APPENDIX A. Spatial patterns and simulations for all tree species from 1999 to 2012.

FIG. A1A. Spatial patterns for all trees ≥5 cm present in 1999 that survived or died by 2012, as well all trees that recruited (ingrowth) into the ≥5 cm size class by 2012.

FIG. A1B. Spatial patterns for all *Tsuga heterophylla* ≥5 cm present in 1999 that survived or died by 2012, as well those that recruited (ingrowth) into the ≥5 cm size class by 2012.

FIG. A1C. Spatial patterns for all *Pseudotsuga menziesii* ≥5 cm present in 1999 that survived or died by 2012. No *Pseudotsuga menziesii* ingrowth recruited into the ≥5 cm size class between 1999 and 2012.

FIG. A1D. Spatial patterns for *Thuja plicata* ≥5 cm present in 1999 that survived or died by 2012. No *Thuja plicata* ingrowth recruited into the ≥5 cm size class between 1999 and 2012.

FIG. A1E. Spatial patterns for all *Taxus brevifolia* ≥5 cm present in 1999 that survived or died by 2012, as well those that recruited (ingrowth) into the ≥5 cm size class by 2012.

FIG. A1F. Spatial patterns for all *Abies amabilis* ≥5 cm present in 1999 that survived or died by 2012, as well all trees that recruited (ingrowth) into the ≥5 cm by 2012.

FIG. A2. Spatial patterns of tree mortality within the initial population of live trees. Values above (below) the simulation envelope indicate aggregated (dispersed) mortality. Confidence envelopes are based on n = 2000 simulations of random mortality.

FIG. A3. Spatial relationships between dead and surviving trees. Values above (below) the simulation envelope indicate that dead and surviving trees are attracted (segregated). Confidence envelopes are based on n = 2000 simulations of random mortality.

FIG. A4. Spatial pattern of ingrowth. Values above (below) the simulation envelope indicate that ingrowth is more aggregated (dispersed) than expected. Confidence envelopes are based on n = 2000 simulations of random ingrowth as an inhomogeneous Poisson process with intensity estimated from observed ingrowth locations.

Fig A5. Change to tree patterns due to ingrowth. Values above (below) the simulation envelope indicate that the pattern of surviving trees became more aggregated (uniform) due to ingrowth. Species abbreviations: All, all species pooled; TSHE, *Tsuga heterophylla*; ABAM, *Abies amabilis*.

FIG . A6. Intraspecific density-dependent mortality. Values above (below) the simulation envelope indicate that the initial 1999 neighborhoods of trees that died by 2012 were more (less) crowded the initial neighborhoods of trees that survived to 2012. Confidence envelopes are based on n = 2000 simulations of random mortality.

FIG. A7. Change in pattern due to mortality. Values above (below) the simulation envelope indicate that the pattern of surviving trees became more aggregated (uniform) due to mortality. Confidence envelopes are based on n = 2000 simulations of random mortality.

FIG. A8. Density-dependent mortality due to interspecific competition. Values above (below) the simulation envelope indicate that the initial 1999 neighborhoods of trees of the focal species that died by 2012 were more (less) crowded with heterospecifics than the initial neighborhoods of trees of the focal species that survived to 2012. Confidence envelopes are based on $n = 2000$ simulations of random mortality.

FIG. A9. Density-dependent mortality due to competition with *Tsuga heterophylla*. Values above (below) the simulation envelope indicate that the initial 1999 neighborhoods of trees of the focal species that died by 2012 were more (less) crowded with competing *Tsuga* than the initial neighborhoods of trees of the focal species that survived to 2012. Confidence envelopes are based on n = 2000 simulations of random mortality.

FIG. A10. Density-dependent mortality due to competition with large-diameter *Tsuga heterophylla* (dbh ≥70 cm). Values above (below) the simulation envelope indicate that the initial 1999 neighborhoods of trees of the focal species that died by 2012 were more (less) crowded with competing large-diameter *Tsuga* than the initial neighborhoods of trees of the focal species that survived to 2012. Confidence envelopes are based on n = 2000 simulations of random mortality.