Preservation in Libraries

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National Diet Library

国立国会図書館
National Diet Library, Japan

Preservation in libraries

1. Basics

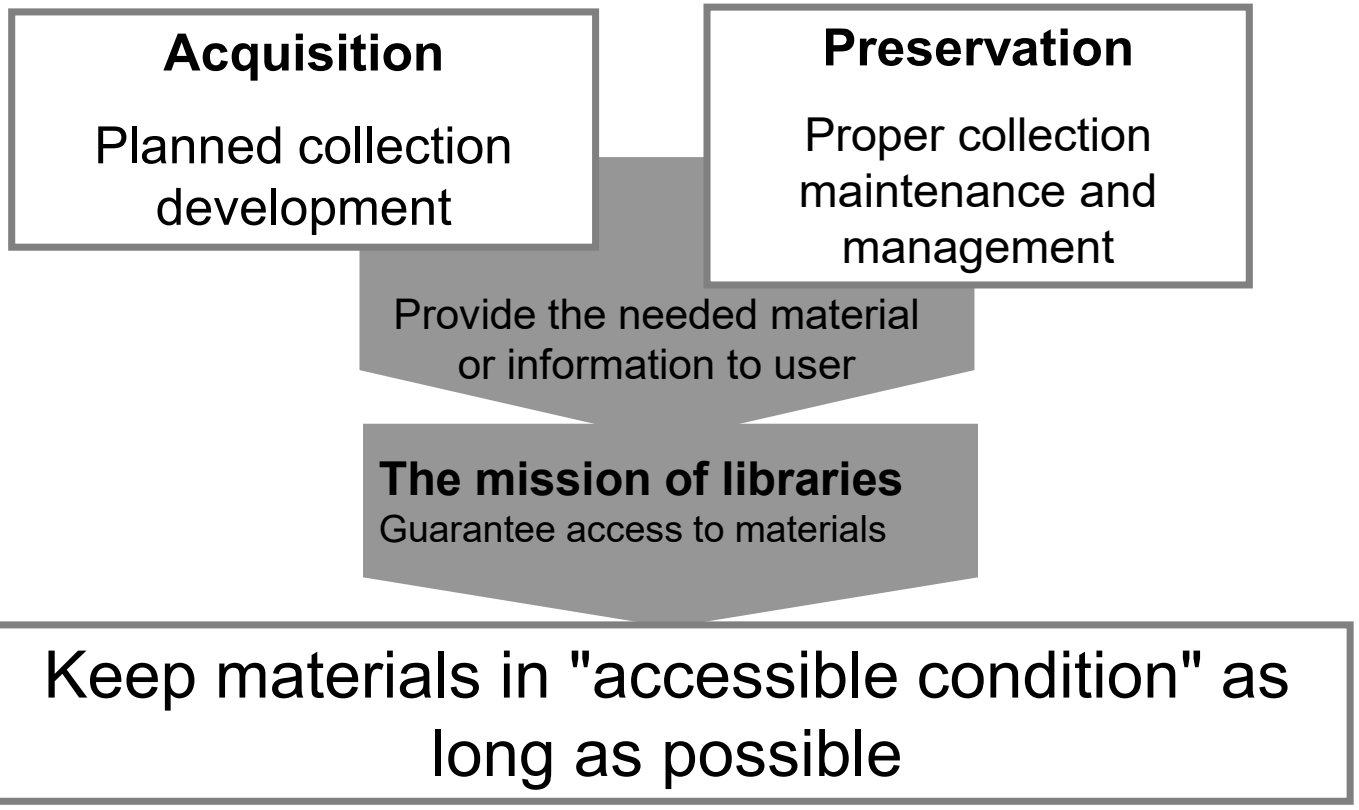
2. Factors in deterioration or damage to materials and how to prevent them

3. Treatment for deteriorated or damaged material

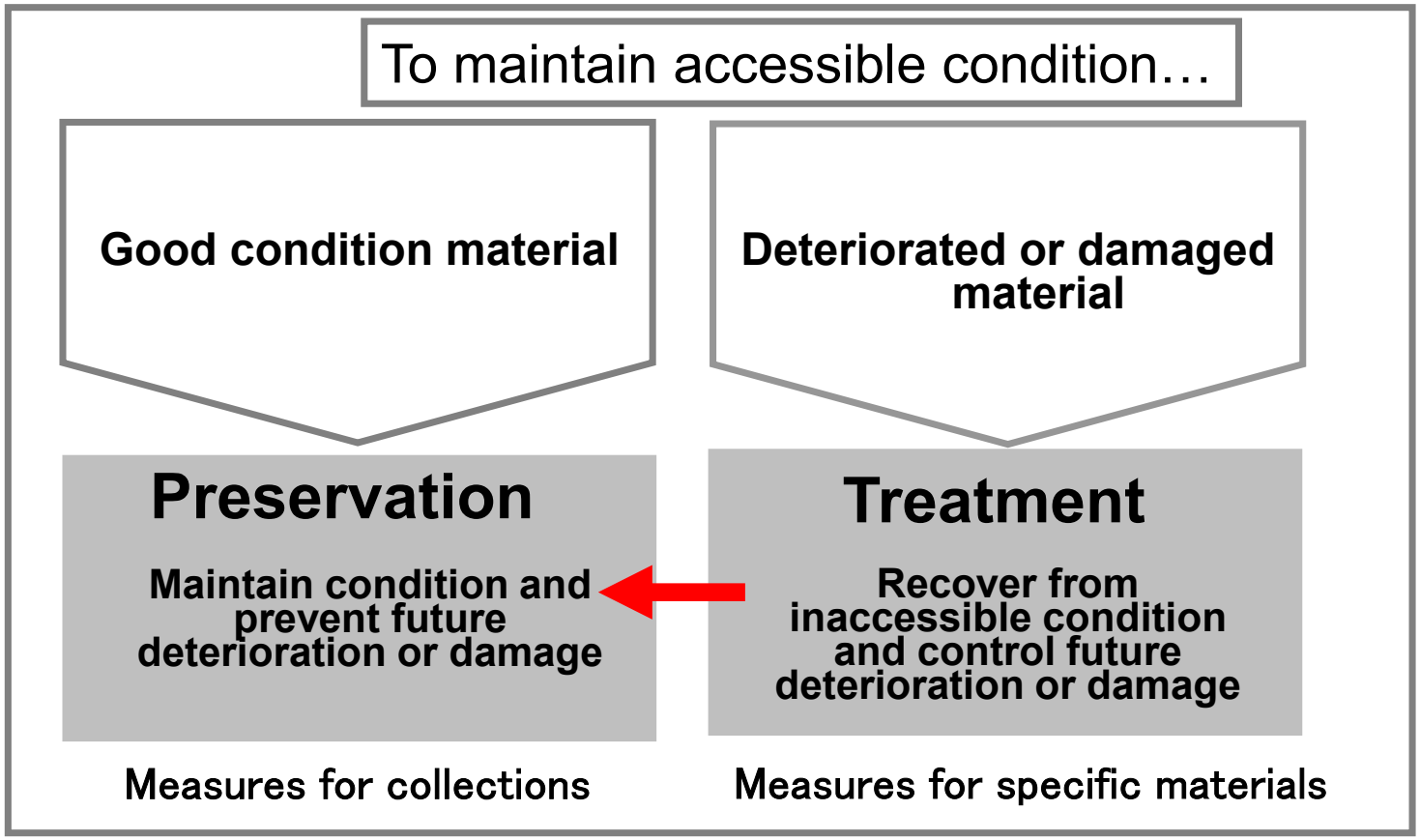
4. Conclusion

1. Basics

Library services — Information services based on the library collection



1. Basics


To maintain accessible condition…
Good condition material
Deteriorated or damaged material
Preservation
Maintain condition and prevent future deterioration or damage
Treatment
Recover from inaccessible condition and control future deterioration or damage
Measures for collections
Measures for specific materials

2. Factors in deterioration or damage to materials and how to prevent them

Various deterioration or damage factors

External factors

Earthquake / Flood / Fire / Air pollution / Temperature / Relative humidity / Insect / Mold / Dust / Dirt / Light

Internal factors

Media deterioration (e.g., acid papers, microfilms, etc.)
Binding condition (e.g., unbound, perfect binding, etc.)

Human factors

Poor handling, treatment, arrangement, photocopying, or display

2. Factors in deterioration or damage to materials and how to prevent them

External factors

Disaster preparedness

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External factors

Disaster preparedness

- **Create a disaster preparedness plan**
- **Emergency disaster drills**
- **Material hazard map and emergency contact network**
- **Periodic inspection of buildings and equipment**

“IFLA disaster preparedness and planning: a brief manual ” IFLA PAC, 2006
https://repository.ifla.org/handle/123456789/1315

“Disaster Preparedness” (National Diet Library)
https://www.ndl.go.jp/en/preservation/collectioncare/preparedness.html

2. Factors in deterioration or damage to materials and how to prevent them

External factors

Environmental management
(temperature, relative humidity, dust, dirt, air pollutants)

- **Maintain temperature and relative humidity**

  Minimize the difference of temperature/relative humidity between the storage and the reading room.

- **Inspection and maintenance of air conditioning systems**

- **Do cleaning periodically**

To find the appropriate conditions, consider multiple factors: the status of your library, the type and content of materials, your budget, etc.

2. Factors in deterioration or damage to materials and how to prevent them

External factors

Environmental management -Light

- **Use LED lighting, UV-filtered fluorescent lighting and UV-blocking window films**
- **Turn off the lights diligently**
- **Store materials in protective enclosures**

Faded color caused by light

2. Factors in deterioration or damage to materials and how to prevent them

External factors

Environmental management -Mold, insects

- **Mold**
- **Insects that eat paper (beetles, cockroaches, etc.)**

Adopting Integrated Pest Management (IPM)

Moldy books

Insect damage

IPM (Integrated Pest Management)

IPM is a control and prevention program for pests (e.g. mold and insects) that relies on several approaches. If the IPM program is applied at an early stage of pest damage, it will work better.

5 steps

Reference: Combatting pests of cultural property / by Tom Strang and Rika Kigawa
https://publications.gc.ca/site/eng/9.806873/publication.html

1.Avoid	**Removing pest habitats**	Clean inside the building / Clean materials / Conditioning the air / Organize / Remove unwanted items
2.Block	**Block the route of pests and water entry**	Check the outer circumference of the building / Use sticky floor mats and shoe covers / Eliminate insects from newly-acquired materials / Seal the gaps / Use door and window screens
3.Detect	**"Detect" early and make records**	Inspect visually / Use sticky traps / Monitor temperature and relative humidity / Development the report line / Share the information
4. Respond	**"Respond" in a safe way**	Control or introduce air conditioning equipment / Do cleaning with ethanol (concentration of 70-80%) / Hire a professional firm
5.Recover/ Treat	**"Recover" by returning the materials to storage in a safe environment**	Make record / Prevent recurrence / Observe continuously

IPM (Integrated Pest Management)

- Examples in the "Detect" process

Mold inspection in the storage

Several kinds of insect traps

Checking the species of trapped insect

2. Factors in deterioration or damage to materials and how to prevent them

Media deterioration & binding condition

Internal factors

- **Acid paper**
  - ⇨ **Deacidification (small scale or mass)**
- **Deterioration of acetate-based films**
  (smells sour, becomes sticky, etc.)
  - ⇨ **Improve storage environment**
- **Deterioration of bindings**
  (unbound, perfect bindings)
  - ⇨ **Library binding, handling carefully, etc.**

Reformatting (Making duplicates)

Acid paper

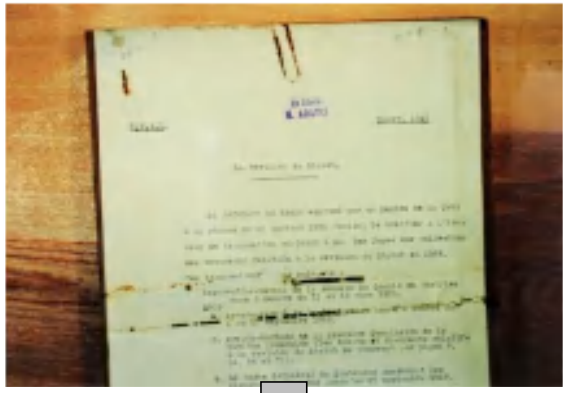
Polyester-based film in good condition (above)
Deteriorated film（below)

2.Factors in deterioration or damage to materials and how to prevent them

Human factors

Poor handling/treatment

- Scotch tape, paper clips
- Clipping, writing, food and drink stains, etc.



Clips and rubber bands

- Education of users and staff
- Calling attention to the issue

Archival quality cardboard and cotton tape

2.Factors in deterioration or damage to materials and how to prevent them

Human factors

Shelving, copying, exhibition

- Shelving properly
- Copying carefully so as not to damage materials

(restrict/prohibit copying)

- Low-impact methods to exhibit materials

(avoid long-term exhibition, cut UV, use cradles to display books, keep proper temperature/relative humidity and illuminanation)

Poor shelving

Using book cradle for exhibition

2. Factors in deterioration or damage to materials and how to prevent them

Conclusion

Factors of deterioration or damage to materials		Measures to prevent materials from deterioration or damage
External factors	Earthquake, flood, fire, atmosphere, temperature, relative humidity, insect, mold, dust, light	Disaster preparedness Environmental management Introduction of IPM programs Enclosures
Internal factors	Media deterioration, binding condition	Deacidification Improve storage environment Handling properly Reformatting (Making duplicates)
Human factors	Poor handling, treatment, arrangement, photocopying, or display	Proper handling education for user and staff

3.Treatment for deteriorated or damaged material

Variety of treatment options

Repair

・Minor repair
・Conservation by professional

Reformatting

・Microfilming
・Digitization
・Duplication

Enclosures

・Phase-box
・Four-flap folders
・Folding case…etc.

Discard
Replace

・Discard
・Replace

Judge comprehensively

Preservation measures

Degree of deterioration or damage

Frequency of use

Worth of the material

Existence of alternatives

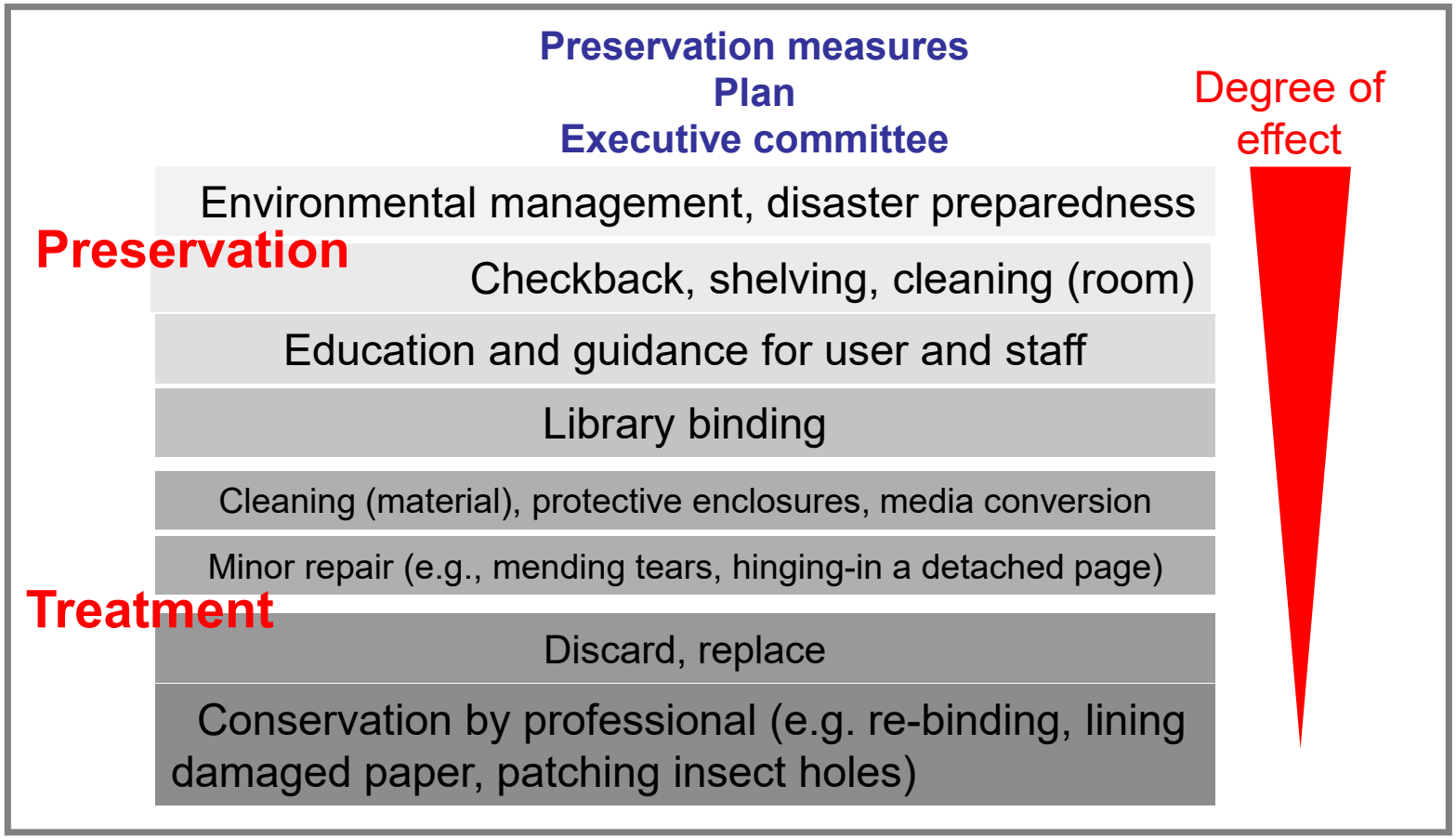
Cost

3.Treatment for deteriorated or damaged material

Repair

Based on preservation policy, choose materials that need treatment. Furthermore, do just enough treatment to make the material usable.

4. Conclusion



4. Conclusion

●Focus on preservation measures rather than treatments that apply after the material is damaged or deteriorated

●Provide the necessary treatments based on the preservation policy.

Useful Links

- Cleaning Mold-Damaged Materials (PDF: 168KB)

  https://www.ndl.go.jp/en/preservation/pdf/cleaning_molddamaged_materials.pdf

- Drying wet materials 1 (PDF: 367KB)

  https://www.ndl.go.jp/en/preservation/pdf/Drying_wet_materials_1.pdf

- Drying wet materials 2 (PDF: 308KB)

  https://www.ndl.go.jp/en/preservation/pdf/Drying_wet_materials_2.pdf

- Dry Cleaning with Brushes (PDF: 96KB)

  https://www.ndl.go.jp/en/preservation/pdf/dry_cleaning_with_brush.pdf

- Dry Cleaning with Powder Eraser (PDF: 142KB)

  https://www.ndl.go.jp/en/preservation/pdf/dry_cleaning_with_eraser.pdf

- E-Learning "Conservation of Paper Materials: Minor Repair" (YouTube)

  https://www.youtube.com/playlist?list=PLXvKjMC1JnVu50NOnLQh5_rBq-U5LpzFj