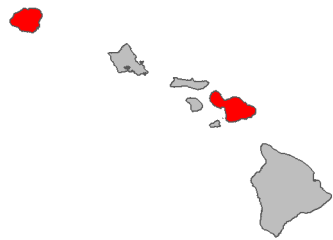


Fire risk report for *Cedrela odorata*

Full Species Name <i>Cedrela odorata</i> L.
Family: Meliaceae
Common names: Spanish cedar West Indian cedar
Synonyms:
Known occurrences (as of 2020) 
Year first documented as naturalized in Hawai'i: 2003
This species has been ranked by the Hawai'i Weed Risk Assessment program as High Risk with a score of 7.
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 **low** fire risk in Hawai'i with a fire risk score of **0.16**.

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	No
Fire promoting plant in its introduced range*	No
Regenerates after fire	No
Promoted by fire	Yes
Reported flammable*	No Data
Relative is flammable*	No

*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	<p>"Cedro is a tree of the New World tropics, appearing in forests of moist and seasonally dry Subtropical or Tropical life zones (24) from latitude 26 N. on the Pacific coast of Mexico, through Central America and the West Indies, to the lowlands and foothills of most of South America up to 1200 m . . . it tolerates a long dry season but does not flourish in areas of rainfall greater than about 3000 mm . . . individual trees are generally scattered in mixed semievergreen or semideciduous forests dominated by other species . . . cedro is often associated with mahogany in moist and wet forests"</p> <p>#seasonally dry areas are often fire prone</p> <p>https://books.google.com/books?hl=en&lr=&id=OhRA0sKG6sUC&oi=fnd&pg=PA250&dq=Cedrela+odorata&ots=WV7SkMUxie&sig=7cQZSdIdC_65UnSF138vBfiOcg8#v=onepage&q=Cedrela%20odorata&f=false</p> <p>Cintron, Barbara. "Cedrela Odorata L." In Agriculture Handbook, Issue 664, Volume 2, 2:250–57. Silvics of North America, 1990.</p>
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	
Fire promoting plant in its introduced range (Same as Fire Promoting Native but within the species introduced range)	No	<p>"Furthermore, the failure of <i>Cedrela odorata</i> to regenerate during this study must be due to the mode of dispersal and destruction of its dehiscent, winged seed bearing fruits, (Tropilab, 2016) its non fire tolerance, (Cites, 2007). The implication of this is that; in the event of frequent fire disturbances, species like <i>Cedrela odorata</i> will become threatened in the study area."</p> <p>Otesile, A, and P Adesoye. "Floristic Survey of the Natural Forest Compartment in the Botanical Gardens of University of Ibadan." Journal of Sustainable Environmental Management 8 (2016): 21–35.</p>

<p>Regenerates after fire (Does the plant regrow after fire by any means? This includes resprouters, reseederers, and recruiters which dispersed into the area within approximately one year post fire)</p>	<p>No</p>	<p>"Furthermore, the failure of <i>Cedrela odorata</i> to regenerate during this study must be due to the mode of dispersal and destruction of its dehiscent, winged seed bearing fruits, (Tropilab, 2016) its non fire tolerance, (Cites, 2007). The implication of this is that; in the event of frequent fire disturbances, species like <i>Cedrela odorata</i> will become threatened in the study area."</p> <p>Otesile, A, and P Adesoye. "Floristic Survey of the Natural Forest Compartment in the Botanical Gardens of University of Ibadan." <i>Journal of Sustainable Environmental Management</i> 8 (2016): 21–35.</p> <p>-----</p> <p>"it is not fire resistant ... [it] suggests the habit of a light-demanding species as does its potential for fast growth and its appearance after fire [page 254]"</p> <p>#appears to regenerate from seed, but mature plants are killed</p> <p>https://books.google.com/books?hl=en&lr=&id=OhRA0sKG6sUC&oi=fnd&pg=PA250&dq=%22Cedrela+odorata%22+fire+OR+burn&ots=WW_ViJQxabc&sig=mM9ey8ObN36r1DGlzOiTzNy_tYQ</p> <p>Cintron, B. B. (1990). <i>Cedrela odorata</i> L. Cedro hembra, Spanish cedar. <i>Silvics of North America</i>, 2, 250-257.</p>
<p>Promoted by fire (Does the plant increase in abundance after a fire?)</p>	<p>Yes</p>	<p>"..suggests the habit of a light-demanding species as does its potential for fast growth and its appearance after fire [page 254]"</p> <p>https://books.google.com/books?hl=en&lr=&id=OhRA0sKG6sUC&oi=fnd&pg=PA250&dq=%22Cedrela+odorata%22+fire+OR+burn&ots=WW_ViJQxabc&sig=mM9ey8ObN36r1DGlzOiTzNy_tYQ</p> <p>Cintron, B. B. (1990). <i>Cedrela odorata</i> L. Cedro hembra, Spanish cedar. <i>Silvics of North America</i>, 2, 250-257.</p> <p>-----</p> <p>"Regarding the causes, the occurrence of <i>Cedrela odorata</i> is significantly linked to the fire occurrence 25 years ago, to the proximity of the forest edge and to the presence of hydromorphic soils."</p> <p>Van der Meersch, V., Zo-Bi, I. C., Amani, B. H., N'dja, J. K., N'Guessan, A. E., & Herault, B. (2020). Causes and consequences of <i>Cedrela odorata</i> invasion in West African semi-deciduous tropical forests. <i>Biological Invasions</i>, 1-16.</p> <p>-----</p> <p>"There is little doubt that the main reasons for the successful regeneration noted above are the very open light</p>

		<p>conditions produced, the desiccation of the soil and litter surface between seedfall and the first rains, the sudden reduction of root competition and the increase in available nutrients especially potash due to the burning of the leaf litter"</p> <p>https://ora.ox.ac.uk/objects/uuid:392739ea-7be6-48cf-b427-42711a7be588/download_file?file_format=pdf&safe_filename=Cedrela%2Bodorata.pdf&type_of_work=Working+paper</p> <p>Lamb, A. F. A. (1968). Fast Growing Timber Trees of The Lowland Tropics, <i>Cedrela odorata</i>. Commonwealth Forest Institute, Department of Forestry, University of Oxford.</p>
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?)	No	

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 Ronja Steinbach and Kevin Faccenda in 2020.

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