

TABLE 1 Shape of the foveal pit and maximal visual acuity (spatial resolving power) of various bird species. The following parameters are summarized: depth of the foveal pit, thickness of the foveal centre, maximal thickness of the fovea walls and width of the foveal pit. The thicknesses of the tissue in the foveal centre and walls were measured between the inner and outer limiting membranes

Order	Family	Species	Pit Depth/Thickness of the Foveal Centre/Wall Thickness/Pit Width (µm)	Visual Acuity (cpd)	References
Accipitriformes	Accipitridae	African serpent eagle <i>Dryotriorchis spectabilis</i>		120 o	Shlaer (1972)
		Black kite <i>Milvus migrans</i>	c 187/133/321/-	25.9–32.7 b	Potier, Bonadonna, Kelber, Martin et al. (2016)
		Broad-winged hawk <i>Buteo platypterus</i>	c 253/92/345/-		Ruggeri et al. (2010)
		Common buzzard <i>Buteo buteo</i>	c 274/84/358/871 t 173/129/302/522 c 205/146/351/903 c 227/92/319/- t 67/227/294/- c 156/162/318/513 t 66/177/243/408		Oehme (1964) Velasco Gallego (2015) Schulze (2016) Mitkus et al. (2017)
		Egyptian vulture <i>Neophron percnopterus</i>		135 b	Fischer (1969)
		Eurasian sparrowhawk <i>Accipiter nisus</i>	c 323/152/475/633 t 234/190/424/411 c 193/83/276/- t 44/241/285/- c 193/57/250/899 t 23/164/187/373		Fite and Rosenfield-Wessels (1975) Schulze (2016) Mitkus et al. (2017)
		European honey buzzard <i>Pernis apivorus</i>	c 239/88/327/800 c 189/83/272/- c 232/59/291/667		Velasco Gallego (2015) Schulze (2016) Mitkus et al. (2017)
		Griffon vulture <i>Gyps fulvus</i>	c 218/155/373/278	104 b	Potier et al. (2017) Fischer (1969)
		Harris's hawk <i>Parabuteo unicinctus</i>	c 290/101/391/464 t 46/254/300/214	27.4–43.7 b	Potier, Bonadonna, Kelber, Martin et al. (2016)
		Indian vulture <i>Gyps indicus</i>		135 b	Fischer (1969)
		Lappet-faced vulture <i>Torgos tracheliotos</i>		88.9 cm	Spiegel, Getz, and Nathan (2013)
		Marsh harrier <i>Circus aeruginosus</i>	c 175/119/294/-		Schulze (2016)
		Northern goshawk <i>Accipiter gentilis</i>	c 291/139/430/791 t 107/222/329/570 c 226/69/295/- t 51/161/212/- c 186/117/303/917		Fite and Rosenfield-Wessels (1975) Schulze (2016) present report
		Red kite <i>Milvus milvus</i>	c 177/90/267/600 t 11/196/207/400		Mitkus et al. (2017)
		Red-backed hawk <i>Geranoaetus polyosoma</i>	c 307/84/391/746		Snyder and Miller (1978)
		Red-tailed hawk <i>Buteo jamaicensis borealis</i>	c 266/240/506/633 t 126/241/367/538	16.8 b	Fite and Rosenfield-Wessels (1975) McIsaac (2001)

TABLE 1 (Continued)

Order	Family	Species	Pit Depth/Thickness of the Foveal Centre/Wall Thickness/Pit Width (μm)	Visual Acuity (cpd)	References
		Short-tailed hawk <i>Buteo brachyurus</i>	c 292/129/421/- t 138/208/346/-		Ruggeri et al. (2010)
		Wedge-tailed eagle <i>Aquila audax</i>	c 229/74/303/586 t 85/187/272/413	100 b 138 b, 142 cd	Reymond and Wolfe (1981) Reymond (1985)
		White-backed vulture <i>Gyps africanus</i>		57.5 cm	Spiegel et al. (2013)
Cathartiformes	Cathartidae	Andean condor <i>Vultur gryphus</i>	c 227/138/365/-		Potier et al. (2017)
		Black vulture <i>Coragyps atratus</i>	c 285/281/566/-	15.8 cd	Inzunza et al. (1989) Lisney et al. (2013)
		Turkey vulture <i>Cathartes aura</i>		15.4 cd	Lisney et al. (2013)
Falconiformes	Falconidae	American kestrel <i>Falco sparverius</i>		40 b 46 cd 15.9–40.5 39.7–71.4 ERG 30 ERG	Hirsch (1982) Dvorak et al. (1983) McIsaac (2001) Gaffney and Hodos (2003) Ghim and Hodos (2006)
		Brown falcon <i>Falco berigora</i>	c 224/83/307/621 t 127/142/269/507	73 b, 76 cd	Reymond (1987)
		Chimango caracara <i>Phalcoboenus chimango</i>		15–40 b	Potier, Bonadonna, Kelber, and Duriez (2016)
		Common kestrel <i>Falco tinnunculus</i>	c 289/77/366/655 t 141/143/284/447 c 250/87/337/- t 107/199/306/- c 284/83/367/508	59 cd	Oehme (1964) Schulze (2016) present report
		Peregrine falcon <i>Falco peregrinus</i>	c 198/94/292/- t 105/171/276/- c 166/75/241/833 t 49/136/185/517		Schulze (2016) Mitkus et al. (2017)
		Saker falcon <i>Falco cherrug</i>	c 209/170/379/- t 131/160/291/-		Potier et al. (2018)
		Southern caracara <i>Caracara plancus</i>	c 253/82/335/-		Potier et al. (2018)
Apodiformes	Apodidae	Common swift <i>Apus apus</i>	t 158/48/206/330		Oehme (1962)
	Trochilidae	Anna's hummingbird <i>Calypte anna</i>	c 98/94/192/500 c 122/114/236/647	4.3 5.3 cd	Ritland (1982) Lisney et al. (2015) Moore et al. (2018)
Charadriiformes	Charadriidae	Least tern <i>Sternula antillarum</i>	c 139/190/329/633 t 133/202/335/443		Fite and Rosenfield-Wessels (1975)
Columbiformes	Columbidae	Domestic pigeon <i>Columba livia domestica</i>	c 119/122/241/574 c 26/162/188/364 c 79/148/227/448	14 b 7.5–25.8 12.6 b 18 ERG 17.2 ERG	Clarke and Whitteridge (1976) Pasteels, Parmentier, Lawson, Verstappen, and Pochet (1987) Querubin et al. (2009) Hamilton and Goldstein (1933) Blough (1971) Hodos et al. (1991) Porciatti et al. (1991) Ghim and Hodos (2006)

(Continues)

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Coraciiformes	Alcedinidae	Laughing kookaburra <i>Dacelo novaeguineae</i>	c 171/96/267/361 t 61/91/152/222	41 cd	Moroney and Pettigrew (1987)
		Sacred kingfisher <i>Halcyon sancta</i>	c 273/84/357/456 t 145/76/221/315	26 cd	Moroney and Pettigrew (1987)
Passeriformes	Acanthizidae	Yellow-rumped thornbill <i>Acanthiza chrysorrhoa</i>	c 111/120/231/978	25.6 cd	Coimbra et al. (2014b) Coimbra, Collin, and Hart (2015)
	Alaudidae	Eurasian skylark <i>Alauda arvensis</i>		22.5 b	Donner (1951)
	Corvidae	Blue jay <i>Cyanocitta cristata</i>	c 240/140/380/981	15–19 cd	Fite and Rosenfield-Wessels (1975)
		Jackdaw <i>Coloeus monedula</i>		30–33	Dabrowska (1975)
		Large-billed crow <i>Corvus macrorhynchos</i>		8.4 b	Yamamoto et al. (2001)
		Rook <i>Corvus frugilegus</i>		30	Dabrowska (1975)
	Fringillidae	American goldfinch <i>Spinus tristis</i>	c 146/93/239/458	5.4 cd	Baumhardt et al. (2014)
	Icteridae	Eastern meadowlark <i>Sturnella magna</i>	c 211/67/278/660		Tyrrell et al. (2013)
	Meliphagidae	Brown honeyeater <i>Lichmera indistincta</i>	c 160/67/227/733	20.2 cd	Coimbra et al. (2014b) Coimbra et al. (2015)
		Red wattlebird <i>Anthochaera carunculata</i>	c 160/89/249/867	40.8 cd	Coimbra et al. (2014b) Coimbra et al. (2015)
	Nectariniidae	Southern double-colored sunbird <i>Nectarina chalypea</i>	c 183/146/329/570		Fite and Rosenfield-Wessels (1975)
	Passerellidae	Field sparrow <i>Spizella pusilla</i>		6.45 cd	Moore et al. (2015)
		Song sparrow <i>Melospiza melodia</i>		7.07 cd	Moore et al. (2015)
		White-crowned sparrow <i>Zonotrichia leucophrys</i>	c 123/139/262/570	5.9 cd	Moore et al. (2016)
	Passeridae	House sparrow <i>Passer domesticus</i>	c 192/86/278/607	4.8 cd	Dolan and Fernández-Juricic (2010) Moore et al. (2016)
	Sittidae	White-breasted nuthatch <i>Sitta carolinensis</i>	c 234/127/361/823	6.83 cd	Fite and Rosenfield-Wessels (1975) Moore, Doppler, Young, and Fernández-Juricic (2013)
	Sturnidae	Common starling <i>Sturnus vulgaris</i>	c 220/80/300/567	7.6 ERG 6.3 cd	Oehme (1962) Ghim and Hodos (2006) Dolan and Fernández-Juricic (2010)

TABLE 1 (Continued)

Order	Family	Species	Pit Depth/Thickness of the Foveal Centre/Wall Thickness/Pit Width (μm)	Visual Acuity (cpd)	References
	Turdidae	Common blackbird <i>Turdus merula</i>	c 241/84/325/- c 233/93/326/675 c 303/93/396/827	22.5 b	Krause (1894) Oehme (1962) present report Donner (1951)
		Fieldfare <i>Turdus pilaris</i>		22.5 b	Donner (1951)
	Tyrannidae	Great kiskadee <i>Pitangus sulphuratus</i>	c 258/54/312/703		Coimbra et al. (2006)
		Rusty-margined flycatcher <i>Myiozetetes cayanensis</i>	c 137/101/238/719		Coimbra et al. (2006)
	Zosteropidae	Silveryeye <i>Zosterops lateralis</i>	c 133/111/244/711	18.5 cd	Coimbra et al. (2014b) Coimbra et al. (2015)
Procellariiformes	Procellariidae	Northern fulmar <i>Fulmarus glacialis</i>	c 104/119/223/394	15.5 cd	Mitkus, Nevitt, Danielsen, and Kelber (2016)
Psittaciformes	Cacatuidae	Galah <i>Eolophus roseicapilla</i>	c 73/150/223/446	7.9 cd	Coimbra et al. (2014a)
		Long-billed corella <i>Cacatua tenuirostris</i>	c left 98/153/251/519 c right 76/172/248/439	9.9 cd	Coimbra et al. (2014a)
	Psittaculidae	Bourke's parrot <i>Neopsephotus bourkii</i>		9.2 cd 9.4	Mitkus, Chaib, Lind, and Kelber (2014) Lind, Sunesson, Mitkus, and Kelber (2012)
		Budgerigar <i>Melopsittacus undulatus</i>		6.9 cd 11.7	Mitkus et al. (2014) Lind et al. (2012)
Strigiformes	Strigidae	Boreal owl <i>Aegolius funereus</i>	t 65/164/229/-		Schulze (2016)
		Eurasian eagle-owl <i>Bubo bubo</i>	t 100/81/181/-		Schulze (2016)
		Eurasian scops owl <i>Otus scops</i>	t 42/99/141/739		Pumphrey (1961)
		Great horned owl <i>Bubo virginianus</i>	t 177/203/380/949	6–7.5 b	Fite (1973) Fite and Rosenfield-Wessels (1975)
		Long-eared owl <i>Asio otus</i>	t 47/92/139/-		Schulze (2016)
		Little owl <i>Athene noctua</i>	t 140/106/246/-	6 ERG	Schulze (2016) Porciatti et al. (1989)
		Pygmy owl <i>Glaucidium spec.</i>	t 152/202/354/443		Fite and Rosenfield-Wessels (1975)
		Tawny owl <i>Strix aluco</i>	t 10/195/205/831 t 74/271/345/-	8 b	Velasco Gallego (2015) Schulze (2016) Martin and Gordon (1974)
	Tytonidae	Barn owl <i>Tyto alba</i>	t 31/122/153/400	8 cd 7 ERG 3.4 b	Oehme (1961) Wathey and Pettigrew (1989) Ghim and Hodos (2006) Harmening, Nikolay, Orłowski, and Wagner (2009)

Note. b, behaviour; c, central fovea; cd, estimated from retinal cell densities; cm, corneal measurements; cpd, cycles per degree; ERG, electroretinogram; o, ophthalmoscopy; t, temporal fovea.