



Preparing for a potential record desert fire season in 2027

The next big desert fire season may be fueled this winter

Forecasters and land managers in the Southwestern U.S. are closely watching the 2026–2027 very strong El Niño [1]. El Niño events often are associated with a wet fall and winter. At higher forest elevations, this usually means a mild fire season in the ensuing summer [2, 3]. In the Mojave and Sonoran Deserts, however, a wet fall and winter frequently lead to widespread establishment of non-native winter annual grasses and forbs like red brome (*Bromus rubens*), Mediterranean grass (*Schismus barbatus*, *S. arabicus*), and Sahara Mustard (*Brassica tournefortii*). When these winter annuals die and cure in the arid foresummer, they can fuel large and destructive wildfires, driving a self-perpetuating grass-fire cycle that eventually transforms less fire-prone desert shrublands to flammable grasslands [4-7]. Historically, the 2005 fire season provides a clear example of how a wet cool season during an El Niño event can set the stage for destructive desert fires in the following summer. In early summer 2005, invasive fuels helped carry some of the largest wildfires ever in the Sonoran and Mojave Deserts, totaling 1.2 million acres of area burned [7]. That same year in central Arizona, the Cave Creek Complex Fire alone cost \$18.3 million in direct fire suppression and caused an estimated \$17 million in structural and resource damages [8]. **This year's very strong El Niño**, which already has led to high hurricane activity in the Eastern Pacific and a wet early fall in the desert Southwest, **could produce another strong pulse of annual, non-native fuels and large, synchronous desert wildfires - threatening natural resources, infrastructure, and population centers.** What happens next will depend on where fuels accumulate, how continuous they become across the landscape, and when and where dry and windy conditions will develop as those fuels cure.

CALL TO ACTION:

Prepare now for a potentially big wildland fire season in the desert



Outside of neighborhoods and between the built environment lays a dangerous fuel bed of invasive plants in the Phoenix-metro area. Credit: Molly McCormick



A desert-adapted fuel break technique that reduces fire risk to infrastructure protecting native vegetation. Pioneered by Siphon Draw Fire and Fuels in Apache Junction. Credit: Alan Sinclair



Aftermath of the Bush Fire outside of Globe, AZ showing mortality and/or top kill of nearly all the native vegetation. When this occurs, invasive species rapidly spread and the desert begins to disappear under the new grassland. Credit: Molly McCormick

When wet winters become a fire problem

Since 2000, invasive-fueled wildfire has expanded in frequency and scale across portions of the Sonoran and Mojave Deserts, as invasive annual plants increase the continuity of fuels across landscapes that historically burned infrequently [6, 7, 9]. The wildfire risk is amplified by established seedbanks of invasive plants, an ever-growing wildland-urban interface (WUI), and more recent invasives such as stinknet (*Oncosiphon pilulifer*) that can spread rapidly during wet winters [10-12]. NOAA's September 2026 outlook reported a greater than 90% chance of a very strong El Niño during fall and winter 2026–27, while seasonal outlooks favor wetter-than-normal conditions across much of the southern U.S. during the fall and winter [1]. That combination, sometimes in back-to-back years, commonly triggers a severe fire season in the Mojave [13] and Sonoran Deserts [14]. The forecasting of an El Niño event, particularly a very strong one nearly a year ahead of next desert fire season, gives managers both time and reason to track both invasive species spread and phenology and prepare. **At increasing risk are valuable conservation lands, critical infrastructure, and rapidly expanding populated areas around Phoenix, Tucson, Las Vegas, Henderson, Kingman, Lake Havasu, Palm Springs/Coachella, Victorville, Lancaster/Palmdale, and many others.**

We can see where risk is building

Federal and academic scientists currently are developing tools to help managers identify where invasive fuels are concentrated, where fire connectivity is changing, and which treatments may be most effective. Landscape-scale mapping has identified persistent, productive invasive-grass hotspots across the Mojave Desert [15], while modeling in the Sonoran Desert helps visualize predictive maps of fire ignition risk, fire spread, intact native vegetation, and threat [16]. A growing number of complementary efforts across federal agencies and universities are extending this work, mapping and forecasting where invasive fuels and fire risk are likely to concentrate so that fuel management and fire suppression resources can be directed to the areas where they are needed most.

Scientific Tools for Risk Mapping

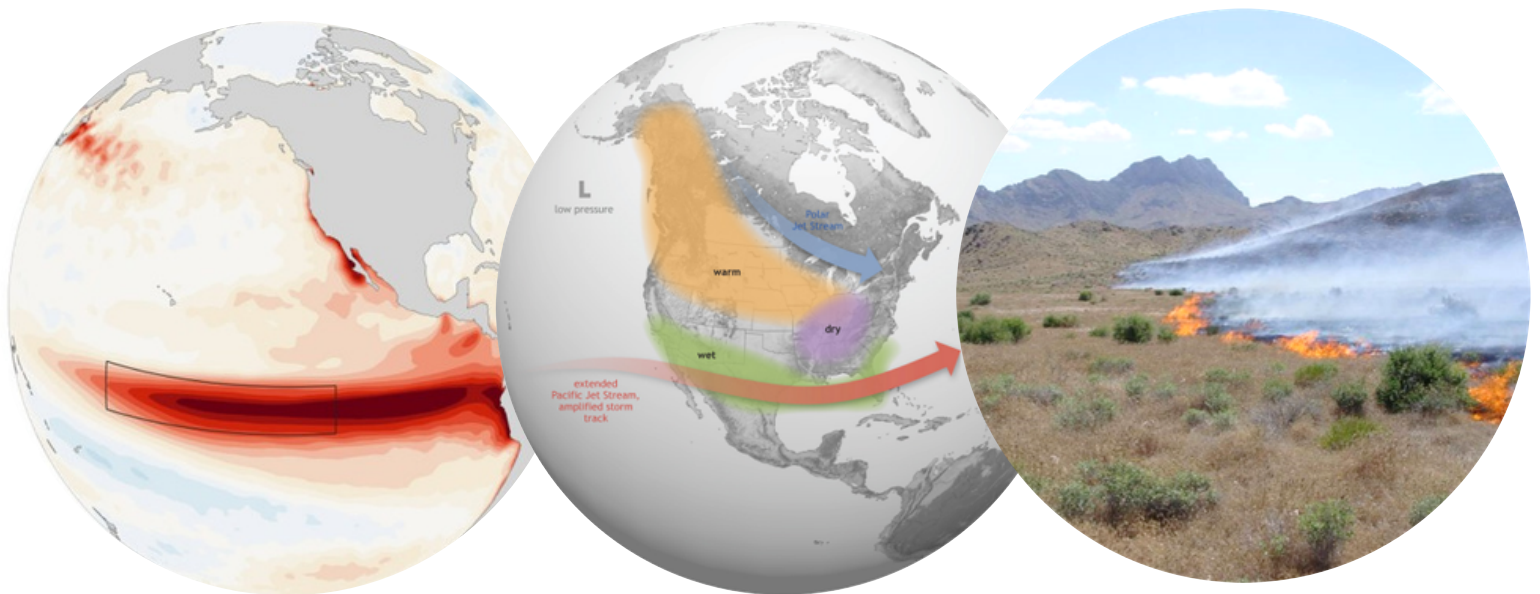
[Hot spots mapped in the Mojave Desert \[15\]](#)



[Sonoran Desert Fire Risk Tool \[16\]](#)



[Estimated Invasive Grass Fuel \[17\]](#)



El Niño is a warming of ocean temperature in the Pacific Ocean that shifts the jet stream and can bring wetter conditions to the Southwest U.S. This in turn catalyzes growth of invasive species in the Sonoran Desert, causing an increased risk of damaging wildland fire.

Conceptual figure above adapts graphics from the Washington Post (left panel); NOAA (middle panel), and USGS (right panel)

We can limit the damage by acting now

After a wet winter, invasive plants can fuel wildfires that spread into communities. As these plants dry with warming spring temperatures, response options will narrow and suppression costs will rise. No-regret actions and risk-triggered readiness plans could save millions of dollars and prevent harm to life and structures.



Actions for policy makers

- Review contingency plans, including triggers for escalating preparedness and response.
- Establish or expand state contingency funds that can be triggered by rainfall and fuel thresholds.
- Prioritize invasive-plant management funding in areas where risk is highest.



Actions for land and fuels managers

- Identify communities and critical infrastructure exposed to expanding desert fire pathways.
- Increase ignition surveillance in areas with high invasive fuel loads, particularly during hot, dry, and windy periods.
- Consider limiting recreation (closing roads) in human ignition hot spots during times of fire weather.



Actions for fire managers

- Pre-position engines, crews, water, and other suppression resources in the places and times when desert wildfires are most likely.
- Verify mutual-aid agreements, resource-sharing arrangements, and cross-jurisdictional communication protocols before the fire season.
- Review and test evacuation routes, shelter capacity, and public-alert systems in communities that could be affected by fast-moving grass fires.



Actions for public affairs and outreach communicators

- Communicate elevated fire risk before fuels cure, giving residents and communities time to address defensible space and evacuation planning.
- Engage residents and local partners in identifying and reporting invasive species, including stinknet, to improve awareness and help track where fuel conditions are changing.

In many communities in the Desert Southwest, invasive species have filled up the spaces between native desert vegetation and the built environment. Fire can spread rapidly across wildlands and into urban centers, threatening homes and other infrastructure.

Credit: Molly McCormick

FIND OUT MORE ABOUT FIRE IN THE DESERT:



LEARN ABOUT INVASIVE SPECIES:



Dive into the science: citations from this fact sheet

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