



Long Exposures for Nature Photography — Tips

Manual Functions

Shutter Speed - Most Important

The longer length of time will show more motion... cloud movement, smoothness of the water, waves will create a mist like appearance, etc...

F Stops / Aperture

This can be flexible, as to compensate for the shutter speed. But you want enough range to get the subject and landscape in focus.

ISO Settings

Using the lowest setting possible will allow you a longer exposer (shutter speed). Also better quality image... less noise visible. ex: 50 ISO or 100 ISO

Shoot Raw

This leaves the image uncompressed (unlike a jpg). This also allows you to have better color correction and fix images that have not been properly exposed. Also allows for better enlargements.

**Note that shooting RAW will take up more space on the disk.*

Bulb setting... Use if an exposure over 30 seconds is needed. You will need remote for this function to prevent camera shake.

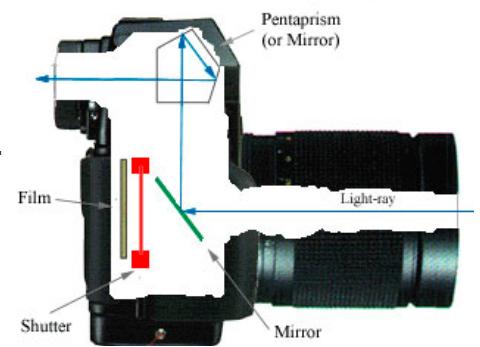
Mirror Up

The mirror can cause the camera to shake if left down. Once set, click on the shutter once and the mirror will go up, wait a second for the camera to settle, then click the shutter a second time and the picture will be taken. *The Mirror Up setting is usually found in the camera's custom functions.

Manual Focus

Using Neutral Density Filters can be difficult to use automatic focus... better to focus manually then put on the Neutral Density Filters.

*(*Using Live Mode can help with focusing and will raise the mirror automatically... but note, it will also drain your battery power faster)*



Cable Release & Remotes...Corded & Wireless

Vello Shutterboss Version II Timer Remote Switch - \$49.00

This will connect directly to the camera. Featuring specialized functionality such as continuous shooting, self-timer, long time exposures, and interval shooting,



*Vello makes many models for different types of cameras including wireless versions that will either have the same multi functions for more cost or just a simple shutter release for less cost.

Vello Wireless ShutterBoss II Remote Switch \$100.00 with Digital Timer



Vello Wired Remote Switch \$7.50



CAMRANGER Wireless Transmitter - \$300.00

<http://camranger.com>

CamRanger is a stand-alone device that connects to select Canon or Nikon DSLR cameras with a provided USB cable. It creates an ad-hoc WiFi network that your device (iPad, iPhone, iPod Touch, Android, or Mac or Windows computer) can then connect to. The free CamRanger app then enables control of the camera. There is no need for a computer or existing Internet connection. (Wireless network enables connections up to 150 feet.)

Control DSLR Remotely via iOS Device
Photo/ Video Capture, Live View, HDR
Intervalometer, Bulb, Focus Stacking
Control Shutter Speed, Aperture, WB, ISO
Metering, Drive/Shooting Mode, and More



Neutral Density Filters — Circular or Square/with holders

A neutral density filter's objective is to provide optical density that is color-neutral.

These will allow you to photograph anytime of day, even sunny days!

(Purchase the size filter for your largest lens opening.)

B+W 77mm 3.0 ND MRC 110M Filter - \$97.00

This is a 10 Stop Filter - almost black

Great for shooting during daylight hours.



6 Stop Filter

B+W 77mm SC 106 Solid Neutral Density 1.8 Filter - \$60.00

B+W 77mm MRC 106M Solid Neutral Density 1.8 Filter - \$160.00

3 Stop Filter

B+W 77mm SC 103 Solid Neutral Density 0.9 Filter - \$66.00

B+W 77mm MRC 103M Solid Neutral Density 0.9 Filter - \$134.00

Add a polarizer and you will have 5 stops.

*The Multi-Resistant Coating (MRC) is both an anti-reflection coating as well as a protective surface. It helps to increase light transmission by reducing reflections, scattered light, and ghosting. Additionally, it offers greater protection to the filter substrate and stays cleaner for longer than uncoated filters. **COSTS MORE

Tiffen 77mm Variable Neutral Density Filter - \$100.00

The filter is designed with a built-in rotating ring that controls neutral density ranging from 2 - 8 stops (0.6- 2.4).

***Mixed reviews on Variable... sometimes work great, other times can create dark lines.



*** Some of the manufacturers are: Formatt Hitech, B+W, Lee, Singh Ray, Tiffen
Prices will vary.

***Research says there is a quality difference between ND manufacturers... better color quality. I believe this could be corrected in any Photo retouching program, especially if you shoot RAW.

Graduated Neutral Density Filters

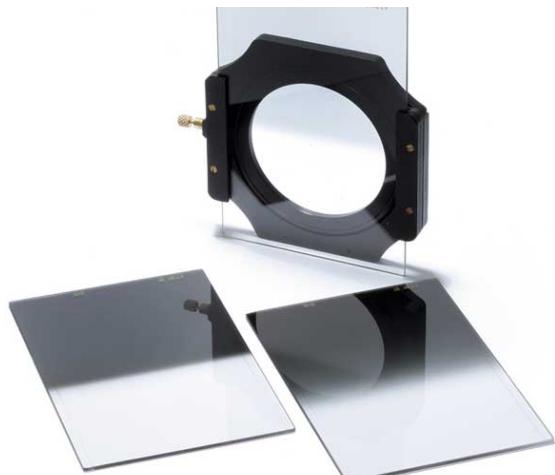
Plastic, Resin, and Glass options.... price and quality.

Glass being the highest quality... sharper clarity.

Cokin Graduated Neutral Density Filter Kit for "P" Series

(3 Filters and Filter Holder) - \$84.00 (Adorama.com)

Three filters: 121L (1 stop), 121M (2 stops) and 121S (3 stops) - Can be used separately or together.



Often it is necessary or desirable to balance the light intensity in one part of a scene with another. This is especially true in situations where you don't have total light control, as in bright contrasty landscapes.

*You can stack the filters and flip them around to get the proper exposure you want.

Tripods

Weight of Tripod... if you are traveling or hiking you want a lighter model.

How Much Weight will it Support... if you have a heavier camera, and/or large heavy lens... you will need a sturdier tripod.

Height Extension... how high does the tripod extend... depending on your height and needs.

Folded Height Extension... how small does the tripod fold down. Important if you are traveling and need to pack it in a suitcase or backpack.

Ball Head... does it have separate control knobs for tilting and panning... does it have bubble levels... does it come with the tripod or is it a separate purchase (more costly).

Monopod... does one of the legs convert to a monopod.
(*Monopod is decent alternative if you don't have a tripod)

Center Column... can it be removed to allow the tripod to get lower to the ground.

Material...

Aluminum (bit heavier, less expensive, but not as durable)
Carbon Fiber (light, sturdy, expensive)

Cost....

***3 Legged Thing - \$500.00 - www.3leggedthing.com**
A great Carbon fiber, travel pod where the center stem can come off.

****Other manufactures — Sirui, Gitzo, Manfrotto, Benro, Oben, MeFoto, Slik**
(*Always Check customer reviews)**

**JOBY Gorilla Model.... Small, lightweight with
flexible, wrappable legs.**



Polarizers

Polarizer filters can be used in combination with ND filters. The great thing about polarizer filters is that not only do they give a little color boost, but also reduces the light with 2 additional stops.

*Variable ND filters are based on the concept of 2 polarizing filters to reduce the light. It's therefore recommended if you use a variable ND filter to not use it in combination with a polarizer filter because the outcome will be very unpredictable.

Step up/down rings

A step up/down ring is a thin ring that you mount onto the front of your lens. You can screw your ND filter onto the ring.

*Ideally it is best to buy all filters for your largest diameter lens you own. Then purchase step up rings for the smaller diameter lens. ex: 67mm up to 77mm. You will then have full coverage for your lens and prevent vignetting.



Filter Holders

Filter holders are used for square and rectangular filters. The filter holder is attached directly in front of your lens using an adapter to fit any size lens. These holders usually hold 3 filters to allow you to stack them together.

Stacking and Vignetting

Using multiple filters at once is called stacking.

*There's however a disadvantage to stacking: vignetting, especially on wide angle lens.

XUME Adapters - www.xumeadapters.com

XUME Quick Release Adapters that screw onto your lens and onto your filters creating a magnet. Less damage to your equipment and not worrying about dropping your filters. Comes in all the different lens sizes.



Problems to consider....

Light Leakage

Leakage can cause a magenta or purple like band of light in an image when shooting with a ND filter.

- If the light is to your back, light can come through the eye piece.

*Black tape can be a great tool to block light.

Increased Noise

First thing to do is to try to avoid noise by shooting at the lowest ISO (100) and if there's still noise it's easy to just get rid of it by using noise reduction software.

*NIK Software's DFine noise reduction tool.

Color Cast

Some brands of filters are known to leave more of a color cast on the final image. This is a great reason (one of many) to shoot in RAW, as the color casts can often be corrected during post-processing. Sometimes, for particularly long exposures, it may just irreversibly compromise an image and, in those instances, a black and white conversion is often the best way to overcome it.

Battery Power

Photographing with long exposures will drain your battery power. If using the 'Live Mode' function it will drain even more power. Each time you review an image in your camera will also drain power.

Tip: Have multiple batteries!!

Techno Talk....

Stacking filters and the Sharpness of the image, "Sweet Spot"

You can stack Neutral Density filters or add polarizer filters to add more stops to lower the shutter speed.

At the same time it has been told, that the more filters you add, their will be a loss of sharpness.

Often to achieve the shutter speed you want, you will think to increase your F/Stop up to f/22 or higher depending on your lens. Again, you will lose sharpness due to the lens 'Sweet Spot'. (That is why ND filters can be beneficial to keep your F stops lower)

Each lens has an F/Stop that will be its max sharpness, often 2.5 - 3 stops above the maximum opening of aperture.

ex: F/2.8 lens will have a sweet spot of 5.6 or 8.

B&H Video has a good description of the "Sweet Spot".

<http://www.bhphotovideo.com/explora/content/rules-thumb-finding-your-lens-sweet-spot>

* Post processing can help sharpen your images

Software

OnOne Photo 2017 - \$119.00

<http://www.ononesoftware.com/>

Works individually as it's own product or as plug-ins with Photoshop, Lightroom.

Includes Photo Effects, Resize, Portrait Retouching
RAW Processor and Photo Editor

Resize and Photo Effects programs can be purchased separately.

Nik Software - Free

<http://www.google.com/nikcollection/>

Includes 7 programs: these are just a few
Silver Efex Pro, Color Efex Pro, Sharpener Pro, HDR Efex Pro

* I use the two programs above. I have heard great things regarding the programs below.
They all have trial periods. So test them out to see what you like.

Topaz Labs

<http://www.topazlabs.com>

Topaz has 17 products - Total package is \$499.00
You can purchase them individually.

They have Photo Effects, Artistic Effects and Technical Fix programs.

MacPhun - Mac Users Only

<https://macphun.com>

Luminar - Photo Editing Program \$69.00

Landscape, portrait, wildlife, macro - you name it. Luminar brings filters, layers, masks, color controls, RAW converter and other features that are ready to give your photos the professional treatment they deserve.

Aurora HDR - Photo Editor - \$99.00

Tonality - Black & White Software - \$69.00

Notes to consider...

Photographing in the early morning hours, in the late afternoon hours, cloudy and even rainy days are very beneficial. First, you are not fighting direct sunlight, so you can achieve a slower shutter speed. Second, for many scenes like rivers and waterfalls... there will be more saturation of color around the water, you are not fighting high contrasts of strong highlights and dark shadows, and it will create a more surreal scene.



Sunrises and Sunsets will become more dynamic as well especially if there is water in the foreground.

*But note, the sun will be either rising quickly or going down quickly...you will need to compensate the exposure as to not overexpose or underexpose your image.



If it is raining at all, a longer exposure will diminish any droplets that hit the water... creating a smooth surface.



The longer the exposure....

Water will smooth out, with little or no detail in the water.

Reflections will soften in the water.

Color reflections in water will become more saturated and blend together.

Rolling waves over and over become mist.



If choosing a shorter exposure, like under 1 second for example, each frame captured will have a different result. Even though the wind and water are moving in one direction... winds will be constantly changing and water can move inconsistently... so shoot many frames to see the differences and create the look you want.



More Notes to consider...

If there are people moving around your scene..as long as they are moving, they will disappear if the exposure is long enough. Even if someone walks right in front of your camera, with a few seconds of exposure, you will never see them in the photo.

Cheating Method....

What if you don't have any Neutral Density Filters...What can you do...

Set your camera to the lowest ISO possible: ISO 100 or even ISO 50

Set your lens to the highest Aperture Setting: F/22, F/29, some even go higher

*Use a polarizing filter to reduce 2 more stops!

I might recommend that when choosing a scene to photograph with a long exposure, that there is an object in the scene that is not moving; like a tree, stone, man-made object, even the roots of grass... it will give a sense of place.

Having everything in the scene moving can create wonderful abstracts... grass, leaves, and sky blurring together in the water.

As you are the creator, you need to decide what you want your outcome to be... you may want a super long exposure to smooth out the surfaces, or you may want a shorter exposure to show some detail.

Remember winds and sun are constantly changing... decide what you want to create... and select your shutter speed to capture that moment.

Experiment and Have Fun!

******All equipment listed are products that I use and the prices are from B&H Photo. There are many options available, choose what fits your budget and needs.***