
Disaster Recovery FAQ on Film Water Damage

How does getting wet affect film?

Film that has been immersed in water is in severe danger of having the base separate from the emulsion. This means that the part of the film with the image on it will come away from the plastic backing that gives the film its shape. The film is also at risk of being contaminated by mold growth and debris from flood water.

Why do I need to keep my films cool?

The most important factors in determining whether or not a flooded roll of film will survive are the total time it has been wet and the temperature at which it has been kept. The warmer the conditions, the shorter the time frame.

How much time do I have before films that have gotten wet are unrecoverable?

This depends on so many factors, it is impossible to say for any particular reel of film. Without question, the sooner you can get the film into the hands of recovery professionals, the better. But even if a lot of time passes before you are able to start the recovery process, if the film is valuable to you, it is worth trying to salvage it. You might at least be able to save part of the film.

Why should I store films that have gotten wet underwater? Doesn't it make more sense to dry them off?

You should not try to dry the films! The reason for storing the films underwater is to prevent them from drying in the air. If films get wet and are not dried in a special way, the emulsion (image) from one layer can stick to the base (plastic backing) of the next layer. This is known as "blocking." If a film develops blocking it cannot be unwound without damage.

When my films are stored in water, will I see any changes in them?

You probably will notice changes. First, the film will probably change color slightly. Sometimes it develops a purplish or blue color after a few days. This is normal and does not indicate any problems.

After a few more days, the film will become very slippery. This happens because the gelatin at the edges of the film is starting to dissolve and because bacteria and molds are active. This is a warning sign. The film may still be salvaged fairly intact at this point, but it needs to be taken to a lab as soon as possible.

"Threads" or filaments may start to appear on the film. These are thin sections of emulsion floating away from the film base. This is not a good sign. The emulsion may not withstand rewashing intact. Take the film to a lab as soon as possible.

"Gray soup," nasty, gooey, slimy water: the emulsion is decomposing and the film will not withstand any treatments. However, some frames may still be able to be seen and duplicated as still images. So even in this extreme case, you may still want to take the film to a lab to see what images can be salvaged.

What happens if my films got wet, then dried out again before I could put them in water?

When a film becomes wet and then dries completely, there are two levels of damage that may occur. With luck, the damage to your films will not be too severe. Even if you are less fortunate, it may still be possible to save parts of your films.

If you are lucky, all that will happen is that the emulsion surface will become very shiny and smooth, especially around high density areas (where more dye or silver is

congregated). This may occur in patches and will result in some noticeable artifacts (flaws) when the film is projected or copied.

In worse conditions, more serious damage, called "blocking," may occur. When the film dries out, the gelatin emulsion will adhere via crosslinking to the backing layer of the adjacent wrap of film. This is a very strong adhesion, so strong that the emulsion will tear internally and some of the emulsion will remain adhered to the base where it should be and the rest will adhere to the other layer of film. It may also tear from the film base, so that chunks of emulsion will be removed and stuck to the adjacent film layer. Or the whole film will tear. Any attempt to unwind a blocked film will result in damage to the film.

While a blocked film cannot be unwound without damage, it is possible to carry out highly specialized conservation treatments that may enable the film to be unwound. These treatments carry a degree of risk, especially if the film has been wet for any length of time before drying out. The treatments are time-consuming and expensive. Unblocking treatments should be thought of as a last resort for attempting to save films that are very important to you.

Getting Your Films to a Lab

Driving: When films need to be kept wet, labs within driving distance should be consulted first. If there are no appropriate labs nearby, discuss with the lab of your choice the best means of transporting the film to them.

Shipping: Use overnight express: If films are not being transported by hand, they should be shipped by overnight express so that they spend as little time possible in transit, where they will be subject to high temperatures and drying.

FedEx: Submerged films may be shipped by FedEx if you take care to pack them so that no water can leak out of the package. Speak to your FedEx representative and follow their instructions.

FedEx will ask you to pack the submerged films about like this: First place the films in a container with a tight-fitting lid, such as a Tupperware container, filled with water to keep the films wet in transit. Place this container inside a plastic bag and seal the bag. Place the first bag inside a second bag and seal the second bag. Place the double-bagged container in a waterproof receptacle, such as an ice chest. Add packing materials such as plastic bags or Styrofoam to the ice chest so that the film is packed in tightly. Snug packing will help prevent the film reels from moving around excessively during shipping (remember, the wet films are fragile) and will decrease the chances of the plastic bags moving around and possibly springing a leak. Seal the ice chest with duct tape. If the ice chest locks securely, you can wrap some packing tape around it to secure it and FedEx can ship it as is. If the ice chest doesn't lock, put it inside a cardboard box that can be secured with packing tape.

Keeping records of shipped films: When you get ready to send your films to a lab, be sure to keep detailed records of the films you are sending. The most important thing is to link the information on the film containers with the films themselves. Otherwise it may be hard to identify the contents of the films later on. Here's how:

1. Give each film box, can or reel an identifying number with an indelible pen (and permanent adhesive tape if the pen doesn't write directly on the container). Or write the number on the film leader. If a film box falls apart while underwater, the identification number will need to be transferred to the film reel or leader before shipping the film to a lab.
2. Manually copy all of the information written on the film box or can to a paper list. Include dates, names, places and all other information about the contents of the

- film. Write the same ID number you have written on the film box or reel by the information about that reel.
3. Or, instead of copying by hand the writing on the film box or can, take a digital or traditional photo of the box or can. Be sure that the photo includes the ID number you have written on the film container and any notes (dates, names, places, etc.) that could help identify the contents of the film.
 4. Most ballpoint or felt tip pens that would have been used in the past to write on film cans or boxes will only withstand water immersion for a short period of time. Because of this, an organized identification system is essential.

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