DIGITALPHOTOGRAPHY

Kelvin Aitken's unique and comprehensive how-to guide

RETRIEVING THOSE LOST IMAGES

It's happened to us all. You are running late, the traffic is bad, you have to get to a very important meeting and, now, where are those car keys. You start out assuming they are where you normally put them and end up digging holes in the back yard. Your mind is totally blank. Last time you saw them was, well, when you hung them on the key hook or tossed them into the key bowl. But they are gone. Vanished. Not to be found. Your entire day has turned into a stomach churning mess of stress and frothing anger. All over a little bunch of missing keys.

Do you notice that it only happens when it's the last thing in the world you need? It does not happen when you have to go to the in-laws, when that insufferable party is going to happen or when you decide you want to go for an aimless drive. It only happens at the most inconvenient moment of your entire life.

The same thing can happen with your photographic endeavours. If you spend a less than stellar dive photographing sea cucumbers or urchin spines, then losing your photos is not an issue; in fact I can fairly guarantee it will never happen. But chance upon a wobbegong swallowing a Port Jackson shark (it has happened and been photographed) and there's all the chance in the world that you'll lose your shots. It's the wicked truth. Murphy's law rules supreme.

When I say 'lose your photos', I don't mean misplacing an envelope of prints or even a shoe box full of old memories. I'm referring to that scourge of digital photography: the corrupt compact flash card. It does not happen often but when it does, you'll know all about it. Putting a full card into a card reader and having it show up blank is no fun. But don't despair. There are solutions and preventions.

There are a number of reasons why a card may be either blank or missing images. A common mistake, normally during topside photography, is to remove the card before it has finished writing the last image(s) completely. Obviously, if the information from your sensor has not been fully transferred then you're either going to have a partially written file which most often will not be able to be opened or transferred to your computer or other device, or no file at all. The simple solution is to wait for the file(s) to be completely written to the card before you remove them from the camera.

Even if you turn off your camera, a file transfer will continue until complete. Your

If the light is flashing (A) don't open the gate (B), and certainly do not eject the card. Check your camera to see where your writing LED is located then always check that it is off before taking out your memory card.
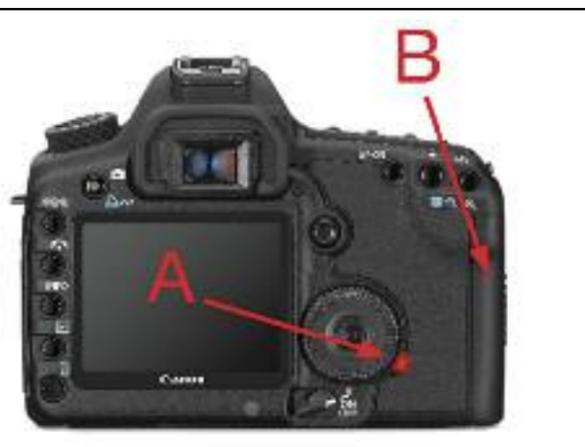
camera will have a small LED light somewhere on the camera body which will flash or light up when a transfer is occurring. If you remove the card while the light is active, you most probably will lose one or more image files. Your camera will have a cover or flap to protect the inserted card. If you open the cover, your camera may flash an alert but the transfer will continue, unless you have a camera which automatically ejects the card when you open the cover. In that case, you are lost. The transfer is incomplete and you will lose the last file or files that were in the process of transfer to the card.

Every camera has a buffer or memory chip so that if you take multiple images in

rapid succession, the camera does not stop for each shot to be transferred. It is held in the buffer then fed into the card as time and camera power permits. The 'higher end' your camera is, the bigger the buffer and the more images it can hold ready for transfer to the card. High speed cameras used in sports or similar

fields, have the ability to hold on to 6,10, 15 or more images in the buffer, allowing the camera to work away without having to stop to transfer the files. Older Nikon digitals ground to a halt as their buffer was minute and you had to wait for the whole queue to be transferred before you started again, while the old digital Canons could keep going, even if only at one frame at a time, as each file dropped out of the buffer.

Most cameras have an eject button or similar under the cover to eject the card. Before you get that far, check that the transfer light is off, indicating that transfer of digital files from the buffer to the card is complete. It's a simple step but one that may be omitted in the haste of switching

cards while photographing those breaching white sharks or dolphins leaping in the wake of your boat. This is almost never an issue with underwater shooting as even if you fill the buffer completely, by the time you surface and open the housing then fiddle around with the card cover and eject button, the files have long since been transferred. But that does not omit you from the missing file brigade, as we will discuss further on.

If you have a camera that seems to take forever to transfer files to the card and it is a regular issue that annoys you, chances are that you can improve things a whole lot by buying a faster card. A card's speed, that is, the capacity in which it is able to accept data from your camera and later to transfer that to a

There are two basic cards used in digital cameras, the Compact Flash Card (left) and the SD (Secure Digital) card (right). The Lexar boasts a rather astounding 600x, until you find out that just means 90 mb/s, if you use a special reader for card to computer transfer. SD cards tend to have slower transfer rates, such as this one at 15 mb/s, and even that has an '*' next to it, meaning it will be less in the real world.

computer, is rated in megabytes per second (Mb/s). A slow card will chug along at 5 or 10 mb/s or a fast card can rip along at 100 mb/s or more. If you're intending to be shooting lots of high speed work, either above or below water, then get a card that will operate well in extreme temperatures with a high transfer rate. Like LED screens, they are affected by temperature so you may as well get one that works in extremes.

Remember the first iPods? Slow and clunky in comparison to the huge drives and slick speeds today. Same with camera memory cards. The capacity and speed of modern cards are much better than recent older versions, and will pale into insignificance in the future. Prices

have also plummeted. My first 2 gig card cost close to $300. You could by 10 for that now, if you wanted one that small.

Other factors that may corrupt, erase or otherwise tinker with your images are faulty or loose cables between your card reader and computer, a faulty card reader (an old one of mine wiped an entire 2 gig card in a microsecond. Not a spot of data to be found), corrupt data on the card, faulty sectors, and more. The bottom line and the big question is, no matter what the cause, can I retrieve my images? The short answer is yes – well, most of the time the answer is yes. Sometimes the situation is beyond help. But, despair not. Lets have a look at your knight in shining armour.

Data retrieval is a big business. It all comes down to the human condition known as 'Itwon'thappentomeitis'. Most car accidents, stupid deaths, broken spines, drug overdoses, obesity and general dumb stuff happens because we think we are immortal and that it 'won't

happen to me'. This includes backing up your computer. Let's face it. Only really annoying control freaks back up their computers every day. Because a disc crash 'won't happen to me'. Fortunately for us less perfect, there is a 'get out of jail free' card. The disc recover software application.

Some are free, the good ones are not. You can find a myriad of free trials but none are worth the effort as you can't use them to save files, only have a peek into your disc. Some card manufacturers supply a free one year subscription for each card sold. If so, don't activate it until you have a problem. In short, the recover software scans your card then lists all the files it can find. You then select the ones you want (usually all of them), click the Go button and it saves all the files from the card to your computer.

When you deliberately delete a file from your card, it still remains on the card, like an unwanted guest sitting outside your front door. He might not be in the party, but he sure will be if someone opens the door. When you delete a file you're merely placing a character at the beginning of the file's ID code to let the computer chip know that if it wants to add a file then it is OK to overwrite this older file. The recovery software ignores the code (usually a '?' character) and lists the now hidden files which you can then select and re-save onto another disc.

When you format a card, you not only add that character to all files, thereby making them invisible and ready to be overwritten, but you also set up the card's internal file structure to work optimally

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Kelvin Aitken is a Melbourne-based professional photographer and diver who's passionate about the big blue and the big sea creatures to be found out there. He's dived from the Arctic to the extremes of the South Pacific and if there's a new marine dive adventure to be experienced or invented, he's always the first to put up his hand. He's also dived the southeastern Australian continental shelf and photographed shark species nobody knew would be found out there. Kelvin is a BBC Wildlife Photographer of the Year marine category winner and his unique work is on www.marinethemes.com

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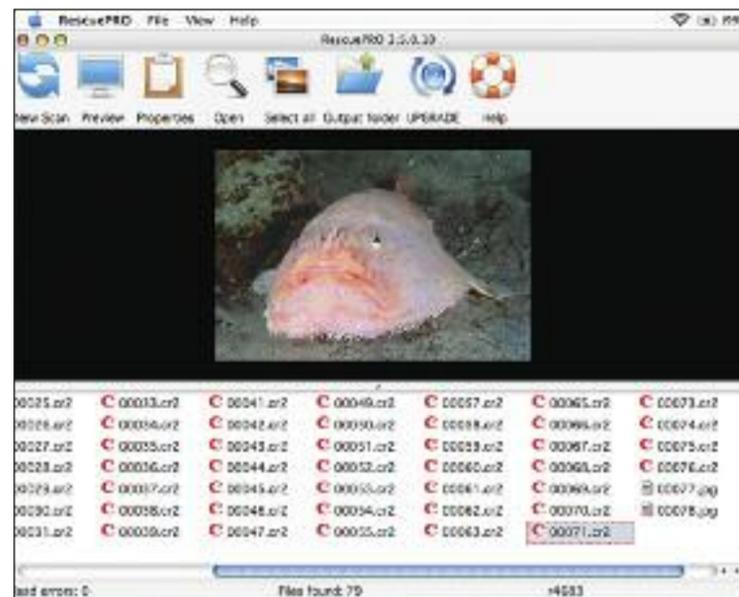Kelvin Aitken's unique and comprehensive how-to guide
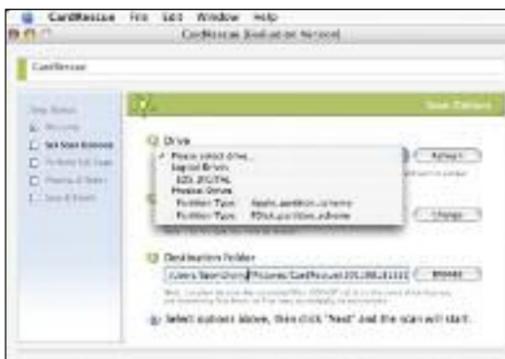
One of the many card rescue programs on offer is this one, Card Rescue. There are so many different rescue programs, it is obvious that you are not the only one doing dumb things, or having a bad electronic day. This first dialogue screen is asking me (after inserting my card into a card reader and connecting the reader then hitting the Refresh button to find the new connection) to choose one of the drives available. I will choose the compact flash card called 'EOS_Digital'.
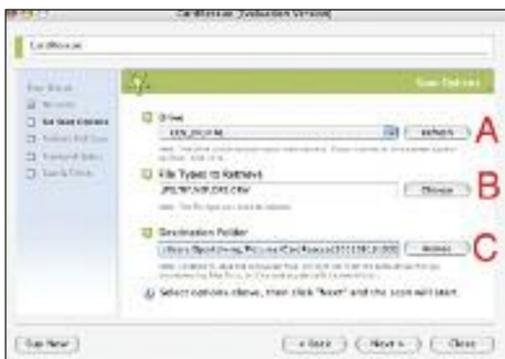
When rescuing files you will not only have to tell the software where the card is (A) but also where to save the files (C), something which another program may ask for later, but this one also asks me what type of files I want to scan for, with the default not including any Raw file formats and a bunch of video formats. For this exercise I ask it to look for Jpegs, Tiffs and three different raw file formats (B).

This screen shot shows a successful scan by Rescue Pro, a third party program promoted by San Disc. San Disc provided me with a free 1 year subscription with one of the cards I purchased. They usually provide some form of retrieval provision when buying their cards. Rescue Pro is telling me that it has found 79 images on a formatted card and has saved them all to my hard drive in a folder I have specified.

with your particular camera make and model. You might run into an issue where the format process 'zeros' all other information, changing all information to zero so that there are no hidden files to be recovered. However, I've yet to come across that issue. The more common problem is where you have deleted files by either dragging to the trash or formatting the card, then overwriting the files with new image files. In that case, you will not be able to recover the original image files – they're gone for good.

Using recovery software is reasonably painless. Download the software, start it up and activate it with a serial number which will be given to you on purchase. Plug in your card reader with card inserted. The differences between software seems to be the complexity of choosing how you retrieve the images. Some are a simple click of a Go button, others want you to choose file formats, media types and all sorts of unnecessary complexities. In short, you will need to select the drive you want to recover from (your camera's memory card) and where to put them (a destination folder that you will make on your computer's hard drive or an external drive, not the card that you are retrieving from. You don't want to overwrite anything on your card at this stage.) Then press the Search or Retrieve button. Your software will now start scanning the card to find all those hidden files.

Once the scan is complete, select the images you want and save them, if the software has not already done so. You can now work on the image files as normal. First thing to do is to back up every recovered file onto a DVD or external hard drive or similar. You can now safely remove the card and format it for future use.

But, if you suspect that the card is faulty, throw it away. Life is too short to gamble on your dodgy card working perfectly from now on. You would not gamble on a torn O-ring in your housing, so why gamble with the vital image storage card? (Please tell me you won't gamble with your O-rings.) If you suspect the card reader or cable, do the same. If you botched the removal of your card while the camera was still transferring, force yourself to be more disciplined in checking the transfer light. It's like opening the back of a film camera while the film is still rewinding. Not a smart thing to do and it wastes your valuable efforts. If it is your camera you suspect, check the pins at the bottom of the slot in which your card sits. There might be dirt, a dead moth, a lump of fluff or any number of things pushed into the slot when you last inserted a card.

When this is happening, you should not be fluffing around with your camera, and especially not your housing. When the dive starts, you should have done all your backups, card changes and full camera check plus housing and strobe check. Then when the diving starts, you will not be risking a stupid mistake during a hurried camera prep. You might be able to rescue a few images from a partially overwritten card, but that is no excuse to be sloppy. Besides that, you can't rescue a flooded camera.

While you may be able to recover image files, there are a couple of things you can do to minimise damage. First is the obvious; back up all files after shooting. There is nothing more embarrassing that using the same roll of film twice, which is why I used to wind the take-up section right into the cassette after every film change. Now I use a newly formatted card every dive. If you start getting sloppy – changing cards but not backing up right away – chances are that you'll pick up the wrong card and wipe all your pics. This may not be such an issue with day dives, but get on a decent liveaboard with 4-5 dives per day, every day, and before you know it you can't remember which card is which and what day it is.

Be disciplined. Take out your card after ever dive, back it up right away, format it for it's next use and put it in with your pile of cards to use next. Or back it up and put it in a separate box of used cards which will not be confused with ones ready for use. Put in your new card, check that it is formatted. If there are images showing, check that they have been backed up and kick yourself for not formatting when you last used it. Do

whatever maintenance you need on your housing and strobes and then you can go have a drink and relax with your dive buddies.

Doing all that after the 'five minutes to dive' call is a recipe for disaster; no card, flat batteries, improper O-ring sealing, wrong card, gears not meshing, strobes not syncing, etc. Do it all right after your dive and you cut the mistakes by 99%. Plus if there is a problem, you're not jigging around at the last second, water and weightbelts flying everywhere and your buddies yelling at you from the surface, telling you to hurry up. I bet you

can feel the disaster from your lounge chair.

Another cheap insurance move is to use cards that are not too big. Depending on your camera's megapixel rating, choose a card that will be big enough in storage size to take two long productive dives. Then make sure you change to a new card EVERY dive. Why? You have enough space if those mating killer whales swim up to you and you fire off 200 shots. You have enough space if they don't swim up to you and you take a normal number of photos on the dive of whatever else you happen across. Then if a card becomes corrupt and is unrecoverable then you have 'only' lost one dive.

If you lose one dive out of 50 from that expensive three week dive trip, it's a tragedy, but not like losing the shots from 20 dives that you squeezed onto that one huge card because you couldn't be bothered opening your housing after each dive. You know the card, that 16 gig monster that you dropped on the floor just as the trip comedian dropped their bowl of steaming pea soup onto it, followed by the heavy ceramic bowl. Or the boat generator decided to fire off 300 volts into your card reader after an errant fruit bat flew into the air vent. Use smaller cards, which do not restrict your shooting on a single dive, and use a clean formatted card every dive.