INTEGRATED PEST MANAGEMENT PROGRAM
MINNESOTA HISTORY CENTER

Revised December 1998
Revised January 2001
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I. **Goals**:

A. The main goal of the Integrated Pest Management (IPM) Program is to keep the facilities free of pests. IPM as used here connotes the control and eradication of pests that attack and damage collections of cultural and scientific materials. The term *pests* denotes insects and other arthropods, rodents, fungus and any other creatures who do not belong inside buildings.

B. **IPM consists of the following activities**:

1. **Monitoring**: regular monitoring of the facility for the types and numbers of pests that have infiltrated the building structure and fabric;
2. **Housekeeping**: Control and careful cleanup of food wastes and keeping all areas clean of all debris that is attractive to pests;
3. **Building Maintenance**: Keeping the building fabric in good condition to prevent the ingress of pests through cracks, gaps, etc.; this includes gasketing doors and windows, keeping plants away form the exterior walls, controlling temperature and R.H. within all spaces in the structure;
4. **Eradication**: Controlling and eradicating pest species through the judicious and sparing use of chemical insecticides, fumigants, and fungicides on a regular and as-needed basis; non-chemical methods such as freezing are used whenever possible to treat individually infested objects; rodents will be trapped with snap and/or live traps; anti-coagulant baits will not be used.

II. **Methodology**:

A. The IPM Program (hereafter referred to as the Program) at the Minnesota History Center (MHC) will consist of the following components:

1. **Monitoring**: All spaces subject to infiltration and habitation by various pest species will be monitored with glueboards, smaller blunder traps, and live traps for rodents. The contracting PCO will place the boards and collect them, and communicate the results to the Objects Conservator. The PCO will have to be accompanied by Museum Collections Dept. staff member into all Level B storage areas, and a Library and Archives Staff member into any storage areas on Level A. A regular schedule must be set up for inspection visits.

a. Large format floorplans of the entire building will be obtained and zones will be marked out and locations numbered.
b. A database will be set up by the Objects Conservator to keep track of the trap locations, dates of setting, and an inventory of the catch.
c. Unidentified specimens will be sent to the appropriate agency for identification. A comparative collection will be assembled by the Objects Conservator for in-house identifications.

2. **Building Maintenance**: All outside doors which lead to the Collections areas will be gasketed with floor sweeps. The exterior of the building will be inspected regularly for cracks and settling.

3. **Housekeeping:**
   a. The Staff Amenities Subcommittee of the MHC Building Use Committee has made recommendations regarding food and live plants in the building in reference to staff activities:
      1) Live plants and cut flowers will be kept out of all collections use areas. They will be allowed in the Great Hall, food service and office areas in which collections are not located.
      2) Food will only be allowed in non-collections handling areas.
   a. The Conservation Department will to continue to actively work with the exhibits staff to advise on pre-treatment of wood and other materials to be used in exhibits.
   b. The food service areas must be kept clean and constantly monitored. Care must be taken to completely clean up after events and to prevent food from entering the Reference area on Level 2.
   c. No food or drink should be allowed in the Galleries. Coffee stations must be kept clean of sugar and creamer spills. No food should be stored or consumed on the A and B levels, except in the conference rooms on those levels. Food and food remains used in those rooms must be cleaned up immediately, including having the floor vacuumed. No food will be left out overnight in office areas.
4. **Eradication:**
   a. The licensed Pest Control Operator (PCO) under contract with the State of Minnesota is currently working in the building on a semimonthly basis in the kitchen area, and monthly in the rest of the MHC.

   b. The Building Services cleaning personnel have been instructed to report any sightings of insects or rodents to their supervisor, who will communicate the information to the Institutional Services

Manager. The ISM will inform the Objects Conservator of the sightings, and the latter will record the data.

c. Chemical pesticides will be tailored to the areas in which they are used (e.g. a solvent based spray in areas where water sensitive materials are kept). Less toxic substances, such as the pyrethrin based chemicals are to be used, whenever possible. For example, Dursban will be used instead of Chlordane, when the problem calls for that class of insecticide.

d. The application of insecticides will be done based on the results of the monitoring program. Regular spraying in collections areas will not be done.

e. All commercial pest control contractors hired to apply chemicals must use only those products which have been reviewed and approved by the Conservation Dept. An MSDS must be on file in the Conservation and Institutional Services Offices for all hazardous materials used.

f. Noxious or foul smelling chemicals, such as diazanon in mineral spirits, will be avoided in public spaces and eating areas. Low odor substances will be used whenever possible.

III. **Procedures for Collections:**

A. Upon collecting objects and materials that have been exposed to favorable conditions for pest infestation, the conservation staff will be notified and reasonable lead time given for scheduling and preparation for inspection and pest control actions, if necessary.

B. If an object is infested, the Conservation Department must be informed so a field inspection can take place and advice given as to whether the object should be accepted based on its condition. Plastic bags will be taken to the collections sites and infested (mold and/or insects) boxes will be bagged before returning to the MHC.

C. If the decision is made to accept an infested or suspected object, it will be held in the Pre-treatment Quarantine Room (B-164) near the loading dock. The objects should be bagged or wrapped in polyethylene sheeting. Decisions will be made as to which fumigant to apply and if a contractor is hired for the job. The conservation dept. has the capability to do low oxygen fumigation for smaller objects.

D. Smaller objects will be prepared (i.e. dried of excess moisture, wrapped in plastic, Pest Control Form Cl 008 will be filled out by the conservation staff, etc.) for freezing in the chest freezer in B-164. The standard process of two 48 hour cycles at -20 degrees C will be followed where applicable or modified to fit the situation.

E. Objects that are infested with mold growth will be processed and cleaned in the "Mold Room" (B-167) using fungicides and drying procedures appropriate to the materials.

F. Only after the proper quarantining and treatment procedures have been completed to the satisfaction of the Conservation Department will the objects be moved into spaces with other collections. Safe handling techniques will be employed if objects have been treated with chemicals. The MSDS's provided prior to the use of specific pesticides will be consulted to determine the specific handling techniques and equipment required. Collections staff will monitor the treated objects for recurrences of infestation.

IV**. Paper-based Collections:**

A. The MSS and Archives accessions are inspected on site by the staff member who is acquiring the collection.
    1. plastic bags will be taken to the collections sites and infested (mold and/or insects) boxes will be bagged before returning to the MHC.
    2. the Pest Control Treatment Form (CL 008) will be filled out by the MSS and Archives acquisition staff and submitted to the Objects Conservator for further action when it is deemed necessary to treat infested materials.
    3. It is imperative to keep accession information on the containers holding the records during every phase of pest treatment. Pressure sensitive labels will be used on the boxes and exteriors of the bags.
B. When an infestation is observed, the Objects Conservator and MSS/Archives staff will move the boxes to B-164 (Museum Collections Quarantine holding area).

V. **Staff Education:**

A. The MHC staff will attend IPM orientation sessions conducted by the Conservation Department.
B. These orientation sessions will consist of the following informational components:
    1. Introduction to IPM
        a. components (structural, cultural, etc.)
        b. goals
    2. Brief description of museum pests and their biology.
    3. Description of the MHC IPM procedures.
        a. monitoring
        b. chemical applications
        c. quarantining
        d. trapping
    4. staff participation
        a. keeping food and desk areas clean
        b. checking live plants and flowers

c. not touching or moving sticky traps
d. reporting infestations or unusual occurrences to Conservation staff.
e. collecting samples of live insects spotted in the building according to procedures set up by the conservation dept. Samples will be given to the Conservation Dept. for identification and recording.
f. following Collections Procedures in III above.
g. making certain that contract and project/temporary personnel go through IPM orientation as deemed necessary.
h. training staff (i.e. archives and manuscripts depts.) in the proper handling of dusty and fungi infested papers.
    1) proper protective equipment (face masks, gloves, etc.)
    2) using available lab spaces and extractive equipment when handling large lots of material.

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HOW TO DEAL WITH AN INSECT/PEST INFESTATION AT YOUR SITE

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October 1995; January 2001

1) Initial Actions:

If a live insect infestation is observed, initiate the following actions:

- Notify the Objects Conservator **and** Sites Collections Curator immediately. If your site has a contract with a state licensed Pest Control firm, notify the Pest Control Operator (PCO) and have them contact the Objects Conservator before authorizing any pesticide application such as fumigation. If the Objects Conservator is unavailable, contact the Conservation Department Head for advice on how to proceed.
- If the infested objects are on loan to your site from MHS collections or from another institution or individual, notify the Central Registrar as well.
- Please **do not** stomp on, squish, swat, smash, or otherwise obliterate the specimen (unless you are being attacked by a foot long mutant roach). Having a mostly intact specimen saves time and effort in identification. Proper identification of the genus and species gives a knowledge of the life cycle of the animal, and allows for better control methods.
- Place the specimen(s) in a vial from the Integrated Pest Management Kit (IPM) . Most insects will chew their way out of vinyl baggies and even polyethylene ziplock bags. Contact the Objects Lab at the above number for more vials.

- Label the vial with the tag provided. Include the following information:
- Date found - Location (site, loc. within the site) -initials of the finder

- Send the vial(s) to the Objects Conservation Lab for identification.

2) Isolating the objects:

- **Do not use commercial insecticides on objects (e.g. Raid, Diazanon, Sevin dust, etc.).**

- If the objects are small enough or are in boxes, place them into heavy duty polyethylene garbage bags. Each site should make sure that they have a supply on hand. Place that bag into another garbage bag. Label the outer bag as to the contents. Make an inventory of the contents of each bag (accession numbers, object name, number of parts, etc.). For instructions on isolating larger objects, contact the Objects Conservator.

- **CAUTION:** If the objects are also damp or wet, contact the Objects, Textile or Paper Conservator (depending on the object) BEFORE placing them into the plastic bags.

3) Treating the Objects:

- The Objects Conservator, or other Conservator (depending on the nature of the effected objects), will advise you on how to proceed with the elimination of the pests. With most insects and smaller objects, this will involve freezing cycles. The Objects Lab has facilities for this treatment. It will be your responsibility to transport the objects to the Minnesota History Center (MHC) upon arranging a schedule with the Objects Conservator and Sites Collections Curator. The Objects Conservator will perform the actual treatments and maintain the treatment records.

- It is your responsibility to package the objects properly for transport from and to your site. If you need help and advice on this, contact the proper conservator for the object type.

- The Objects Conservator (or other Conservator) will be in contact with your contracting PCO if one is required for on-site fumigation, trapping, or other involved treatment before the treatment commences to ensure that the materials and methods used are safe for humans and objects. All procedures will be coordinated with the Site Manager.

4) Follow-up:

- Once the problem has been treated and the objects are returned to the site, you will have to monitor them to insure that the infestation is not recurring. The frequency of the inspections will depend upon the lifecycle of the pest and the seasonal cycle. Monitoring may also involve checking the PCO-provided traps on a weekly basis.

- Enhanced house-keeping procedures may have to be instituted, as well as improvements to the physical plant of the site (e.g. door sweeps, caulking cracks, facia repair, etc.). This is especially important at sites which have cooking programs or where food items are displayed and/or served.

- Periodic inspections by a PCO (monthly, quarterly, etc.) may be required if the infestation is likely to recur due to natural circumstances. Most insect pests are endemic and will cause problems if given the opportunity. Proactive approaches are necessary to prevent reinfestation even after treatment.