

Vision in Animal Kingdom

Different types of visual sense exist in animals to adapt them with the environment. Here are some examples of how some animals see the outside world.

Dog and Cats - They have night vision and can see moving objects rather than the stationary ones. Their eyes are much more sensitive to movement. Dogs and cats are color blind and see only very pale shades of color but they have better peripheral and night vision. **Tapetum lucidum** is also present in them to reflect light into the retina.

Hawk - Hawk's vision is equivalent to 20/5. Normal vision for people is 20/20. Therefore Hawk can see an object from 20 feet that most people can see from 5 feet.

Snakes – They use their normal eyes during the daytime to see things. During the day time, a snake's vision depends on the movement of prey. They ignore any prey that is completely motionless. At night snakes will use **Pit Organs** to sense infrared rays. Pit organs can pick up infrared heat signals from warm objects in their surroundings.

Falcon – Distant vision is high in Falcon. They can see a 10 cm. object from a distance of 1.5 km.

Bees – Bees can see light between wavelengths 300 nm & 650 nm and they can see polarized light

Ants - Ants can see polarized light.

Octopus – Octopus is the largest **Mollusc** and its retina contains 20 million photoreceptors. Their eye has a flicker fusion frequency of 70/sec in bright light. The pupil of the eye is rectangular in shape.

Fish - Some fish can see the infrared wavelengths. They have only rods in the retina. About 25 million rods/sq. mm of the retina. This high density of photoreceptors helps them to detect the dim **Bioluminescence** in the ocean depths.

Fly - The eye of flies has a flicker fusion rate of 300/sec. Flicker fusion rate is the frequency with which the “flicker” of an image cannot be distinguished as an individual event of the electromagnetic spectrum.

Shark – Shark has no retinal cones, and therefore cannot detect colors. Shark’s eyes are designed to pick up as much light as possible, in order to see in water . But their vision is not as acute.

Bats - Bats can detect warmth of an animal from about 16 cm away using its “nose-leaf”.

Penguin – Penguin is well adapted to see under water.They have **flat cornea** that allows for clear vision underwater. Penguins can also see into the ultraviolet range.

Not all animals see the world as humans do. For many animals, the world is seen in fuzzy shades of gray, or very “washed out” and pale colors. But some animals can see in total darkness, or even see colors beyond the visual spectrum, that humans have never seen. Still others can use binocular vision to spot prey from thousands of feet away.