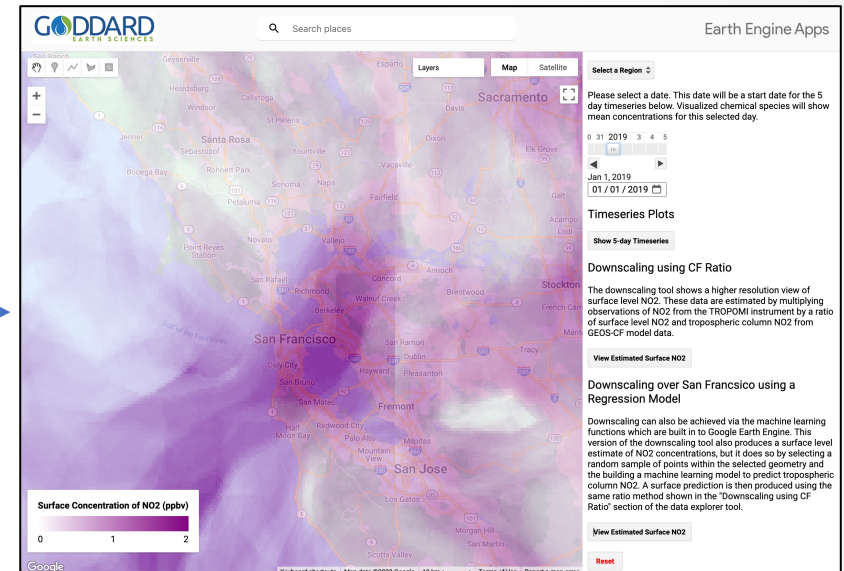
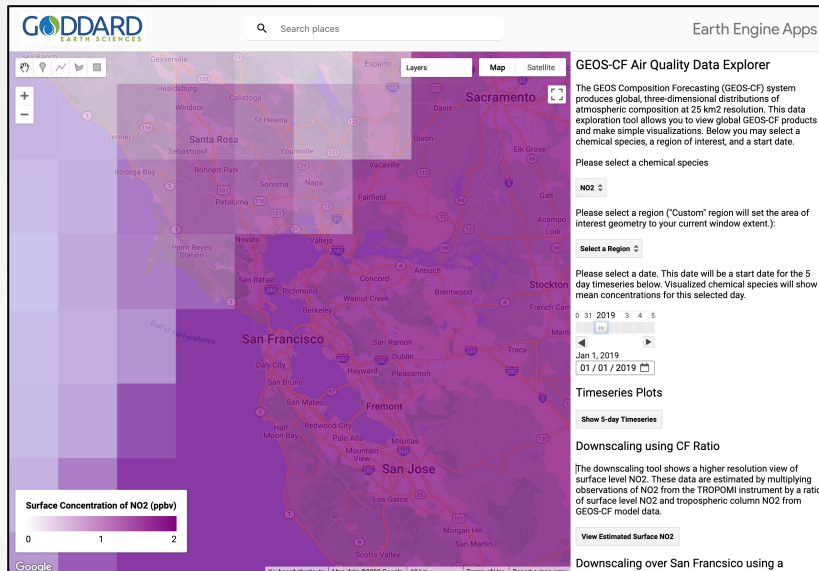


# A New Generation of GMAO Apps in Google Earth Engine



Since the autumn of 2022, high frequency GEOS Composition Forecast (GEOS-CF) data has been ingested into the Google Earth Engine data repository. Using ratio techniques and a machine learning regression algorithm within the Google Earth Engine code editor, an example application, called the GEOS-CF Data Explorer, has been developed to fuse GEOS-CF surface level NO<sub>2</sub> data with TROPOMI column NO<sub>2</sub> observations. The open accessible tool can be used to visualize mean daily surface-level NO<sub>2</sub> as seen in the left image. The tool can also generate high-resolution (1km<sup>2</sup>) surface NO<sub>2</sub> maps on demand and in near real-time, as seen in the image on the right.