



Forest Service
U.S. DEPARTMENT OF AGRICULTURE



Rocky Mountain Research Station Science You Can Use *(in 5 minutes)*

NOVEMBER 2024

When More Blackberries Is a Bad Thing: Invasive Plant Management Support

What plants can survive fire, can displace native plants, and are difficult to manage? Among others are these eight nonnative species in the western United States: [buffelgrass](#), [cutleaf blackberry](#), [diffuse knapweed](#), [Himalayan blackberry](#), [Sahara mustard](#), [spotted knapweed](#), [ventenata](#), and [yellow starthistle](#). Unfortunately, one of the reasons that invasive plants are so hard to manage is because there is no one-size-fits-all approach—each species has its own tricks enabling it to thrive and wreak havoc.

This is where the Fire Effects Information System (FEIS) can help. FEIS is an [online searchable database](#) of research syntheses about how fire affects ecosystems and individual species. In the past few years, FEIS ecologists scrutinized and synthesized the scientific literature and published “Species Reviews” on each of these invasive species. Whether it’s causing unpalatable milk (diffuse knapweed), replacing livestock forage in rangeland (ventenata), hindering wildlife movement (Himalayan blackberry), or causing fires to burn farther and hotter than ever before (buffelgrass), invasive species have made their mark on



Invading buffelgrass increases fuel continuity in Sonoran desert scrub. Photo courtesy of Janet Nickerman, Region 3 Pesticide / Invasive Species Specialist.

the western United States. As with all Species Reviews, those on invasive species are written to provide guidance and information, especially to land managers.

According to Robin Innes, a technical information specialist for the Fire, Fuel, and Smoke Program at the Rocky Mountain Research Station, the purpose of Species Reviews is myriad: They not only include information on the plant’s distribution, seasonal development, and regeneration processes, but they also provide information on the plant’s response to fire and

effects of invasion on fuels and fire regimes. They also describe control methods and whether prescribed fire—alone or in combination with other methods—is an effective control option.

Many of these plants arrived in the United States from Europe, Asia, and Africa in the 1800s. Most snuck rides from overseas, but a couple were introduced intentionally. Himalayan blackberry was introduced by a botanist who appreciated its abundant blackberry production and buffelgrass was introduced as livestock forage. Having made



themselves at home in the United States, they are causing substantial negative ecological and economic impacts. Some change how fires burn and many degrade wildlife habitat and forage.

Forest management plans throughout the West include management recommendations for one or all these species. The [Forest Service National Strategic Framework](#) for Invasive Species Management recommends prioritizing and implementing treatments, and using FEIS syntheses on individual species provides researched information to help managers make scientifically sound decisions. While each invasive species has unique characteristics promoting its success, one of the things they have in common is that they all establish well after disturbance. Innes states: “Prevention is key to nonnative invasive plant management. Once established, an integrated management approach that includes a variety of techniques is generally the most effective at controlling them. Ensuring the establishment and maintenance of desirable plant communities after disturbance aids in prevention as well as in long-term control.”

Further Reading

Fire creates favorable conditions for nonnative invasive plants, which have a variety of regeneration characteristics that may contribute to their postfire invasion success. Click the species name to access the Species Review.

Buffelgrass:					
Cutleaf blackberry:					
Diffuse knapweed:					
Himalayan blackberry:					
Sahara mustard:					
Spotted knapweed:					
Ventenata:					
Yellow starthistle:					
 Annual		Resprouts after top-kill			
 Biennial		Long distance off-site colonizer			
 Perennial		Establishes from the postfire seed bank			

Key findings

- Nonnative, invasive plant syntheses in the Fire Effects Information System (FEIS) provide comprehensive information on fire ecology and management and are especially useful to land managers.
- Due to the variety of biological and ecological characteristics of each species, once established, there is no one solution to limit the spread and minimize the effects of invasive species on native ecosystems.
- The Forest Service National Strategic Framework for Invasive Species Management prioritizes the control of invasive species, and FEIS syntheses help managers to determine suitable control strategies, especially as related to fire.
- FEIS has Species Reviews on 142 nonnative, invasive plant species. To access these Species Reviews, use the “lifeform,” “nativity,” and “invasiveness” filters in FEIS.



Yellow starthistle can displace native plants and form dense monocultures. Photo courtesy of Steve Dewey, Utah State University, Bugwood.org.

Principal Investigator

[Robin Innes](#) is a technical writer and editor for the Fire Modeling Institute. She writes and edits three products for the Fire Effects Information System (FEIS): literature reviews of plant and wildlife species’ relationship with fire; fire studies that contain detailed descriptions of a particular fire and its effects on vegetation; and syntheses that describe historical and current fire regimes of plant communities in specific regions.

[Heather Leach](#) is the author of this Science You Can Use in 5 minutes.

The Rocky Mountain Research Station is one of seven units within USDA Forest Service Research & Development. RMRS maintains 14 field laboratories throughout a 12-state geography encompassing parts of the Great Basin, Southwest, Rocky Mountains, and the Great Plains. While anchored in the geography of the West, our research is global in scale. RMRS also administers and conducts research on 14 experimental forests, ranges and watersheds and maintains long-term research databases for these areas. Our science improves lives and landscapes. More information about Forest Service research in the Rocky Mountain Region can be found here: <https://research.fs.usda.gov/rmrs>.

Click Here To
SUBSCRIBE
To Future SYCU