Ecological restoration is an emerging field that has grown rapidly in the past three decades. Policymakers and the public have embraced restoration as an important solution for offsetting the impacts of development projects and adapting to climate change. The field of ecological restoration, however, is currently at a theoretical crossroads, with significant uncertainties surrounding the motivations and objectives of ecological restoration projects. The lack of consensus is complicated by the dynamic nature of ecosystem interactions and by the emergence of novel ecosystems as a result of climate change. Without ethical and ecological guidelines for restoration in our rapidly changing and increasingly degraded environment, we run the risk of entering an era of “designer ecosystems” where politicians, ecologists, resource managers, and engineers shape ecosystems to benefit human interests without considering the broader ecological implications. This paper presents a literature review of the current understanding and criticism of the three primary methods used to determine restoration objectives, along with an analysis of the motivations driving restoration projects, and provides suggestions for the future direction of ecological restoration.