EXTREME WEATHER

We explore some of the most extreme environments known to man and speak with their avid explorers to find out exactly what it takes to get the perfect shot

Far from the tame landscapes of the Lake District or Scottish Highlands, this issue we've gone in search of some of the most extreme environments on earth. You're not only challenged physically out there, but your camera kit and shooting skills are put to the ultimate test too, and every second counts.

Join us as we explore some of these incredible locations and unveil all the secrets behind shooting there. We'll first be exploring the extreme desert heat and then delve into the dangers of shooting in a ferocious storm. To top things off, we'll also be taking a trip to the South Pole to find out what the challenges are when shooting in the plummeting temperatures of Antarctica. Along the way, we'll be speaking with top field professionals to uncover all the dangers that lie ahead and share not only their incredible experiences but also some expert shooting advice. Follow along over the next ten pages and discover what drives these photographers to risk their lives in search of the perfect shot.

Extreme shooting tips

- Arid desert scapes
- Frame electric skies
- Moody storm shots
- Ice-cold captures

Shooting storms

Storms are the epitome of extreme weather and have the power to evolve rapidly into other natural phenomenon's including tornadoes and hurricanes. These formidable forces are not for the faint hearted to photograph, as they pose a very real risk to your safety. Extreme weather photography pro Scott McPartland says, "When I'm documenting hurricanes, I always seek out shelter that I feel can withstand the full force of the storm. I also ensure it's far enough above sea level to avoid a possible storm surge. During Hurricane Katrina in August 2005, we took shelter in a steel-reinforced parking garage. The ground level of the garage was a good ten feet above sea level already, and we were another 25-30 feet up from that. This proved to be the perfect shelter and we not only remained safe during the storm, but we also managed to get decent video footage and still photographs as well. In situations such as these, you should always plan for the worst-case scenario so that you've covered all your bases."

Once a storm rolls in it can quite literally be a race against time to get out there and capture some of the incredible occurrences as the action unfolds. Scott says, "Doing your research and having a firm understanding of the weather, and more specifically, severe weather is critical. As an extreme weather photographer I need to assess what areas I feel hold the best chance of severe weather when I'm out chasing storms. Without a firm knowledge of weather forecasting, you would be hard-pressed on finding these storms to begin with, and then there is the challenge of navigating around them so you can find the best position to photograph from. From a safety standpoint, it's also crucial to know your exact position in relation to the storm so you know which way it's heading." Scott uses software that feeds live radar images of the storm as it develops, he can then overlay his GPS signal to find out which ways it's heading. "When you are up-close and personal with violent storms things can change in a heartbeat, so you cannot rely on radar alone. You also need to be able to assess the situation with your eyes, and if need be, quickly adjust your position, not to just get 'the shot', but to also stay out of harm's way."

During a storm, extraordinary cloud formations can appear quickly, so be prepared to shoot before they disperse. Scott says, "My favourite cloud formations to photograph are associated with supercell thunderstorms. The striated bases of these storms to the corkscrew appearances of the updraft all amaze me. The cumulonimbus clouds are spectacular but I also love to shoot mammatus clouds. These are most often in association with severe thunderstorms and take on the appearance of lumpy lobes hanging down from the underside of the anvil of a thunderstorm."

When working in a storm, you'll need to be aware of sudden changes. Funnel clouds for example are fantastic to photograph but it's not uncommon for them to transform into intense tornados. "Tornadoes are very short-lived for the most part so if you are lucky enough to see one, you have got to be ready to shoot at a moment's notice!" says Scott. "The window of time to get these shots can be very small, so have a plan in place so that when that time does come, you're ready to go!"

Light and weather conditions change continually during a storm so be prepared to adjust camera settings while you shoot. Extreme weather photographer Sean McCormick advises, "Storms equal high winds so aside from using a heavy tripod to stabilise my camera, I also use fast shutter speeds to minimise movement. If however, I've been caught with just a camera and the wind is up, I'll use high ISO settings (ISO 800 or thereabouts) and shoot as wide as possible to minimize problems from camera movement. I may even underexpose by a stop and bring the exposure back in RAW processing just to get the extra shutter speed I'll be needing. In these situations however, I never use a telephoto lens as strong winds buffeting the lens will ruin the majority of my images."

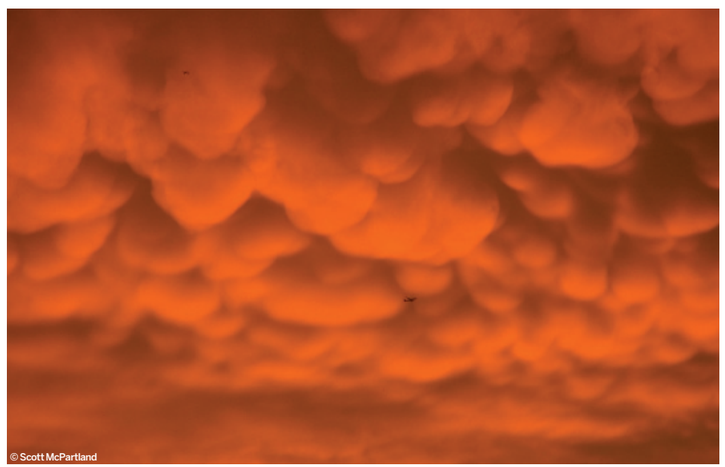
© Sean McCormick

Extreme shooting tips

When you're photographing in the midst of a storm, try to include a vehicle or something equally as recognisable in the shot. Including these elements in to your image will help to add a sense of scale to towering storm clouds or even a tornado.

SHOOT WIDE VISTAS
Use a wide-angle lens to shoot impressive cloud formations. A stormy sky like this looks fantastic in a panorama as it highlights the sheer scale of the event

ADD PERSPECTIVE
The large jet planes in this image look minute against the gigantic mammatus clouds, which adds some perspective to the shot



© Scott McPartland

"When you are up-close and personal with violent storms things can change in a heartbeat, so you cannot rely on radar alone"

ACTION BUILD-UP
An incredible storm cloud can look a little dull without some perspective. Balance the composition by including both land and sky

© Sean McCormick

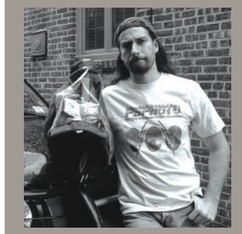
Weather it out

Protecting your camera kit from the elements is paramount if you want to continue shooting storms. Scott McPartland explains, "Keeping your camera gear dry is essential. Shooting extreme weather means that everything including the kitchen sink will be thrown at you, and your camera. If I had to pick one thing that is essential to keeping my gear safe it would be my Kata rain cases! They take a few minutes to secure properly but it's totally worth it. Whether it's eight hours in a hurricane, or a blizzard the gear stays dry. Another piece of equipment I highly recommend is a UV filter/lens protector. They are very inexpensive but worth every penny. When shooting extreme weather there's always dirt and debris flying around and you need to protect the glass. Some photographers hate using these filters because of claims that it degrades the image but I haven't had any issues. I would much rather replace a cracked $20 UV filter, then the entire lens because the factory glass got broken."

FILTER PROTECTION
Attaching a filter will protect the glass of your lens – a much cheaper alternative than having to replace the lens itself!

Q&A Taking it to extremes

We speak with pro **Scott McPartland** to discover the dangers behind shooting some of Mother Nature's most brutal forces



severeweathervideo.com

Bio: Scott is an extreme weather photographer who resides in New York City. In the summer of 1986 he began documenting severe weather events in and around the NYC area, and for the last 13 years has been travelling the states in search of tornadoes, lightning, hailstorms, hurricanes and blizzards.

What's the best location and season to photograph storms?
For me, the best location is Tornado Alley, which covers the area from Texas, north to the Dakotas, and Colorado, east to Missouri and Arkansas. Tornado Alley is known for some of the most picturesque and violent storms on the planet. All four seasons offer up some incredible photo opportunities for me. But when it comes to chasing and photographing supercell thunderstorms, hailstorms, lightning and tornadoes, the best time of year is definitely the spring. May and June are the climatological peak of the tornado season in the Midwest so during that time that I really pay attention to the weather patterns. When I see a good setup on the horizon, I hit the road with my storm-chase partner Dave Lewison.

What's your favourite extreme weather event to photograph or film?
Hands down it would be supercell thunderstorms and lightning. Supercell storms like the ones you see most frequently in Tornado Alley during the spring are an amazing sight. A supercell storm has a persistent rotating updraft [which] gives the storm a unique look. Many of them look like UFO motherships in the sky, which is why the term 'mothership' is used often in the storm-chasing community. Once you have seen one you never forget it.

What are your safety rules when shooting extreme weather?
When shooting severe weather and thunderstorms in general, lightning without a doubt is one of the biggest dangers. You don't know when or where it's going to hit, and it could be a mile from you, or the top of your head, or even your tripod. When the lightning starts hitting too close for comfort, I retreat to the safety of my vehicle and photograph from inside. Lightning is nothing to mess with and while a certain amount of risk is inevitable when you do what I do, you can still take precautions that will minimise the danger a bit.

Have you ever had any close calls when capturing severe storms?
In June of 1988 I was filming a thunderstorm approaching my area in Queens, NY when a bolt of lightning struck the television antenna on my parent's home. I was standing in the driveway at the time so the lightning had struck literally 50 feet from me. It was deafeningly loud and scared me to death. I was just 16 years old at the time but that was the day I gained a very healthy respect for the power of lightning, and just how unpredictable it is. There have been a few other occasions where I felt uneasy about whether I was truly safe or not, and most of those occurred during hurricane intercepts. Hurricane Katrina was a very intense experience and there were a few moments in there where I wasn't too sure if I was safe or not. Thankfully everything worked out just fine.

What's your top piece of advice for keen weather photographers?
Extreme weather photography can be very rewarding if done safely. Start slow and take it from there!

To see more of Scott's images and videos, check out his website at **severeweathervideo.com**. DVDs are available, including his latest installment *Scott McPartland's 2010/2011 Storm Chase Adventures*.

STORM SEASON
Tornados are formidable forces that regularly occur during spring in the USA's Midwest. Known as Tornado Alley, this area covers a number of states and has some of the most violent storms known to man

"Hurricane Katrina was a very intense experience and there were a few moments in there where I wasn't too sure if I was safe or not. Thankfully everything worked out just fine"

© Scott McPartland

01 Be prepared
Always have extra batteries, tape stock and SD cards on hand! Nothing is worse than running out of room on any of these, right at that crucial moment!

FRAMING FORK LIGHTNING
It's impossible to be certain exactly where lightning will strike. To increase your chances of capturing it, shoot in landscape orientation

Striking lightning

Lightning is a truly spectacular sight during a raging storm. Capable of completely transforming the landscape as it lights up the sky, this extreme electrical force of nature commands both respect and awe. Being unpredictable however makes it a real challenge to shoot. Extreme weather photographer Scott McPartland (severeweathervideo.com) regularly risks the elements to get incredible shots of storms, hurricanes, tornados and lightning. He says, "What I love most about lightning is you'll never capture two bolts that are exactly the same. Every single one of them is unique. Plus there's the thrill of capturing such a fleeting moment in time."

Due the sporadic appearance of lightning, it's impossible to predict exactly when or where it will strike during a storm, so a long exposure is crucial to capturing the shot. The speed of fork lightning and the powerful source of light that is produced is not dissimilar to a flash, so you needn't worry about blur or overexposure. Scott says, "It's better to photograph lightning at night, away from city lights as you'll be able to do longer exposures without overexposing the image. I have, however, captured a good number of lightning shots at dusk, and in areas where light pollution was an issue, but during those times I've had to use a shorter exposure time."

Sean McCormick (**mccormickphotography.com**) is an avid extreme weather photographer who has had plenty of practice capturing lightning and even some pretty close calls. Sean says, "When I'm photographing lightning and it's bright out, I'll stop down to the smallest aperture and stick to a low ISO setting. I also lock my shutter open and set my camera to high-speed capture mode. If it's too bright, I'll add a ND filter to the end of my lens. Generally, I'll keep my captures between 10 and 30 seconds as under that, you're likely to miss lightning strikes while the camera cycles between shots. Once the camera is then set up, I'll point it toward the lightning activity, focus, lock the manual focus then release the shutter and retreat to safety. If I'm shooting after dark however, particularly when there's no moon, I'll use the bulb mode and leave my shutter open for up to four or five minutes at a time." Patience and perseverance is without doubt key here, as it's not uncommon to miss what could've been a great lightning shot.

Safety is also paramount and should be carefully considered when exploring this area of extreme-weather photography. This is not a lesson you want to learn the hard way, as Sean McCormick points out, "I was once shooting a storm that was ten miles away, when lightning struck very close to me. One minute I was with my tripod and the next both the tripod and I were on the ground. The flash had left me temporarily blinded and the thunderclap left me deaf. I knew I was on the highway but couldn't locate my camera or van. I crawled around in circles until I found both and had to wait over half and hour before I could see well enough to drive. I am incredibly lucky. From that day forward, I make sure the camera is outside with the lightning and I'm inside a vehicle or a building."

Setting up your camera and then using a remote shutter release is ideal and will help to ensure you get some great lightning shots safely. Scott McPartland suggests, "Set your camera up on a tripod outside the driver-side window. You can remain inside the vehicle and still adjust the camera settings if needed by rolling down the window. My main rule of thumb is if I find myself questioning my safety, it's time to pull back."

Extreme shooting tips
If you're shooting fork lightning at night, away from any light pollution, leave your shutter open for longer (minutes as apposed to seconds). This will increase your chances of capturing multiple lightning strikes in just one single frame.

"From that day forward, I make sure the camera is outside with the lightning and I'm inside a vehicle or a building"

02 SAFETY FIRST!
No shot is worth your life so if you find yourself in a situation that makes you extremely uncomfortable, or is clearly unsafe, back off. Plain and simple.

03 INVEST IN SOME GOOD EQUIPMENT
Furnish yourself with in a good, sturdy tripod. Whether it's still photography, or video, you want to be able to get those steady shots with minimal camera shake.

04 PROTECTION IS KEY
Be sure to protect not just your gear, but yourself as well! Remember you will be out in the elements for long periods of time. Dress for the occasion as they say!

05 EXTRA KIT
It's worth investing in a good car dashboard mount for your still camera or video camera. These are exceptionally useful for those times when shooting outside of your vehicle is just not safe.

06 TEAM UP WITH SOMEONE ELSE
I personally don't chase storms alone. Safety in numbers I say. I chase the weather with my friend Dave who navigates, while I concentrate on the driving.

07 COMPOSITION AND FRAMING
Include some of the foreground to give depth. Lightning with no foreground, for example, can look boring in my opinion.

08 EMERGENCY SUPPLIES
Have an emergency supply/first-aid kit in your vehicle at all times! You'll find yourself on some desolate roads and rural areas from time to time!

09 DO SOME TRAINING
Become a certified Skywarn Spotter (USA). These classes teach the basics of observing severe weather, and you can report direct to the weather service. This in turn helps get warnings to the public!

Explore more of the storm
Check out more of Sean McCormick's latest work online, including his current photography project: '12²: Twelve Cubed', which you can get involved in…
- **www.mccormick photography.com**
- **www.twelvecubed.com/twelvecubed.pdf**

STRIKES TWICE
The lightning acts as a flash, so you are able to use longer shutter speeds

SAFE DISTANCES
Lightning is unpredictable by nature and even if you think you're at a safe distance, you can never be sure. Always have a safety plan in place when shooting a storm

10 Don't forget storage
Invest money in good media storage. I use SanDisk Extreme Pro SD cards in my Sony HXR-NX5U, and Sony HDV tapes exclusively. For my Nikon D70 I use SanDisk CF cards

© Sean McCormick

Desert heat

Sprawling desert landscapes baking under the blazing sun can be a real challenge to shoot. These arid environments, although seemingly barren, are full of abstract forms, textures, vibrant colours and strong, contrasting light. Capturing this extreme environment on camera is not without its difficulties though. Nature photographer Dean M. Chriss (**www.dmcphoto.com**), who's a keen desert explorer points out, "During the summer there are the least amount of photographic opportunities for the most amount of hardship. The sun can be up for more than 15 hours per day, but it spends very little of that time near the horizon. That means the light is very harsh most of the time. Temperatures can also be unbearable."

If you're working in these blistering conditions, safety is paramount. Dean says, "In hot locations I try to carry only the camera equipment I think I will need. That lightens the load so I can carry plenty of water." Avoiding the midday sun is also essential as Dean says, "I try to get out well before the sun is up. This is the coolest time of the day, and light on the landscape is at its best before sunrise and a couple of hours afterward."

Light is one of the most dominant features in this landscape so the practicalities of shooting differ somewhat to your standard landscape shoot. "Brightly lit sand dunes can require two stops of overexposure while chocolate-brown sandstones may need significant underexposure. I always have my camera set to blink overexposed pixels on its LCD, as you'll need to use the histogram to determine the best exposure. I like to bracket exposures too for an extra margin of safety, particularly in situations where exposures are tricky."

Using the right camera equipment and settings is also essential. "A good sturdy tripod and low ISO settings are great for producing sharper images that have less noise. This way you can preserve the textures and fine details found in the desert. A polariser filter will also help to render rocks and plants in their proper colours, eliminate atmospheric haze, darken blue skies and make clouds stand out." Dean adds, "Just remember that too much polarisation of the sky can look unnatural. Polarising filters are most effective when your lens is perpendicular to the direction of the sun." Don't be afraid to experiment with equipment either, as telephoto lenses are a great alternative to wide-angle as the extended focal lengths compress the scene and bring the background in.

Aside from the vast landscape opportunities, the topography of this kind of environment offers plenty of fantastic abstract forms. Dean explains, "Without much vegetation, the forms, patterns and textures of the earth itself are revealed in the desert. I look for interplay between the various shapes and textures. When the sun is near the horizon, the light helps to accentuate these forms. I also enjoy creating softer and more intimate images in diffuse light when it's available. These tend to reveal the desert in a way that many never see."

Desert environments should never be underestimated either. "Research the weather before you visit. It's not always hot and the difference between high daytime and low nighttime temperatures can be more than 40°F (22°C). Winter nights can dip far below freezing." Dean recommends visiting desert locations during autumn months when there's some respite from the heat. He says, "The shorter days and cooler temperatures make it possible to take longer hikes, which puts more photo locations within reach. The sun also spends [more] time near the horizon in autumn, giving more good low-angle light, so your time is a lot more productive." The lack of bad weather during this season is also a bonus, as Dean adds, "The dramatic thunderstorms of summer become less frequent as autumn progresses. Such storms can add some real drama to a grand landscape image, but they are no fun to be under. These storms tend to produce lots of lightning too, which can be deadly."

01 Keep skies in check

Use a polariser but watch out for unwanted effects in the sky when using a polariser with a wide-angle lens

© Dean M. Chriss

MANLY BEACON SUNRISE
The rising sun illuminates clouds above Death Valley while Manly Beacon and Golden Canyon are lit by a pre-dawn glow

Heatproof your kit

The extreme heat can play havoc with your camera equipment so it's important you take precautions. As Dean highlights, "A hot image sensor means noisier images and such extreme heat is not good for the electronics. Keep your camera inside your bag when it's not being used." Changing your lenses inside the camera bag is also a great way to avoid dust, dirt or sand from getting in and scratching the sensor. It's always important to zip up your bag too: "Fine sand will always find its way inside a camera bag that is left unzipped. It may be inconvenient to keep opening and closing the zipper, but once inside sand will pollute every piece of equipment you put in the bag until you empty it and vacuum it out thoroughly."

When you're all set up, be aware that the black camera body will absorb the heat too. Dean suggests, "Something as simple as a small white towel put over the camera is enough to keep it cool."

02 PLENTY OF WATER

Plenty of water is a must. You can't get good photographs if you don't stay alive.

03 APPROPRIATE KIT

Wear the right clothing, such as thin, light-coloured clothes, a wide-brimmed hat, sturdy footwear and sunglasses.

04 WEAR SUNSCREEN

Prevent painful sunburn by applying a high SPF sunscreen to all exposed skin.

05 KEEP YOUR KIT COOL

Cover it with a white cloth when it must be exposed to the sun for an extended period. Otherwise keep it in your camera bag.

06 DIAL-IN SETTINGS

Use low ISO settings and a tripod to produce sharp images with less noise.

07 USE EXPOSURE TOOLS

Use your histogram, flashing pixels and bracketing capabilities for exposure. Over or underexposure is often necessary when a scene contains bright or dark colours.

08 SHOOT RAW FILES

These will give your photographs the greatest potential for success.

09 CARE FOR YOUR TRIPOD

Extend the lowest section of the legs first to stop sand contaminating mechanisms.

10 Work with the light

Take pictures in the early morning and late evening. This produces more dramatic images and you'll stay cooler too

Q&A Facing the heat

We chat to **Dean M. Chriss** to unearth his interest in sprawling deserts and soaring temperatures

www.dmcphoto.com

Bio: Dean began learning nature photography in the early 1970s. His work was first published in the United States in 1986 and has since been published worldwide. He currently shoots in the national parks, forests, and wilderness areas of North America, south-east Asia, and Australia.

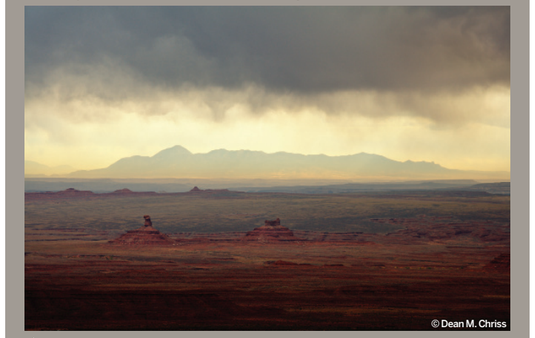
What's your favourite desert location?
South-eastern Utah because the abundance and diversity in subject matter, the area is simply amazing. For instance, Arches and Canyonlands National Parks are very close together but they couldn't be more different visually.

How important is research to this type of photography?
Researching locations is important and it's easier to do today than ever. Tools like Google Earth let you preview locations, hiking trails are also visible to plan your route. You should research the weather so that you have the right equipment and clothing with you. It's also important to realise that the desert is not always hot. The difference between high daytime temperatures and night-time lows can be more than 40°F (22°C) at any time of year. Winter nights can dip far below freezing in some areas, and hypothermia can be a real danger if you are unprepared and have to spend an unintended night outside.

What are your safety rules when out shooting in extreme heat?
The primary rule is to have plenty of water. In general that means one gallon (3.8L) per person per day, particularly in the summer. Thin, loose, light-colored cotton clothing also keeps you cool. As sunburn can occur in a short period of time, a high SPF sunscreen is essential. It can be deceptively easy to get disoriented and lost in the desert so go with another person if possible and always let someone know where you will be going and when you will return. Note major landmarks and carry a small handheld GPS unit that you [can] use.

Do you have any tips for those looking to get into desert photography?
I believe that a personal connection with [your] subjects is a prerequisite for the creation of any compelling image. Time spent learning, exploring, or just sitting on a rock observing the environment is as important as taking pictures. Slow down and soak in your surroundings. You'll get better pictures and enjoy it more too. On your travels please also keep in mind that the desert is fragile. Footprints in delicate cryptobiotic soils can take decades to heal, so stay on established trails or step only on rock surfaces if you are hiking off the path.

To see more of Dean's images and for information on his current and future exhibits please see his website at **www.dmcphoto.com**.



© Dean M. Chriss

SLEEPING UTE STORM
A large isolated thunderstorm looms over New Mexico's Sleeping Ute Mountains. The Valley of the Gods in south-eastern Utah is in the foreground

Sub-zero climates

Photographing in the extreme cold is another intense challenge for photographic explorers. Up against severe minus temperatures, you can never be over prepared. Alexander Kumar (**alexanderkumar.com**) and Erick Bondoux (**antarcticaonline.org**) are both keen photographers who are currently stationed at Concordia Station in Antarctica – the coldest place on earth. As temperatures can drop below -80°C in winter here, it's essential for any photographer to have planned for every eventuality prior to setting off. This is something both Alexander and Erick strongly advocate, remarking, "Planning is everything when working in extreme cold environments. You have to first ensure your own safety – be sure that the equipment and clothing you're using are suitable for the worst conditions you may expect." Alexander adds, "Frostbite can occur to any area of the skin that's left exposed. Adequate and appropriate clothing such as a Canada Goose parka is essential and will offer protection to your body as well as camera equipment and accessories."

Protecting your camera from the elements is essential. It's important to note that even the most durable models are still susceptible to breaking under these conditions. Alexander explains, "Autofocus mechanisms and diaphragms can freeze easily in extreme cold temperatures. If you force this mechanism once it's frozen, it can break. We recommend you use manual focus and avoid changing the AF/MF switch on your lens. You should also try to limit the use of the aperture diaphragm and optical stabilisation technology." Setting up your kit and selecting the best-possible camera settings prior to stepping outside is the best way to reduce the risks of damaging your precious camera equipment. This includes changing your lenses as Alexander points out, "the snow and humidity changes can damage internal mechanisms."

Of course, when working outside in the cold there will still be things you'll need to watch out for, as Alexander and Erick explain, "Batteries are the greatest technical limitation when it comes to shooting in cold environments." Once a camera battery is exposed to colder temperatures it can lose its charge extremely quickly. Alexander suggests, "Any spare batteries should be kept inside your clothing and up against your body. Lithium-ion batteries generally provide longer life but only will last around 15-30 minutes or so when exposed to -50°C and below. Use a DSLR grip, this way you can use additional batteries simultaneously, increasing your shooting time, autonomy outdoors and provide greater control when handling the camera with large, cumbersome gloves."

Naturally, shooting in these conditions, you'll be challenged by the light and the landscape. Setting your exposure correctly is key to avoiding overexposed images that have burnt-out highlights. Alexander says, "Because of the high light intensity and reflection and refraction off the snow in the Antarctic winter, you'll need to continually measure the light when setting or changing your exposure. Polarising and UV filters can be useful to help reduce glare." ND filters like the Big Stopper are also great for preserving some of the highlight details in your image and give you a little more flexibility when it comes to setting just slightly longer exposures. It's important to remember however that this can still have a damaging effect on your kit as Alexander and Erick point out, "You should try to avoid using the mirror-up function as prolonged exposures in direct sunlight can damage your camera's sensor."

Between shooting, always ensure your camera is out of the elements and ideally within an insulated camera bag. Most importantly, always put yourself before the shot and regardless of what extreme conditions your shooting in, always have a safety plan in place. DP

The deep freeze

In cold temperatures your camera becomes more susceptible to accidental trauma, so take additional care when handling or placing your camera to rest on a surface. You will also need to be careful of sudden changes in humidity when bringing your camera inside from the cold. Don't attempt to forcibly reheat it on a radiator – instead let it warm up gently at room temperature.

In certain cold environments, humidity may be lower causing frequent build-up and discharge of static electricity around you. Take care to 'discharge' yourself by touching a metal surface before handling electronic equipment and especially memory cards as static discharge can cause data loss. Instead of carrying the card in your hands, try carrying it gripped gently in-between your teeth!

To protect your camera in cold conditions, common sense often prevails over expensive external underwater housing kits, which can fog up and may not provide additional internal room for body grips or heating kits.

© Sean McCormick

BRAVING THE FORCE OF NATURE
DSLRs are tough, but rugged environments will push them to their limits – do some research to protect your kit!

GETTING CREATIVE
Barren, monotonous landscapes can sometimes be uninspiring. Mix up your shots by trying some tricks such as changing your camera lens to get some more creative results

© Alexander Kumar

CHANGING LIGHT
The time of day you opt to shoot at can completely transform your photographs. Early mornings or late afternoons provide a much more vibrant light to complement the landscape

FACING THE ELEMENTS
Always ensure you are suitably dressed to face the elements. Do your research first and layer up to stay warm. Always put your safety first when working in challenging environments

Extreme shooting tips
Safety is paramount so don't forget all of the essentials alongside your camera kit. Remember to tell others where you are headed and carry emergency supplies, communication and location tools. A torch is also a must-have!

© Alexander Kumar

© Alexander Kumar

Alexander Kumar & Erick Bondoux's top tips for ice-cold images

01 BODY GRIP
Use a grip on your DSLR to maximise the autonomy and length of time for shooting outside in extreme cold (preferably with lithium batteries).

02 USE SUPPORT
Tripods are extremely useful in cold conditions as you can keep your hands warm without having to hold the camera. Take care not to force your tripod's mechanisms when readjusting your position though. In extreme conditions, the materials will shrink and may become unmovable.

03 PROTECT YOUR KIT
If you're using accessories to shoot that have wires such as cable release, wrap them in Silicone (temperatures down to -45ºC) or Teflon (below -45ºC) to prevent them from freezing and snapping.

04 WARM CLOTHING IS A MUST
Invest in a large parka and use multilayered gloves with large insulated outer mitts which can be removed to leave five-finger gloves underneath. These are handy if you need to change settings (classic five-finger gloves alone are not efficient below zero).

05 Be selective
In extreme cold conditions, your camera's shutter life expectancy may be significantly reduced with wear and tear. Try to prolong your camera's use by only taking photographs when absolutely necessary

06 TIME IS LIMITED
It's important to make sure you understand your camera model's manual settings in order to get the most out of your camera before the batteries discharge in the extreme cold.

07 PREPARATION IS IMPORTANT
Do not change lenses outside or force frozen lens mechanisms. Select one lens to shoot with or take two cameras with you when you're out on location.

08 STAY IN THE WARMTH
Make all the necessary exposure and setting adjusts you can before going outside, this will help to protect you and your kit from the elements.

09 Consider temperatures
External flash accessories become fragile in extreme cold – don't use these under -35°C without adequate protection

10 Heating things up
If necessary use heating mechanisms for your camera and your gloves and clothing. Products like EXO2 or Blazewear heated clothing are perfect