

PRESERVATION METRICS: A PRESERVATION ANALYSIS TOOL FOR RISK ANALYSIS IN PREVENTIVE CONSERVATION

Jeremy Linden* and Kristin Smith

Image Permanence Institute, Rochester Institute of Technology, Rochester, NY USA

www.imagepermanenceinstitute.org

[jrlpph \[at\] rit.edu](mailto:jrlpph[at]rit.edu)

*Author for Correspondence

This poster paper presents the use and application of the Image Permanence Institute's (IPI) Preservation Metrics. These are sets of algorithms that process gathered temperature and relative humidity data and yield numerical estimates of the risks of environmentally induced decay. Their use constitutes a powerful method for risk analysis in preventive conservation.

Preventive conservation professionals have long been aware of types of environmentally induced decay that threaten our cultural collections including spontaneous chemical degradation, mold, corrosion, and mechanical damage caused by changes in moisture content of objects. These same professionals are equally aware of the need to monitor temperature and relative humidity as the factors which drive those threats. The challenge has been quantifying the rate at which, or likelihood that, decay would occur.

The metrics include the preservation index and time-weighted preservation index (chemical decay), mold risk factor, percent maximum equilibrium moisture content (metal corrosion) and maximum and minimum percent equilibrium moisture content and percent dimensional change (mechanical damage) – are quantitative preservation risk analysis tools that allow us to qualitatively assess the conditions of our preservation storage environments from a material impact perspective. Gathered and trended over time, the data and metrics become a base of fundamental information which can be referred to over and over again – as one partner has stated, “this information provides the valid basis on which all of our decisions must lie and rationally supports the need for any improvements that we request.” The information provided by the metrics allows for the strategic management storage environments for collection preservation.

The preservation metrics allow us to document unfavorable conditions, analyze their causes, and finally, prioritize our efforts based on their relative threat, creating a powerful tool in the conservator's kit. The poster describes the use of the metrics to analyze the relative risks to assorted media posed by various environments, provides examples of applications of the data, and demonstrates the tools used by IPI to calculate, organize, and present these metrics.

Keywords

preservation metrics, preventive conservation, preservation environments, risk analysis, decay, management