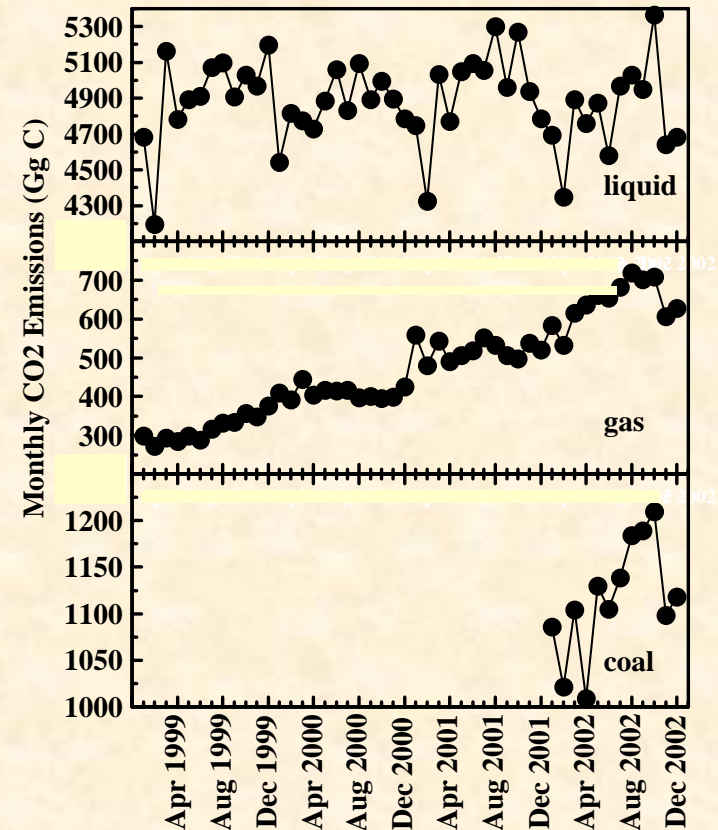


Monthly estimates of carbon dioxide emissions from fossil-fuel consumption in Brazil during the late 1990s and early 2000s

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DOE/Office of Science/Biological & Environmental Research

- ↪ Existing global, fossil-fuel-carbon-dioxide inventories are at one degree latitude by one degree longitude spatial scale and at annual time scales.
- ↪ This research applies a methodology to create inventories at finer spatial and temporal scales. Previously applied to the U.S., it has now been applied to other countries where the underlying energy statistical data base is not as robust as that in the U.S.
- ↪ The long-term impact of this work will be the generation of a global description of the fossil-fuel CO₂ emissions at monthly time scales; this description currently does not exist.



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Detailed understanding of global carbon cycling requires estimates of CO₂ emissions on temporal and spatial scales finer than annual and country. This is the first attempt to derive such estimates for a large, developing, Southern Hemisphere country. Though data on energy use are not complete in terms of time and geography, there are enough data available on the sale or consumption of fuels in Brazil to reasonably approximate the temporal and spatial patterns of fuel use and CO₂ emissions. Given the available data, a strong annual cycle in emissions from Brazil is not apparent. This is in stark contrast to the United States where a strong seasonal cycle is observed; the differences are due to the increasing use of fuels for seasonal heating and cooling as one departs equatorial latitudes. CO₂ emissions are unevenly distributed within Brazil as the population density and level of development both vary widely. A better understanding of the relationship of emissions to population density and level of development is important for improving future CO₂ emission distribution maps.

Losey LM, Andres RJ, Marland G (2006) Monthly estimates of carbon dioxide emissions from fossil-fuel consumption in Brazil during the late 1990s and early 2000s. *Area* 38:445-452. doi:10.1111/j.1475-4762.2006.00713.x