

## **Extracting Climatic Seasonality from the Marine Environment**

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It is widely recognized that information, such as the range and variation in seasonal seawater temperature, from the marine environment is highly important in climate and ecological studies. Yet substantial challenges exist that hinder the development of robust, spatially and temporally diverse records of past seasonality. Several major problems commonly associated with using biological proxies for seasonality studies (attenuation of the seasonal cycle as a function of age, temporal gaps, spatial biases, and sampling protocols) are outlined and discussed. Possible solutions and potential future research directions are outlined.