

Black wattle's new biogeographic distribution threatens flight safety in China

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Black wattle trees at the Changshui airport. Credit: Min Liu

Black wattle, flowering trees also known as the Australian acacia, have been observed to rapidly spread around local airports in Yunnan

province, southwestern China. According to the ecologists, this alien species and its extraordinary pace of invasion are to lead to new threats for both flight safety and local biodiversity. The five Chinese scientists, led by Min Liu, PhD student at Yunnan University, have their findings and suggestions for immediate measures published in the open-access journal *Neobiota*.

The phenomenon was investigated by the ecologists and botanists, affiliated with Yunnan University and [Kunming University of Science and Technology](#), at Kunming's Changshui International Airport.

The black wattle is listed as being among the "[Top 100 of the world's worst invasive alien species](#)" by the World Conservation Union (IUCN). Native to Australia, the species has been settled across the globe for more than 150 years owing to its multiple uses. However, its distribution and expansion are generally overlooked in China.

It is an evergreen fast growing flowering tree species, which is strongly dependent on sunlight and contributes to nitrogen fixation. This means that due to bacteria in its root system, the tree produces nitrogen compounds that help the plant grow and compete with other plants. Once dead, it would release these compounds to fertilise the soil.

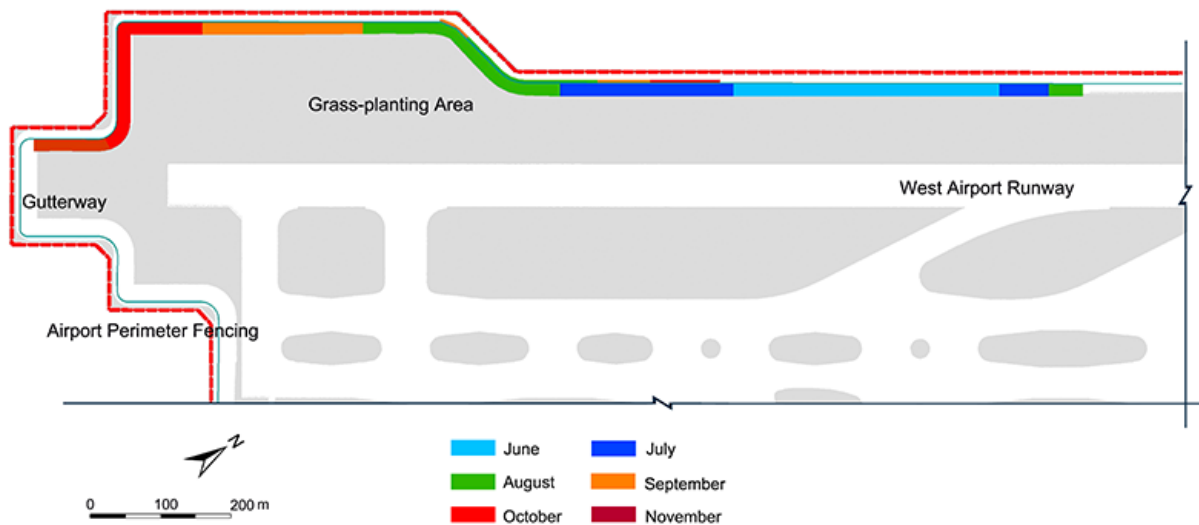
During their investigation, the scientists observed a total seedling spread of 1800 m in 2013, with its peak growth taking place between June and November. Other population features such as number, density, height and ground diameter, also showed that the [species](#) had a very high invasion rate.



Black wattle tree being measured at the Changshui airport. Credit: Min Liu

The authors conclude that black wattle has a strong potential to change the local vegetation structure and increase the risk of bird strikes. It is of urgent need that the situation is further assessed and the potential invasion threat at other airports around China and other parts of the world - evaluated.

"I have never found such a rapid expansion like the one of the black wattle trees at this airport in my career," said the Head of Bird Strike Prevention Office of Changshui Airport. "These trees grow very fast and provide good shelters for local birds, which eventually increases the probability of bird strikes at our airport. So, they must be controlled."



The expansion of black wattle in the grass-planting area near the west gutterway at the Changshui airport (June-November 2013). Credit: Min Liu

More information: Min Liu et al. Invasive *Acacia mearnsii* De Wilde in Kunming, Yunnan Province, China: a new biogeographic distribution that Threatens Airport Safety, *NeoBiota* (2016). [DOI: 10.3897/neobiota.29.7230](https://doi.org/10.3897/neobiota.29.7230)

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