

ABORIGINAL AND TORRES STRAIT ISLANDER CULTURAL MATERIAL

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Objectives

At the end of this chapter you should:

- be aware of the range of materials which are used to make Aboriginal and Torres Strait Islander heritage items;
- have a basic knowledge of the most common types of damage encountered in collections of Aboriginal and Torres Strait Islander heritage items;
- have an understanding of the factors that contribute to the deterioration of these items;
- be able to take practical steps to reduce future damage to items in your care;
- know about specific steps you can take to care for particular items, such as bark paintings, and carved and painted objects; and
- know about the national museums' policy on Aboriginal and Torres Strait Islander items.



Photograph courtesy of Karen Coote, Australian Museum

Introduction

Many museum, gallery and library collections include Aboriginal and Torres Strait Islander heritage items. These items can be made from a wide range of materials; and caring for them is not always straightforward.

As with all heritage items, compromise is necessary when trying to find a balance between using and preserving collections. Yet, there is

much that you can do to preserve items in your care: through careful and thoughtful handling, storage and display.

This section identifies the main problems you will encounter with Aboriginal and Torres Strait Islander heritage items in your collections, and provides information that will help you to prolong the life of these items. The measures recommended in this section relate to standard museum conservation practice, and do not take into account regional, indigenous conservation methods.

Previous Possessions, New Obligations—a national policy



Photograph courtesy of Karen Coote, Australian Museum

In 1993, the International Year for the World's Indigenous Peoples, the Council of Australian Museum's Association—now Museums Australia—released *Previous Possessions, New Obligations: Policies for Museums in Australia and Aboriginal and Torres Strait Islander Peoples*.

The introduction to this policy document states:

Museums have tended to see their major role as collecting and maintaining objects. But they in fact have obligations to people, most particularly as to how they portray the people and societies whose cultural material and heritage they hold. Increasingly, museums need to strengthen their relationships with the peoples and communities whose material culture forms the basis of their collections. Museums in Australia wish to join with Aboriginal and Torres

Strait Islander peoples in collaborative programs to increase understanding amongst all peoples.

Museums Australia's policy encourages all State and Territory museums to work closely with indigenous people to interpret, display and preserve their cultural property. Part of this policy includes the identification and repatriation—to their rightful custodians—of culturally sensitive Aboriginal or Torres Strait Islander material in museums.

Aboriginal and Torres Strait Islander heritage items in collections

This section concentrates on Aboriginal and Torres Strait Islander heritage items that are commonly found in collections, and which are most at risk of deterioration. These include items made from:

- feathers;
- dyed fibres;
- fibres;
- seeds;
- carved wood;
- painted bark;
- painted wood;
- natural pigments;
- natural gums, waxes and resins;
- paintings on canvas;
- printed fabrics; and
- paintings and drawings on paper;

For more information

For more information about the care of paintings, works on paper, fabrics and wooden objects, please see *Caring for Cultural Material 1* and *2*.

What are the most common types and causes of damage?

As with most heritage material which is made mainly from organic materials, Aboriginal and Torres Strait Islander heritage items are vulnerable to physical damage, and to damage caused by chemical deterioration of their components.

Physical damage includes:

- scuffing, abrasion and breaks to objects caused by poor handling and/or inadequate support during storage and display;
- creasing and tearing of works on paper and canvas caused by excessive or careless use;
- splitting and curling of bark paintings due to fluctuations in relative humidity;
- woven plant fibres drying out and becoming brittle in low relative humidity conditions;
- distortion of natural resins and waxes in high temperatures;



Paint is flaking away from this wooden object.

Photograph courtesy of Karen Coote, Australian Museum

- loss of paint because of fluctuations in relative humidity. Fluctuations in relative humidity can cause the paint to flake and become powdery and fall off the surface of bark paintings and carved wooden objects;
- cracking of wooden objects in low relative humidity conditions. Cracking occurs when wood dries out too quickly. This can also lead to a loss of paint from these objects;

- flaking and powdering of paints because of inadequate binder in the paint formulation. The artists make their own paints for use on barks and wooden objects, using natural ochres and mineral pigments bound with glues. Sometimes only a little bit of glue is used, and this can cause the paint to fall off;
- insect attack—insects will attack wood, feathers, seeds, fibres, human hair string, bark, paper and canvas; and



Areas of insect damage can be seen on this object.
 Photograph courtesy of Karen Coote, Australian Museum

- soiling caused by deposits of dust. Dust can become permanently attached to objects if components, such as natural resins and waxes, soften due to high temperatures.

Damage due to chemical deterioration includes:

- fading and discolouration of natural pigments, watercolour pigments, felt-tip pen inks and other media caused by exposure to UV radiation and high lighting levels;
- discolouration of paper due to exposure to UV radiation and high lighting levels;
- fading of feathers, woven fibres, printed fabrics, paper and unpainted wooden carvings due to exposure to UV radiation and high lighting levels;
- damage from pollutants;
- natural aging of materials which happens more rapidly when objects are exposed to extreme temperatures and high relative humidity levels; and

- deterioration caused by mould growth. Organic materials are potential food sources for mould. Conditions are very favourable to mould growth when the relative humidity remains constantly above 65%.

For more information

For more information about adverse environmental effects, please see *Damage and Decay*.

Common causes of damage

All the most common types of damage are caused by:

- poor handling;
- poor storage methods;
- inappropriate display methods;
- chemical and physical changes in the objects themselves; or
- a combination of any and all of these.



Photograph courtesy of Karen Coote, Australian Museum

The do's and don'ts of handling Aboriginal and Torres Strait Islander heritage items

Handling Aboriginal and Torres Strait Islander heritage items with care and commonsense will help to prevent damage.

It is best to handle all items as little as possible and to fully support all objects when handling

them. This includes objects made from stone, wood, fibres, feathers, bark, fabric and paper, as well as painted objects and paintings on canvas or other supports.

If objects are painted, try to touch them on unpainted areas where possible. For example, carry barks by holding the edges and decorated carvings in the areas of plain decoration.

If an object is made up of different materials, examine it carefully to find the strongest, most stable part, so that you can handle it there.

Ochre-painted items are particularly vulnerable to pigment loss—take extreme care when handling these works.

Wear gloves to reduce the risk of pigment rubbing off, and the possibility of transferring sweat, grease and grime from uncovered hands.

CAUTION:

Do NOT wear white, cotton gloves when handling objects with flaking or powdery pigment surfaces, for example, Aboriginal bark paintings.

The pigment can be picked up by the cotton gloves. If you must touch pigmented areas, wear clean, close-fitting surgical gloves instead.

Remember, feathers are fragile and should not be handled directly. If you must pick up single feathers, handle them at the rachis, that is, the vein portion.

Storing and displaying Aboriginal and Torres Strait Islander heritage items

Always remember to be sensitive to the cultural group, and make sure that cultural mores are respected, when handling, storing and displaying cultural heritage material.

For example, with particular Aboriginal community groups, it is appropriate to store items relating to men's business in a separate area to items relating to women's business.

With secret or sacred material, security is important—to make sure that only the appropriate people have access to the items.

Just as there can be appropriate and inappropriate ways to store particular items, it is important to be aware that displaying these items should also be handled sensitively. For example, it may never be appropriate to place some items on general display.

If you are unsure of the appropriate way to handle, store or display any Aboriginal and Torres Strait Islander heritage items in your collection, contact a curator at your State museum for further information or for contacts with the appropriate people to answer your questions.



Spears in storage.

Photograph courtesy of Karen Coote, Australian Museum

Ideal conditions for storage and display

It is important to note that ideal storage conditions cannot always be achieved; nor is it always appropriate to do so, because some items are produced, and used, in extreme climates. For example, if an item has been produced recently, or stored for a considerable time, in a tropical environment, placing it in a so-called ideal environment which is much drier than the conditions it is used to, could cause extensive damage.

This section describes the ideal storage and display environment for most materials. If the ideal environment cannot be achieved, or is inappropriate, the emphasis should be on providing a **stable** environment.

Ideally, store all Aboriginal and Torres Strait Islander heritage items in an environment where temperature is constant and moderate—in the range of 18–22°C. If temperatures are generally outside this range in your area, it is important to keep fluctuations to a minimum and to make sure that they are gradual.

Relative humidity should be constant and below 60%. Minimise fluctuations in relative humidity, and ensure that they are gradual. Fluctuations in relative humidity can cause severe distortion, cracking and splitting, and cause separation of paint layers from the objects.

Mould grows where the relative humidity is continuously above 65%, mould does not grow when relative humidity is stable and below 60%.

Keep items at risk of drying out too quickly after coming from moist conditions, in an environment where the relative humidity is in the range of 55–65%.

Keep items acclimatised to drier conditions in an environment where the relative humidity is in the range of 50–55%.

Light should be kept to the minimum necessary for the activity. Wherever possible, store items that are not on display in the dark. This reduces the risk of fading and discolouration of a range of materials.

It is necessary to have light when items are on display. The brightness of the light should be determined by the sensitivity of the particular materials to light.

For sensitive materials such as feathers, woven fabrics, dyed materials and watercolours on paper, the brightness should be 50 lux or less. For moderately sensitive materials, the brightness of the light should be 250 lux or less.

For all items the UV content of the light should be less than 30 $\mu\text{W}/\text{lm}$ and no greater 75 $\mu\text{W}/\text{lm}$.

Protect items from dust and pollutants.

For more information

For more information on adverse environmental effects, please see *Damage and Decay*.

General storage and display guidelines

Give careful consideration to the storage site and the storage system. In ideal conditions, a good storage system in an appropriate storage site, gives added protection to your collection. If the available facilities or the local climate make it difficult to achieve the ideal conditions, selecting the storage site and maintaining a good storage

system are even more critical in preventing damage to the collections.

Wherever possible, the storage and display sites should be in a central area of the building, where they are buffered from the extremes of climatic fluctuations which can be experienced near external walls or in basements and attics. The storage site should not contain any water, drain or steam pipes, particularly at ceiling level. Leaking pipes can cause a lot of damage. Basements should also be avoided, because of the risk of flooding.

The storage and display sites should be well-ventilated. This helps reduce the risk of insect and mould infestation.

Inspect and clean storage and display areas regularly. Thorough and regular cleaning helps greatly in controlling insects and mould. To detect insect infestations early, check objects regularly for signs of infestation—holes and frass, that is, wood powder left by boring insects.

Don't store items in sheds, or directly on the floor.

Cover stored objects with cotton or Tyvek covers. They provide protection from dust and unnecessary exposure to light. These covers also provide some buffering against fluctuations in environmental conditions.

For more information

For more information about Tyvek, please see the chapter on Textiles in this volume.

Always give items adequate support and try to reduce the physical stresses that can cause damage.



Spears and spear throwers supported and shelved in storage.

Photograph courtesy of Karen Coote, Australian Museum



Hafted axes—note the supports for each item.

Photograph courtesy of Karen Coote, Australian Museum

Bark paintings should be stored flat, and any curved or warped areas supported with polystyrene-filled, cotton bags or something similar. This gives the bark the greatest overall support.

Ideally, place barks in drawers such as plan cabinets: to protect them from dust and from fluctuations and extremes in relative humidity and temperature. If suitable drawers are not available, store bark paintings on flat shelving, with support for warped or curved areas as described above.

You can consider placing each bark painting on a flat board, for example, acid-free Foam Cor, mount board or in a box, so that you can lift the item without touching the bark itself. This is particularly helpful when it is necessary to move items in storage or to have the bark painting available for study purposes.

Woven material, such as pandanus, bark string bags and baskets, should be well supported on the inside with Dacron-filled cotton bags. This helps to maintain their shape, and reduces the risk of splitting along the creases, which can occur if they are stored flat. It is wise to support them on the outside with filled, cotton bags as well.

Design similar support systems for items that are on display, especially for long-term display.



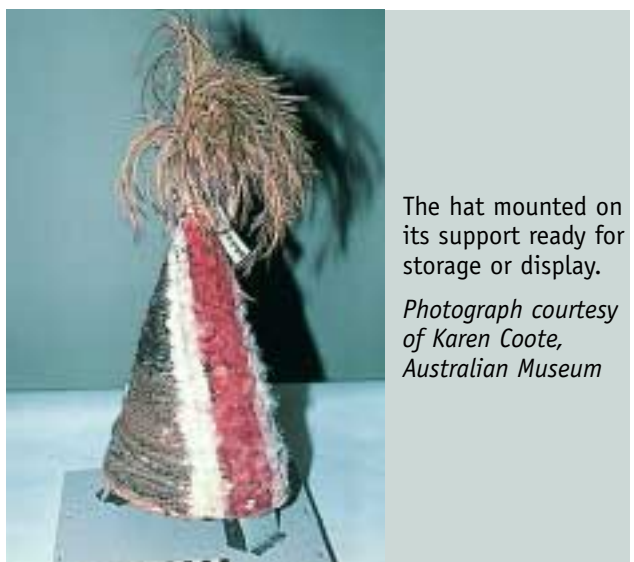
This woven bag is padded to help it maintain its shape.

Photograph courtesy of Karen Coote, Australian Museum



The support system on the right is designed to prevent distortion of the dance hat on the left.

Photograph courtesy of Karen Coote, Australian Museum



The hat mounted on its support ready for storage or display.

Photograph courtesy of Karen Coote, Australian Museum

Objects made with feathers and/or seeds are prone to light and insect attack. It is better to store them in large, dry, plastic containers with lids in a storage system specifically made to fit the container. As well as protecting against light damage and insect attack, this stops the items being squashed.

Always give carved and painted items adequate support—using systems that will not rub against painted areas and cause paint loss.

Store and display carved and painted items, such as Pukamani poles from the Tiwi Islands, so that their weight is supported and there is no friction on painted surfaces, which could lead to losses.



Pukamani poles supported in a specially designed storage system.

Photograph courtesy of Karen Coote, Australian Museum

Smaller items can be supported on polystyrene-filled cotton bags, where the paint can be protected and the carving is well-aired, preventing possible cracking through preferential drying.

Painted bags, for example, decorated bark baskets or painted pandanus bags, can be stored inverted to give uniform support over the unpainted surface, or on doughnut-shaped, padded cushions which hold them upright and touch only unpainted areas of the objects.

Make sure that light-sensitive items are adequately protected.

Store light-sensitive material—such as the pandanus and bark string bags and baskets—away from strong light, because the vegetable dyes fade readily. They can be placed in covered storage

boxes, or covered with cotton or Tyvek dust cloths to reduce their exposure to light.

Rotate the exhibitions, so objects are not constantly on display.

Keep light levels low when items are on display, and make sure lights are turned off after hours. Make sure also that heat produced by the lights does not affect your objects.

Always avoid direct sunlight on your objects.

Care of bark paintings

The bark most commonly used for paintings is called Stringybark—*Eucalyptus tetrodonta*. The pigments used in the paintings are natural red and yellow ochres as well as white gypsum and charcoal. Since the 1960s these pigments have been mixed with water and varying quantities of PVA glue, generally the brand name Aquadhere. Earlier, artists used vegetable binders with the pigments, including orchid juice, the sap of certain leaves and trees and turtle egg yolk.

Problems encountered with bark paintings

Loss of paint

Possible Causes

- Poor storage conditions.
- Poor mounting systems.
- Too little binder in the paint.
- Paint applied over unbound pigment.
- Environmental fluctuations cause movement of barks, causing paint to flake.
- Some paints shrinking more than others as the paint dries.

Preventive Action

- Store bark paintings flat, painted side up, and in a stable, dust-free environment.
- Support barks so that they are protected against vibration.
- Avoid stacking objects one against the other.

- Seek the advice of a conservator.
- In communities where the artist is available to retouch his or her work, take great care to make sure only the damaged area is treated and pigment colours are matched.

CAUTION:

It is unwise to spray commercial fixatives onto flaking or powdery areas, because the fixatives often yellow in time, and the pressure of the spray can blow flakes from the objects.

Mould growth

Possible Causes

- Relative humidity above 65%. The main storage room may be at a low relative humidity; but pockets of higher relative humidity can occur, especially in badly ventilated corners and drawers.
- Mould can grow unseen on the back of a bark where the relative humidity is higher because of poor storage conditions. The mould can then grow through fine cracks in the bark to the painted surface.

Preventive Action

- Store or exhibit in a well-aired environment with relative humidity below 65% and preferably below 60%.

Splitting and curling

Possible causes

- Rapid fluctuations in relative humidity—fibres absorb and lose water, which causes barks to expand and shrink.

Preventive action

- Store the bark horizontally and well supported in a stable environment.
- Avoid placing the bark near heaters, air conditioning outlets or open windows. The environment is not likely to be stable in these areas.
- The most stable areas are normally the inner rooms of a building.
- In time, the bark may relax into a flatter position.

Warping

Possible causes

- Normally because of uneven pressure on the bark. It can occur over a long time, and can eventually cause splitting and loss of pigments.
- Can be the result of poor mounting systems, which allow some areas of the bark to move in response to environmental fluctuations while others are kept immobile.

Preventive action

- Remove any uneven pressure from the back or front of the bark.
- Remove, or get a conservator to remove, any glued bars of wood from the back of the bark.
- If you wish to display your bark painting, mount it in such a way that it is supported without being subjected to uneven pressures.

Care of items made from fibres

Vegetable fibres are used for the manufacture of a range of woven objects. In the north of Australia, the Pandanus Palm—*Pandanus spiralis*—and the Sand Palm—*Livisonia humilis*—are used extensively for basket making. Fibrous grasses of the genus *Cyperus* are used also.

Bush string is made from a range of species—including the Yellow-flowered and Red-flowered Kurrajong—*Branchycton diversifolius* and *Branchycton paradoxum* respectively—the Banyan Tree—*Ficus virens*—and Beach Hibiscus—*Hibiscus tiliaceus*. Bush string is used to make bags and ornaments.

In recent years, Aboriginal people have developed a range of vegetable-dye recipes for colouring their vegetable fibres; and in some regions the purple dye of the Murex shellfish is also used.



Fibre items and bark paintings on display
 Photograph courtesy of Karen Coote, Australian Museum

Objects are also made from human-hair string, and some are decorated with the feathers from a variety of birds.

Problems encountered with items made from fibres

Insect attack

Insect attack can be avoided by:

- storing objects in sealed containers to prevent infestation;
- placing these items indoors for exhibition, preferably in sealed showcases;
- checking objects constantly for insect attack; and
- fumigating or freezing items that are being attacked by insects.

For more information

For more information on controlling insects, please see the chapter on Biological Pests in *Damage and Decay*.

Damage through exposure to light and UV radiation

Light and UV radiation damage can be avoided by:

- storing objects in containers or boxes with lids, or under cotton or Tyvek covers;
- rotating items on exhibition, so that individual items are not exposed for long periods;

- keeping light levels low when items are on display, and turning lights off when they are not needed for viewing; and
- using low UV-emitting light sources, and avoiding sunlight.



Fibre items stored in plan chest drawers.

Photograph courtesy of Karen Coote, Australian Museum

For more information

For information about reducing UV radiation from storage and display areas, please see the chapter on light and UV radiation in *Damage and Decay*.

Care of wooden objects

In the Top End, many wooden objects—particularly carvings—are made from the soft wood of the Beach Hibiscus—*Hibiscus tiliaceus*—the Kapok Tree—*Bombax cebia*—Shitwood—*Cyrocarpus americans*—the Milkwood—*Alstonia actinophylla*—acacias and eucalyptus woods.

Burial poles and weaponry on Melville and Bathurst Islands are commonly made from Ironwood—*Erythrophleum chlorostachys*—or Bloodwood—*Eucalyptus nesophila*.

Most items are made from freshly cut timber, that has been dried for several days, though this varies according to the maker. On Melville and Bathurst Islands, burial poles are made, where possible, from fallen logs which are already cured through a long drying out period.

In arid central Australia, the most common wood used for making weapons and carvings is Mulga wood—*Acacia aaneura*. Other commonly used

timbers for making artefacts are Bloodwood—*Eucalyptus opaca*—Desert Kurrajong—*Branchyiton gregorii*, and Sandhill Wattle—*Acacia dictyophleba*.



A canoe in storage.

Photograph courtesy of Karen Coote, Australian Museum

Problems encountered with wooden objects

Insect attack

Possible causes

- Softer woods are prone to insect infestation.
- Usually the infestation occurs before the tree is cut down, and insects emerge from the object because the conditions—relative humidity and temperature—are favourable for continuing their life cycle.
- Insect infestation shows itself by the typical frass and exit holes in the wood. The size and shape of the hole can tell an expert what insect has emerged.

Preventive action

Freeze the object:

- place the affected object in a plastic bag;
- remove as much air from the bag as you can. This reduces the amount of moisture which would otherwise be absorbed by the object or condense inside the bag;
- close the bag with a heat-sealer or waterproof tape;
- place the object, in its bag, in a freezer for 48 hours at -20°C; and

- then remove the object from the freezer and allow it to thaw.

Wood, leather, feathers, fibre and textiles can all be treated this way. This process kills insects at all stages of their life cycles.

Cracking

Possible causes

- Aboriginal wooden objects have often been cut and carved before the wood has had time to cure or season. This leads to preferential loss of water from particular areas of the wood as they dry out in the natural atmosphere.

Preventive action

- Place the object in a wetter environment, up to 60%RH. This slows down the drying rate and helps to reduce cracking.

Flaking paint

Possible causes

- Too little binding medium in the paint.
- Paint applied over unbound pigment.
- Environmental fluctuations causing movement of the wood, leading to flaking of the paint.
- Preferential shrinkage of some paints over others as the paint is drying.

Preventive action

- Wooden objects with flaking paint can be stored by supporting them on sand-bags, so that the painted areas are not under any pressure.

CAUTION:

Do not try to treat painted wooden objects without a conservator's help. Using the wrong adhesive and/or application technique can cause problems, including further flaking and the yellowing of the paint area over time. It is unwise to spray commercial fixatives onto the flaking or powdery area, because the fixatives often yellow in time, and the pressure of the spray can blow flakes from the objects.

Natural adhesives and cements

Wax, gums and resins are frequently used:

- as adhesives for mounting stone spear or axe heads;
- for mending broken artefacts;
- as caulking for containers;
- for modelling small figures; and
- for making ornaments and ceremonial items.

In the desert the most common adhesive is resin from the Spinifex bush—*Triodia sp.*—other types include gums from the Desert Grass Tree—*Xanthorhea thurstonii*—the Mulga—*Acacia aneura*—and the Ghost Gum—*Eucalyptus papuan*.

In the tropical north, the wax made by native bees is the most commonly used sealant and adhesive; it is used for making small modelled figures and ornaments as well. Sometimes the gum from the Ironwood tree is also used as a cement.

Problems encountered with natural adhesives and cements

Distortion and slumping

Possible causes

- These substances change as the temperature and humidity fluctuate.

Preventive action

- Keep items with these types of materials out of direct sunlight and away from heat.

Paint media on canvas and paper

Artists' paints can include combinations of acrylics, natural gums and natural pigments.

Problems encountered with paint media on canvas and paper.

Flaking and powdering of paints

Possible causes

- Fluctuations in relative humidity.
- Too little binding medium in the paint.
- Inadequate support of the paper or canvas, allowing them to flex.

Preventive action

- Store works on paper and canvas in a stable environment.
- Use correct mounting techniques for works on paper to ensure that they are fully protected.
- Use appropriate storage, handling and display techniques for stretched and unstretched paintings on canvas.

For more information

For more information about storage and display of works on paper and or painting, see *Caring for Cultural Material 1*.

Aboriginal and Torres Strait Islander heritage items in Australia's climatic zones

The climatic zones outlined below are broad categories. Conditions may vary within these categories, depending on the state of repair of your building and whether the building is air conditioned.

Arid

This climate is generally very dry, however, in arid areas, it is often very hot during the day and very cold at night. This wide fluctuation in temperature is matched by wide fluctuations in relative humidity, for example from 75%–20% in a day.

When caring for Aboriginal and Torres Strait Islander heritage items in arid climates it is important to note:

- many of the materials that make up these items will tend to give out the water they contain—this can lead to some items, and some components of items, becoming dry and brittle; and
- the composite nature of many Aboriginal and Torres Strait Islander heritage items means that they are particularly susceptible to damage from fluctuations in temperature and relative humidity. As different materials release moisture at different rates, warping, dimensional change and flaking of paints can result.

Remember that even arid areas can have periods of higher relative humidity, even though the periods may only be very short. High humidities will cause swelling of some materials, and will increase the likelihood of insect and mould attack.

Dust can be a major problem in an arid climate. It is important that steps are taken to protect items from dust in storage and display.

Note: If your collections of Aboriginal and Torres Strait Islander heritage items have been kept in an arid environment for a considerable period and they are stable—**do not** try to alter the environment to meet the recommended ideal conditions. This could do more harm than good. The emphasis should be on long term stability.

Temperate

A temperate climate is considered a moderate climate, however, temperate climates tend to have a greater range of temperatures than tropical climates and may include extreme climatic variations.

If you are redecorating or designing storage and display areas, consider using materials that will help to buffer these areas against rapid fluctuations and extremes of relative humidity and temperature. This will help to reduce the risk of damage due to the fluctuations and extremes that occur in temperate environments.

The system of layers of storage—boxes, boxes within cupboards and drawers, covering items on shelves, etc—will be very useful in helping to buffer against the extreme conditions that can occur in a temperate environment.

As for all climatic areas regular inspection of storage and display areas is important so that developing problems do not go unnoticed.

Remember that many of Australia's main cities and major regional centres are in temperate regions. These areas tend to be heavily polluted and this should be taken into account.

Note: If your collections of Aboriginal and Torres Strait Islander heritage items have been kept in a temperate environment for a considerable period and they are stable—**do not** try to alter the environment to meet the recommended ideal conditions. This could do more harm than good. The emphasis should be on long term stability.

Tropical

These climates are characterised by heavy rainfall, high humidity and high temperatures.

When caring for Aboriginal and Torres Strait Islander heritage items in tropical climates it is important to note that:

- insects and moulds thrive and reproduce readily;
- chemical deterioration reactions generally proceed faster at higher temperatures;
- materials that have been in a tropical environment for some time will have a high moisture content. If they are suddenly moved into a drier environment they are likely to suffer shrinkage and warping;
- many of the materials used in making Aboriginal and Torres Strait Islander heritage items are very reactive to changes in relative humidity; and
- composite works will be particularly vulnerable.

Take steps to ensure that your storage and display spaces have good air flow.

Note: If your collections of Aboriginal and Torres Strait Islander heritage items have been kept in a tropical environment for a considerable period and they are stable—**do not** try to alter the environment to meet the recommended ideal condition. This could do more harm than good. The emphasis should be on long term stability.

MORE ABOUT ABORIGINAL AND TORRES STRAIT ISLANDER HERITAGE ITEMS

Additional information on *Previous Possessions, New Obligations*—a national policy

The following principles and detailed policy statements about preservation are taken directly from *Previous Possessions, New Obligations: Policies for Museums in Australia and Aboriginal and Torres Strait Islander Peoples*.

Management and collections

2. Aboriginal and Torres Strait Islander involvement in management of collections and information, and their use in the public programs and communication of museums, including exhibitions, education and publications, is essential.

Assistance to Aboriginal and Torres Strait Islander communities

8. Museums must assist Aboriginal and Torres Strait Islander community groups in the care and

preservation of objects. Conservation practice must adapt to cultural requirements, most particularly in respect of secret/sacred items.

Human remains

Return

1.5 All requests for the return of Aboriginal and Torres Strait Islander remains will be promptly and sensitively dealt with by the Museum.

Storage, access and display

1.7 Human remains, if retained by the museum, will be properly stored in an area separate from other parts of the collections and treated with respect at all times.

Secret/sacred material

Custodianships and access

2.5 Secret/sacred material shall be kept in a manner consistent with its sensitive nature and separately from other collections.

2.6 Traditional custodians will be consulted on the method of storage and preservation of secret/sacred material.

Display

2.8 Secret/sacred material shall not be displayed to the public except with the specific permission of the traditional custodians or their descendants.

Return

2.10 Secret/sacred material will be considered for return to the traditional custodians when requested by them in accordance with procedures which involve establishing that those requesting return are the rightful custodians according to Aboriginal and Torres Strait Islander custom and have regard to the highly sensitive nature of the material.

Collections in general

Acquisition, ownership, access and return

3.1 Acquisition, conservation, disposal and access to collections, including use in public programs, will take into account, or incorporate as appropriate, the views of the Aboriginal and Torres Strait Islander community of whose cultural traditions the items form part.

3.3 Museums will lend cultural material from their collections to museums and other appropriate venues, especially local Aboriginal and Torres Strait Islander keeping places, subject to appropriate conditions concerning conservation and security of the items.

Staffing, training and financial support

Employment

5.1 Museums will actively promote the employment of Aboriginal and Torres Strait Islander people in activities concerning Aboriginal and Torres Strait Islander cultures and heritage including collections management, research and conservation, public programs and administration.

Mould on objects

Mould can be very damaging to a wide range of Aboriginal objects. It is disfiguring, can stain and obscure the surface, or even penetrate through the whole structure of an object.

Mould grows where the relative humidity is continuously above 65%, where there is stagnant air, and in dusty and acidic environments. Mould particularly affects wood-based objects which have not been thoroughly dried or seasoned before use.

CAUTION:

Remember that mould is dangerous to your health—always wear a dust-mask when dealing with mould growth.

Preventive action

It is important to seek the advice of a conservator before undertaking any action on a cultural object. In the case of bark paintings, it is particularly important if:

- painted surfaces are crumbly or powdery, and brushing the mould removes the paint; and
- the mould growth is ingrained into the surface of the object and the bloom is still visible.

As a preventive measure, spray the back of a bark painting or the unpainted areas of objects with Glen 10 or Glen 20. The object can then be moved to a drier and environmentally more stable area of the building.

CAUTION:

Do not use Glen 10 or Glen 20 on acrylic paints.

Do building repairs, where necessary—to maintain the relative humidity below 65%.

Keep air circulating by using oscillating fans, which are more effective than ceiling fans.

Avoid placing objects in corners of rooms where there is minimal air circulation.

Inspect regularly for any signs of mould growth.

Maintain a clean room by vacuuming to prevent dust accumulation.

Avoid eating inside the room—foodstuffs are nutrients for mould as well as insects.

If you have a persistent mould problem, you may have to disinfect the room before your housekeeping efforts become effective. This means

washing down the walls with a product such as Exit Mould, and disinfecting, clean surfaces with a Glen 20 or Glen 10 spray; Glen products have a residual effect for up to 3 months.

It is important to document the condition of the object before treating it. This can be a written description with an accompanying photograph. By examining the item thoroughly you will better understand the extent of the problem. For example, it is often found that mould grows initially from the back of a bark painting, where a hot, wet microclimate has developed, and the mould on the front is symptomatic of the greater problem on the back.

The method you use to clean mould from an object depends on the state of the mould. The treatment described below dries out and removes a light dusting of mould.

Place the mouldy item in a well-aired, stable atmosphere with relative humidity of 50–60%. This dries the mould so that it can be removed.

Drying the mould does not kill it. Unless it is removed outdoors or in a well-vented area away from the rest of the collection, the spores can spread, be deposited on other items and infect the rest of the collection.

Do not over-dry the environment. A significant drop in relative humidity can cause objects to warp, curl and crack. For example, don't place infected items in direct sunlight because this could cause them to split or warp.

Dried mould can be brushed off outside using a medium/stiff brush.

CAUTION:

It is important to test-clean an area first to ensure there will be no loss of paint during cleaning.

Where the mould has progressed to a thick growth and is damp to the touch, it is safer to remove it through a wet-cleaning process. This is particularly true for carved and painted wood sculptures where the paint is stable.

- Mix 7 parts industrial methylated spirits to 3 parts water in a small glass jar.
- Before you begin cleaning, test an inconspicuous area using a cotton swab.

- If there is no smudging of paint or colour loss, clean off the mould with damp swabs.
- Change swabs regularly.
- An alternative method is to dip a brush into the solution, brush the affected area with it, then remove mould residue with lint-free paper or fabric.
- Allow the object to air-dry naturally.

If there are any problems, consult a conservator. It is also wise to see a conservator if the painted surfaces are friable and brushing the mould removes paint or if the mould growth is ingrained in the surface of the object and the bloom is still visible.

Mounting bark paintings

The system suggested below is described in Coote, 1995.

This method is straightforward, but requires you to contour the mount to the shape of the bark. If you are not confident doing this work, ask a conservator for help, or work through it with your local framer.

Problems which can occur with inappropriate mounting systems

Bark is subject to movement when it is placed in environments that are not controlled. This movement can happen over a short or long period of time, depending on the speed and extent of environmental changes. If a bark painting is constrained, or mounted in the wrong way, a great deal of damage can occur during this movement. In addition, if the paint is not held strongly onto the bark surface, it is more likely to flake off when the bark moves.

If a bark painting is fixed top and bottom, it tends to develop a twist.

If a wood backing has been glued in spots to the back of the bark then hung, it may develop a central warp over time.

If strips of wood are glued to the bark, it can develop a warp just below the adhesive line, which can progress into splitting or pulling away from the bark during natural movement.

In the past, barks were nailed, screwed or wired through from the front, and held onto a hard board at the back. This is now considered unethical: in the same way that any painted surface by an artist should be respected in its entirety. In addition, those areas which are unconstrained can move, split and warp as the environment changes, while the constrained areas cannot move. This can result in more damage than occurs when the whole bark is unconstrained.

A bark larger than about 750mm in length which is leant unsupported on an angle against a wall develops a curve, indicating that it cannot readily support its own weight.

A mounting system for bark paintings

The best mount fully supports the bark and its contours, using a reversible system that does not employ adhesive contact with the bark. This system has great advantages when used in uncontrolled environments.

The system uses a padded, riveted, aluminium framework, designed to conform to the significant contours of the bark painting.

Aluminium strips of 1.6mm and 3mm thick and 200mm wide are used.

The bark is held in place at the base by appropriately coloured polyethylene-coated aluminium feet.

Strong, durable, polycarbonate clips hold the bark in place at the top and sides.



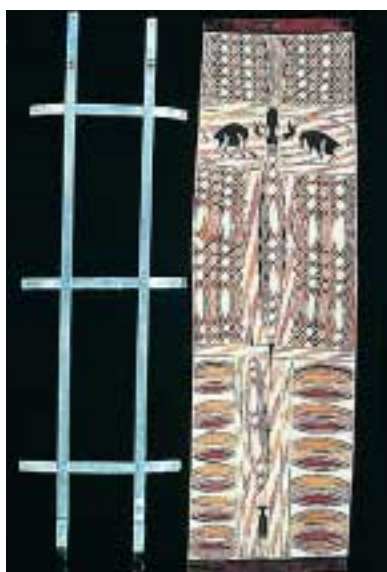
The back of the bark painting showing the mount in place.

Photograph courtesy of Karen Coote, Australian Museum



The mounted bark ready for display.

Photograph courtesy of Karen Coote, Australian Museum



A bark painting and its aluminium mount.

Photograph courtesy of Karen Coote, Australian Museum

When you are constructing the mount it is important to constantly check the mount against the bark, because small movements during construction can cause problems and frustration in the final alignment.

The method

Assess the bark painting to determine how many horizontal and vertical support struts are needed, and the approximate placement of the clips and base feet.

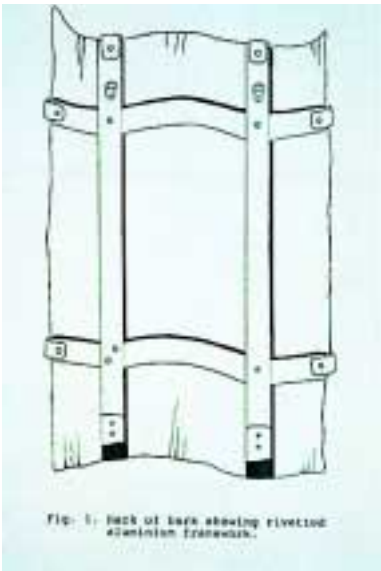
A bark approximately 1100mm x 450mm needs two struts of 3mm gauge aluminium following the longitudinal direction of the bark, and three struts of the 1.6mm gauge following the radial direction of the bark.

You may have to compromise between the best structural support for the bark and the aesthetic

placement of a clip over an important image on the painting.

After you have determined where the clips should be placed, mark the positions with chalk on the back of the painting.

Then place the bark painted-side down on a supporting bed of sand or Dacron-filled bags, so that all the contours of the bark are fully supported. Only proceed to this step if you are confident that the paint is well attached to the bark surface.



*Photograph
courtesy of
Karen Coote,
Australian Museum*



*Photograph
courtesy of
Karen Coote,
Australian Museum*

At this stage, the placement of the aluminium strips can be mapped out precisely.

The 3mm-thick lengths are cut with a hacksaw to the exact length of the bark.

If the bark is overly convex or concave, you will need to make some allowance in the length, to be able to slightly bend the aluminium to conform to the shape.

File and smooth the aluminium at the ends—to prevent any damage to the bark.

The 1.6mm-thick lengths for the radial—or horizontal—strips need to be cut about 100mm over each end. This gives adequate allowance for the shaping of the aluminium to the contours of the bark in this direction.

These radial strips are then moulded by hand to the shape of the bark.

It is recommended that shaping of each strip starts from the centre and works to the sides.

Once the shape conforms well to the bark contours with allowance in the length of the strips for any curving at the edges, the strips are cut to the correct length, filed and rounded to prevent damage to the bark.

The 1.6mm aluminium can be bent readily using thumb, finger and hand pressure. Practice speeds the process and the using a vice and a pair of pliers can help. Experience shows that hand and finger pressure is often all that is required, because tools can create too sharp a bend, preventing smooth contours being formed.

When you have finished shaping the strips, lay them in place over the back of the bark, with the 1.6mm contoured strips in direct contact with the bark.

Then mark the aluminium with a fine, felt-tipped marking pen: to help in placing the drilled holes for the rivets, which will attach the aluminium strips together and attach the D-rings to the mount.

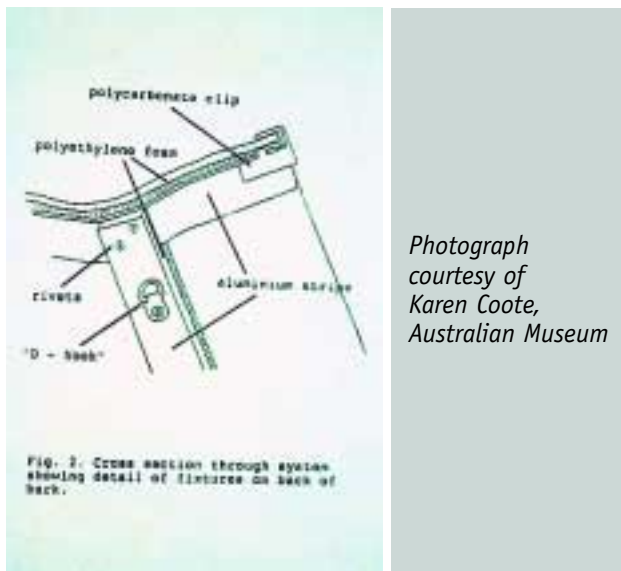
CAUTION:

Do not drill the holes while the aluminium strapping is resting on the bark. For drilling, place the aluminium strapping on a surface away from the bark. Otherwise you could damage the bark.

Use a rivet gun and steel-stemmed, aluminium rivets to rivet the aluminium strips together. The recommended rivet size is 10mm long with rivet diameter 3.2mm.

To prevent any distortion or movement of the system when in place, it is useful to make a double rivet at one joint. This double rivet can be put into place after all other riveting has been done and final alterations made, to ensure a good fit to the bark.

The D-rings, which are used to hang the painting, can be riveted at this stage. They are always attached to the heavier, 3mm-thick aluminium, as these are the weight-bearing struts of the system.



Photograph courtesy of Karen Coote, Australian Museum



Mount system with D-rings and polycarbonate clips in place.

Photograph courtesy of Karen Coote, Australian Museum

When the system sits snugly over the bark, holes for the polycarbonate clips can be marked and drilled along the top and sides. Remove the mount from the bark during drilling.

Depending on the weight of the bark, the finer or heavier gauge aluminium can be used to construct the feet. A length of aluminium, approximately

120mm, is cut to bend a U foot, on average, 8mm internal width and a foot 10mm front.

The length of the back depends on the needs of the joint, but would measure at least 40mm, to enable two rivets to join the foot to the base and ensure a strong joint.

An appropriately coloured, powdered, low-density, polyethylene material—LDPE—can be heat-sealed onto the feet: to give a durable, aesthetically pleasing support. Alternatively, they can be covered with a coloured fabric—or painted after the application of an etch prime paint. The feet are thus coloured and double-riveted to the base of the system.

Thin strips of polyethylene foam—1–3mm—are cut and glued to the inside of the aluminium system. These will be in direct contact with the bark.

The foam can be glued with a hot-melt glue applied with a glue gun.

It is important to create a fairly firm sandwich of the bark/foam/aluminium system; and different thicknesses of the foam may be needed.

When the system is ready, it can be attached to the bark by slipping the bark into the feet and clipping it into place with the polycarbonate clips.

If the system is loose at the clips, they can be glued to the aluminium struts with hot-melt glue; or extra polyethylene foam can be added to the sandwich.

The final steps are:

- removal of the pen markings with ethanol;
- attachment of picture wire to the D-rings; and
- hanging the bark in place.

An alternative display system

For display purposes, a bark painting can be exhibited by leaning it against the wall, with the bottom of the bark resting on a narrow shelf. A padded L-shaped bracket can be drilled into the wall at the top centre of the bark, to secure the bark so that it cannot fall off the shelf.

If you have a problem related to the care of Aboriginal and Torres Strait Islander heritage items, contact a conservator. Conservators can offer advice and practical solutions.

For further reading

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Self-evaluation quiz

Question 1.

Which of the types of damage to Aboriginal and Torres Strait Islander heritage items listed below are caused directly by extremes or fluctuations in relative humidity?

- a) Splitting and curling of bark paintings.
- b) Creasing and tearing of works on paper.
- c) Cracking of wood.
- d) Dimensional change leading to paint loss.
- e) None of the above.

Question 2.

Which of the following statements are true?

- a) Items that are at risk of drying out too quickly should be stored at 65%RH or above.
- b) Mould grows when the relative humidity is continuously above 65%.
- c) Fluctuations in relative humidity don't matter because they will not result in damage.
- d) Items that are acclimatised to drier conditions should be kept in an environment where the relative humidity is in the range of 45–55%.

Question 3.

Which of the following factors should you take into account when considering the display of Aboriginal and Torres Strait Islander heritage items?

- a) Whether the materials are sensitive to damage from light and/or UV radiation.
- b) Whether the display of particular items is culturally appropriate.
- c) Whether the items are likely to fade or discolour.
- d) Whether you are able to rotate light-sensitive exhibits, to reduce the display-time per item.
- e) All of the above.

Question 4.

What would you look for if you find fine wood powder on the floor near an object?

- a) Light damage.
- b) Mould growth.
- c) Insect infestation.
- d) Unsupported objects.

Question 5.

Which of the following statements is false?

- a) If an item has been stored for a considerable time in a tropical environment it should be placed in a much drier environment as soon as possible to prolong its life.
- b) Covering objects in storage protects them from dust and unnecessary exposure to light.
- c) Bark paintings should be stored flat, and any curved or warped areas supported with polystyrene-filled cotton bags or something similar.
- d) Woven material such as pandanus, bark string bags and baskets should be well supported on the inside with Dacron-filled, cotton bags.

Answers to self-evaluation quiz

Question 1.

Answer: a), c) and d).

Question 2.

Answer: b) and d) are true. a) is not true. Items that are at risk of drying out too quickly after they have come from moist conditions should be kept in an environment where the relative humidity is in the range of 50–60%. If the relative humidity is above 65%, mould growth is highly likely. c) is not true. Fluctuations in relative humidity can cause extensive damage in a range of materials.

Question 3.

Answer: e).

Question 4.

Answer: c).

Question 5.

Answer: a) is false. If an item has been recently produced, or stored for a considerable time in a tropical environment, placing it in a much drier environment without allowing it to acclimatise gradually could cause extensive damage.