



Linking Traits of Invasive Annual Grasses to Degradation of Ecological Processes

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Exotic annual grasses are fundamentally different than the native perennial species that are displaced by their invasion in the Great Basin, USA. The annual growth form provides many mechanistic advantages including high growth rates, favorable response to resource pulses, and high phenotypic plasticity. My talk reviews how these mechanisms provide competitive advantages at small ecological scales, and create positive feedbacks, characterized by alteration of hydrology, soil biochemistry, nutrient cycling, and litter abundance at large ecological scales. Thus, invasive annual grasses radically transform ecological processes such that native perennial species cannot be reestablished without managerial inputs that may be unrealistic at large scales. In addition, I discuss tradeoffs associated with adopting potential ecological assembly rules and managerial strategies to reestablish key ecological processes.

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