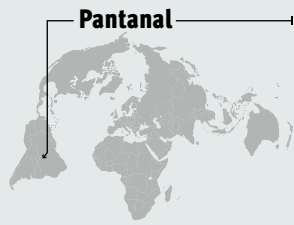


Case study: Burning a wetland – the Pantanal



Stretching across Brazil and parts of Bolivia and Paraguay, the Pantanal is the world's largest tropical wetland, covering around 15 million hectares. Parts of the Pantanal have been designated a biosphere

conservation area and recognised as a United Nations Educational, Scientific and Cultural Organization (UNESCO) World Heritage site. The area is home to thousands of endangered species such as the jaguar (*Panthera onca*), the giant otter (*Pteronura brasiliensis*), the marsh deer (*Blastocerus dichotomus*), and the hyacinth macaws (*Anodorhynchus hyacinthinus*), and has the greatest concentration of wildlife in South America. The Pantanal is also a key migratory route of terrestrial and aquatic bird species.

Since 2019, the Pantanal has experienced a severe drought (Marengo et al. 2021). In 2020, the coincidence of hot and dry conditions pushed vegetation combustibility thresholds to their highest since 1980 (Libonati et al. 2020a). These conditions, combined with a lack of appropriate management, resulted in the intense and widespread fires of 2020 – the highest fire year recorded between 2001 and 2020 (Garcia et al. 2021). The fires, which in most cases were deliberately lit, consumed almost one-third of the biome – approximately 4 million hectares (Figure 4.3; Libonati et al. 2020a). Large areas of Indigenous lands and converted areas were extensively burnt, devastating the habitat of many endangered species. Protected areas such as the “Encontro das Águas” (the Meeting of Waters) State Park, an area with the highest feline density in the world, burnt entirely (Libonati et al. 2020b). It will take several months to assess the total extent of plant and animal loss across the area, but already there are indications that the impact will be extensive and long-lasting, giving rise to concerns that this biodiversity hotspot may not be able to fully recover from these extreme fires (Mega 2020).



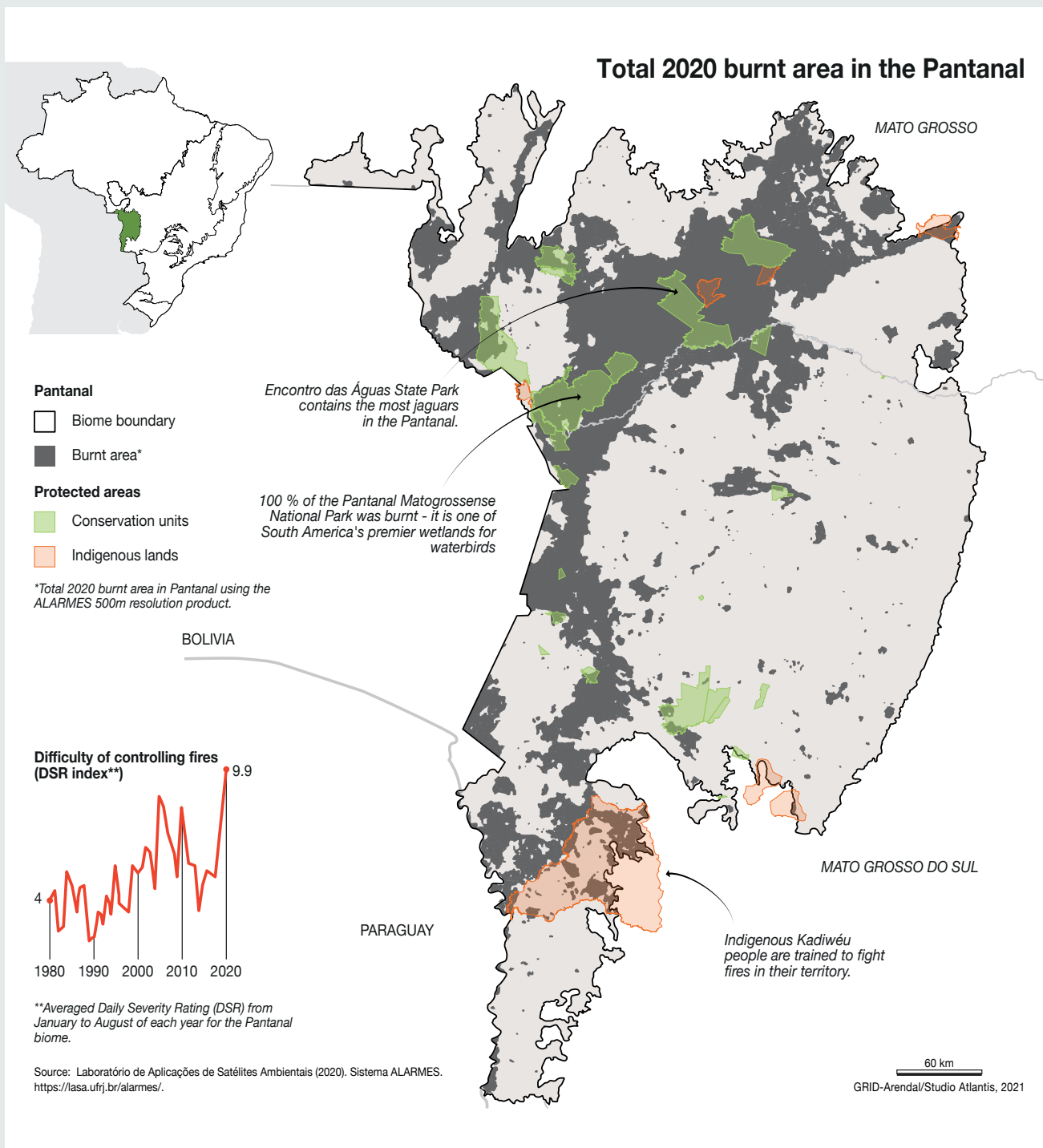


Figure 4.3. Total 2020 burnt area in the Pantanal using the ALARMES 500m resolution product. Conservation units and Indigenous lands are shown in green and orange, respectively. The bottom left graph shows Pantanal's average Daily Severity Rating (DSR) from January to August each year, estimated using the ERA5 reanalysis product (Libonati et al. 2020a). DSR is a numeric rating of the difficulty of controlling fires.