

FACTORS THAT IMPACT

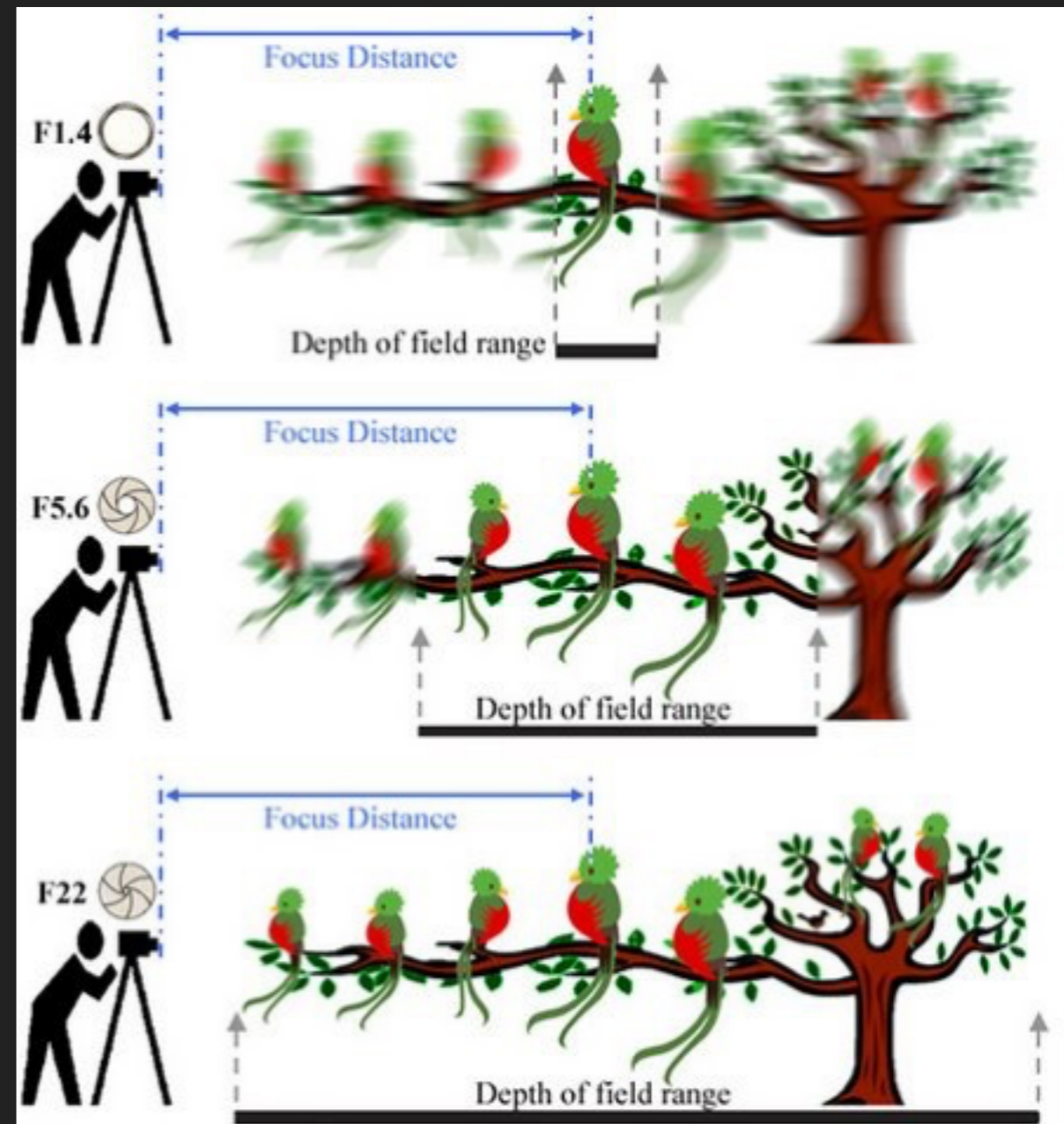
DEPTH OF FIELD???

AGENDA

- ▶ Defination
- ▶ Lens Aperture
- ▶ Distance to subject
- ▶ Focal Length
- ▶ Sensor Size
- ▶ The Maths
- ▶ Demo (Using lens calibrator)

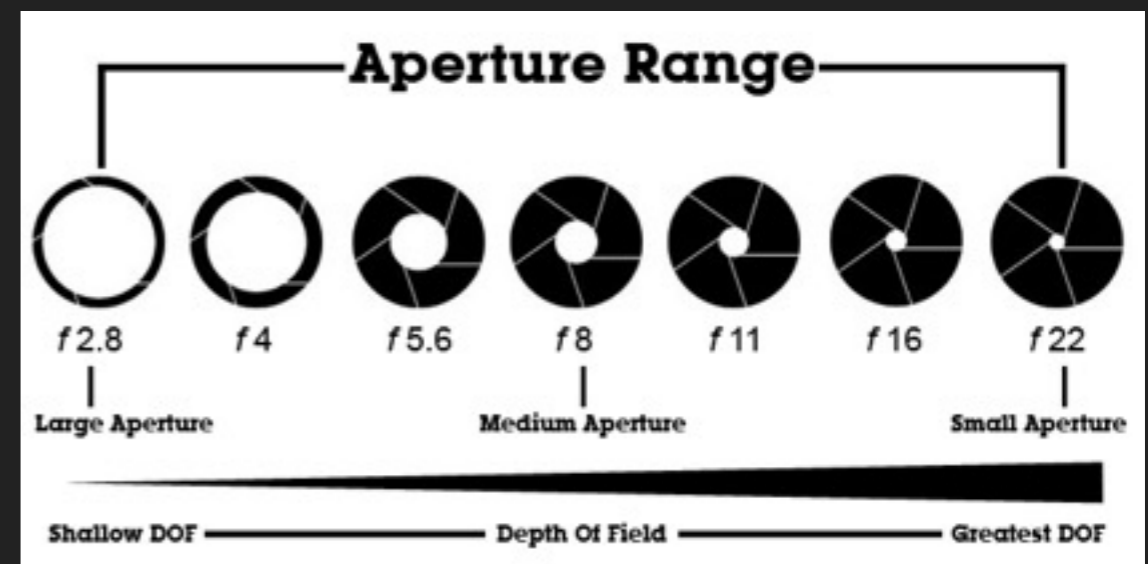
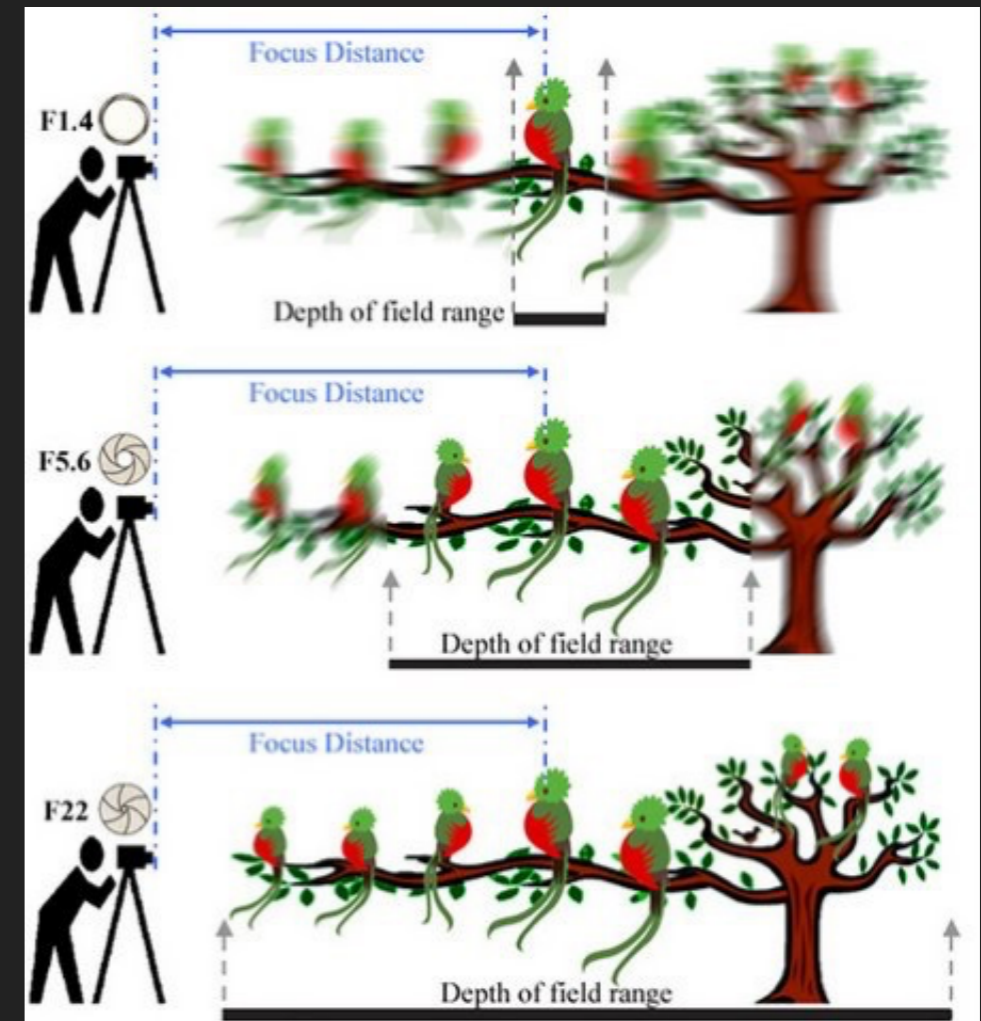
WHAT IS DEPTH OF FIELD

- ▶ To make things simple, we will use a definition that is commonly agreed upon
- ▶ Depth of Field is the plane perpendicular to your camera that has acceptable focus.



APERTURE

- ▶ This is the most commonly thought about factor, it is also the easiest to adjust.
- ▶ as the F-stop number increases, the depth of field increase. This does however lower the amount of light available



DISTANCE TO SUBJECT

- ▶ this would be the second easiest to adjust, it is second because you have to move your body, not just your finger.
- ▶ As you move closer to a subject the DOF decreases

DISTANCE BETWEEN SUBJECT AND BACKGROUND

- ▶ Kind of a subset of distance to subject
- ▶ While this does not have an impact on the true depth of field, it can cause the subject to stand out more.
- ▶ Adds to the isolation of the subject through depth of field, it is far more noticeable when you have a sharp subject against a burry haze.

FOCAL LENGTH

- ▶ Not as cut and dry. The Internet has much debate about if this really exists or if it is part of the Distance to subject.
- ▶ Functionally, the more zoomed in you are the less depth of field. ie a 200mm lens will be shallower than a 50mm lens



SENSOR SIZE

- ▶ Once again this one has some debate around it. However when everything else is constant, but you compare a full frame to a crop sensor there is a DOF change.
- ▶ As you increase the sensor size you decrease the DOF.

THE MATHS

- ▶ OH GOD NO!!!!!!
- ▶ Head to wikipedia if you want the detailed maths behind it. https://en.wikipedia.org/wiki/Depth_of_field
- ▶ For our purposes all I will say is that DOF can be calculated, this is what causes the controversy between what does actually have an effect

BONUS

$$H = f + \frac{f^2}{Nc} \approx \frac{f^2}{Nc}$$

- ▶ Hyperfocal distance, the math is very useful in determining this value for your lens.
- ▶ This is the combination of F-stop, and focal length.
- ▶ Determines the point at which everything beyond will be in focus
- ▶ For example i have a manual focus 8mm fisheye, generally at f5.6 and 3 feet away everything beyond that will be in focus.



ONE MORE THING