

## *Pulsatrix perspicillata* (Spectacled Owl)

Family: Strigidae (Typical Owls)

Order: Strigiformes (Owls)

Class: Aves (Birds)



**Fig. 1.** Spectacled owl, *Pulsatrix perspicillata*.

[[http://upload.wikimedia.org/wikipedia/commons/8/80/Pulsatrix\\_perspicillata\\_-\\_Woodland\\_Park\\_Zoo\\_-\\_upper\\_body-8a.jpg](http://upload.wikimedia.org/wikipedia/commons/8/80/Pulsatrix_perspicillata_-_Woodland_Park_Zoo_-_upper_body-8a.jpg), downloaded 17 October 2014]

**TRAITS.** The spectacled owl *Pulsatrix perspicillata* ranges from a medium to large size. Its head is rounded containing no ear-tufts. The species gets its name from the white 'spectacles' (i.e. the white eyebrows and white streaking located between the eyes and cheek that contrast with its dark face. Their plumage is dark brown on the upper side of their body whereas the underside is off-white or light yellow (Fig. 1). The neck of the owl is white and forms a sort of semi-collar, whereas the chin is black. Juveniles display a variant colour which is often described as reversed (i.e. a mostly white body with a brown/black facial disk) (Fig. 2). Adult spectacled owls are on average

about 43-46 cm long, with a tail length of 16-22 cm. Males are smaller weighing 453-680g with a wingspan of 30-35 cm. Females are larger weighing 680-906 g with a wingspan of 32-36 cm (Burton et. al., 1984). They possess large, forward facing, bright orange eyes that provide stereoscopic vision which is vital for judging distance and well adapted for seeing in the dark. Tarsi (feet) and toes are almost fully feathered creamy-buff whereas the unfeather parts display whitish or pale grey and dark claws. The claws are typical in that it consists of four toes and a sharp curved talon. They have a short bill and cere (fleshy base) both of which are yellowish-horn coloured, with a greenish tint approaching the tip.

**ECOLOGY.** *Pulsatrix perspicillata* can be found spanning a large range from Southern Mexico through to Argentina, northern South America and has also been known to be resident in Caribbean islands including Trinidad (Burton et. al., 1984). Their habitat regions are mostly temperate and tropical areas within rainforests, woodland savannahs and dry forests. The species can also be seen in mangrove areas, forest edges and coffee plantations. However, they almost always limit their residence to areas close to a source of fresh water. They prefer lower elevation but have been spotted up to 1200-1600m (Burton et al., 1984). The species is nocturnal and hunts from exposed perches. Its diet consists of small mammals and rodents with the occasional insect, amphibian, and terrestrial non-insect arthropod (crab). However, they have been known to hunt during the day occasionally. They are non-migratory.

**SOCIAL ORGANIZATION.** It is a solitary bird that is highly non-social thus it usually roosts singly each day. Interaction with others of their own species occurs solely for reproduction purposes. They tend to also be single foragers as a means to avoid the interruption of the hunt of other owls in the area. This species is non-migratory and highly territorial. They are known to be monogamous and cavity-nesters. Breeding occurs somewhere in the later part of the dry season into the early wet season, approximately April/June (Del Hoyo et al., 2011).

**ACTIVITY.** The diet of the spectacled owl is not limited to any one organism but rather a large range as it consumes any animal within its size range that is nocturnally active, thus being an opportunistic hunter. They are mostly nocturnal hunters, hunting from about dusk till dawn, with the occasional day time hunt. They are typically fast hunters that prey from an open perch and once they have detected their prey they swoop down upon it, snatch it and return to their perch. They are well camouflaged, as they are able to resist predation by perching in low hanging foliage.

**FORAGING BEHAVIOUR.** They possess soft flight feathers which make it possible for them to conduct silent flight while hunting. They hunt from an exposed perch and lean forward scanning the area (Fig. 3). When prey has been detected they swoop down and snatch it with a quick pounce or agile swoop and carry it back to their perch where they devour it (Fig. 4). They are opportunistic hunters and prey on a variety of nocturnal animals which include the usual rodents. In Oaxaca, Mexico the main prey choice is the Peter's climbing rat along with mouse opossums (De Silva et al., 1997). They have been known to catch prey that are heavier than themselves weighing between 1.5-4 kg including *Didelphis* opossums, agoutis (*Dasyprocta*) and *Mephitis* skunks. Even larger animals, like the three-toed sloth weighing 3.5-4.5 kg have been known to be prey, especially by adult females (Voirin et al., 2009). Bats have also been known to fall prey to these owls (Konig et al., 2009; Knörnschild and Tschapka, 2012; Carvalho et al., 2013). Insects are usually gleaned off of foliage during foraging (Konig et al., 2009). Medium sized birds have also been known to be selected as prey (Konig et al., 2009, De Silva et al., 1997).

**COMMUNICATION.** The vocals produced by the male spectacled owl is a characteristic knocking or tapping combined with a pop effect, somewhat of a tree being hit repeatedly by a blunt object like a hammer. Unlike most calls of birds that have ascending or progressing notes the call of the spectacled owl is one that descends. The call becomes weaker as it progresses but in turn picks up pace. It sounds like a set of rapidly descending deep, short hoots producing the effect of sounding like “Pup-pup-pup-pup-pup-po”. During the mating season the female produces a specialized call to attract males which is a loud high pitched scream “ker-Weeer” often compared to a steam whistle (Konig et al., 2009). Juveniles alternate between a raspy ‘kweew’ call and loud ‘juuuu’ whistle which usually tells the parents it is hungry or otherwise. The peak time at which calls and duets can be heard is during moonlit nights (Hilty and Brown, 1986).

**SEXUAL BEHAVIOUR.** The breeding season of the spectacled owl occurs during the late dry season and the early wet season. During the mating season females emit a high pitched call to signal to males that she is ready to mate. A gesture of food is provided to the female by the male in order to attract the female to the nesting site (usually within the hollow of a tree). It is not until the female accepts the food that she has accepted a mate. Another way to tell mate choice has been made is by observing the couple preening and conducting synchronized calls or duets. The spectacled owl is a monogamous owl meaning it does not mate with more than one mate. Copulation occurs by the female crouching over in a forward position with her breast touching the floor while the male climbs onto her back to deposit his sperm into her cloaca below her tail feathers in order to fertilize her eggs. This species of owl lays two white eggs (three eggs are rear) upon which she incubates for 5 weeks. After another 5-6 weeks the owlets (juvenile owls) leave the nest and venture to surrounding branches, but they are still unable to fly. They depend on their parents for a further year or more once fledged. Often only one owlet survives. Both male and female take part in raising young, however most of the responsibility is taken by the female. Each parent takes turns incubating the eggs while the other goes out foraging for food.

**NESTING BEHAVIOUR.** Spectacled owls are known to be cavity nesters in that they do not build nests like most birds comprised of twigs and grass. Instead they find a vacant tree hollow or cavity and use it as a nest to keep their eggs safe and raise their young.

**JUVENILE BEHAVIOUR.** Juveniles break free of their egg during hatching using a specialized egg tooth. Their down is white as compared to the parents brown/black (Fig. 5). Once fledged they often leave the nest and explore on surrounding branches of the tree but always return to the nest when it is time for feeding. Juvenile spectacled owls go through a moulting phase that lasts about 3 years until they develop their adult plumage through plumage stages. In captivity however, the moulting phase lasts an extended period of 5 years. Attempts at flying commences after about 2 years after fledging during the moulting phase. However, efficient flight is only achieved after moulting has been completed. Juvenile calls alternate between a raspy ‘kweew’ call and loud ‘juuuu’ whistle which usually tells the parents it is hungry or otherwise (Burton, 1984).

**ANTIPREDATOR BEHAVIOUR.** The spectacled owl is preyed on by larger birds than itself. However, because they hide in the foliage that hangs low, this provides them with camouflage as well as keeping them out of the sight of predators so they are almost never detected.

**REFERENCES**

- Carvalho, L. F., Cunha, N. L., Fischer, E. and Santos, C. F. 2013. Predation on Broad-eared bat *Nyctinomops laticaudatus* by the Spectacled Owl *Pulsatrix perspicillata* in southwestern Brazil. *Revista Brasileira de Ornitologia-Brazilian Journal of Ornithology*, **19**(45), 3.
- Konig, C., Weick, F., and Becking, J-H. 2009. Owls of the World. Yale University Press. ISBN 0300142277
- De Silva, H. G., Pérez-Villafaña, M., and Santos-Moreno, J. A. 1997. Diet of the spectacled owl (*Pulsatrix perspicillata*) during the rainy season in Northern Oaxaca, Mexico. *Journal of Raptor Research* **31**, no. 4: 385-387.
- Del Hoyo, J., Elliott, A. and, J. 2011. Handbook Of The Birds Of The World. Lynx Edicions. Vol 16 - ISBN: 8487334253
- Knörnschild, M., and Tschapka, M. 2012. Predator mobbing behaviour in the Greater Spear-Nosed Bat, *Phyllostomus hastatus*, Chiroptera Neotropical, **18**(2): 1132-1135.
- Burton, P. Fogden, M., Ginn, H., Glue, D. and Hekstra, G. 1984. Owls of the World. Great Britain: Peter Lowe.
- Hilty, S. L. and Brown, W. L. 1986. A Guide to the Birds of Colombia. Princeton University Press. ISBN 069108372X
- Voirin, J. B., Kays, R., Lowman, M. D. and Wikelski, M. 2009. Evidence for Three-Toed Sloth (*Bradypus variegatus*) predation by spectacled owl (*Pulsatrix perspicillata*)". *Edentata*, **8**: 15-20.

Author: Mark Mario Ramnath

Posted online: 2014



**Fig. 2.** Adult and juvenile spectacled owls.

[[http://2.bp.blogspot.com/-xbAxSjsNVYk/TaoQyXHkI8I/AAAAAAAAABCg/W\\_jwpPTXMMc/s400/Spectacled%2Bowl%2BPulsatrix%2Bperspicillata.jpg](http://2.bp.blogspot.com/-xbAxSjsNVYk/TaoQyXHkI8I/AAAAAAAAABCg/W_jwpPTXMMc/s400/Spectacled%2Bowl%2BPulsatrix%2Bperspicillata.jpg), downloaded 15 October 2014]



**Fig. 3.** Spectacled owl perched during hunt at night.

[<http://www.oiseaux-birds.com/strigiformes/strigides/chouette-lunettes/chouette-lunettes-ad-nb3.jpg>, downloaded 17 October 2014]



**Fig. 4.** Juvenile spectacled owl swooping on food.

[[http://www.neilmiller.info/BirdsOfPrey\\_Oct\\_10/SpectacledOwl\\_2\\_IMGB\\_0629\\_s\\_g.JPG](http://www.neilmiller.info/BirdsOfPrey_Oct_10/SpectacledOwl_2_IMGB_0629_s_g.JPG), downloaded 19 October 2014]



**Fig. 5.** Spectacled owl fledglings.

[<http://www.owlpages.com/pictures/species-Pulsatrix-perspicillata-4.jpg>, downloaded 21 October 2014]