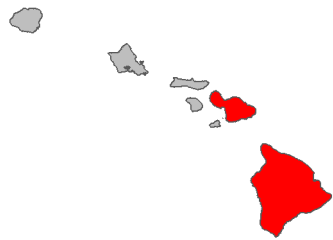# Fire risk report for *Ehrharta calycina*

Full Species Name
Ehrharta calycina Sm.

Family: Poaceae

Common names:
perennial veldtgrass
purple veldtgrass

Synonyms:

Known occurrences (as of 2020)

Year first documented as naturalized in Hawai'i: 1939

This species has been ranked by the Hawai'i Weed Risk Assessment program as High Risk with a score of 18.

View photos on Starr Environmental

View on Wikipedia

View occurrences on iNaturalist

View at Plants of Hawaii

View photos on Flickr

0		.5	1
Lowest risk		⇔	Highest risk

This species is likely a **high** fire risk in Hawai'i with a fire risk score of **0.72**.

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*	Yes
Regenerates after fire	Yes
Promoted by fire	Yes
Reported flammable*	High
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	
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	no data for this species in its native range
Fire promoting plant in its introduced range (Same as Fire Promoting Native but within the species introduced range)	Yes	"In Australia, where Ehrharta calycina is also invasive, fire enhances invasiveness by reducing regrowth or establishment of native species and drastically increasing cover of E. calycina (Milberg and Lamont 1995). E. calycina creates a dense thatch during summer months, as the plant dries and the stems and leaves lean over. In addition to providing excellent fuel, this thatch may interfere with the germination and establishment of native plants during the wet fall and winter." Bossard, C. C., Randall, J. M. & Hoshovsky, M. C. 2000. Invasive Plants of California's Wildlands. University of California Press, Berkeley and Los Angeles, CA --------------------------- "In south-west Western Australia E. calycina invasion initiates a grass-fire feedback cycle (Baird 1977)." https://www.researchgate.net/profile/Hans_Lambers/publication/225503181_Enhanced_soil_and_leaf_nutrient_status_of_a_Western_Australian_Banksia_woodland_community_invaded_by_Ehrharta_calycina_and_Pelargonium_capitatum/links/0f317531ceac0f3062000000.pdf Fisher, J. L., Veneklaas, E. J., Lambers, H., & Loneragan, W. A. (2006). Enhanced soil and leaf nutrient status of a Western Australian Banksia woodland community invaded

		by Ehrharta calycina and Pelargonium capitatum. Plant and Soil, 284(1-2), 253-264.
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)	Yes	"Purple veldtgrass displaces native vegetation and converts coastal scrub and chaparral communities to grasslands. It resprouts after fires and may increase fire frequency." http://www.cal-ipc.org/. [Accessed 13 Nov 2015] California Invasive Pest Council. (2015). Ehrharta calycina (purple veldtgrass).
Promoted by fire (Does the plant increase in abundance after a fire?)	Yes	"In Australia, where Ehrharta calycina is also invasive, fire enhances invasiveness by reducing regrowth or establishment of native species and drastically increasing cover of E. calycina (Milberg and Lamont 1995). E. calycina creates a dense thatch during summer months, as the plant dries and the stems and leaves lean over. In addition to providing excellent fuel, this thatch may interfere with the germination and establishment of native plants during the wet fall and winter." Bossard, C. C., Randall, J. M. & Hoshovsky, M. C. 2000. Invasive Plants of California's Wildlands. University of California Press, Berkeley and Los Angeles, CA
Reported flammable (Is the species described as being flammable, being a major wildfire fuel, or high fire risk?)	High	"The grass accumulates large quantities of dried plants thus increasing fire intensity and frequency. Fires themselves stimulate germination and regrowth, favouring the spread of the grass." Weber, E. 2003. Invasive Plant Species of the World. A Reference Guide to Environmental Weeds. CABI Publishing, Wallingford, UK
Relative is flammable (Does a plant in the same genus meet the Reported Flammable criteria?)	Yes	" Ehrharta juncea forms a highly flammable elevated web of fibres that becomes entwined with shrubs, which suspends fallen eucalypt litter" https://webarchive.linc.tas.gov.au/20120306091050/http://www.forestrytas.com.au/assets/0000/0149/08.pdf Wapstra, M., French, B., & Ashlin, T. (2003). Distribution, habitat characteristics and conservation status of the forest wire-grass Ehrharta juncea (R. Br.) Sprengel (Poaceae) in Tasmania. TASFORESTS-HOBART-, 14, 77-92.

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 Hawaiʻi 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 Hawaiʻi 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 Hawaiʻi is available from the Hawaiʻi 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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Adaptation Science Center or the National Climate Adaptation Science Center or the US Geological Survey.