

Submission Type

Oral Presentation

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Presenter Organization

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Presenter Title

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Presenter Bio

Morgan Roche is a biologist at the U.S. Geological Survey Fort Collins Science Center in Fort Collins, CO. Her research focuses on understanding the causes and consequences of biological invasions to help inform invasive species management decisions.

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Abstract Title

Beyond the grass-fire cycle: The effects of fire and non-fire disturbance on annual grass invasion

Abstract Summary

Invasive annual grasses are a major management challenge across sagebrush ecosystems. It is clear their expansion is driven in part by the grass-fire cycle, a feedback loop in which invasive annual grasses promote frequent fires, and then often dominate in burned landscapes. However invasive annual grasses also establish and dominate in unburned areas, indicating that non-fire processes also contribute to their spread. To determine the relative influence of non-fire disturbance compared to the known effects of fire on invasive annual grass expansion, we quantified timing, proximity and spread rate for multiple putative vectors of annual grass invasion such as roads, fuel breaks, wildfire, and energy infrastructure. Vector behavior varied across regions, and we identified areas of higher and lower invasion risk for each putative vector. This work can help practitioners identify which vect

Conference Themes

- Prevention
- Monitoring
- Restoration

TAXA

- Terrestrial Plants

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Abstract: Invasive annual grasses are a major management challenge across sagebrush ecosystems. It is clear their expansion is driven in part by the grass-fire cycle, a feedback loop in which invasive annual grasses promote frequent fires, and then often dominate in burned landscapes. However invasive annual grasses also establish and dominate in unburned areas, indicating that non-fire processes also contribute to their spread. To determine the relative influence of non-fire disturbance compared to the known effects of fire on invasive annual grass expansion, we quantified timing, proximity and spread rate for multiple putative vectors of annual grass invasion such as roads, fuel breaks, wildfire, and energy infrastructure. Vector behavior varied across regions, and we identified areas of higher and lower invasion risk for each putative vector. This work can help practitioners identify which vectors are most important to manage in particular ecological contexts to limit the spread of invasive annual grasses.