



Integrated Pest Management and the Risk Assessment Process

Integrated Pest Management (IPM) was adopted to describe the development of new pest control methods which did not rely on the continuous use of pesticides. The main IPM principles which have successfully been adapted for use in museums and houses are: monitoring for pests, targeting treatment only where it is needed and modifying the environment to discourage pest attack. It is a process that incorporates a **risk-based approach** to the management of pests in museums, libraries, and historic houses.

Risk assessment is a systematic process of evaluating the potential risks that may be involved in a projected activity. It involves:

- Identifying the hazards
- Identifying who or what might be harmed and how
- Evaluating the risks
- Recording significant findings
- Regularly reviewing the risk assessment including following any changes to process or materials



Carpet beetle damage
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A **prophylactic** or **preventive treatment** is a treatment that is applied to an object to guard from or prevent the spread or occurrence of an infestation. The historic application of persistent and toxic pesticides is an example of a prophylactic treatment. These treatment methods are generally no longer considered acceptable or ethical. In some cases, the surface application of pyrethroids against woodborers is still recommended.

Preventive conservation Measures that prevent damage or reduce the potential for it. It focuses on collections and the environment rather than individual objects. It is a non-interventive approach, seeking to preserve the object in its present chemical and physical form.

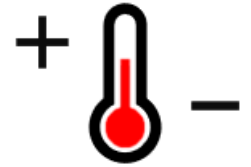
Integrated Pest Management Approach

IPM uses a **risk-based approach** to assess the level of risk posed to collections. To determine risk, information must be collected on both the pests and the collections.

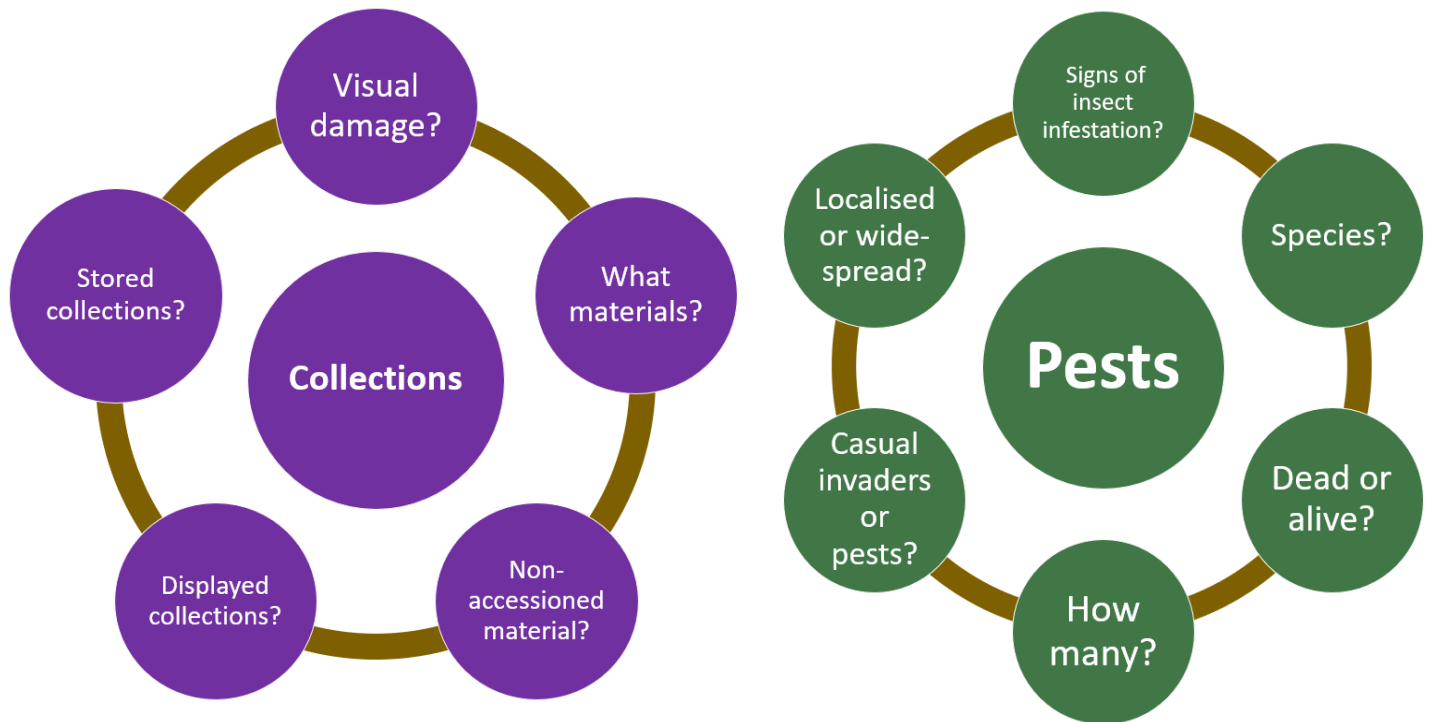
Persistent pesticides applied directly to the surface of objects will leave residues of that chemical or its breakdown products for many years. Many pesticides are now banned or no longer in use and deposits may still remain on objects that were treated many years ago.



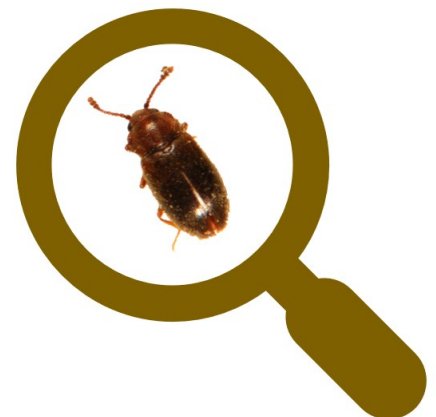
More recently developed treatment methods, such as low temperature, high temperature and anoxia (low oxygen) are effective in killing pests but are not prophylactic in nature as they will not prevent the objects from being attacked after treatment. However, they are much safer and less hazardous to objects and humans than toxic chemical methods of treatment.



Assessing the Risk



IPM applies a **risk-based approach** to determine the level of risk posed as an ethical method to reduce damage to collections from pest attack and the harmful effects of excessive chemical treatments. Modern physical treatment methods remove the risk of these deleterious chemical treatments but are not prophylactic in nature. A combination of monitoring for pests, targeting treatment only where necessary and modifying the environment are required to ensure objects are not put at risk of pest attack.



Key references

Ashley-Smith, J. 1999. Risk Assessment for Object Conservation. Butterworth-Heinemann.

Caple, C. 2000. Conservation Skills: Judgement, method and decision-making. Routledge.

Crossman, A. and Pinniger, D. 2021. Integrated Pest Management: A Holistic Approach to Managing Pest Damage to Cultural Assets. AC/DP CoLab.

