

Aquarium Photography Part 2

Part 1 we discussed some basic principles of photography. How do we apply them? Well, you need a camera and a lens. This part of the series will focus on some of the equipment associated with photography including bodies, lens, and flashes.

Let's discuss the bodies first. I am going to focus on DSLR for the most part. There are some wonderful point and click cameras, and they are great for snapshots. They are tough to use for our hobby though. They typically don't do very well in low light and the biggest obstacle I always faced was shutter lag. Considering many of our subjects are fast moving, the lag can be very frustrating. The next step up is Digital Single Lens Reflex (DSLR) cameras. There are many manufactures but the 2 biggest players to this point are Canon and Nikon. I personally use Canon and have for many years. I feel it is useless to say one is better than the other and like cars it is very much a personal preference. Both offer outstanding equipment. When considering bodies I think it is useful to look at the lens systems associated with the brand and see which one suits your style and types of shooting better. DSLR range from \$599 up to \$8000 in price. Factors in the price include Mega Pixels (MP), build quality, Auto-Focusing (AF) speed and accuracy, sensor size, and digital processing chips. There are many more factors, but these are some of the big ones that people look at immediately. Let's look at a couple of these a bit more closely.

Mega Pixels- Currently DSLR cameras range from 6 MP to 16 MP. The number of MP doesn't affect image quality as much as it affects the image size that can be printed. If you are printing nothing but 4

X 6 all day, then a 6 MP body is fine. When you start printing much larger sizes and posters the extra MP come in handy. The trade off is that that if you shoot in RAW the files are very large. The difference between RAW and JPEG shooting will be dealt with in the next article of the series.

Build Quality- Bottom line is as in most things in life, you get what you pay for. Cameras are the same. Some of the more inexpensive bodies feel slightly plastic and not real solid. Pay a little more and you have a camera that feels much more stout in your hands.

Auto-Focusing- The higher end cameras have many more focus points and focus much quicker than the entry-level models, though these also do an excellent job. Plus focusing isn't all about the body, a large portion of that is a factor of the lens you use as well.

Sensor size- Currently DSLR use sensors that range from full frame to crop factors of 1.6. What does this mean? Full frame is like a traditional 35 mm camera. Full frame in DSLR equals expensive. This is reserved for your professional level models. The lower priced bodies use smaller sensors and this introduces a crop factor. This changes the field of view a bit. The crop factor comes from the fact that the sensor in a digital camera is smaller than a frame of 35mm film. This means the digital SLR crops out the center portion of a given lenses field of view, but the image is still at the full resolution of the digital sensor. This crop

Aquarium Photography Part 2

factor gives a lens on a digital SLR a smaller field of view than it would have on a film SLR, giving it the same field of view of a longer lens when compared to a film SLR. Let's say you have a body with a crop factor of 1.6. That means a 50 mm lens would give you the same view as a 80mm lens. A 300 mm lens would look like a 480. When using telephoto lens it isn't that big of an issue. It really becomes a problem when using wide-angle lenses. With the crop factor it is really hard to get a true ultra wide-angle picture. It all references on how the image fills up the frame. This image will hopefully help a little bit.

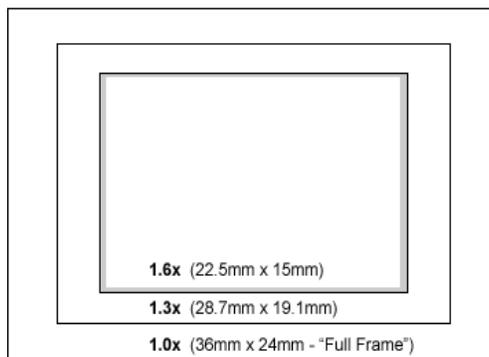
Some of the other features can differ somewhat. They all have LCD panels on the back for reviewing images and other important information. They display your menu options, histograms, shutter speed, aperture, ISO, etc. Most but not all have a built in wink flash, which are pretty much useless in my opinion. You have options for exposure compensation, flash compensation, AF mode, metering mode, white balance, parameters for jpeg processing, custom functions etc. I could write about each one individually, but it would be very long and will treat these as special topics after the series is over.

Now to the fun part, the lens. Lenses can be very personal. Some people swear by zooms, and others

shoot only primes. We will discuss some various terms and pros and cons of various lenses. Each brand of camera has their own lens system. Let's break the lens down into categories and discuss them that way. Before that let me differentiate 3 types of lenses. Normal lenses are ones that have a focal length that sees like we see. Generally this is considered 35-50mm. Telephoto lens are ones where the focal length is above 50 mm. Wide-angle lens are those that are below 35-50 mm. In addition, prime lenses are a fixed focal length, while zooms cover a range of focal lengths.

Wide Angle- These are great lenses and are used often in landscape, urban, and interiors photography. Wide-angle lenses can be used to get in more subject, or to enable you to get closer to a subject and still include it. Anything below 24 mm is usually considered an ultra-wide angle

© TheDigitalPicture.com lens.



Normal- These are lenses that have a natural perspective, i.e. your eye. As mentioned above this is generally in the 35-50 mm range.

Telephoto- Longer than 50 mm and are used to get you much closer to the subject. Many people

like them because you can really fill a frame with these lenses. They are very popular with nature and sports photographers.

Aquarium Photography Part 2

Macro - This is a specialized group of lenses that allow you to focus very closely to subjects and give you life like sizes of your subject. The biggest trade off with these lenses is they AF very slowly and is best used with manual focus. This can be a bit of a problem with our fish, because many move quickly and manually focusing is almost impossible.

We talked about aperture last article. Lower aperture means a bigger opening for light to reach the sensor. Of course you want the widest aperture you can get. Well there is a trade-off for low aperture and that is money. Low aperture requires more glass and higher precision. A single stop of aperture can add several hundred dollars to the cost of a lens. I like low apertures and use primes mostly because it is cheaper to get a low aperture in a prime versus a zoom lens. I could buy a 200mm 2.8 for \$500 or I could buy a 70-200mm 2.8 for \$1300. The zoom lens is not only more expensive it is much heavier as well. You really have to consider price vs. convenience. I will take a 50 1.8 and a 200 2.8 and use my feet as a zoom. Many lenses also come with image stabilization technology that can add several stops to your hand holding ability. Many of the newer ones also come with special coatings for DSLR's. The quality of the glass used in lenses plays a big part in the price of the gear as well. I like to really look at what I want to use a lens for before considering purchasing it. Take the Canon 70-200mm lens. You can buy the 2.8 version for about \$1300. You can buy a 4.0 copy for about \$600. Now I would ask myself, what am I going to do with this lens. If I am going to shoot baseball with it than I can get away with the f4 because it will be used outside and nor-

mally on sunny days, so lighting isn't an issue. For those rare dull days I can always bump the ISO up some. If I am going to shoot boys HS basketball indoors I would opt for the 2.8 version because we all know the inside of those gyms are badly lit and we need all the help we can get. So the most important thing is to consider what you are going to shoot.

Speaking of light, sometimes we can use some extra. Flashes are a tremendous investment to make and can really change your photography when you learn how to use it properly. Some cameras come with a pop up flash, but these aren't very effective. They are infamous for producing red -eye and for taking pictures of fish the often reflect hard off the glass. Flashes that can be mounted off or on the camera have become much more reasonable in price and can make a huge difference in your picture taking. Once again, price is a factor and the higher end models are much more customizable and flexible. Getting use to taking photos with a flash head takes time and much experimentation. I will be discussing this topic in more detail in the next article that will talk about actually setting up and executing a photo session with your fish. I hope this article help expose you to some basics about DSLR cameras and lenses. Whole books have been written on these topics and my goal was just give you a brief "exposure" to them.

■ *Dave Hansen*