

Photographing Waterfalls: Shutter Speed (Part 2 of 3)

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Aug 17, 2005

Waterfalls and white water cascades are among the most inspiring spectacles in nature, which makes them an ever popular subject of photography. There is something about the motion and sound of the water, the mist and the wet sheen on the rocks that's soothing and hypnotic. In part 1 of this series, Jim gave hints on how to frame waterfalls for different situations. In part, Jim explains in depth the techniques surrounding shutter speed.

What shutter speed should I use?

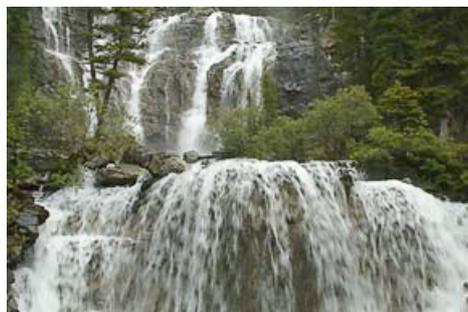
As we've mentioned, a change in shutter speed creates different textures in the water. There is no one correct shutter speed to shoot waterfalls. As the previous images illustrated, the shutter speed to use depends upon how you want to interpret the scene. However, there is a good guideline to which you can refer.



Most landscape photographers seem to prefer interpreting waterfalls with a slow shutter speed. The soft "cotton candy" effect of the water is illustrated in the image on the left. As a general guideline, a shutter speed between 1/4th and 1/15th of a second will create this soft effect.

A slower shutter speed will increase the softness of the water; a faster shutter speed will create a "harder" look. Shooting water at around 1/60th of a second will reproduce the water as your eye normally sees it. Shutter speeds faster than that will start to "freeze" the water droplets. There are situations when fast shutter speeds are more appropriate than slow shutter speeds. Your choice depends on how you want to interpret the scene.

Look at the images below:



This image above was shot at 1/50th--about the way your eye sees it.



...and this one was shot at 1/8th, which gave a soft effect.

The guideline provided above is not a hard and fast rule. It's merely a good range for most waterfalls. You should adjust the range based on two factors: volume of water and speed of flow. You can use the upper range of the guideline, or a slightly faster shutter speed, if the volume of water is

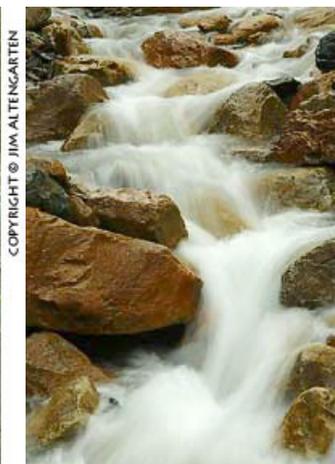
great and/or the water is traveling at a very high velocity. If the volume of water is low, or it's not moving at a high velocity, you'll need to shoot at the low end of the guideline, or slower, to create the soft effect.



The image on the left has water seeping out of a ledge into a stream. The flow was low volume and is slow. Therefore, a shutter speed of about $1\frac{1}{2}$ seconds was used to achieve the soft effect. Alternatively, the image on the right is a small waterfall in a canyon. The water was flowing rapidly and at a high volume. Therefore, I could obtain a very soft effect shooting at $1/20$ th of a second.

As we mentioned, experience will help you determine how to interpret the guidelines and get the desired shutter speed. Until you obtain that experience, try bracketing your shutter speeds to obtain the soft effect. Use a fairly wide interval in your bracketing—perhaps a two or three stop difference. If you bracket in two-stop intervals and start at $1/4$ th of a second, your shutter speeds will be $1''$, $1/4$ th, and $1/15$ th. Those should provide a wide range of interpretations for the waterfall.

The same guideline and principles apply to any moving water, whether it's in a waterfall, stream, or ocean wave. Remember the general range of $1/4$ th to $1/15$ th of a second, and determine if the volume of water or the speed of flow requires any deviation from that range.



The left image above shows a section of small rapids in a stream as the water passes a huge rock in a canyon. The soft effect of the water provides an interesting compositional element that would not be present if the scene were photographed with a faster shutter speed.

The image on the right is a section of a mountain stream. The slow shutter speed provides interest to the image. If the scene were photographed as your eye would see it, everything would become boring. Using a slow shutter speed can make an interesting scene out of something very ordinary.

The ocean scene could have been shot with a slower shutter speed to soften the waves more. However, with softer waves, the image would require the addition of something dominant to the scene for the soft waves to complement. In my interpretation, the waves create the interest. Therefore, the shutter speed had to be a little faster (but within the stated guideline).

The best ways to achieve slow shutter speeds are to shoot on overcast days using a very small aperture (=large f-stop number) with a slow film speed. Allowing light to come in a small opening requires that the light come in for a long time. Also, shooting on an overcast day means the light level is lower, and you'll be able to use a slow shutter speed. A slow film speed helps ensure that the shutter speed will be slow.



There are occasions when no matter what f-stop you're using, the light level is high enough to prevent you from getting into the "magic" range of 1/4th to 1/15th of a second. Your best recourse in this situation is to have one or more neutral density (ND) filters handy. These filters should have neutral density over the entire filter--not the graduated neutral density filters used to balance out wide ranges of contrast. A neutral density filter reduces the light entering the lens by a certain number of stops. The most common one used by landscape photographers is a two-stop ND filter. Your polarizer normally reduces the light by about two stops, so it can be used as a ND filter.

Be aware that some manufacturers do not make polarizers with threads on the outside of the filter. If this is the case with your polarizer, put the ND filter on first, and then mount the polarizer. A two-stop ND filter used with a polarizer will reduce your shutter speed by about four stops, which should cover most of the situations you face. For example, if your shutter speed is 1/200th without any filters, four stops less exposure will put you within the guideline range. If you don't have a polarizer, I suggest carrying a three-stop ND filter in addition to the two-stop filter.

The two images below demonstrate how you can use a slow shutter speed with a waterfall or river to create an interesting background. In the first image, the slow shutter speed allows the river to provide a nice, soft, textured background for the dogwood blossom. This image was shot with a shutter speed of 1/4th of a second due to the swift current of the Merced River in springtime. The upper part of the image added some color reflected from trees on the far shoreline.



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The next image uses the violence of the swift Athabasca Falls as a background for a tree abutting the falls. Note how a faster shutter speed adds texture to the water. This creates more of a contrast with the softer tree that is silhouetted.



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We discussed situations when a slow shutter speed provides an interesting image. As mentioned previously, there are times when a fast shutter speed is necessary to get the shot. For example, while visiting Beauty Creek in the Canadian Rockies, I came upon a kayaker. There are seven major waterfalls along the mile-and-a-half creek. The kayaker was traversing three of the falls.



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This was not a situation for a slow shutter speed. I wanted to capture the kayak going down the falls with the water drops frozen around the person. Since I was shooting digitally, I set my ISO to 800, used f5.6--because I didn't need a lot of depth of field, and used my AI Servo mode to focus track the kayak as it approached and then went over the falls. Since it was a bright sunny day, I was able to get a shutter speed of 1/2000th, which was way more than I needed. Something in the range of 1/250th would have frozen the kayak, but I didn't know if he would go over the falls again (he didn't). I knew I wanted the shot, and the really fast shutter speed ensured me of getting it.

You can feel the power of the stream as it covers the kayaker after he went over the falls. I previously had taken a picture of the falls (without the kayak) at a very slow shutter speed. That gave me an interpretation of the falls. Using a faster speed in this photo to prevent blurring made a stronger image with the kayak included in the scene.

Any time you want to create a feeling of power, use a fast shutter speed to freeze the water. The image of the wave crashing over a rock at right

illustrates that point. A slow shutter speed and soft flow to the water would not suggest the power of the wave. Remember, it is YOUR interpretation of the scene that dictates the shutter speed, not some arbitrary rule.



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