Dual discounting in renewable resource planning under risk

Mo Zhou
Department of Forestry and Natural Resources

Renewable resource planning and management projects, in most cases, entail evaluating economic and ecological criteria in the long term. For such projects, ecological criteria need to be discounted at a smaller rate than that for economic criteria, based on the concept of strong sustainability and that the growth rate of ecosystem services is lower than the economic growth rate. With a case study of managing public forestlands in the US Pacific Northwestern region for both timber return and habitat conservation for the northern spotted owl (Strix occidentalis caurina), we illustrate the impacts that the dual-discounting scheme has on the trade-off between conflicting management objectives, the temporal development of the portion of the forestlands suitable for owl habitats, as well as its stead-state expected value and standard deviation.