

Disaster Response Training is Fun!

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This paper focuses on the Disaster Training efforts of a group of collection managers, archivists and conservators at the University of Iowa and I hope to persuade you that Disaster Training is thoroughly worthwhile and FUN!

There are many collections at the University of Iowa ranging from libraries and archives, rare books and manuscripts, to art, archaeology, medical artifacts, historic buildings and natural history collections. The natural history collections include: the Museum of Natural History, the Paleontology Repository, the Office of the State Archaeologist, and until recently the UI Herbarium.

Considered to be the oldest university museum west of the Mississippi, the Museum of Natural History has significant collections of birds, mammals, ethnographic materials, and invertebrates. In addition the museum holds archives and extensive photographic collections important to the history of the museum and the history of science. Exhibition areas include the Hall of Birds (with the unique Laysan Island Cyclorama), Mammal Hall and Iowa Hall, as well as smaller exhibit cases in a building shared with the Anthropology Department.

Affiliated with the museum is the Paleontology Repository (Fig. 1). This collection of over one million fossil specimens includes taxonomic, stratigraphic and type collections, modern comparative material (seeds and vertebrate skeletons) and archive and photographic collections. The collection is administrated by, and housed in, the Department of Geoscience which also has faculty offices, laboratories, a library and teaching classrooms. Small exhibits display Repository collections in the hallways, but our main exhibit is Iowa Hall in the Museum of Natural History.



Figure 1. Collections at the UI Paleontology Repository

The Office of the State Archaeologist holds over 4 million specimens and artifacts from sites in Iowa, ranging from human and animal remains to ethnobotanical material, cultural artifacts and archives and site records.

Until recently, we also had a significant Herbarium collection consisting of a quarter of a million specimens of vascular plants as well as a smaller collection of fossil plants, and a photographic archive of lantern slides and glass plate negatives. However, due to a change in the research focus of the department responsible for the collection, this bulk of this collection has been transferred to another university.

The natural history collections, and in fact all the collections at the University of Iowa are spread across a variety of departments and colleges with different administrative homes, and with the exception of the Main Library and Art Museum, none are in buildings devoted specifically to collections and exhibitions, but share space with a range of other activities. This increases the risks to collections both in terms of possible disasters and administratively, and has the potential to isolate those working with the collections.

To overcome these problems staff working with collections formed the University of Iowa Collection Coalition (UICC) so that we could pool our expertise and make joint efforts to attain good standards in collection care and management. One example of this has been our Disaster Training program.

The major types of catastrophic disaster to prepare for in the Midwest are:

- Flooding (our Art Museum and main Library are on the Iowa River floodplain);
- Tornadoes and storms: Iowa's tornado season is April to June with an average of 31 tornadoes a year. Spring and summer storms can be severe also, causing flooding, damage to buildings and power outages.
- Fire: the gold dome of the UI Old Capitol Museum was accidentally burnt off during restoration in 2001, requiring over \$5.6 million in repairs, renovations and remodeling to the entire building. The Museum has yet to re-open.

On a smaller, but more frequent scale, are disasters caused by water and steam pipe leaks, a common problem in our library collections. In the case of the Paleontology Repository, space issues necessitate the use of some less than perfect off-site storage facilities with a variety of problems.

Just before the Old Capitol Fire occurred, UICC embarked on a Disaster Training Program. Our Preservation Librarian, Nancy Kraft, was creating a Disaster Plan for the UI Libraries (she has had first-hand experience of a major pipe leak disaster at the State Historical Society of Iowa). Nancy encouraged other UICC members to model their disaster plans on the Library's, and at each monthly UICC meeting we would discuss a particular aspect of the disaster plan, go back to our collections and write it up for the next meeting. This was a great exercise because we could share information about disaster resources, contacts and procedures, and we had the framework of the Libraries' Disaster Plan to work on. Our Disaster Plans include:

- an introduction
- telephone or reporting tree
- position and responsibilities list
- collection priorities (including a floor plan)
- resources list
- checklist for prevention and protection
- response instructions

- recovery plans and instructions
- post recovery plans

In addition we were able to make bulk purchases of the Emergency Response and Salvage Wheel and React Packs. Our next step was to become involved in a rolling series of lectures, demonstrations and workshops.

The Iowa Conservation and Preservation Consortium is a multi-organizational group, of which the University of Iowa is part, whose aim is to increase awareness of preservation issues, to create an understanding and commitment to preservation activities, and to develop a statewide preservation plan. A statewide preservation training program, "Preservation 101" and "Save Our Stuff" annual conferences, provides lectures, demonstrations and hands-on workshops for anyone interested in conserving and preserving our material heritage.

UICC members have participated by giving talks and demonstrations based on their specialist skills, as well as attending. This year's series has included disaster preparedness, and preservation planning. At our next workshop we will be learning how to salvage different materials, and in the fall we are planning to hold a one-day disaster exercise jointly between UICC and ICPC.

In September 2003, UICC co-sponsored a two-day Disaster Recovery Workshop run by the Upper Midwest Conservation Association (UMCA) entitled "Disaster Response: Salvaging Museum, Library and Archival Collections." The workshop stressed hands-on participation in salvaging collections after a disaster. Again, our Preservation Librarian was instrumental in setting up this workshop, and negotiated with the University's Risk Management Department to cover the cost of our fees (around \$170 per person). Twenty-six UI staff (including risk management staff) attended the workshop and we are very grateful to Risk Management for funding our participation. Staff from other institutions, such as the Chicago Historical Society and Herbert Hoover Library and Museum, also attended the workshop. We spent the first day learning about disaster response and salvage procedures including emergency planning, safety, assessing and documenting, prioritizing, response, hazards associated with mold, and salvage techniques.

We were each given a huge resource pack, detailing all the above as well as disaster response terminology, insurance, essential supplies and sources, example forms and checklists, and specialist recovery contacts.

The next day was the real fun! We were divided into teams and plunged into a disaster situation - a tornado hit the main library, archive and museum building of an unknown university, scattering objects into 8 paddling pools filled with water and dirt (potting compost)! Our task was to salvage the objects (Fig. 2).

We worked all day with our paddling pools and the supplies available to us, learning how to handle wet objects, clean and dry or pack them for recovery. The most valuable training (and most fun) was our mistakes!

We didn't pay attention to the weather - it was windy so our drying tarps kept blowing up over our salvaged materials, and hot so we got sunburnt. We also should have paid more attention to how much sunlight was on our objects throughout the day.



Figure 2. Salvaging objects at the UMCA Disaster Response workshop
(Iowa Press-Citizen/Jason A. Cook/Vanessa Miller, reproduced with permission)

We plundered the supply cart - carrying off armfuls of paper towels and other supplies which then ran out, when we should have nominated someone to monitor supplies and make sure they were given out efficiently.

Some of us were too eager to pull objects out of the water without thinking about what we were going to do with them. Everyone wanted to be a picker rather than a cleaner or a drier, even though we swapped jobs so everyone had a go. We all worked too hard without enough breaks and regular meetings, except at lunchtime when we abandoned the disaster en masse for local restaurants, leaving our objects at the mercy of the elements and opportunist junk hunters.

There was also a mix up in communication partly because the teams tended not to interact with each other and partly because our instructors gave us conflicting information on purpose to see how we'd handle it. So, there were some tensions over the setting up and use of washing and drying facilities. And finally, when we came to clearing up at the end of the day we realized we should have kept more control over our rubbish.

We still have a lot to learn about salvage techniques, but have a much better idea of how to respond to a disaster and we also managed to form a volunteer disaster team willing to help with disaster recovery anywhere in Iowa.

So, what about applying what's been learned? Recently I included a mini disaster response exercise in the Collection Care and Management module of the Museum Studies Certificate program at the University of Iowa. I went to a local antique shop and bought a boxful of the cheapest objects I could find in varying states of preservation and including a variety of materials. The students used the objects to practice writing condition reports and in this way became familiar with, and somewhat connected to, the objects.

After two lectures in which the students learned about disasters and disaster planning and response, and heard first hand accounts of real disasters, I put their objects outside in containers of water and potting compost. We talked about disaster response procedures based on the Salvage Wheel and then they practiced removing objects from the water, rinsing them if necessary, then blotting and drying them (Fig. 3). This gave us a stress-free opportunity to see what happened to different materials when they got wet and were then handled - books became swollen and disfigured, fragile paper ripped, glue dissolved and objects fell apart, ink disappeared, and textiles clumped in messy bundles.



Figure 3. A disaster response exercise for Museum Studies students

References (Minnesota Historical Society emergency salvage procedures) were provided for the students to consult to see how they should deal with the specific objects they picked up. The aim of the exercise was to let students see how objects are affected by water damage and to become familiar with the problems of handling, cleaning and drying a variety of waterlogged materials. The exercise also made students more aware of the potential disasters in collections. Student reports from the next museum study visit were very focused on disasters waiting to happen.

Ironically, the mini disaster exercise was made more relevant by a real disaster that occurred earlier in the day (Fig. 4). On my way to work I stopped at the Repository's off-site storage to prepare for the transfer of some coal ball material from another department. I opened the door to the sound of dripping water. Water leaking from a pipe had spread through three small rooms containing fossil plants and invertebrates.

Fortunately the invertebrate material was in boxes on shelving and was off the floor. I had been in the process of un-wrapping the paleobotany collection however, and material was still wrapped in newspaper in cardboard boxes stored on the floor. These had soaked up the water very effectively and boxes that were stacked on one another (since 1999) had collapsed. The good news is that my preparation for the disaster exercise helped me to deal with the real disaster and I was able to stay calm, call the maintenance staff and mop up the floor before rushing into class to set up the fake disaster.

The students were very interested to see the boxes of soggy fossil plants and damp archive material I brought with me, as well as noting how exhausted I appeared. By the time I got back to the real disaster the maintenance staff had set up fans and dehumidifiers. Although the boxes on the floor and the bottoms of the wooden cabinets got wet, humidity stayed low and there was very little mold.

The wet boxes were unwrapped (I definitely underestimated how long this would take) and specimens allowed to air dry. Some specimens had broken, probably when the supporting cardboard boxes collapsed, and a few showed signs of fresh pyrite decay. The collection is now being monitored for any further pyrite decay.

Later that week, water from a leaking pipe came through the ceiling of the main Repository storage area from two floors up, but I was prepared for that and only a ceiling tile was damaged before the pipe was fixed. Then last week, the air conditioning stopped working, the temperature soared and we had to get fans in to keep the air circulating through the collections area.



Figure 4. Pipe leak in storage area. Clockwise from left: dehumidifier and fan drying out the worst affected room; soggy, collapsed cardboard boxes storing plant fossils; newspaper wrapping soaked up water from floor; drying wet collections, the contents of one box of fossil specimens and one box of archival material.

The disaster training program at the University of Iowa has increased the knowledge and skills of the collections staff, helping us to deal with disasters more effectively and increasing our awareness of risks to collections. It has encouraged collaboration and team building among a group of people dispersed across the campus, and has given us the confidence and opportunity to provide training for students, and staff at smaller museums and libraries. Above all, we have had fun!

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Resources and links

University of Iowa Collections Coalition: <http://www.uiowa.edu/~collect>

Heritage Preservation Emergency Response and Salvage Wheel
<http://www.heritagepreservation.org/programs/taskfer.htm>

ProText React Pak <http://www.protext.net>

Iowa Conservation and Preservation Consortium
<http://web.grinnell.edu/individuals/stuhrr/icpc/>

Minnesota Historical Society emergency salvage procedures
<http://www.mnhs.org/preserve/conservation/emergency.html>

UI Museum of Natural History: <http://www.uiowa.edu/~nathist>

UI Museum Studies Program: <http://www.uiowa.edu/~museum/>

UI Paleontology Repository: <http://www.uiowa.edu/~geology/paleo>

Upper Midwest Conservation Association: <http://www.preserveart.org/>