

Just wanted to drop you a line to let you know how much I appreciate yours and Conor's contributions to BioSum by way of building the comprehensive OpCost tool for estimating the costs of forest management operations by integrating the 100+ relevant cost studies that bear on this question. Cost estimation is truly a complex, even monumental undertaking, with many moving parts and innumerable details to keep track of, so this contribution is truly significant and valuable. OpCost now performs admirably in generating estimates across a really broad range of conditions, and relegates to the past our long struggles using FRCS, initiated by trying to estimate costs for situations that may have been atypical when the equations were developed, such that FRCS often failed to provide any estimate. Conor's close coordination with analysts and programmers on the Forest Service led BioSum Development Team allowed for a tight integration of OpCost function with the BioSum software in the BioSum Edition of the software, ensuring maximal flexibility in accounting for costs and individual cost components such as chipping and move-in. I see the Stand-alone Edition of OpCost (SE) as a great way to explore and test different harvest system options interactively, and predict that it will enjoy broad use in the forest management and forest engineering community once they are made aware of it. I regard Conor's commitment to seeing both versions through all the way to completion, including full compatibility and consistency between software editions as well as three significant contributions critical to the success of any simulation software: validation (as summarized in the IJFE manuscript), user documentation (through the forthcoming GTR to be published by PNW), and the programmer's documentation that Conor is working hard to complete now, as laudable and deserving of kudos. While it has been a long road, with plenty of unanticipated challenges that we have worked through, I believe that the OpCost component of the JFSP grant for which we are jointly responsible has accomplished the project goals and fully delivered on our commitments. This development effort has in many ways transformed BioSum, moving the treatment cost estimation component of the system from the least reliable and most problematic component of the overall workflow to perhaps the most solid, trusted, and reliable one. While it took a village to get there, Conor's dogged persistence in achieving issue resolution and cheerful willingness to revisit anomalies until they could be definitively dispatched, contributed to the successful outcome we now find ourselves enjoying.