin	Intro	5	Nat	9	-0.01148	0.01254	75	-0.92	0.3629
geo_num*origin	Intro	5	Intro	10	-0.01110	0.01254	75	-0.89	0.3787
geo_num*origin	Intro	5	Nat	10	-0.01533	0.01354	75	-1.13	0.2612
geo_num*origin	Nat	5	Intro	6	-0.02254	0.01273	75	-1.77	0.0807
geo_num*origin	Nat	5	Nat	6	-0.03365	0.009232	75	-3.64	0.0005
geo_num*origin	Nat	5	Intro	7	-0.02126	0.008344	75	-2.55	0.0129
geo_num*origin	Nat	5	Intro	8	-0.02188	0.01273	75	-1.72	0.0899
geo_num*origin	Nat	5	Nat	8	-0.00215	0.008589	75	-0.25	0.8034
geo_num*origin	Nat	5	Intro	9	-0.02954	0.01273	75	-2.32	0.0231
geo_num*origin	Nat	5	Nat	9	-0.02902	0.008589	75	-3.38	0.0012
geo_num*origin	Nat	5	Intro	10	-0.02865	0.008589	75	-3.34	0.0013
geo_num*origin	Nat	5	Nat	10	-0.03288	0.01273	75	-2.58	0.0118
geo_num*origin	Intro	6	Nat	6	-0.01110	0.01299	75	-0.85	0.3954
geo_num*origin	Intro	6	Intro	7	0.001281	0.01160	75	0.11	0.9124
geo_num*origin	Intro	6	Intro	8	0.000667	0.01354	75	0.05	0.9609
geo_num*origin	Intro	6	Nat	8	0.02040	0.01254	75	1.63	0.1079
geo_num*origin	Intro	6	Intro	9	-0.00700	0.01354	75	-0.52	0.6068
geo_num*origin	Intro	6	Nat	9	-0.00648	0.01254	75	-0.52	0.6070
geo_num*origin	Intro	6	Intro	10	-0.00610	0.01254	75	-0.49	0.6279
geo_num*origin	Intro	6	Nat	10	-0.01033	0.01354	75	-0.76	0.4479
geo_num*origin	Nat	6	Intro	7	0.01238	0.008730	75	1.42	0.1602
geo_num*origin	Nat	6	Intro	8	0.01177	0.01299	75	0.91	0.3677
geo_num*origin	Nat	6	Nat	8	0.03150	0.008959	75	3.52	0.0007
geo_num*origin	Nat	6	Intro	9	0.004102	0.01299	75	0.32	0.7530

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Effect	origin	geo_num	_origin	_geo_num	Estimate	Standard Error	DF	t Value	Pr > |t|
Differences of Least Squares Means									
geo_num*origin	Nat	6	Nat	9	0.004625	0.008959	75	0.52	0.6072
geo_num*origin	Nat	6	Intro	10	0.005000	0.008959	75	0.56	0.5784
geo_num*origin	Nat	6	Nat	10	0.000768	0.01299	75	0.06	0.9530
geo_num*origin	Intro	7	Intro	8	-0.00061	0.01160	75	-0.05	0.9579
geo_num*origin	Intro	7	Nat	8	0.01912	0.008047	75	2.38	0.0201
geo_num*origin	Intro	7	Intro	9	-0.00828	0.01160	75	-0.71	0.4774
geo_num*origin	Intro	7	Nat	9	-0.00776	0.008047	75	-0.96	0.3381
geo_num*origin	Intro	7	Intro	10	-0.00738	0.008047	75	-0.92	0.3619
geo_num*origin	Intro	7	Nat	10	-0.01161	0.01160	75	-1.00	0.3198
geo_num*origin	Intro	8	Nat	8	0.01973	0.01254	75	1.57	0.1197
geo_num*origin	Intro	8	Intro	9	-0.00767	0.01354	75	-0.57	0.5730
geo_num*origin	Intro	8	Nat	9	-0.00714	0.01254	75	-0.57	0.5705
geo_num*origin	Intro	8	Intro	10	-0.00677	0.01254	75	-0.54	0.5909
geo_num*origin	Intro	8	Nat	10	-0.01100	0.01354	75	-0.81	0.4193
geo_num*origin	Nat	8	Intro	9	-0.02740	0.01254	75	-2.19	0.0320
geo_num*origin	Nat	8	Nat	9	-0.02688	0.008294	75	-3.24	0.0018
geo_num*origin	Nat	8	Intro	10	-0.02650	0.008294	75	-3.20	0.0020
geo_num*origin	Nat	8	Nat	10	-0.03073	0.01254	75	-2.45	0.0166
geo_num*origin	Intro	9	Nat	9	0.000523	0.01254	75	0.04	0.9668
geo_num*origin	Intro	9	Intro	10	0.000898	0.01254	75	0.07	0.9431
geo_num*origin	Intro	9	Nat	10	-0.00333	0.01354	75	-0.25	0.8063
geo_num*origin	Nat	9	Intro	10	0.000375	0.008294	75	0.05	0.9641
geo_num*origin	Nat	9	Nat	10	-0.00386	0.01254	75	-0.31	0.7592
geo_num*origin	Intro	10	Nat	10	-0.00423	0.01254	75	-0.34	0.7367