D.O.F

A refresher in depth of field

The importance of sharpness

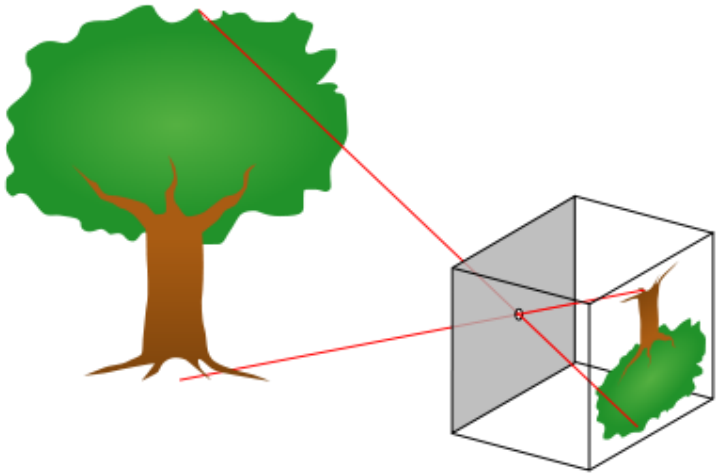
- D.O.F photography, depth of field (D.O.F), also called focus range or effective focus range, is the distance between the nearest and farthest objects in a scene that **<u>appear</u>** acceptably sharp in an image.

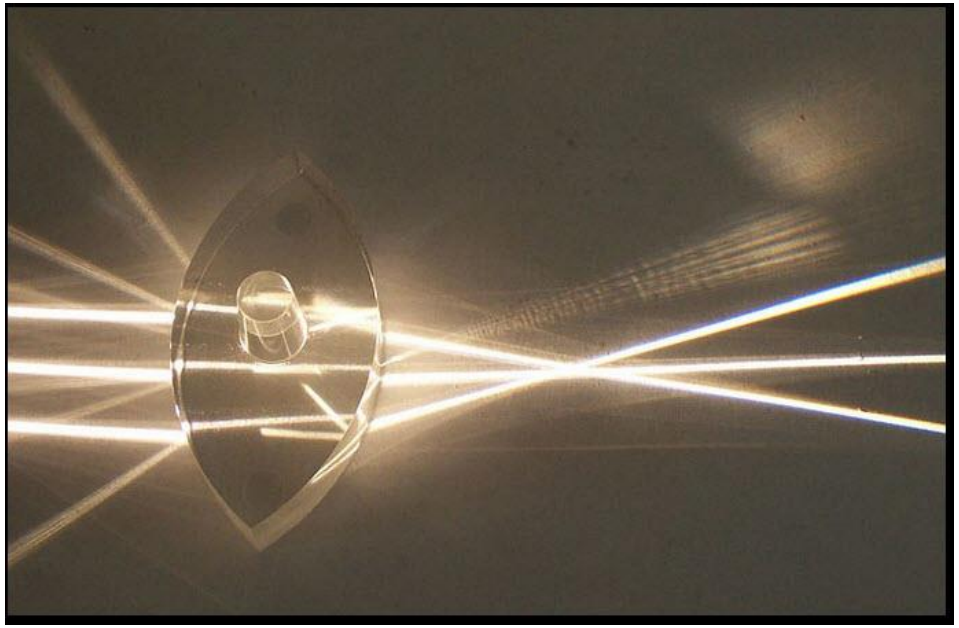
D.O.F mathematically

- I will try to avoid technical discussion even if it means over simplifying some things formulae will be avoided at all times

$$\mathrm{DoF} = \frac{2Nc\,(m+1)}{m^2 - \left(\frac{Nc}{f}\right)^2},$$

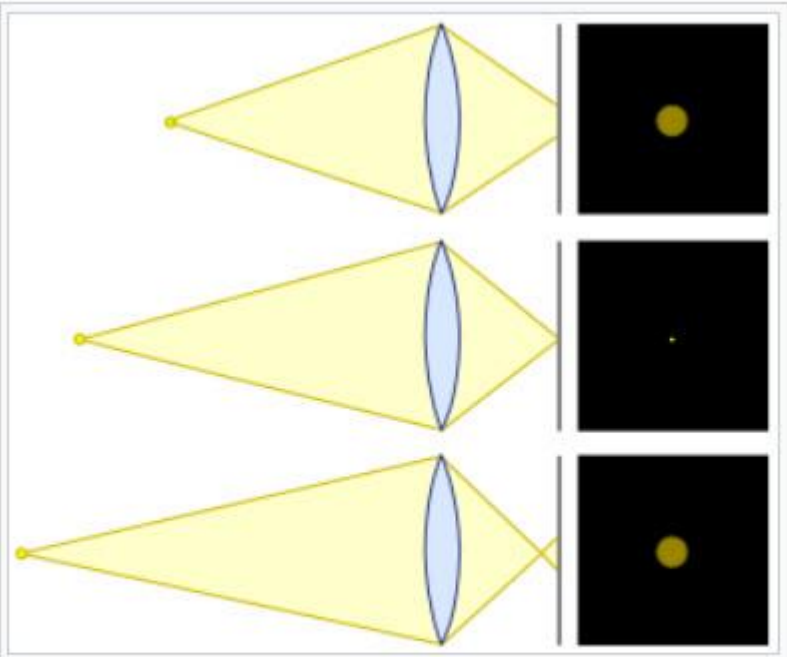
Depth of field(D.O.F)



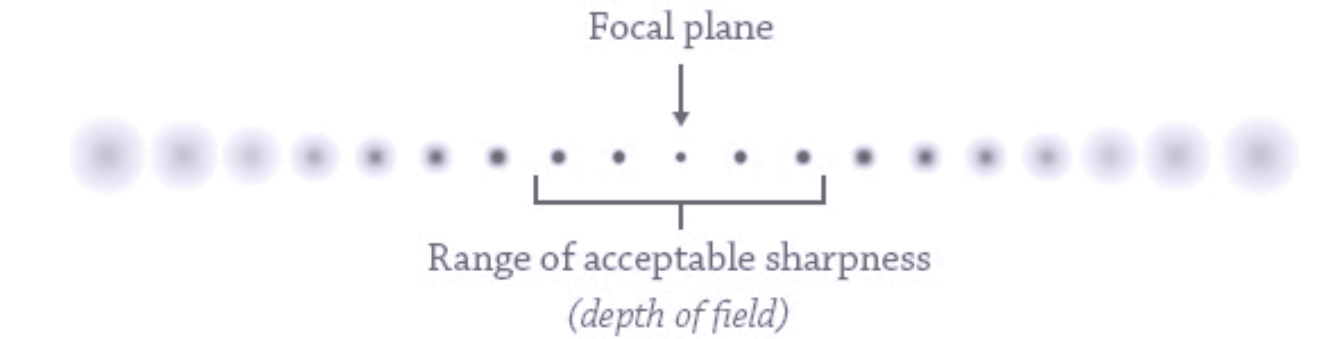


The circle of confusion

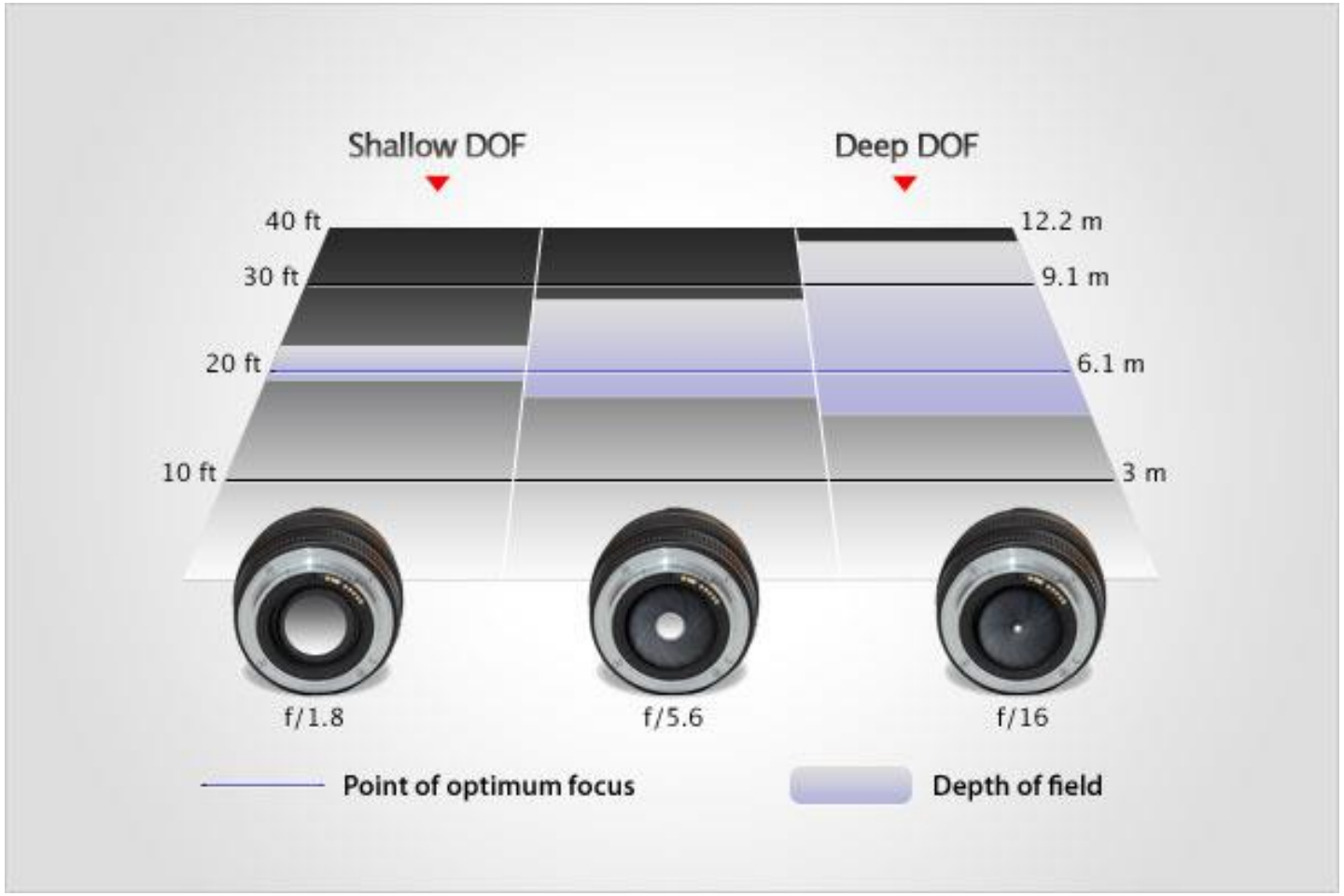
- Focal point



The depth of field is the region where the CoC is less than the resolution of the human eye (or of the display medium).



How aperture affect D.O.F



Apeture and D.O.F

Other factors that relate to D.O.F

- Sensor size the larger the sensor generally the better D.O.F APC vs. Full frame
- The number pixel available are important
- The ISO used contribute to focus control
- Harsh strong light helps auto focus cameras
- When possible Aperture Priority to force the issue.
- The focal length of the lens Longer lens need more light. Wider angle lens have greater D.O.F but side effect are harder to control.
- i i l i i i

From here to infinity and beyond.

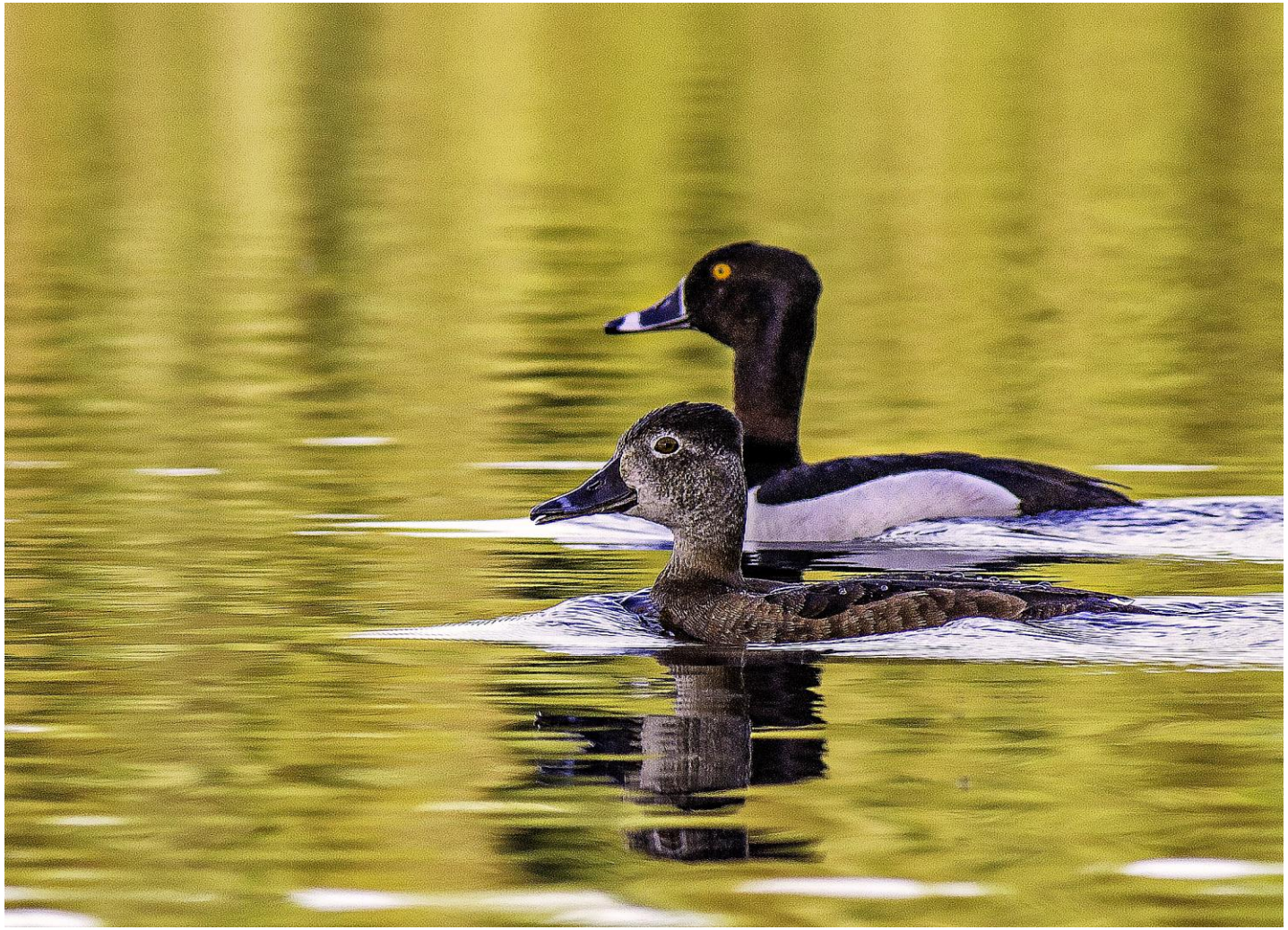
- Though not directly related to D.O.F all lens have two import number related to the focal length
- All lens have a minimum distance that you can focus to get a acceptable picture.
- All lens have a Hyper focal distance where from that point to infinity are in focus.
- These distance are largely dependent on the focal length of the lens. Longer lens have the longer minimum distance and longer hyper focal
- Wider lens the two distance are shorter until in super wide angle the minimum distance is almost 0 and every thing in focus.
- The other exception is true macro lens are built so that they focus almost at 0 but they may sacrifice long distance.

Up close

Standing out in a crowd.

To infinity and beyond (HDR)

When AV doesn’t cut it.



Macro photography D.O.F is at a premium

Macro part 2 focal plain

Bibliography

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