

Carbon Dioxide Supersaturation in the Surface Waters of Lakes

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Data on the partial pressure of carbon dioxide (CO_2) in the surface waters from a large number of lakes (1835) with a worldwide distribution show that only a small proportion of the 4665 samples analyzed (less than 10 percent) were within ± 20 percent of equilibrium with the atmosphere and that most samples (87 percent) were supersaturated. The mean partial pressure of CO_2 averaged 1036 microatmospheres, about three times the value in the overlying atmosphere, indicating that lakes are sources rather than sinks of atmospheric CO_2 . On a global scale, the potential efflux of CO_2 from lakes (about 0.14×10^{15} grams of carbon per year) is about half as large as riverine transport of organic plus inorganic carbon to the ocean. Lakes are a small but potentially important conduit for carbon from terrestrial sources to the atmospheric sink.
