Fire risk report for *Eragrostis dielsii*

Full Species Name
Eragrostis dielsii Pilg. ex Diels & Pritz.

Family: Poaceae

Common names:
mallee lovegrass

Synonyms:

Known occurrences (as of 2020)

Year first documented as naturalized in Hawai'i: 2008

This species has not yet been ranked by the Hawai'i Weed Risk Assessment program as of 2020.

View photos on Starr Environmental

View on Wikipedia

View occurrences on iNaturalist

View at Plants of Hawaii

View photos on Flickr

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Lowest risk ⇔ Highest risk

This species is likely a **low** fire risk in Hawai'i with a fire risk score of **0.31**.

This species was ranked by our machine learning algorithm using the data presented on the next page. A predicted score of > .34 suggests the plant is a high fire risk.

Summary of Fire ecology	
Native habitat fire proneness	No Data
Fire promoting plant in its native range	No
Fire promoting plant in its introduced range*	No
Regenerates after fire	No Data
Promoted by fire	No Data
Reported flammable*	No Data
Relative is flammable*	Yes

*These values were used by the model to predict fire risk

Detailed summary of Fire Ecology

Native habitat fire proneness (In any part of the plant's native range is its habitat described as fire prone due to natural or human caused fires?)	No Data	"[possible, this species listed as occurring in dune swales, and a fire was noted as occuring in one swale, but it was not mentioned if that is a regular occurnce]" Buckley, R. (1981). Soils and vegetation of central Australian sandridges III. Sandridge vegetation of the Simpson Desert. Australian Journal of Ecology, 6(4), 405-422. ---------- "[likely, this species is listed and several species fire responses are listed, but habitat flammability is not explicitly stated]" Keighery, G., & Gibson, N. (1993). Biogeography and composition of the flora of the Cape Range peninsula, Western Australia. Records of the Western Australian Museum, 45, 51-85. ---------- "[listed in Low woodland and tall shrubland, both of which are described as not flammable]" http://museum.wa.gov.au/sites/default/files/10.%20How,%20Dell,%20Milewski,%20Keighery.pdf How, R. A., Dell, J., Milewski, A. V., & Keighery, G. J. T The Biological survey of the Eastern Goldfields of Western Australia. Part 6. Youanmi - Leonora study area / comprising papers by J. Dell, R.A. How and A.V. Milewski -- Part 7. Duketon - Sir Samuel study area / comprising papers by R.A. How, J. Dell, A.V. Milewski and G.J. Keighery 1992
Fire promoting plant in its native range (Does the species act as a major fuel source, increase fire severity, frequency, or modify fuel bed characteristics within its native range?)	No	"Scarp footslope zone: shallow duplex soil with thin brittle sandy topsoil (4–8 cm) subject to surface stripping by rill and sheet erosion where disturbed; over saline clay subsoil (20–40 cm) subject to scalding where exposed; over hardsetting granite saprolite and kaolin. Supports halophytic low shrublands with small grasses (e.g. Eragrostis dielsii)." #uncertain if this will add enough biomass to affect habitat flammability Pringle, H., & Tinley, K. (2003). Are we overlooking critical geomorphic determinants of landscape change in Australian rangelands?. Ecological Management & Restoration, 4(3), 180-186.

Fire promoting plant in its introduced range (Same as Fire Promoting Native but within the species introduced range)	No	not invasive outside of HI
Regenerates after fire (Does the plant regrow after fire by any means? This includes resprouters, reseeders, and recruiters which dispersed into the area within approximately one year post fire)	No Data	
Promoted by fire (Does the plant increase in abundance after a fire?)	No Data	
Reported flammable (Is the species described as being flammable, being a major wildfire fuel, or high fire risk?)	No Data	
Relative is flammable (Does a plant in the same genus meet the Reported Flammable criteria?)	Yes	"There is also concern that African lovegrass (Eragrostis curvula) could invade lucerne and summer cropping areas in Queensland, where it may contaminate these commodities. Because it is highly flammable, particularly during the dry season, dense infestations also create an increased fire hazard for people and property." https://keyserver.lucidcentral.org/weeds/data/media/Html/eragrostis_curvula.htm#:~:text=There%20is%20also%20concern%20that,hazard%20for%20people%20and%20property.

Text in quotes are direct quotes from the source
Text in square brackets was added by the assessor to clarify something or to summarize from a figure.
Text preceded by a "#" is comment from the assessor

The data presented were assembled from literature and database searches for each species using as much data as could be collected regarding the plant's fire ecology under natural conditions. Searches aimed to be exhaustive and consist of as much data as could be located in 2020. Our machine learning algorithm was trained on 49 species of plants which had their fire

risk ranked by 49 managers in Hawai'i in November 2020. The model used a conditional random forest regression algorithm to predict scores for each species using the manager score as the response variable and the fire ecology traits of each plant as the predictor variables to generate a fire risk score. This trained model was then used to predict the fire risk for all species which were not ranked by managers. The model was calibrated such that it is 90% accurate at predicting high fire risk plants and 79% accurate at predicting low fire risk plants. This research and the resulting fire risk model has been published in the journal Biological Invasions by Kevin Faccenda and Curt Daehler (both at the University of Hawai'i at Mānoa).

Note that the analysis doesn't account for a plant species' spatial distribution, population density, or distinct climate and ecosystem conditions (which can also influence fire risk). The fire risk of these species are mostly under "worst case" environmental conditions where the climate is dry enough to maintain fire, but wet enough to allow for plant growth and fuel accumulation. The fire risk ranking should not be taken as a stand-alone risk metric in prioritizing weed control efforts. Rather, this information may also be useful for determining if a newly discovered species poses a potential fire threat in wildland areas.

More general information on the weed risks and ecology of non-native plants in Hawai'i is available from the Hawai'i Invasive Species Committee's Weed Risk Assessment database.

View more fact sheets at https://www.pacificfireexchange.org/weed-fire-risk-assessments

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Fact sheet prepared by Kevin Faccenda (faccenda@hawaii.edu) in November 2021. Data were prepared by Kevin Faccenda in 2020.

This research was funded by the Department of the Interior Pacific Islands Climate Adaptation Science Center. The project described in this publication was supported by Grant or Cooperative Agreement No.G20AC00073 to Curt Daehler from the United States Geological Survey. The views and conclusions contained in this document are those of the authors and should not be interpreted as representing the opinions or policies of the U.S. Geological Survey. Mention of trade names or commercial products does not constitute their endorsement by the Pacific Islands Climate Adaptation Science Center or the National Climate Adaptation Science Center or the US Geological Survey.