

Nocturnal Encyclopedia Article

Nocturnal

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Nocturnal

Nocturnal organisms are those that are active mainly at night and sleep during the day. Their activity pattern occurs in twenty-four hour cycles, known as a circadian rhythm. Nocturnal animals include bats, cats, owls, mice, scorpions, opossums, raccoons, coyotes, cockroaches, and moths.

Nocturnal animals occupy a **niche** that is complementary to that of **diurnal** animals. For example, owls have a nighttime role similar to that of hawks during the day. Moths fill the same niche at night as butterflies do during the day.

Many nocturnal animals have specialized adaptations for their nighttime activities. The eyes of most nocturnal animals are larger than those of diurnal animals, helping them to function well in low light. Many nocturnal animals have large ears that are exceptionally sensitive. An acute sense of hearing is helpful when sight cannot be relied on in the darkness. Similarly acute senses of smell, taste, and touch also aid in overcoming the disadvantages of low light conditions.

Most bats have developed a special **sonar** system called echolocation. They make high frequency calls either out of their mouths or noses and then listen for echoes to bounce from the objects in front of them. This is an effective means of finding their way around in low light and catch their food (generally insects). Fruit bats, one of the few diurnal bats, lack the ability to echolocate. This demonstrates the evolution of characteristics favoring their particular niche, in this case daylight activity versus nighttime activity.

Cats' eyes are well adapted to nocturnal activity. The eyes are relatively large, with pupils that can open wide in the dark and narrow down to slits in the sunlight. The size and position of the eyes on the head allow as much light as possible to enter them and ensure a wide field of vision. These are important factors in hunting and nocturnal prowling. A cat cannot see in total darkness, but it can see better in dim light than can most other animals. Also, cats have large, erect ears that help in the detection of prey in the darkness.

See Also

Diurnal.

Bibliography

Towle, Albert. *Modern Biology*. Austin, TX: Holt, Rinehart and Winston, 1993.

Internet Resources

Forest Preserve District of Du Page County. <<http://www.dupageforest.com/CONSERVATIONIST/FALL98/night.html>>.