The 20th century witnessed the widespread net return of forests in sites across the world. A crucial science need is to complement understanding of forest loss with new attention to the socioecological drivers of forest recovery and sustainability. This is critical to maintain second- and third-generation forests and to anticipate their emergence globally. We focus particular attention on the under-examined human and ecological couplings that give rise to specific forest forms and functions. This talk will discuss the research of the Appalachian Ohio Forest Research Group, an ideal laboratory to explore such questions.