

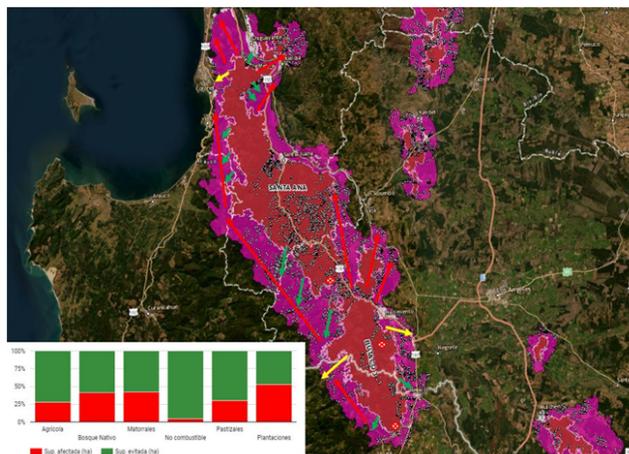
Disasters Avoided

Wildfire Disasters Avoided in Chile

Good Data and Avoided Losses

- Good data helps to justify investments in wildfire prevention.
- Chile is at the forefront of conducting these analyses, presented here for 2023.
- Chile is investing in fire prevention activities at the community level.

Authors: Jorge Saavedra, Daniela Alegría, Gonzalo Tapia, Ana Prados, and Mackenzie Allen



- Affected Area (ha): 108 944
- Potential Area (ha): 242 093
- **Avoided Area (ha): 133 149**
- Number of Affected Municipalities: 10
- Number of Potential Municipalities: 15

- Number of Affected Homes: 2150
- Potential Homes: 17 321
- **Avoided Homes: 15 171**
- Economic Loss – Homes (USD): 44.2 M
- Potential Economic Loss (USD): 480.1 M
- **Avoided Economic Loss (USD): 436 M**

Figure 1: Avoided burned area (Magenta) from the Santa Ana fire in February 2023. Region of Biobío, Chile. Analysis by Jorge Saavedra, Daniela Alegría, and Gonzalo Tapia.

Technical experts at CONAF, Chile's National Forestry Agency, have been documenting avoided losses due to wildfires since 2014-2015. Their goal is to use these analyses to facilitate the assessment of prevention and response actions and improve future policies on wildfire risk management [Saavedra et al., 2022]. CONAF has implemented methodologies for assessing avoided losses due to wildfire using two complementary approaches: a) simulation of fire behaviour and b) fire potential polygons. The latter method has been incorporated into the analysis since 2017-2018 and applied to events such as Agua Fría (2021) and Santa Ana (2023). Then, they compare the modelled or potential burned area with the actual burned area post-fire, to calculate avoided burned area, as shown in Figure 1 for the Santa Ana fires in the Biobío region, where 135 515 hectares (ha) were spared from the fire. The avoided burned area is then combined with data on population density, property values, direct (market) and indirect (social and environmental) and vegetation value to estimate total economic losses, and the number of structures and people spared from losses.

In January and February 2023, Chile experienced one of its most severe wildfire seasons on record. CONAF estimated the total avoided economic losses across all regions at approximately USD2 billion about 20.8 times greater than the current USD101 million budget for fire control and prevention activities; and 64 477 people and 46 634 structures were spared from the wildfire impacts.

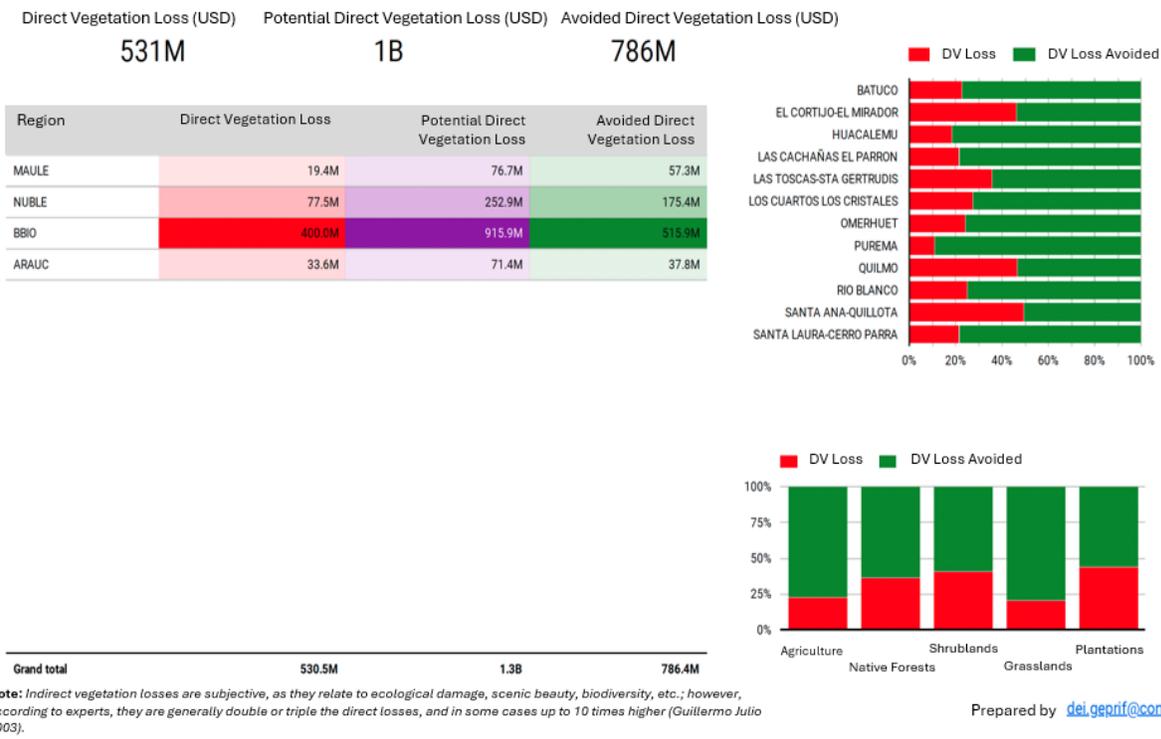


Figure 2: Avoided vegetation-related economic losses in January-February in Chile by region (upper left) and municipality (upper right), and type of vegetation (lower right). Analysis by Jorge Saavedra, Daniela Alegría, and Gonzalo Tapia.

Figure 2 shows an example of the breakdown in the avoided losses from vegetation by region, municipality, and vegetation type, worth USD786 million.

At the community level, CONAF has been implementing wildfire prevention initiatives through its Community Preparedness Program, which engages residents in high-risk rural and wildland-urban interface (WUI) areas to co-develop participatory prevention plans. These processes are complemented by capacity-building workshops addressing household fortification, self-protection spaces, and emergency protocols, as well as silvicultural treatments in interface zones, including pruning, thinning, and the establishment of fuel breaks to reduce fuel continuity and fire spread. By integrating local knowledge with institutional expertise, these actions not only strengthen community resilience but also reflect a multi-scalar approach to wildfire governance and risk reduction.

This case study illustrates the key role of good data from models and earth observations - not just for fire mitigation and response, but also to help justify funding allocated towards prevention activities, therefore contributing to avoided wildfire disasters through the [right investments](#).

Sources: Saavedra, J., J. Brull Badia. T. Osses Acuña, and S. Mendoza Olavarría, Evaluación del daño evitado por incendios (2018-2020) en Chile, Revista Incendios y Riesgos Naturales, 2022 https://revistarirn.org/wp-content/uploads/2022/08/RlyRN_Julio2022_n07.pdf