Corrigendum

Corrigendum: "Energy and water balance of two contrasting loblolly pine plantations on the lower coastal plain of North Carolina, USA" [Foreco 259: 1299–1310]

A. Noormets [a,*], G. Sun [b], S.G. McNulty [b], M.J. Gavazzi [b], J. Chen [c], J.-C. Domec [a], J.S. King [a], D.M. Amatya [d], R.W. Skaggs [e]

[a] Department of Forestry and Environmental Resources, North Carolina State University, Raleigh, NC 27695, United States
[b] Southern Global Change Program, Southern Research Station, USDA Forest Service, Raleigh, NC 27606, United States
[c] Department of Earth, Ecological, and Environmental Sciences, University of Toledo, Toledo, OH 43606, United States
[d] Center for Forested Wetlands Research, USDA Forest Service, Cordesville, SC 29434, United States
[e] Department of Biological and Agricultural Engineering, North Carolina State University, Raleigh, NC 27695, United States

In Sun et al. (2010) we reported the albedos (A) for two loblolly pine plantations in the range of 0.22–0.38 (Table 5 in Sun et al., 2010). They were estimated according to Gholz and Clark (2002) as:

$$A = 1 - \frac{R_n}{R_g}$$

where Rn is net radiation and Rg is global radiation. This equation is correct if Rn and Rg are expressed on the same basis, but actually Rn is the net balance of both short- and longwave radiation, whereas Rg is only incoming shortwave radiation (Jones, 1994). The inequal basis of these two quantities results in a higher estimated albedo than obtained from the direct ratio of outgoing to incoming shortwave radiation. Given that the approach of Gholz and Clark (2002) is commonly used in hydrological and ecological studies, there may be a dichotomy of results in the published literature that are attributable to the difference in methodology rather than in surface properties. We discourage further use of the Gholz and Clark (2002) approach in calculating albedo as it is not comparable with other methods. The true shortwave reflectivities for our loblolly pine plantations were 0.11–0.12 at the mid-rotation (LP) site and 0.15–0.18 at the recent clear cut (CC) site with distinctly subdued seasonalities compared to those originally reported. The seasonality of the estimates reported in Sun et al. (2010) is the result the seasonality in the ratio of long- to shortwave radiation.

References

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