

Photographing Wildflowers: Are Your Pictures Worth 1,000 Words?

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The first step is identifying the primary subject. This photo contains many opportunities, but because a subject has not been isolated, it looks busy.

After a near-perfect day of photographing some of Oregon's flora on a recent NPSP field trip, you eagerly anticipate showing the images of your botanical discoveries to your friends. However, as you review your photographs, you are disappointed by the images. The blossoms you remember as being vibrant in color appear dull, details of the flowers are fuzzy and key characteristics you wanted to capture for identification are out-of-focus or absent. Many of the flowers you wanted to share with others are so distant they are unrecognizable or appear dwarfed by the surrounding landscape. In other photographs, clutter distracts the eye from the primary subject. You don't want this to happen again and wonder what you can do to improve your pictures.

Producing outstanding photographs is much easier with today's high-tech cameras. Even without all of the "bells and whistles," the new digital cameras can produce excellent images. However, the camera's success is highly dependent on its owner's knowledge of its capabilities and how to use them along with some important photographic techniques.

Taking good wildflower pictures requires more than just looking through the viewfinder and pressing the shutter release button. *You, the photographer, not the camera, are the primary avenue to creating good pictures.* Even with today's automated cameras, knowing some basic elements of photography can help improve your wildflower pictures, while you let the camera do the mechanical work. Regardless of whether you own one of the newer digital cameras, an older film point-and-shoot, or a 35-mm single lens reflex (SLR), the following techniques will improve your pictures. These techniques are described in sequential order, all of which are done before pressing the shutter release, which is the final step.

Don't just take a photograph, make one!

Imagine that you come around the bend in a trail and encounter a meadow full of spectacular wildflowers. Your first instinct is to grab your camera and start snapping pictures. *STOP!!* Sit down, relax and mentally plan the images you want your camera to create. You have some important decisions to make before you start

shooting pictures. Create the desired image in your mind and then duplicate it in the viewfinder. The first task is to identify your photographic objective. Is it capturing the flowers in the foreground with the full landscape view, an individual plant, important floral characteristics for future reference, filling the viewfinder with vivid color, or showing the plant in its natural habitat? Once your purpose has been identified, walk around the primary subject and view it from different perspectives (elevations and angles). Decide if you want the subject displayed vertically or horizontally. Look at your subject and visualize it in terms of lines, forms, textures, patterns, shapes, and color. Mentally create a composition using the key elements of the subject.



Although this photograph is shot at closer range, it is still cluttered and does not lead the viewer's eye to an obvious subject.

Once you have the general concept in mind, begin to simplify it. Decide whether you want to emphasize the entire plant or just the beautiful lines in the petals. Specifically identifying the primary subject will help simplify your composition. Usually, when it comes to capturing a quality image, less is more, and the closer, the better. This is a good time to take

out your camera and use your viewfinder to get the desired composition. Keep your finger off the shutter release, though, because there is a lot to consider before finally capturing the best possible image.



In the rule of thirds, objects should be close to the intersection of the lines for a pleasing arrangement.

Catching the viewer's eye

Good photographers use composition to produce images that are visually balanced and pleasing to the eye. One of the most useful techniques is the "rule of thirds." To use this simple rule, mentally divide your camera's viewfinder into nine sections using imaginary horizontal and vertical lines. Then, use this grid to position the important elements of your photograph on one of the four intersecting points of the grid so that it is one third down from the top or up from the bottom of the frame, and one third in from one edge of the frame. Any of the four intersections can be used to produce a more pleasing composition. To prove this point, pick up any magazine or book with good photographs. Place a grid of thirds over the photograph and you will see that the primary subject usually falls near an intersection of vertical and horizontal lines. You can also observe this when watching television. The placement of an important actor's head is normally at one of the grid intersections, not in the center of the screen.

The vertical lines also serve as a guide to divide up the frame vertically for placement of elongated subjects. Horizontal lines can help you place the horizon in your photograph in either the upper or lower third. Horizon lines should rarely be placed in the middle of the frame. Although the use of the rule-of-thirds is an excellent guideline, never force a picture to comply with it if the composition just does not work.

While you are looking in your viewfinder and arranging the composition, scan for excess clutter and specifically look for items in the potential picture that will pull the viewer's eyes away from the subject. Eliminate these distracting items by adjusting the camera angle or physically removing objects from around the primary subject. I often place a large gray card or black poster board behind the subject to eliminate background clutter to make the flower stand out. Another technique for creating pleasing compositions of multiple wildflowers is to arrange them together in groups of three.

Creating magic with light

Now that you have chosen a subject and composed your photograph, you need to consider the lighting. In photography, lighting is everything...well, almost everything. Understanding light and how it affects the subject will help you create stunning images. Also, understanding how to adjust for and use the light of the moment can lead to better photographs when conditions are less than ideal.

Analyze the subject of your photograph to determine the direction of its light source; whether from the back, side, or front. Backlighting can silhouette the subject, and makes flowers shimmer and look ethereal. Side lighting enriches colors and reveals surface texture, line and form; it also creates dramatic shadows, creating the illusion of greater depth of field. Early morning and late afternoon light (when the sun is at a lower angle) creates warmer colors, is softer in intensity, and produces more dramatic photos. In shade and on overcast or misty days, light is more diffuse and uniform, bringing out rich colors. Bright, mid-day light flattens textures and bleaches colors. Timing is everything if you want the very best lighting conditions for special effects or dramatic images. Light is best early in the morning or late in the day for outdoor



Grasses can be difficult. In this photograph of Lemmon's needlegrass (*Achnatherum lemmonii*), a gray card eliminated background distractions and gave an accurate light meter reading.

photography. I refer to sources like the newspaper, weather stations, or my GPS (Global Positioning System) to find out when the sun rises and sets to plan my outings for the best light.

Because group hikes are seldom scheduled during hours that are optimum for photography, you will often encounter irresistible wildflowers in bright mid-day sunlight. When this happens, you have several options: you can mark the location and return later when the light is better; you can look for the same flower in the shade; you can go ahead and snap the picture (recognizing that it

is not likely to be the best image); or you can try to create a better lighting situation on the spot.

Better lighting can be created using sunshades or diffusers. Harsh mid-day light is softened by shading the subject with opaque or translucent material of an umbrella, or other items like vehicle sunshades, backpack, a coat propped up on sticks, or a partner. Commercial products available for diffusing and reflecting light are usually a circular piece of thin material in a hoop which folds up 1/3 the size for compact storage. They are lightweight and easy to carry in the field and come in different types of cloth (gold, silver, white, black), some of which are reflective and bounce light back onto a plant in the shade. Make sure that the material used for shading does not transmit unwanted color to the subject. For example, direct sunlight transmitted through a bright pink umbrella may add an unnatural pinkish tint to the subject.

Don't forget about using your on-camera flash in reduced light or when you are shooting in shadows. If you are fortunate enough to have a camera lens that takes screw-on filters, use polarizing, neutral density, or warming filters to enrich colors, reduce glare and alter existing light conditions. Also, keep a lens shade on your camera when photographing in harsh light conditions.

When using digital cameras, it is particularly important to adjust the white balance for different lighting conditions. For most cameras this can be done automatically by turning a knob on the top of your camera to an image of bright sun, partial sun, full cloud or flash conditions. For anything other than automatic modes, check the camera manual for instructions on adjusting the white balance.

Avoid indecent exposure!

Most modern cameras allow you to push the shutter down halfway and hold it while the camera focuses and meters the light, taking an average meter reading from various objects in your prospective photograph. Quite a few of the newer digital cameras allow you to modify both the location and the amount of viewfinder area used for the readings. Check your camera manual to see whether you can set the metering location within the viewfinder and whether the reading is averaged across the entire image or pinpoints an exact spot. This feature allows you to take more precise readings resulting in better images. If your camera allows metering adjustments, use the spot meter for the most accurate light meter reading of the reflective light from a single primary subject in your photograph. For example, use the "spot meter" if you are trying to get an accurate light meter reading for a flower petal. In contrast, if



The white blossoms of brown-eyed evening primrose (*Camissonia claviformis*) in this photograph stand out because the viewer is not distracted by background clutter. To achieve the correct exposure, I metered on the gray card.

the primary subject includes several objects (petals, flowers and leaves), then the averaging method provides a better reading. Using a spot meter you can get different readings from different subjects and then average your findings. Or, you can use the averaging metering system of your camera. Averaged meter readings are normally better for landscape photographs.

Extracting the truth from your light meter

Your camera's light meter may be the primary reason you don't get eye-popping, crisp colors under some light conditions. Even light meters on the most expensive cameras don't give you the correct exposure under all conditions. Camera light meters are designed to read light bouncing off an eighteen percent reflective gray card. When the light meter is aimed at white or black surfaces, the color tones farthest from neutral gray, the camera meter gives an incorrect reading, resulting in pictures that are over- or under-exposed. Obtaining optimum photographs under these conditions requires intervention by the photographer.

Depending on features of your camera, you can usually obtain adequate light meter readings by directing the camera to meter off natural features that are close to eighteen percent gray in the same light as your subject. Find one of the following objects in the same light as your subject and it will be close to a correct meter reading: lawn grass, tree bark, brown earth, weathered wood, blue overhead sky away from the sun, faded blue jeans, or green tree leaves. With some cameras, you can obtain an accurate light meter reading by pointing the lens at a neutral gray object in the same light as your subject, push down the shutter halfway, and then press another button to hold the light meter setting while

you refocus on the subject. For example, to photograph the white petals of a trillium, meter on the green leaves then hold that meter reading while shifting your camera lens focal point back to the white petals. The white petals in your photograph will be a crisp, clean white, rather than an opaque, chalky white (the latter results from under-exposure by metering on the white flower). Of course, you can always carry a small gray card, place it next to your subject in the same light as your subject, take a light meter reading from the card and then shoot your picture. Check your camera manual for the correct procedures for focusing and obtaining meter readings. One caution here! If your camera does not allow separate metering and focusing (e.g., most point-and-shoot models), the object that you use for your neutral color must be equi-distant from your camera as your subject; otherwise your subject will be out of focus.

The f-stop, and can you adjust it?

Most 35-mm film and digital SLR cameras as well as some of the new small digital cameras allow you to set the f-stop and/or film speed. Adjusting the f-stop allows more or less light into the camera, thus enabling you to make corrections to light meter readings. Here are some tricks to help you quickly determine the correct meter reading so you can make these fine adjustments. These tricks can also save your bacon if your light meter malfunctions or the camera batteries run down.

A simple accurate way of estimating the correct light meter reading is called the “sunny 16 rule.” From two hours after sunrise

until two hours before sunset, you can properly expose front-lit subjects in clear, bright sunlight by setting the f-stop on the lens to f-16 and the shutter speed to the film’s ISO number (e.g., f-16 and 1/50th of a second for ISO 50 Fuji Velvia film). On hazy or polluted air days, use f-11. On cloudy but bright days, use f-8. On overcast days or shaded subjects, use f-5.6. On side-lit subjects, use f-11 and on back-lit subjects, use f-8. You can also meter the palm of your hand in the same light as the subject then open up the lens one stop (to allow more light into the camera).

The color of the flower can also fool the camera meter by up to two f-stops. In general, for colors lighter than a medium tone add one to two f-stops (open your lens wider, from f-16 to f-11/ f-8). For colors darker than medium tones, reduce the f-stop by half to one stop (close the lens down, from f-11 to f-16). See the chart on page 19 for adjustments with other colors.

Do you want everything in focus?

Emphasizing your subject requires deciding how much of the photograph you want sharply in focus, a critical element in composition. For example, you may want the pollen on the stigma or anthers to be in sharp focus, but the nearby petals slightly blurred, in order to accentuate the pollen. Or you may focus on a small group of flowers, blurring the background grass and trees so they do not distract the viewer. Narrowing the depth of field that is in sharp focus can enhance your composition by reducing distractions in the background. Deliberately adjusting your f-



When composing photographs with multiple flowers, groups of three are more pleasing to the eye, as in this photo of brittlebush (*Encelia farinosa*).



A telephoto lens can be used to create a narrow depth of field, thereby eliminating background distractions. These flowers of leopard lily (*Lilium kelleyanum*) pop out of the image.

stops, which adjust the focal length and depth of field, is the key to keeping the viewer focused on the most important part of your photograph. Remember that the higher the f-stop number, the smaller the lens opening (f-22, f-16) and the greater the depth of field. The smaller the f-stop, the wider the lens is open (f-2.8, f-4), making the depth of field shallower and the background out of focus. Most 35-mm and digital SLR camera lenses show the range in feet and meters for what is in focus at a given f-stop. Look on the barrel of the lens for this information. Digital camera users should refer to the manual to see if the camera will allow adjusting the depth of field. **Tip:** When shooting close-ups, especially when the lens is very close to the subject, keep the plane of the subject on the same parallel plane as the camera lens to insure a crisp focus across the entire frame.

Three legs are better than two arms

You don't get sharp pictures simply by adjusting the focus, even if the camera can focus automatically. The camera and the subject have to be dead still to create sharp pictures, especially if you anticipate enlarging your photographs. I maintain that you can

identify a serious photographer by the presence of a tripod. It's virtually impossible to hand hold a camera without some movement. Taking landscape photos on windy days may require stabilizing the tripod by hanging additional weight on it. The more you enlarge a photograph the more noticeable the lack of sharpness due to movement. The longer the shutter remains open, the more critical it is for both camera and subject to be perfectly still so tripods are especially important in low light. Rich color in wildflower photos usually comes from longer exposures. The longer the exposure, the more the movement is exaggerated on film.

Tripods come in many different sizes, shapes, materials, and weights. If you do a lot of hiking, you might want to consider a tripod made out of carbon fiber. They are much lighter than the metal ones and don't freeze your hands in cold weather.

Ways to further reduce camera movement while it is mounted on the tripod are to use a fast shutter speed (>125th of a second) and to activate the shutter release using a cable release, timer, or remote control device. Higher shutter speeds are usually needed with larger telephoto lenses.

Other tools for holding the camera still are bean bags, monopods or flat surfaces such as a fence post, a tree stump or a limb. Just

bracing your self against a tree can help steady the camera. Some of the newer lenses and some digital video cameras have image-stabilizing lens. These lenses significantly decrease or eliminate camera shake. While none of these options completely replace a tripod, you can get decent pictures if you can stabilize the camera and the subject, especially if the photos will not be greatly enlarged. [editor's note: Tanya Harvey uses an image-stabilizing lens to capture the photos that appear regularly in the NPSO Bulletin.]

Stopping the wind

Our worst enemy while trying to photograph wildflowers is the wind. Typically, it can be perfectly calm when you find a perfect wildflower, but by the time you get your camera adjusted and the image composed, inevitably a gentle breeze sways the flower back and forth. You normally have four options if you want a sharp picture: 1) put your camera away and wait for a wind-free day; 2) be patient and wait until the wind stops; 3) block the wind; or 4) use something to stabilize the subject. Trying to totally block the wind can be futile, depending on how hard it is blowing. However, I have tried, with some success, using a car sun shade, my back pack, stretching my coat between to sticks, and having a friend positioned to block the breeze. My greatest success has come from a photo tent constructed from a cheap backpacker's free-standing dome tent. If you sew (or know a seamstress) cut out the tent floor and replace the side and top panels with nylon tulle. The tulle diffuses the light, the cut-away floor allows you to place the tent over the top of a rooted subject, and you can get inside the tent with your tripod. Carry some stakes to anchor it to the ground. For keeping the plant still, carry some clothes pins, metal binder clips, and some stiff metal wires or thin wooden dowels and some twist ties. These items will allow you to secure the plant to the pin, rod or dowel. Using a flash can also stop the movement. However, be careful, because using a flash close to the subject typically overexposes the image unless you have a flash

that's dedicated to your camera and adjusts for close-up photographs.

Alternatively, you can create pleasing artistic photographs by setting your camera at a slow shutter speed and let the wind blow the flowers back and forth during the exposure. The result is a colorful blur that adds movement in your photograph.

Other wildflower photography tips

- Photograph immediately following a gentle rain or when there is morning dew on the plants. Alternatively, carry a small water bottle with a mister. Misting a fine spray of water on the petals enhances a fresh vibrant look.
- Make notes of your photography efforts. This will help you see your successes and failures by analyzing your photographs. Next time you photograph a similar subject in a similar situation, you will be able to make adjustments for a better picture after reviewing your notes. I developed a form that I use to record my efforts, shown on page 20. You could also include a comments column as I find myself making additional notes on the back of the form.
- Use a slower ISO speed on digital cameras or slower speed film in addition to longer exposures to achieve good color saturation. Be cautious as this has to be done on a tripod in a wind-free environment.
- Get close to your subject. Eliminate extraneous objects and colors. Fill the frame with just one object.
- Bracket your meter reading by taking multiple photographs of the same subject with over- and under-exposure adjustments in 1/3-, 1/2-, or full f-stop increments.
- Take lots of pictures of the same subject. Photograph from different angles, elevations and distances. You will rarely get the best possible shot with just one try.
- For close-ups, or small flowers, use a two element close-up lens, or an extension tube for low cost macro photography.

Guidelines for adjusting light meter readings for color

Reduce by 2 f-stops (e.g., f-8 to f-16)	Reduce by 1 f-stop (e.g., f-11 to f-16)	Use the camera meter reading	Increase by 1 f-stop (e.g., f-16 to f-11)	Increase by 2 f-stops (e.g., f-11 to f-5.6)
jet black	grayish black	18% reflective gray card	white	bright white
extremely dark shades of red, yellow, green, blue, black	dark shades of red, yellow, green, blue	medium shades of red, yellow, green, blue	light shades of red, yellow, green, blue, pure yellow	very light shades of red, yellow, green, blue,
	purple, maroon, navy blue (-1.5 f-stops)	olive green	lime green (+0.5 f-stop) cyan, aqua (+1.5 f-stops)	
	Examples: e.g., red trillium flowers, rich green grass, pine tree needles (-0.5 f-stop)		Examples: yellow aspen leaves (+0.5 f-stop) white trillium flowers, drier green grass (+1 f-stop)	

- Overexpose negative film one stop for saturated color.
- Don't let the hurried pace of the group steer you away from a good photograph. Capturing a quality image takes some time. Let a member of the group know that you are stopping to take some pictures and that you will catch up with them.

Practice makes faster/easier/better

Although the phrase “practice makes perfect” is an old one, it is especially true when learning to use your camera to photograph wildflowers. If your camera sits idle in the closet for months, you will forget how to use it. In contrast, if you apply these photographic techniques on a frequent basis, your images will indeed be worth a thousand words and your friends will be able to identify plants from your pictures. Keep notes, practice the techniques regularly, be critical of your efforts and make adjustments on your next photography excursion. The time from visualizing the image you want to capture, composing the scene, getting the correct light meter setting and pushing down on the shutter will be shorter each time you go through the steps. The process will soon become automatic and your fellow botanists will not have to wait long for you to catch up to the group. It's time to grab your camera and begin making stunning images of the flora you enjoy.

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Suggested reading

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Suggested web sites

- <http://www.calphoto.com/phototip.htm>
- <http://www.paragon-press.com/tips2.htm>
- <http://mdc.mo.gov/nathis/plantpage/wflowpho/>
- http://www.apogeephoto.com/may2004/along5_2004_1.shtml

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Form For Recording Exposures

NO.	Primary Subject	Exposure/Lens	Meter Adjustments	Metered Object
1		____@ f____	-2, -1, 0, +1, +2, 0.5	
2		____@ f____	-2, -1, 0, +1, +2, 0.5	
3		____@ f____	-2, -1, 0, +1, +2, 0.5	