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View from the lapilli (volcanic ash) fields of the Ruta de los Volcanes hiking trail to the Caldera de Taburiente. Characteristic trade wind clouds can be seen, which bring most of the moisture to the island.

La Palma

CANARY ISLANDS, SPAIN

The volcanic island of La Palma (also known as "La Isla Bonita" or "La Isla Verde") is the only island in the Canary Island archipelago with permanent rivers. It also hosts large natural forests, which are very important in capturing large amounts of humidity from the permanent cloud cover on the northern and eastern slopes, which provide fresh water to aquifers and the island's inhabitants.

Thanks to its large variation in altitude (its highest point reaches 2,426 m above sea level) and its isolation in the Atlantic Ocean, La Palma has very high biodiversity. Many of its species are native (endemic) to the island or the archipelago. For these reasons, the whole island became a UNESCO Biosphere Reserve in 2002 and also hosts a national park (Caldera de Taburiente) and various other protected areas.

Nevertheless, introduced species such as goats, rabbits and exotic plants threaten La Palma's biodiversity. Since mammalian herbivores were not present until recently, local plants have no means to protect themselves, such as thorns or a bitter taste. Thus, they are an easy meal and can be heavily consumed by hungry mouths.

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The dragon tree (Dracaena drago) is an iconic species of the Canary islands.

As fires – another source of potential threat to biodiversity – occur naturally on the island, the native conifers are adapted to them. When the flames are raging through, burning down needles and small branches, the stems survive and resprout quickly afterwards. However, the changing climate could lead to more frequent and severe fires in the future.

Under the ECOPOTENTIAL project, such threats and disturbances are being studied with the help of Earth Observations. Satellite imagery is used to study the health of ecosystems and how they change over time. The extent and intensity of forest fires can also be recorded. The results from this work are being shared with the local managers and used for capacity-building in scientific field courses.

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At the southern tip of the island desert-like conditions occur and strong winds set additional limits to plant life.

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As a relict ecosystem from the Tertiary period, the Laurel Forest is adapted to constant humidity.

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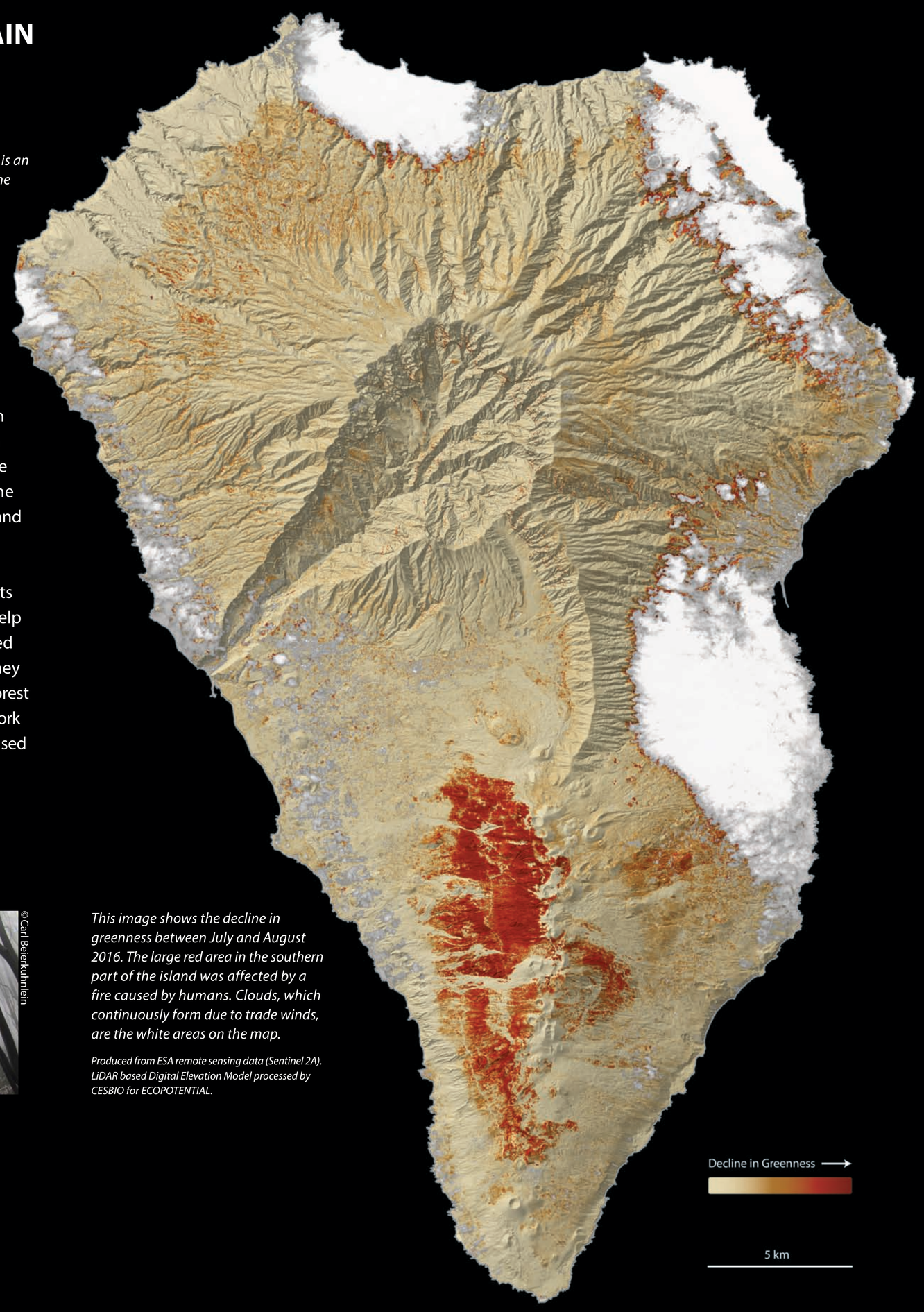
The coast of La Palma is mostly steep and inaccessible.



This image shows the decline in greenness between July and August 2016. The large red area in the southern part of the island was affected by a fire caused by humans. Clouds, which continuously form due to trade winds, are the white areas on the map.

Produced from ESA remote sensing data (Sentinel 2A). LiDAR based Digital Elevation Model processed by CESBIO for ECOPOTENTIAL.

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