

Invasive Sleeper Cell Plant Seedbanks: Terrorists of Eradication Program

John Knapp, The Nature Conservancy, 532 E. Main Street, Suite 200, Ventura, CA USA 93001

Invasive plant eradications are becoming more common as resource managers advance eradication strategies and techniques. Eradication of invasive plant species is considered more difficult than the eradication of invasive vertebrates due to the longevity and unpredictable nature of soil seedbanks. Invasive plant seedbanks behave similar to terrorist sleeper cells by lying dormant until a trigger event is signaled. Once emerged, often at unexpected times, germinated seed can go undetected and if they become reproductive can set eradications back to zero. Successful eradications must meet three key criteria: 1) detect all individuals, 2) removal all individuals, and 3) outpace reproduction. Invasive plant seedbanks can make meeting eradication criteria extremely difficult. Small seedlings are tough to detect, which makes treating all individuals and outpacing reproduction problematic. Seedbanks can also plague eradication programs by contaminating eradication personnel who then spread seed unknowingly on their person or equipment. Therefore, strict biosecurity measures must be put in place to avoid contaminating weed free areas. The presence or perceived presence of a latent soil seedbank can make it difficult for resource managers to declare eradication success. Seedbanks can be managed in a variety of ways; 1) stimulating seedbanks through natural processes such as fire, 2) controlled using pre-emergent herbicides, or possibly other more creative ways yet tested. Resource managers who initiate plant eradications will ultimately have to manage a soil seedbank if they are to be successful, and today there are advances in seedbank management yet to be developed.