

Painting with - Light: The Art and Science of Photography - Photography is all about light. Without light there is no photograph. The question is how to use light correctly. Your picture will tell you what you did wrong, but not how to fix it. Here are some thoughts that may help you understand how light works in a photograph and how to fix your mistakes.

Light attracts your eye:

Your eye will always go to the lightest part of your image, so a pale or milky sky can spoil an otherwise lovely scene. I always try to avoid this by not including the sky unless it actually enhances the image with its cloud formations or other intriguing light, such as rainbows, sun in clouds, or what they call God light where a beam of sunlight streaks through clouds.. In the first image, my eye keeps going up to the milky pale sky. I needed either to crop the shot to get rid of the sky (which would eliminate those wonderful rocks in the distance), , or recompose the shot, or wait for better light and some good clouds.



Under exposed vs over exposed:

If too little light reaches the sensor, then the image will be dark and the details in the darker areas (under exposed) will not be visible. ¹ If too much light hits your sensor, then no details will show in the lighter areas of your picture, (over exposed) (burned out).

Here are two images of a palm. In the first, there is not enough light reaching the sensor. We cannot see the details in its fan. It is under exposed. The second image has the correct exposure. We can now see both the color and pattern in the fan.



¹On the camera, to reduce the light you select a larger f stop number(f11,f16,f22,f32), to reduce the size of the aperture. On the smart phone you tap the screen and either a square or a circle appears (focal point)and on the iphones there is a line/slider with a sun icon to the right. That is your exposure slider, so move the sun icon up or down to add or subtract the amount of light. A good explanation about the mechanics of f stops: <https://photographylife.com/what-is-aperture-in-photography>

Here is an example of a photo where too much light is reaching the sensor so that the colors on the butterfly's wings are "washed out"



In the second image, the aperture was smaller allowing less light to reach the sensor so the colors on the wings are more evident.



In these two images of *Hydrangea* 'Twist n' Shout', taken with my phone,



you can see that there is a lack of detail in the white parts of the inflorescence in the first image because it is over exposed –too much light came into the sensor.

In the second image more detail is evident, as I reduced the exposure - decreasing the light going to the sensor.



Fixing "Hot Spots": If you didn't get the exposure corrected as you took the picture, you can adjust it and get rid of those washed out parts of your image in post processing. I use the app. Snapseed on my phone .



On my desktop, I use Lightroom or Photoshop. In this picture of *Daphne x transatlantica*, I made a mistake with my exposure. The color details in the blossoms of the first image, have "blown out". I corrected my mistake using Lightroom - reducing both the exposure and the highlights – and now the soft rosy pink tones have returned to the petals.



² Tiger Swallowtail