

IPM in Museums

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(Pinniger 2001)



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Integrated Pest Management (IPM)



- What makes a pest a pest? When it causes:
 - Measurable Economic Loss
 - Aesthetic loss
 - Physical Health Issues (Disease, respiratory issues)
 - Mental Health Issues (Fear, stress, mental anguish)

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History of Pest Management

- World War II introduced new organic compounds
 - Carbamates
 - Organophosphates
 - Organochlorines (DDT)



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A Reliance on Chemicals

Late 1940's to Mid 1960's

- The discovery of synthetic organic compounds was considered a major advancement of mankind.
- Crop Production on a large scale, with little or no pest damage was possible
- Pesticides were cheap, effective, persistent over time and killed a broad spectrum of insects



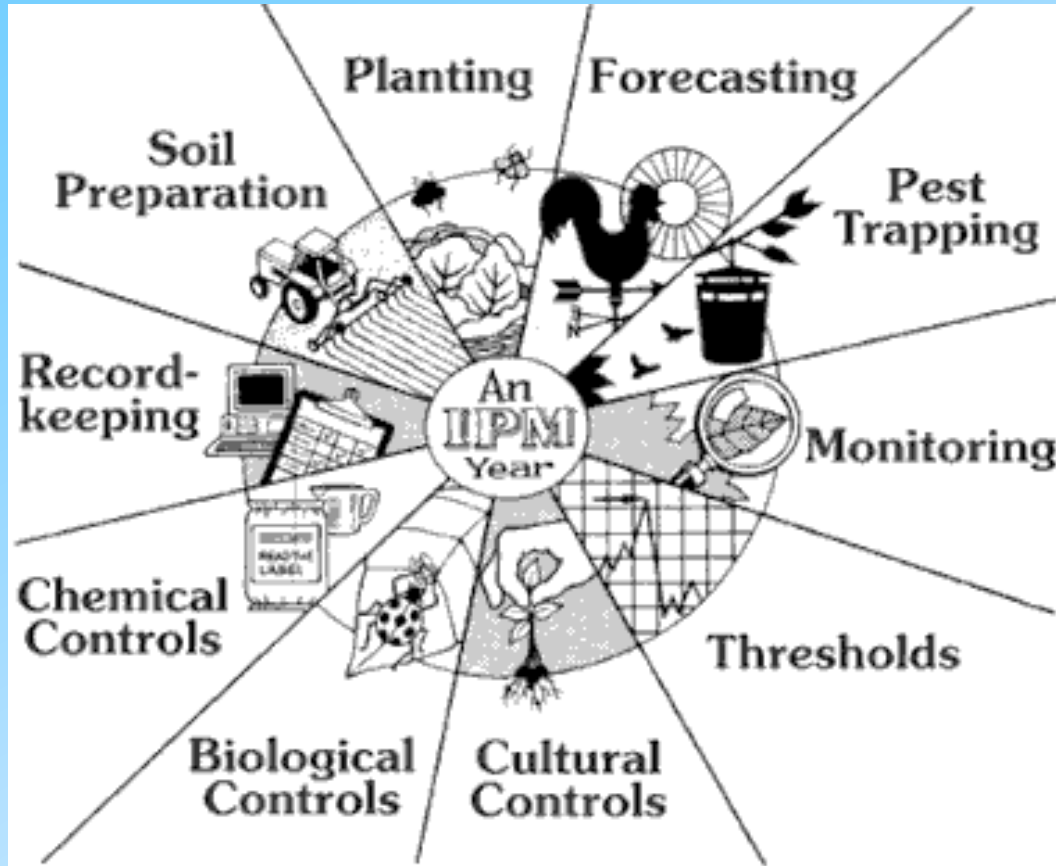
A Voice of Reason



- In 1962, Under constant criticism from agricultural leaders and chemical manufacturers, Rachel Carson wrote the book, Silent Spring
- This eventually lead to the formation of the EPA in 1970

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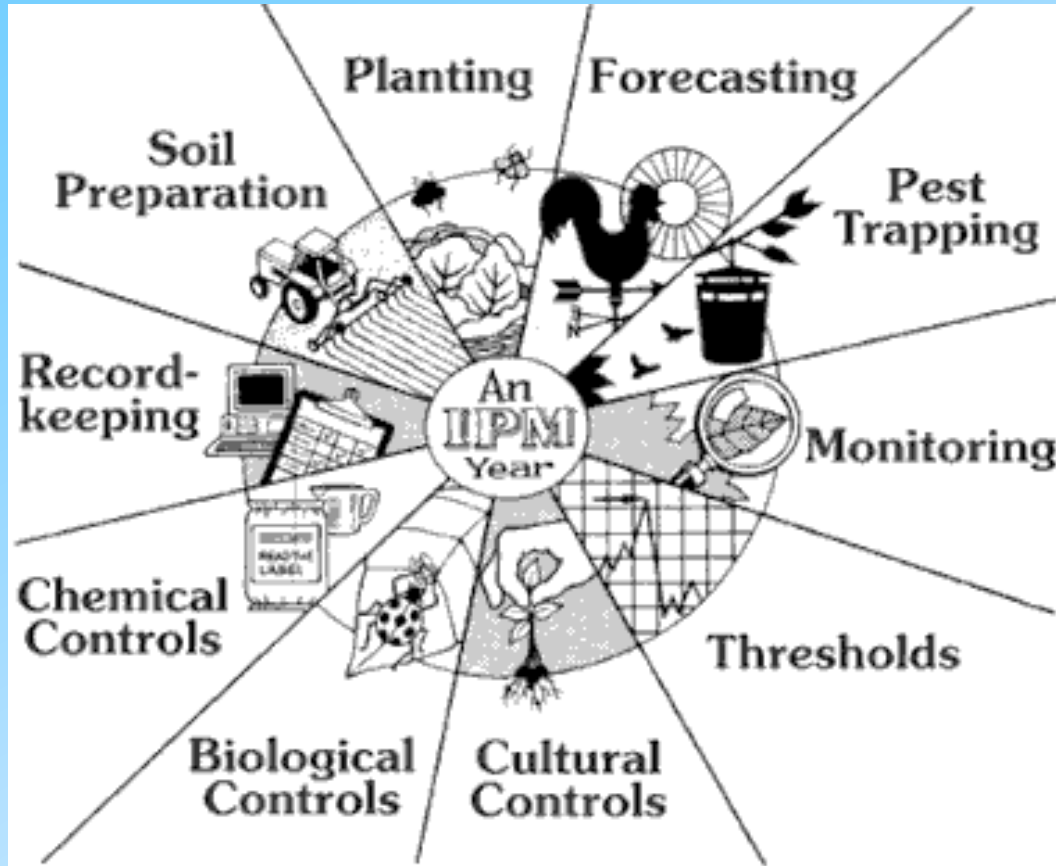
IPM



IPM = Combining Cultural, Physical, Biological and Chemical tools to prevent or reduce pest activity.

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IPM



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How Can We Implement IPM at Our Museum??



- Let's start with the pieces of the IPM puzzle

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IPM Puzzle

Administrative Support



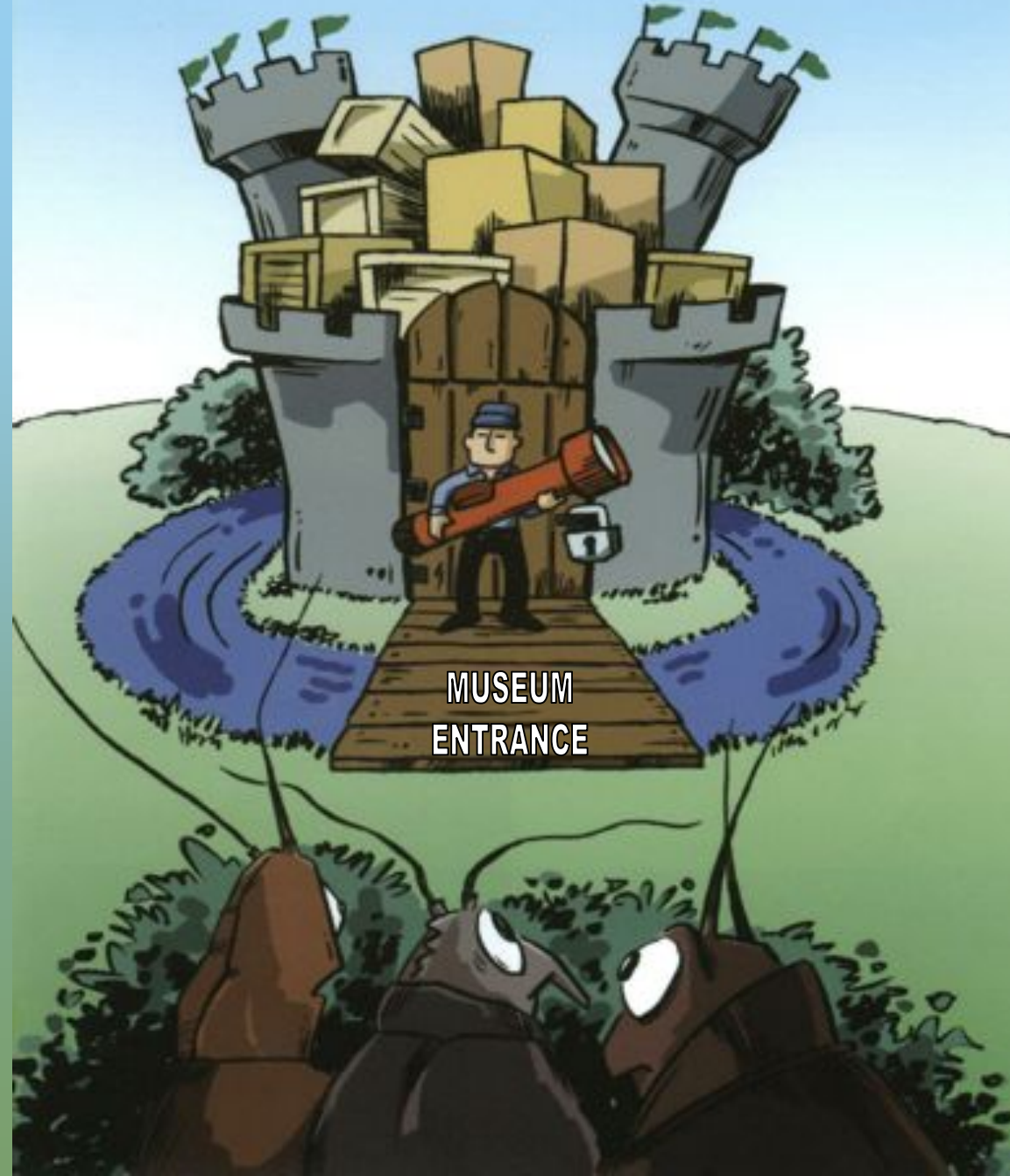
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Choose a Team Leader

- Manager must have:
 - Budget
 - Authority
 - Some Expertise
- Team must understand:
 - Methods
 - Benefits
 - Acceptable Threshold for Institution



ASSIGN GATE KEEPERS



MUSEUM
ENTRANCE

Education, Education, Education Start With The Insects



- Pest Identification
- Knowledge of tools
- Knowledge of collection materials

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Museums are Part of Their Environment



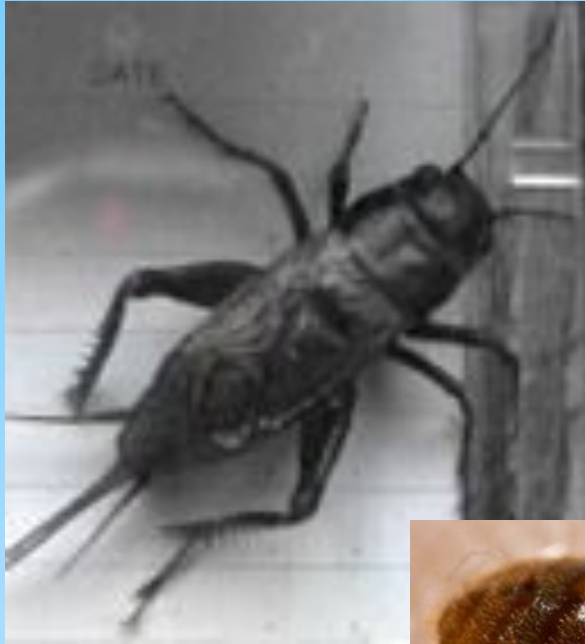
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Water Environment



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Urban Environment



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Forest & Grass Environments

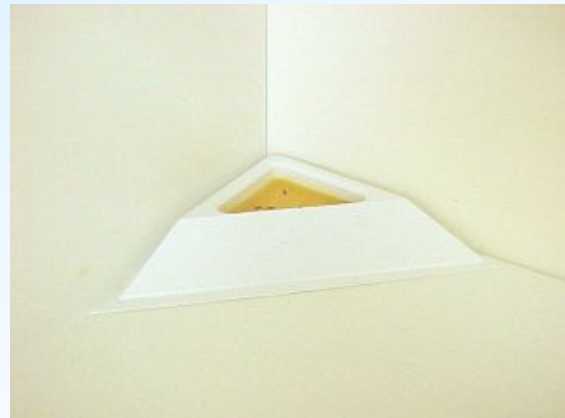
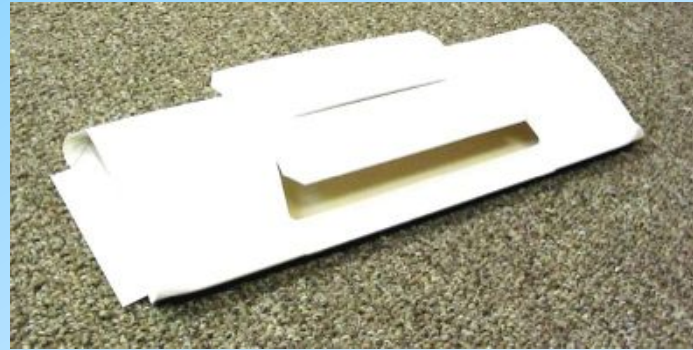
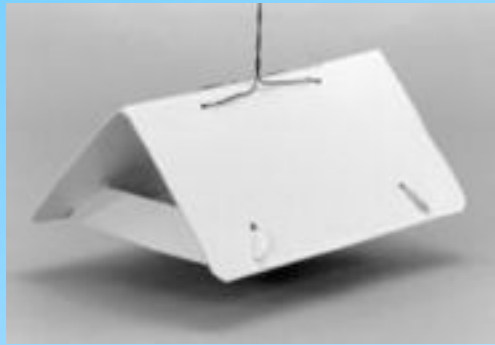


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Monitoring for Pests



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Focus on Riskiest Items

- Fur
- Feathers
- Wool
- Silk
- Insect Specimens
- Parchment & Velum
- Papier Mache
- Animal Skins
- Books composed of these materials
- Dried Plants and Seeds
- Sapwood
- Any Damp Organic Material



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Pay Special Attention to Museum Stores and Restaurants



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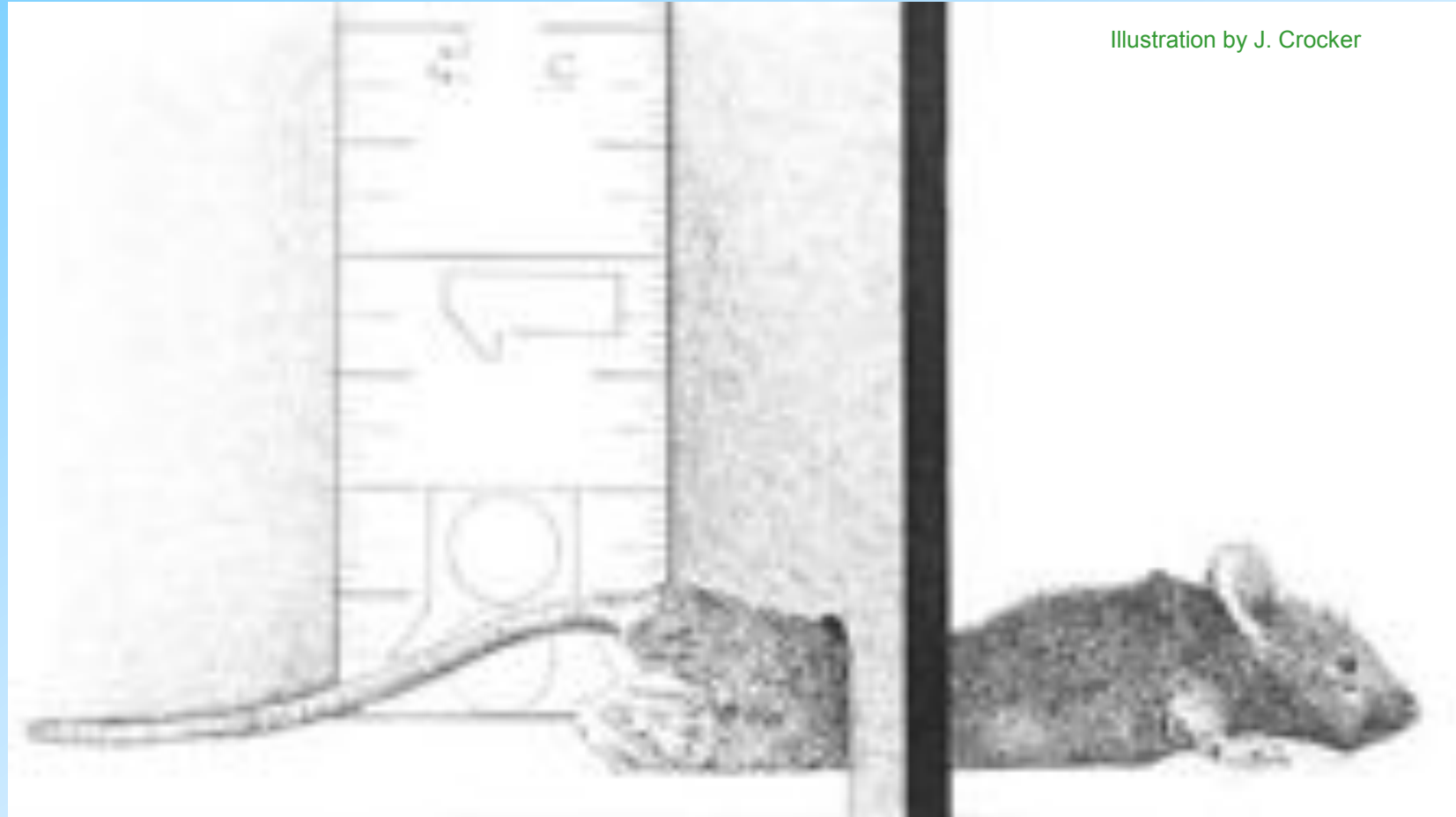
Exclusion

- Integrity of building (excluding pests)



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A ¼ inch gap is all a mouse needs to enter a structure



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Sealing Doors



Rachael Arenstein AM Art Conservation

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Block pathways into the building



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Sanitation

- **Good house-keeping/Sanitation:** producing an environment inhospitable to pests



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Sanitation

- Scheduled Cleaning
- Look for and Recognize Signs of Pest Activity
- People Issues



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Look at Sanitation at a Micro-Level



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Look at Sanitation at a Micro-Level



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Accumulation in Vents



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Exterior Building Lights



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Landscaping



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Rachael Arenstein AM Art Conservation

IPM Program Components

- Identification & Documentation -



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Treating for Pests



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Treatment Options

- Disposal of Infested Material
- Freeze “em or Fry “em
- Anoxia (O₂ Scavengers or Nitrogen)
- CO₂
- Traditional Fumigants – In some situations
- Other



Developing resources on Integrated Pest Management for museums, and other collection holding institutions.



Varied Carpet Beetles

courtesy of Jim Kalisch, University of Nebraska Department of Entomology ©2009

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Better pest management doesn't mean more chemicals.

In the past, pest management in museums and other collection holding institutions often involved regular applications of toxic chemicals to collection areas and actual collections. Health and safety concerns have led institutions to move away from this approach in favor of preventative and protective measures that are not based on chemicals. This strategy involves numerous measures used in combination and is commonly termed "integrated pest management" or IPM. The main elements of an IPM program involve:

- **PREVENTION** - Preventing access to pests
- **MONITORING** - Monitoring pest populations
- **IDENTIFICATION** - Identifying potential pest threats
- **TREATMENT** - Treating outbreaks in the safest manner possible
- **RESOURCES** - Additional resources pertaining to IPM
- **ABOUT US** - Museumpests.net explained

The site presents information on invertebrate, vertebrate, and mold pests.

ANNOUNCEMENTS:

If you are interested in attending the 2010 IPM-Working Group meeting to be held at the American Museum of Natural History in New York City on February 22-23 please contact IPM-WG Co-chair Rachael Arenstein at Chair@museumpests.net

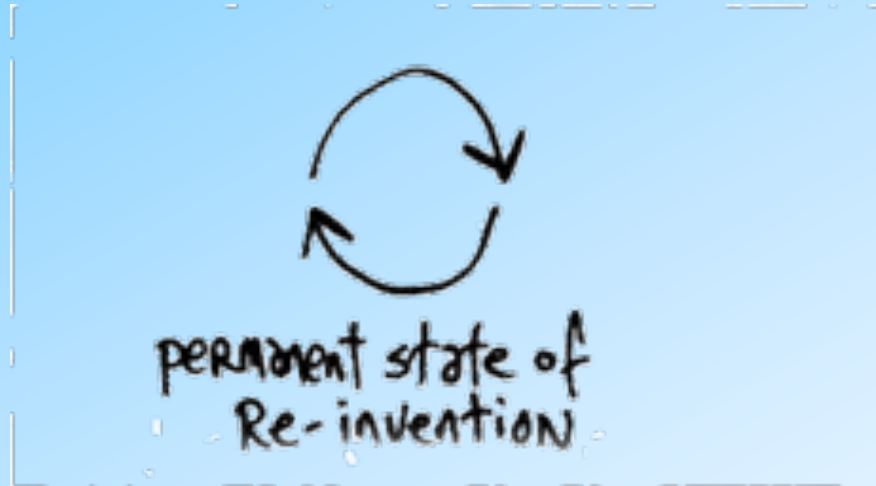
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- Historic New England
- Zak Software Inc.

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Finally

Be Creative in Your Approach



- Don't be afraid to change the program to better suite the needs of your institution
- Make it Fun - when possible

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