High severity, stand-replacing wildfires are increasing in California's forests. There is a critical need for increased efforts in fire management via prescribed fire, but the logistical infeasibility of widespread fire application during short 'burn windows' of favorable ecological, weather and fuels conditions drastically limits implementation. In the Cleveland National Forest (CNF) land managers seek to extend their prescribed burn window in order to get more prescribed fire on the ground. Though the need for more prescribed fire management is urgent, land managers are limited by time of year and fuel buildup, but also by the phenology of species of concern. Due to drought and golden spotted oak borer (GSOB) presence, the CNF burn window is restricted to periods of black oak (*Quercus kelloggii*) dormancy. However, this restriction was put in place based on the precautionary principle (not wanting to do harm to oaks in the absence of data). Our experiment set out to test whether extending their burn season beyond black oak leaf-out in the spring would result in increased black oak mortality or negatively affect black oak regeneration. We conducted a controlled burn experiment, with prescribed burns applied to experimental plots either prior two oak budburst or 3-6 weeks following bud burst, replicated in two climatically disparate years. We tracked the initial burn severity of mature and sapling oaks, as well as survival and resprouting for multiple years after the burn. In addition, we examine black oak physiology through xylem pressure potentials to understand sub-lethal physiological stress that could result in eventual lagged mortality.