## Newsroom

**COLOR PERCEPTION IN ANIMALS** has evolved to help in collecting information about the environment from recognizing food sources to selecting mates. Many animals can perceive at least as many colors as humans and some even see into the ultraviolet. (For more on human color vision, see our feature beginning on p. 44.)

#### ULTRAVIOLET

Birds, bees, and certain fish, including goldfish, perceive ultraviolet light Detecting UV light helps bees find nectar in ....

### TRICHROMACY Cone cell types: 3

Colors perceived: **10 million** Most primates, old world monkeys, marsupials, some insects,

including honey bees In herbivorous primates, color perception is essential for finding edible (immature) leaves

#### DICHROMACY

Cone cell types: 2 Colors perceived: 40,000 Most terrestrial non-primate

TETRACHROMACY

Cone cell types: 4 Colors perceived: 100 million

Most reptiles, amphibians, birds and insects

Some geckos are capable of seeing color in dim light

# Animal Vision Seeing Color

mammals, including dogs and cats

Dog vision is similar to that of many colorblind humans

MONOCHROMACY

Cone cell types: 1 Colors perceived: 200 Most nocturnal and marine mammals, owl monkeys, and achromat primates

PENTACHROMACY Cone cell types: 5

Colors perceived: 10 billion Some insects and birds,

including pigeons and papilio butterflies

> Mantis shrimp have complex color vision with at least 12 photo receptor types and polarization detection

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Greater mouse-eared bats navigate using polarized light

Optical Spectrum				
ELECTROMAGNETIC SPECTRUM			Ultraviolet	
10 <sup>2</sup> 10 1 10	0 <sup>-1</sup> 10 <sup>-2</sup> 10 <sup>-3</sup>	10 <sup>-4</sup> 10 <sup>-5</sup> 10	<sup>-6</sup> 10 <sup>-7</sup> 10	<b>0<sup>-8</sup> 10<sup>-9</sup> 10<sup>-10</sup> 10<sup>-11</sup> 10<sup>-12</sup></b>