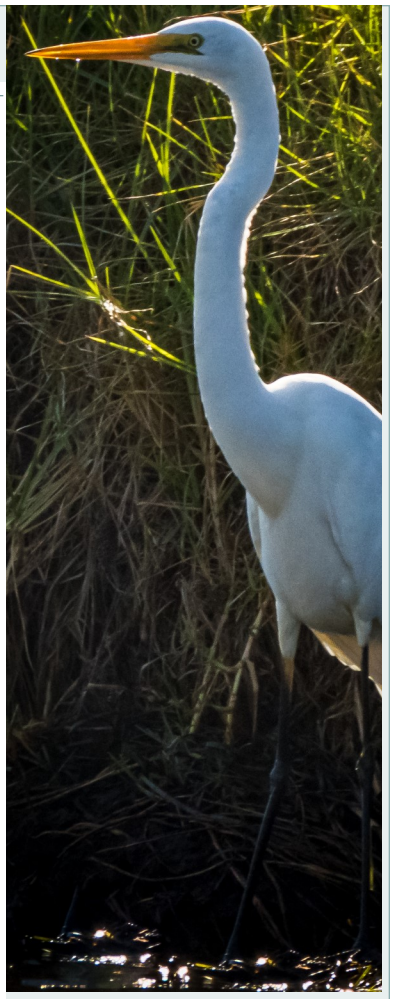
Back Lighting



LIGHTING

When we talk about lighting for photography, we generally are looking at the way light will reflect off the subject. Depending on the affect desired, the direction of the light is critical to achieve a required outcome. Ideally we would position the camera to take advantage of the sun or light source with the light behind us or to one side of the subject.

So what is the reason we avoid having the light behind the subject? The answer is exposure. The sensor of the camera has limited ability to filter intense light other than to reduce the size of the aperture limiting the amount of light entering the camera. This does not take into consideration that some areas in the field of view are underexposed and othe areas are overexposed and could be metered differently. To do that the sensor would need to be able to turn off or desensitize the pixels with too much light and amplify the pixels with not enough light. Wouldn't that be a smart camera. Instead the sensor treats all pixels equally. This is why we need to understand how light affects the exposure of the subject and how we can manipulate light to get the best exposure possible.

So what if the light is behind your subject? From the conventional perspective, this is an undesirable position and to be avoided unless the affect a rear light can produce added value to the image. Back lighting is a subject worth investigating.

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INSIDE

SPECIAL POINTS OF INTEREST

- Solar Eclipse
- Exposure compensation
- Solar Eclipse
- Lights
- Wildlife

"Positioning your camera to block the sun behind a subject or object can help to manage the exposure of the scene"

EXPOSURE COMPENSATION

To ensure the raw image is captured with the best values of light exposure, the photographer needs to be aware of the limitations of their camera.

Some cameras can manage a high dynamic range of light between black and white where others will saturate the pixels and cause burn out.

Use your histogram as a guide to balance the exposure towards the middle range. Also use your exposure bar and pre-set the exposure up or down a couple of points to maintain consistent results.

Use aperture priority as a minimum function and regulate light by opening or closing the cameras aperture to manage the amount of light entering the camera.

Manual mode will provide the best control allowing the aperture to be set for depth of field, shutter set for moving or stationary objects and ISO to move the reference point of exposure up or down to compensate the aperture and shutter settings

BACK LIGHTING

There is potentially many ways that back lighting can be used in photography. It can be a primary light source, a secondary light source or a complementary light.

For the purpose of this exercise, we are going to create four back lighting groups:

- Shooting into the Sun
- Projected Light behind the subject
- Silhouette and Translucent
- Portraits

SHOOTING INTO THE SUN

Shooting into the sun requires good exposure management. Getting a balance of exposure across the whole image when the sun in in the frame requires manual settings and possibly multiple exposures. There are a number of techniques available that can produce stunning images, especially evolving around sunrise and sunset.

If the sun is directly looking into your camera lens it will dominate the exposure of the image where everything else in the image is black. If you have a car head light in font of you , your iris closes to reduce the light entering the eye. It is almost impossible to see anything else but the head light. The camera sensor will also saturate the exposure unless the aperture is reduced limiting the amount of incoming light. The result will also reduce the sensors ability to see darker objects in the foreground.

Shooting directly into the sun will require good exposure settings. The bright light will over exposure the image unless the settings are managed, filters are used or the sun is blocked.

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Composition is an important factor that can help to reduce the impact of the sun on the exposure. By positioning the camera where the sun moves behind clouds, a structure or land form during a sunrise or sunset can produce amazing light without over exposure. The beautiful orange glow of the sun set can be seen once the direct sunlight is blocked.

During a solar eclipse (see image right) , the sun is blocked by the moon, which allows the exposure to be configured to observe the corona and solar flares around the edge of the moon covered sun. Once the moon moves away from the sun the exposure increases and the aperture needs to be reduced. This requires fast action by the camera operator to compensate between extreme light exposures.

The Sun can provide interesting affects when the aperture is closed producing a star burst with light rays leaking through the aperture blades. To compensate the limited light restricted by the small aperture, the shutter speed will need to the lengthened to find the right balance of exposure. ISO can also be altered if the affect that is desired requires a faster shutter speed such as a moving object passing across a sun set. Higher ISO will increase the potential for noise in the darker sectors of the image when the light level is low.

The use of a tripod is recommended when slower shutter speeds are used or blurring may occur. Another advantage of using a tripod is when multiple exposures are taken of the same scene, the images can be merged in post editing software. By taking a number of images at different exposures a composite image can be rendered where the software takes the best exposure for every pixel and uses it to create a new image. Most post editing software has this option with the results producing a balanced exposure image. HDR setting in some cameras can do this in camera where three to five images can be taken at once and the exposure compensation is blended onto one image.

Under exposed images can be interesting if the detail is not lost in the blacks

SOLAR ECILPSE

During a solar eclipse the moon gradually passes in front of the sun slowing reducing the bright intensity of light. It is only when the sun is 100% blocked that the exposure of the camera can be changed. The duration of the second stage of a total eclipse will vary depending on you position along the eclipse pathway. This can range from less than one minute to nearly four minutes.

Special solar filters can be used during the lead up and lead out of the eclipse, but this filter needs to be quickly removed when the sun is hidden behind the moon. The changes from day light to a night level of light happens within a couple of seconds. The camera settings will need to be changed from a small aperture to a large aperture, the ISO or shutter speed may also need to be modified to get the desired level of exposure.

The above photo was taken with a 500mm prime lens with manual camera settings 1/125 sec at f/9.0, ISO100. Focusing is extremely difficult as there is little or no light being reflected off the moon and the corona around the sun is light not matter and the camera cannot see enough contrast to automatically focus. Infinity is close to the correct setting, but a 500mm prime lens will have a very fine focus point. To achieve this a solar filter is used during the lead up where the moon edge can be used to acquire the sharp focus.

The use of bracketing can help to get the best exposure as the combination of underexposed and over exposed frames can be blended to get a good average exposure. If the image is underexposed the solar flares can be seen shooting beyond the surface of the sun. An over exposed image will produce a far reaching corona spreading widely around the black disk of the moon.

LIGHTS

Any light will work as a fill light but each light will have a different colour co-efficient. A candle will have a warm orange glow where a LED lamp will have a much white look.

A light with a temperature of 5600k is close to day-light and will blend with outside light. If you use many different lights from different positions they will all have different colours. This can be a good or bad thing depending on what you are aiming to achieve.

Reflectors come in white, silver, gold and black and each produces a different colour cast. A white reflector or grey card will provide a more neutral colour as it reflects the source light. Strobes and flash / speedlights can be regulated to reduce the amount of light produced. In combination with a reflector or diffuser, the light can be manipulated to add just enough emphasis or sculpting affect to add character to your image.

Natural light is everywhere and often overlooked as a light source. A window in a darkened room can provide a wonderful side or back light. The morning or afternoon sun is soft and warm and gentle on the lens.

Understand light and you understand photography.

PROJECTED LIGHT BEHIND THE SUBJECT

Like the sun, a single light source or multiple lights can be used to light a subject from behind. This could be a mixture of lighting coming from different directions, but for the purpose of back lighting, we look to have the main light coming from the back. In many natural scenes we can find filtered light providing enough exposure on the front of the subject and use the brightness of the sun or another stronger light positioned on the back to produce a halo or shimmering light of high contrast.

A light from an outside window filtering into a semi dark room can produce interesting shadows and lines on furniture and people. The glowing bright light of a sun behind a tree can illuminate branches and leaves along their edges. A couple standing in a open door can silhouette the subject or a reflector or strob can be added from the front to allow the dark areas to be illuminated to balance the exposure. A combination of natural light and artificial light will create different colour temperatures within the same exposure.

SILHOUETTE

When photographing an object with a rear light source, the camera will typically average the exposure in the field of view and the dominant well lit background will often win out. This leaves your subject dark and under exposed. The affect can be interesting and in some circumstances desirable producing a silhouette.

A silhouetted subject does not have to be totally blacked out, it can have some detail visible in the shadows. For the best result use the background to measure your exposure so that the brightness is not over exposed and burnt out. To achieve this use spot metering rather than a partial average metering setting so you can select the area in the frame you want to reference. Partial metering cn be used when the subject is contrasted by size as well as illumination.

Filters are another way to manage the intensity of the background light. Often the sky is much brighter than the foreground where a graduated filter can help to balance the exposure. Finally composition is vital to achieve not only a well exposed silhouetted image, but an interesting photograph that catches the eye and holds your attention.

TRANSLUCENT

When the majority of the light is coming from behind the subject yet there is enough refracted and reflected light to show subject detail the back light can produce a glowing subject.

When the subject is made of a transparent material, the light will penetrate illuminating the subject producing a glowing affect.

Depth of field is important when you are dealing with flowers and the opened aperture will help to increase the amount of light exposure as well as minimising the depth of the focus plane. This can aid the bokeh affect in the background given the right conditions. Subject separation is important and if the background is not to bright the illuminated subject will pop out of the image.

"When the subject is made of a transparent material, the light will penetrate illuminating the subject producing a glowing affect."

PORTRAITS

Generally when we are taking a portrait, we find the best light to fall onto the face of the subject to either flatten the reflected light or to produce strong shadows.

When back lighting is used in conjunction with front and side lighting the subject can be rimmed with light producing a glowing outline.

A brighter background can also reduce the detail in the back ground when the subject is also well lit. This can be achieved by using a flash, reflectors or another strong static light source.

We don't have to illuminate the background light if the exposure of the subject is balanced.

Choosing the correct exposure for the subject is the primary objective whist allowing not to overexpose the brighter background.

Rim light the subject with the contrasting light levels will produce a delightful portrait. Splashes of light across a darker subject will create a wonderful contrast of detail exposures.

Lens flare can be adapted to create an artistic contribution to the composition when positioned correctly in the image. Using spot metering will help to control the exposure on your subject with the consideration of an overall frame exposure. Manual setting will provide the best means to control the way the image is exposed using a combination of aperture, shutter speed and ISO. And as always the composition itself must feel balanced and well structured to achieve a high standard you are looking for.

WILDLIFE

PHOTOGRAPHING WILDLIFE IS CHALLENGING AND REWARDING AT THE SAME TIME. IT HAS AN ELEMENT OF BEING FREELY AVAILABLE AND A COMPLEXITY THAT REQUIRES GOOD SKILLS TO CAPTURE IT.

PLAN WHAT YOU WANT TO ACHIEVE. RESEARCH YOUR SUBJECT AND UNDERSTAND ITS CHARACTERISTICS.

FIND THE LOCATIONS WHERE THE WILDLIFE CAN BE FOUND AND SCOPE IT OUT BEFORE HAND SO YO UNDERSTAND THE ENVIRONMENT.

WATCH THE WEATHER AS WIND CAN BE A ISSUE WHEN TREES AND GRASS ARE BEING BLOWN AROUND. THE TIME OF YEAR WILL PRODUCE DIFFERENT NUMBERS OF BIRDS AND SOME ANIMALS HIBANATE DURING THE WINTER. SOME ANIMALS ARE MORE ACTIVE WHEN THEY ARE MATING.

DON'T THREATEN OR DISTRUPT WILDLIFE IN TEH PROCESS OF YOUR PHOTOGRAPHY. BE ONE WITH NATURE AND YOU WILL BE WELL RECEIVED AND GET BETTER IMAGES AS A RESULT.

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PLANNING

The most important element of any production is good planning.

Other than those spontaneous moments at a family gathering or during a day trip when an opportunity is presented to you to capture., we should always take time to plan our work.

Light changes with the time of day, the weather and if it is inside or outside. We can not always plan for the conditions we want such as a wedding. We may be able to visit the area in advance and scope out the location, but there will always be variations in light to consider.

Back lighting is always an option that can be used to your advantage rather than an undesired problem. If you have identified your subject you can move around until you get the composition you desire but the light will not always be where you want it. Look for ways to reflect light, cover brighter areas or shade from the direct sun light under a tree.

Wildlife does not always allow you the opportunity to set up your shot, so quick actions and knowing your environment will help towards getting a good result. Perspective and composition are critical always looking at how the sun falls and shadows are created. Photograph a water droplet as it hangs from a leaf capturing the sun as it shines through the droplet.

Plan the time of day that best suits the direction of the sun onto your subjects face. Or to capture the sun rising or setting. When photographing shore birds for example, the early morning light is softer and warmer providing a beautiful light.

The lens selection is important as you can not carry every lens in your kit during a shoot. Take with you the best lens for the task and if you plan to do a landscape or something different whilst you are waiting, have a second lens in you backpack. The tripod might be useful but if you are doing lots of walking you might consider a monopod or a skid plate. If Landscape is your thing than the size and weight of your tripod is conditional to your fitness and practical application. Find a location that is close to a car park where you won't have to walk too far.

Clothing is another thing to consider. Wears layers of clothing so as the day warms up you can peel off a layer or two as required. Walking to a location can be hot work, but when you get there and the wind is cool you will get cold very quickly. Camouflage can also be very useful if you are targeting wildlife and birds. A hide or blanket can be used to ensure you are not seen by your subject. Remember a hat and sun screen if you are out for the day.

Your phone can be a good tool to record information about what you are doing or what you have done. Make notes and refer to them when you get to the site. Phone apps are available that provide information about where he sun will be at a given time. Other apps provide calculations on depth of field or the name of a bird you just photographed.

Consider the distance you are from you subject, the direction of the light. Do you need a filter? Would a reflector allow you to get the exposure you need when the back light is bright. Can you move your subject to a better location or look for a different perspective to make it more interesting. Would bracketing help later in editing. Use a flash as a fill light.

Post editing can make all the difference but if you don't have a well exposed image in raw it can not be reproduced on a computer. Post editing is a tool not a compromise. Good preparation and planning will help improve your photographic experience and altimately help produce a better outcome.