Appendix I. Summary of the Principal Components Analysis for the first three principal components (PCs) of selection criteria used in modeling macrohabitat at Trinity bristle snails sample sites (n = 333) based on the CALVEG and CWHR systems. Abbreviations for forest cover-types and tree stand structural elements within each category are: 1) CALVEG REGIONAL DOMINANCE COVER-TYPE (DF = Douglas fir, DP = Douglas fir-Ponderosa pine [*Pinus ponderosa*]), DW = Douglas fir-white fir, QG = Oregon white oak [*Quercus garryana*], QC = Canyon live oak, QT = Tanoak-Pacific madrone, MP = mixed conifer pine); 2) CALVEG SAF COVER-TYPE (white fir = 211, Douglas fir = 229, Oregon white oak = 233, Sierra Nevada mixed conifer = 243, Ponderosa pine-Douglas fir = 244, California black oak [*Quercus kelloggii*] = 246, blue oak [*Quercus douglasii*]-digger pine [*P. sabiniana*] = 250); 3) CALVEG VEGETATION COVER-TYPE; 4) CWHR COVER-TYPE (DFR = Douglas fir, MHW = montane hardwood, SMC = Sierra mixed conifer, WFR = white fir; MCP = montane chaparral, AGS = annual grass, BOP = blue oak-digger pine; 5) CWHR LIFE-FORM COVER-TYPE (WHR-CON = conifer forest, CWHR-HDW = hardwood forest, CWHR-MIX = mixed conifer-hardwood forest, CHDW = Hardwood forest-woodland, CHEB = herbaceous dominated habitats, CSHB = shrub dominated habitats); 6) CALVEG AGGREGATION TYPE (G = grouped aggregations, H = homogeneous aggregations); 7) CALVEG CON-CFA = conifer forest); 8) CALVEG HDW-CFA = hardwood forest); and 9) CALVEG OS-TREE DIAMETER CLASS (overstory tree diameter breast height [DBH]).

Category and GIS selection criteria	Principal components		
Forest cover-type variables (total variance explained = 86.5%)	PC I (43.9%)	PC II (29.0%)	PC III (13.6%)
1. CALVEG REGIONAL DOMINANCE COVER-TYPE	0.750	0.103	0.584
2. CALVEG SAF COVER-TYPE	-0.514	0.679	0.380
3. CALVEG VEGETATION COVER-TYPE	-0.646	0.620	-0.023
4. CWHR COVER-TYPE	0.819	0.389	-0.029
5. CWHR LIFE-FORM COVER-TYPE	0.531	0.665	-0.440
Forest stand and tree structure (total variance explained = 84.6%)	PC I (36.7%)	PC II (31.3%)	P III (16.6%)
6. CALVEG AGGREGATION-TYPE	0.757	-0.275	-0.427
7. CALVEG CON-CFA $\geq$ 4.8 m	0.692	0.454	-0.159
8. CALVEG HWD-CFA $\geq$ 4.8 m	0.581	-0.568	0.578
9. CALVEG OS-TREE DIAMETER CLASS $\geq$ 2.1 m	0.227	0.806	0.352
Minimum monthly temperatures C° (Total variance explained = 94.3%)	PC I (70.5%)	PC II (20.3%)	P III (3.5%)
10. January $\geq$ -3.3 and $\leq$ 1.1	0.900	0.062	0.307
11. February $\geq$ -2.7 and $\leq$ 2.2	0.887	-0.392	0.109
12. March $\geq$ -2.8 and $\leq$ 3.3	0.824	-0.532	0.021
13. April $\geq$ -2.2 and $\leq$ 4.4	0.637	-0.732	-0.162
14. May $\geq$ 2.2 and $\leq$ 6.7	0.891	-0.331	0.155
15. June $\geq$ 6.1 and $\leq$ 9.4	0.951	0.072	0.132
16. July $\geq$ 8.9 and $\leq$ 12.8	0.817	0.497	-0.047
17. August $\geq$ 8.3 and $\leq$ 12.2	0.836	0.451	0.077
18. September $\geq$ 5.6 and $\leq$ 11.1	0.636	0.737	-0.175
19. October $\geq$ 2.2 and $\leq$ 7.8	0.697	0.678	-0.052
20. November $\geq$ -0.6 and $\leq$ 3.3	0.827	-0.236	-0.489
21. December $\geq$ -2.2 and $\leq$ 1.7	0.942	-0.178	0.013
22 Annual average $\geq$ 2.2 and $\leq$ 6.1	0.974	0.062	-0.038
	PC I (89.2%)	PC II (4.1%)	P III (3.2%)

Category and GIS selection criteria	Principal components		
Maximum monthly temperature C° (total variance explained = 96.5%)			
23. January ≥ 6.7 and ≤ 10.0	0.914	-0.040	-0.386
24. February ≥ 9.4 and ≤ 12.8	0.860	-0.492	-0.073
25. March ≥ 12.2 and ≤ 16.1	0.910	-0.396	-0.024
26. April ≥ 15.6 and ≤ 20.0	0.971	0.007	0.174
27. May ≥ 20.6 and ≤ 25.0	0.972	0.019	0.201
28. June ≥ 25.6 and ≤ 30.0	0.980	0.027	0.126
29. July ≥ 30.6 and ≤ 34.4	0.975	0.090	0.151
30. August ≥ 30.6 and ≤ 34.4	0.961	0.025	0.250
31. September ≥ 27.2 and ≤ 34.4	0.910	0.161	0.001
32. October ≥ 20.0 and ≤ 23.3	0.956	0.126	-0.123
33. November ≥ 10.0 and ≤ 13.3	0.956	0.111	-0.118
34. December ≥ 6.1 and ≤ 9.4	0.914	0.246	-0.255
35. Annual average ≥ 17.8 and ≤ 21.7	0.992	0.061	0.026
Monthly precipitation cm (total variance explained = 83.2%)	PC I (65.8%)	PC II (8.2%)	PC III (8.2%)
36. January ≥ 16.8 and ≤ 30.5	0.952	0.058	0.057
37. February ≥ 13.2 and ≤ 26.2	0.970	0.023	0.030
38. March ≥ 11.9 and ≤ 23.6	0.985	0.011	0.019
39. April ≥ 5.7 and ≤ 10.9	0.954	-0.010	-0.068
40. May ≥ 1.9 and ≤ 4.6	0.911	0.129	0.082
41. June ≥ 0.6 and ≤ 2.0	0.318	0.144	0.853
42. July ≥ 0.6	-0.085	0.786	-0.083
43. August ≥ 0.6 and ≤ 2.0	0.593	0.094	-0.546
44. September ≥ 3.2 and ≤ 4.6	0.285	-0.720	0.045
45. October ≥ 5.7 and ≤ 12.2	0.891	-0.090	-0.109
46. November ≥ 15.9 and ≤ 29.7	0.966	0.016	0.015
47. December ≥ 17.2 and ≤ 31.0	0.958	0.037	0.007
48. Annual total ≥ 99.1 and ≤ 170.2	0.991	0.017	0.005
Topographic/distance to stream (total variance explained = 76.9%)	PC I (37.7%)	PC II (24.9%)	P III (14.4%)
49. Aspect $\leq 60°$	0.665	0.453	-0.080
50. Distance to nearest stream (m) $\geq 0.114 \leq 357.8$	-0.589	0.560	0.255
51. Elevation (m) ≥ 204 and ≤ 1605	-0.803	-0.042	0.347
52. Hill-shade ≥ 18 and ≤ 254	0.275	0.772	0.201
53. Slope $\leq 46°$	0.611	-0.355	0.699