

A National Assessment of Forest Fragmentation Change for the Conterminous United States. Wickham, JD (U.S. EPA, United States, wickham.james@epa.gov)

Determination of land-cover change is important for ecological assessments and environmental planning. We used national land-cover change data, resolved at 0.09 ha per pixel, to assess change in forest fragmentation for the conterminous United States. Temporal change in fragmentation was assessed by measuring forest density in five logarithmically scaled moving windows that ranged in size from approximately 2 to 5300 ha. The logarithmically scaled forest density maps were classified using thresholds of 40% (patch), 60% (dominant), and 90% (interior) to analyze temporal change in fragmentation. Loss of dominant forest doubled from the smallest to the largest spatial scale, and interior loss increased approximately 80% over the same scale range. Conversely, loss of the patch forest class was constant over the range of scales examined and lower in magnitude overall. These results indicate the forest loss is changing the spatial scale at which forest dominates the landscape. We complemented the moving window analysis by organizing the forest land-cover data into the hub-and-corridor networks (hereafter networks) that are popular in green infrastructure assessments. Consistent with the fragmentation results, most forested networks were small in area, and loss of both hub and corridor dominated much of the United States.