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II. Signal PreservationA. Carbon Isotopes; B. Oxygen and Hydrogen Isotopes; III. Sample Preparation and Analysis; A. Site Selection and Sampling; B. Sample Preparation; C. Isotopic Analysis; IV. Replication and Quantification of Signal Strength; A. Replication; B. Signal Strength; V. Nonclimatic Trends; A. Age-Related Trends; B. Correction for Atmospheric delta13C and CO2; VI. Calibration and Mechanistic Modeling; A. Laanila, Northern Finland: A Carbon Isotope Case Study; B. Climate Reconstruction from Oxygen and Hydrogen Isotopes; C. Multiparameter Dendroclimatology; VII. Conclusions
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A. Climate Modes Influencing Tropical Cyclone OccurrenceB. Isotopic Compositions of Tropical Cyclone Precipitation; C. Oxygen Isotope Compositions of Tree-Ring Cellulose; III. Materials and Methods; IV. Results and Discussion; A. Testing the Tree-Ring Isotope Proxy Record of Tropical Cyclone Activity; B. A Proxy for Seasonal Drought; C. Decadal to Multidecadal Scale Variations in Tree-Ring Oxygen Isotopes; V. Conclusions; VI. References; Chapter 6: The Stable Isotopes delta13C and delta18O of Lichens Can Be Used as Tracers of Microenvironmental Carbon and Water Sources; I. Introduction
II. Lichen delta13C as Tracer for Carbon Acquisition, Carbon Source, and Global Change

Sommario/riassunto

The 20th century has experienced environmental changes that appear to be unprecedented in their rate and magnitude during the Earth's history. For the first time, this special volume brings together a wide range of perspectives and data that speak directly to the issues of ecological change using stable isotope tracers. The information presented originates from a range of biological and geochemical sources and from research fields within biological, climatological and physical disciplines covering time-scales from days to centuries. Unlike any other reference, editors discuss where isotope