**Decay of Hard Wood Products Paper Outline**

1. Introduction of role of product decay in current carbon contribution calculation by USFS
   1. How it is calculated (exponential)
   2. How half-lives differ among products
   3. How half-lives change with time
   4. How it contributes to total
2. Qualitative reasons for changing decay from exponential
   1. Reference Laurel’s paper
   2. Exponential implies initial sharp decay – probably not realistic
   3. Look for more papers talking about qualitative decay of products
   4. Show graphically what exponential implies
3. Introduction of alternate distributions
   1. Explain chi-squared and standard gamma, and how they differ from exponential mathematically, statistically, probabilistically, etc
   2. Show graphically what they imply about decay of products vs exponential
4. Quantitative reasons for changing decay from exponential
   1. Run half-lives given by USFS through decay lookup tables and overall calculate change in carbon contribution by using different decay models
      1. Show how tables were created, how half-lives were used, etc
   2. Calculate change in carbon contribution by using different decay models in individual end products – ie, how does the length of the half-life interact with different decays? How sensitive is decay to changing half-life? What end products would a change in decay most “help”, or effect quantitatively?
   3. Why does a change in decay change carbon contribution? Discuss thickness of tails, rate of decay and changing rate of decay, show graphically where and how the change is happening
5. Summary and recommendations
   1. How might this be used, aside from just implementing a different decay method, what products/half lives should be emphasized policy-wise? Should 100-year cutoff/permanence be changed?