IPI's Preservation Environment Metrics™

James M. Reilly

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IPI Preservation Metrics™

Risk analysis algorithms developed by IPI over the last 20 years that convert T & RH data collected in spaces into useful preservation judgments

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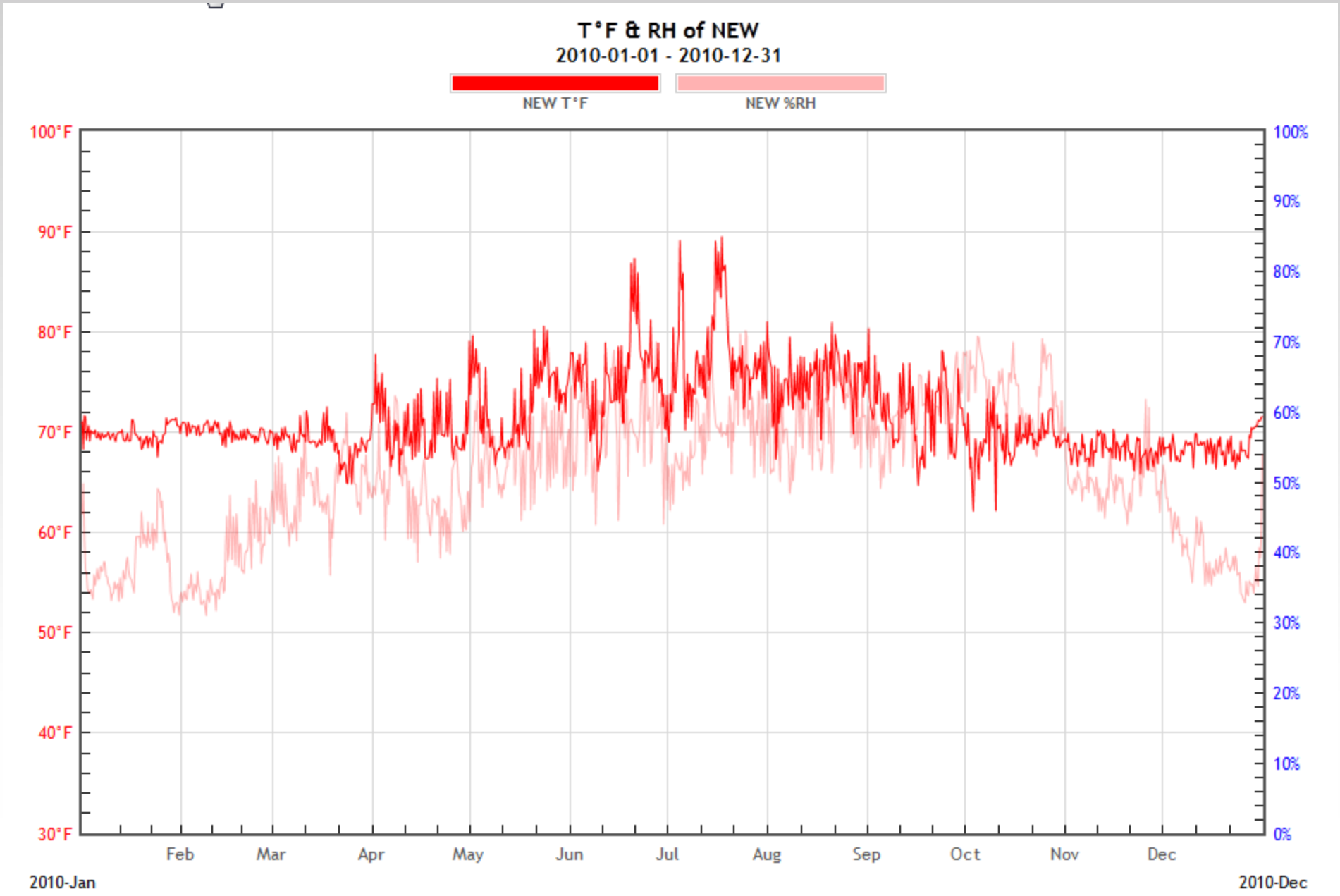
Access to IPI Metrics

- Read section 6B of Reference Workbook
- Data must be in computerized form
- Algorithms are embodied in *eClimateNotebook*™
  - Web-based environmental data storage and analysis platform

IPI Preservation Metrics™

Each metric evaluates the quality of environments over a period of time into a single value representing the degree of risk (or benefit) for a particular form of material decay, taking into account all the ups and downs of T & RH during the monitoring period


T°F & RH of NEW
2010-01-01 - 2010-12-31
NEW T°F
NEW %RH
100°F
90°F
80°F
70°F
60°F
50°F
40°F
30°F
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
2010-Jan
2010-Dec

NEW

Risk Summary		Preservation Metrics	
Natural Aging	RISK	TWPI	31
Mold Risk	GOOD	MRF	0.08
Metal Corrosion	RISK	%EMC Max	11.8
Mechanical Damage	OK	%EMC Min	7.2
		%DC Max	1.28

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Advantages of Metrics

- Quick, standardized read
- Point out which categories of decay are likely to occur in a given space
  - But *you* have to decide if they are important to the collections in that space
- Flag potential problems
- Compare spaces one to another
- Make convincing case for improvements

Location Dataset	Date Range	Natural Aging	Mechanical Damage	Metal Corrosion	Mold Risk	T°F	%RH	DP°F	TWPI	%DC Max	%EMC Min	%EMC Max	MRF
Art Arch Stacks	2012-01-01 to 2012-03-13	OK	RISK	GOOD	GOOD	77.9	20	32.7	49	0.12	4	4.4	0
Art Closed stacks	2012-01-01 to 2012-03-13	OK	GOOD	GOOD	GOOD	69.4	26	33.1	73	0.21	5.1	5.9	0
Council House Case	2012-01-01 to 2012-02-28	GOOD	GOOD	GOOD	GOOD	68.8	27	33.5	75	0.06	5.7	5.9	0
History Stacks LL	2012-01-01 to 2012-03-20	OK	GOOD	OK	GOOD	69.5	36	41	58	0.13	6.8	7.2	0
Library Annex3W	2012-01-01 to 2012-04-02	OK	RISK	OK	GOOD	72.8	27	34.9	64	0.9	4.5	7.7	0
Longhouse	2012-01-01 to 2012-02-28	OK	GOOD	GOOD	GOOD	69.1	27	33.4	74	0.1	5.5	5.9	0
Spirit Exhibit	2012-01-01 to 2012-02-28	GOOD	GOOD	GOOD	GOOD	68.8	26	32.6	78	0.06	5.5	5.7	0
Temporary Display Case	2012-01-01 to 2012-02-28	OK	RISK	GOOD	GOOD	77.1	20	32.8	51	0.07	4.4	4.7	0
Average (8 locations)						71.7	26.1	34.3	65.3	0.2	5.2	5.9	0

Using Preservation Metrics™

- Require a little effort to understand and interpret
  - It's worth it
- Now beginning to be used to specify environments
  - New museum storage at National Museum of Denmark specifies annual TWPI of 100 or more

Chemical Decay Metrics

- PI and TWPI
  - Based on combined influence of temperature and RH on spontaneous reactions in organic materials
  - Integrate over time
  - One calendar year yields best overall rate estimate

Mold Risk Metric

- Based on combined influence of T & RH on germination rates of common mold species
- Integrates over time
- Indicates likelihood and severity of mold outbreaks
- Good warning system for impending mold

Mechanical Decay Metrics

- Based on moisture-absorption and dimensional change in an imaginary block of wood
- Warns of excessive dryness, dampness and dangerous excursions between extremes

What the Metrics are *NOT*

- Predictors of when specific objects or collections will become ruined
- Predictors of how long specific objects or collections will last

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