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Comments: Here in the New York State Catskill Forest Preserve we have mapped 36,450 hectares of - largely unrecognized - mature and old growth forest. This forest protects the water supply of New York City and provides recreational and ecosystem services to thousands of residents and visitors every year. The forest at the highest elevations is evergreen Spruce - Fir. The slope forest is mixed Hemlock - northern hardwoods. Mapping was accomplished using land use records and field work over fifty years. Traditional objective, positive criteria were used to identify the age and status of the forest. We also used old growth indicator species of lichens and bryophytes to confirm our findings. Although these forests in the northeastern United States are, in many ways, different from the federal lands of the western states, they can inform the definition of mature and old growth forests wherever they occur.

Our observation that the mature and old growth forest is not uniform is a cautionary note to anyone seeking a definition.. The forest varies on a meter to meter scale. Pockets of old growth with big, old trees are interspersed within the matrix forest. Stunted old growth trees may go unnoticed on ridges. Variation is the rule. A great deal of this variation is not understood. Research on forest dynamics lags the study of agricultural lands. Soil science is especially wanting. It may be premature to presume a definition is always possible. Many forests must be classified as incertae sedis -uncertain placement.

We value land use history in defining forests. Historical documents guide us in our field work. They are the best predictors of mature and old growth status. We sincerely hope our work can inform the important mission of the Forest Service and the Bureau of Land Management. These invaluable resources are threatened by climate change and management must become less passive.

Recommendations for criteria to define mature and old growth forests:

Include a metric to quantify the range of variation in the stand.
Include a land use history in any definition.