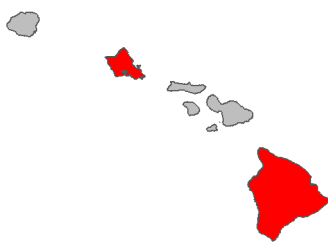


Fire risk report for *Andropogon glomeratus*

Full Species Name <i>Andropogon glomeratus</i> var. <i>pumilus</i> (Walter) Britton, Sterns & Poggenb.
Family: Poaceae
Common names: bluestem beardgrass
Synonyms:
Known occurrences (as of 2020) 
Year first documented as naturalized in Hawai'i: 1966
This species has been ranked by the Hawai'i Weed Risk Assessment program as High Risk with a score of 16.
View photos on Starr Environmental
View on Wikipedia
View occurrences on iNaturalist
View at Plants of Hawaii
View photos on Flickr

0 **I** .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	Fire-prone
Fire promoting plant in its native range	Yes
Fire promoting plant in its introduced range*	No
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?)	Fire-prone	"The vegetation of this site, consisting of savanna-like woodlands and grasslands, is unusual because of the long-term influences of frequent burning, and is replicated in Virginia only at similar sites within Forts A.P. Hill and Pickett. [flora includes <i>A. glomeratus</i>]" http://virginiannaturalhistorysociety.com/banisteria/pdf-files/ban17/Banisteria17_Quantico%20Flora.pdf Fleming, G. P., McCoy, K. M., & Van Alstine, N. E. (2001). The vascular flora of fire-maintained grasslands and woodlands at Quantico Marine Corps Base, Virginia. <i>Banisteria</i> , 17, 3-19.
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?)	Yes	"Nevertheless, some large areas of in this category did burn at a nearly annual rate. Those that did seem to have been more like open bogs rather than low pocosin. One annually-burned peatland of some 325 km ² (125 mil), was described in 1852 as being covered with :coarse grasses" (Emmons 1860). A second visitor to the same site in 1856 said it was dominated by <i>Andropogon glomeratus</i> " #must be fire promoting if it is dominant https://talltimbers-org.exactdn.com/wp-content/uploads/2018/09/39-Frost1995_op.pdf Frost, C. C. (1995). Presettlement fire regimes in southeastern marshes, peatlands, and swamps. In Proceedings 19th tall timbers fire ecology conference: fire in wetlands: a management perspective. Tall Timbers Research Inc., Tallahassee.
Fire promoting plant in its introduced range (Same as Fire Promoting Native but within the species introduced range)	No	
Regenerates after fire (Does the plant regrow after fire by any means? This includes resprouters, reseeder, and recruiters which dispersed into the area)	Yes	"[described as a fire follower; highest density at site burned on year prior and declining with time from burn; table 1]" https://www.jstor.org/stable/pdf/1931182.pdf Lemon, P. C. (1949). Successional responses of herbs in the longleaf-slash pine forest after fire. <i>Ecology</i> , 30(2), 135-145.

within approximately one year post fire)		
Promoted by fire (Does the plant increase in abundance after a fire?)	Yes	<p>"[described as a fire follower; highest density at site burned on year prior and declining with time from burn; table 1]" https://www.jstor.org/stable/pdf/1931182.pdf Lemon, P. C. (1949). Successional responses of herbs in the longleaf-slash pine forest after fire. Ecology, 30(2), 135-145.</p> <p>-----</p> <p>"These andropogons will flourish in partial shade if competition is suppressed through fire. In two pine plantations in the southeastern United States, there are extensive populations of the virginicus complex where annual burns prevent hardwood growth." https://www.biodiversitylibrary.org/item/33627#page/1/mode/1up</p>
Reported flammable (Is the species described as being flammable, being a major wildfire fuel, or high fire risk?)	High	<p>"Andropogon glomeratus (Walt.) BSP. (Bush beardgrass) The problems associated with this species and its ecological preferences are the same as A. virginicus. It is confined to the island of Hawai'i. Andropogon virginicus L. (Broomsedge) This perennial bunchgrass sometimes forms continuous cover in boggy, open mesic and dry habitats. It releases highly persistent allelopathic substances (Rice 1972). The dead material provides an excellent fuel for fires. It is fire-stimulated; its cover increases dramatically with each fire (Smith, Parman, and Wampler 1980). In areas where it occurs, both fire intensities and acreage burnt have increased. " https://www.researchgate.net/profile/Clifford-Smith/publication/255607093_Impact_of_alien_plants_on_Hawa%27i%27s_native_biota/links/559186a208aed6ec4bf83ed2/Impact-of-alien-plants-on-Hawais-native-biota.pdf Smith, C. W. (1985). Impact of alien plants on Hawaii's native biota. Hawaii's terrestrial ecosystems: preservation and management, 180-250.</p> <p>-----</p> <p>"Fire Risk: This plant has an extreme flammability rating and should not be planted within the defensible space of your home. Select plants with a low flammability rating for the sites nearest your home. " https://plants.ces.ncsu.edu/plants/andropogon-glomeratus/</p>
Relative is flammable (Does a plant in the	Yes	"After a few years without fire, broomsedge bluestem [A. virginicus] stands contain much of this dead, highly

same genus meet the Reported Flammable criteria?)		flammable material which carries fire well. It burns at relatively high relative humidities (80-90%) and high fuel moisture (20-25%) [14]." https://www.fs.fed.us/database/feis/plants/graminoid/andvir/all.html
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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>

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

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