Coral records of the 1990s in the tropical northwest Pacific: ENSO, mass coral bleaching, and global warming.

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We examined the signal-recording ability of *Porites* spp. corals by comparing high-resolution coral oxygen isotope ($\delta^{18}O$) records from the northwestern Pacific with instrumental records of the 1990s. Temporal changes in coral skeletal $\delta^{18}O$ records from Ishigaki Island, Japan, showed good agreement with instrumental records of sea-surface temperature (SST) because the effect of seasonal and interannual variations in salinity on the $\delta^{18}O$ of seawater in that region was relatively small. In the northwestern equatorial Pacific, the cooler SST and relative drought characterizing El Niño events were particularly well recorded by corals from the Philippines. These conditions were also faithfully recorded as distinct positive anomalies in coral $\delta^{18}O$ records from Chuuk Atoll and Pohnpei Island in Micronesia. Bleached *Porites* spp. corals from Ishigaki Island, as well as corals from Pandora Reef of the Great Barrier Reef, Australia, showed a growth gap, indicating a substantial decrease in skeletogenesis during the 1997–1998 mass bleaching event. At Ishigaki Island and on the Pacific side of the Philippine Islands, a decreasing trend in $\delta^{18}O$ was found even over the relatively short period between 1980 and 2000, which may indicate an SST rise or surface-water freshening related to global warming. Our results demonstrate the potential of coral isotope records to serve as indicators of climatic change in the tropical and subtropical waters of the northwestern Pacific, where the number of coral records is still limited.