Unprecedented Human-Ignited Pantanal Fires May be Changing the Ecosystem

• The Pantanal, which spans four countries in South America, is the world’s largest tropical wetland.

• **About 29% of the Pantanal burned in 2020**, according to Goddard scientists and collaborators using MODIS data in a recent study.

• Ongoing drought conditions were uniform across the domain, but the 2020 fires happened disproportionately over natural and low-cattle-density areas.

• The study revealed that those fires were likely the result of human ignition sources, raising concerns about the vulnerability of natural ecosystems to fire-driven degradation.

• An advanced NASA-developed model showed that post-fire impacts result in a clear decrease in evapotranspiration (by ~9%) and an increase in runoff (by ~5%) over the natural areas.

*Kumar et al. (2022) Nature Scientific Reports, Vol. 12, https://www.nature.com/articles/s41598-022-05130-0*