

= Common vampire bat =

The common vampire bat (*Desmodus rotundus*) is a small , leaf @-@ nosed bat native to the Americas . It is one of three extant species of vampire bat , the other two being the hairy @-@ legged and the white @-@ winged vampire bats . These species are the only known parasitic mammals . The common vampire bat mainly feeds on the blood of livestock , approaching its prey at night while they are sleeping . It uses its razor @-@ sharp teeth to cut open the skin of its hosts and laps up their blood with its long tongue .

The species is highly polygynous , and dominant adult males defend groups of females . It is one of the most social of bat species with a number of cooperative behaviors such as social grooming and food sharing . Because it feeds on livestock and is a carrier of rabies , the common vampire bat is considered a pest . Its conservation status is categorized as Least Concern by the International Union for Conservation of Nature (IUCN) because of " its wide distribution , presumed large population tolerance of a degree of habitat modification , and because it is unlikely to be declining at nearly the rate required to qualify for listing in a threatened category . "

= = Taxonomy = =

The common vampire bat was first classified as *Phyllostoma rotundum* by Étienne Geoffroy Saint @-@ Hilaire in 1810 . The species received several scientific names before being given its current one ? *Desmodus rotundus* ? by Oldfield Thomas in 1901 . It is classified under the subfamily Desmodontinae along with two other species : the hairy @-@ legged vampire bat (*Diphylla ecaudata*) , and the white @-@ winged vampire bat (*Diaemus youngi*) . These three species compose the " true " vampire bats , as opposed to the " false " vampires of the family Megadermatidae and the spectral bat . All three species of Desmodontinae specialize in feeding on the blood of warm @-@ blooded animals . However , the common vampire bat feeds on mammalian blood more than the other two species , which primarily feed on that of birds . The three species resemble each other , but the common vampire bat can be distinguished by its longer thumb . It is the only extant member of its genus , although other fossil species have been described .

= = Physical description = =

The common vampire bat is short @-@ haired , with silver @-@ gray fur on its undersides , demarcated from the darker fur on its back . It has a deeply grooved lower lip , and a flat , leaf @-@ shaped nose . A well @-@ developed , clawed thumb on each wing is used to climb onto prey and to assist the animal in take @-@ off . The bat averages about 9 cm (3 @-@ 5 in) long with a wingspan of 18 cm (7 in) . It commonly weighs about 25 @-@ 40 grams (2 oz) , but its weight can drastically increase after a single feeding . The braincase is relatively large , but the snout is reduced to accommodate large incisors and canines . It has the fewest teeth among bats . The upper incisors lack enamel , which keeps them razor @-@ sharp .

While most other bats have almost completely lost the ability to maneuver on land , vampire bats are an exception . They can run using a unique , bounding gait in which the forelimbs are used instead of the hindlimbs to propel forward , as the wings are much more powerful than the legs . This ability likely evolved independently within the bat lineage . Three pads under the thumb function like a sole . It is also capable of leaping in various directions , magnitudes and temporal sequences . When making a jump , the bat pushes up with its pectoral limbs . The hindlimbs keep the body over the pectoral limbs which are stabilized by the thumbs .

Common vampire bats have good eyesight . They are able to distinguish different optical patterns and may use vision for long @-@ range orientation . These bats also have well @-@ developed senses of smell and hearing : the cochlea is highly sensitive to low @-@ frequency acoustics , and the nasal passages are relatively large . They emit echolocation signals orally , and thus fly with their mouths open for navigation . They can identify a metal strip 1 centimetre (0 @-@ 39 in) wide at a distance of 50 centimetres (20 in) , which is moderate compared to other bats .

= = Range and habitat = =

The common vampire bat is found in parts of Mexico , Central America , and South America . They can be found as far north as 280 kilometres (170 mi) south of the Mexico ? United States border . Fossils of this species have been found in Florida and states bordering Mexico . The common vampire is the most common bat species in southeastern Brazil . The southern extent of its range is Uruguay , northern Argentina , and central Chile . In the West Indies , the bat is only found on Trinidad . It prefers warm and humid climates , and uses tropical and subtropical woodlands and open grasslands for foraging . Bats roost in trees , caves , abandoned buildings , old wells , and mines . Vampire bats will roost with about 45 other bat species , and tend to be the most dominant at roosting sites . They occupy the darkest and highest places in the roosts ; when they leave , other bat species move in to take over these vacated spots .

= = Behavior = =

= = = Feeding = = =

The common vampire bat feeds primarily on mammalian blood , particularly that of livestock such as cattle and horses . Vampire bats feed on wild prey like the tapir , but seem to prefer domesticated animals , and favor horses over cattle when given the choice . Female animals , particularly those in estrus , are more often targeted than males . This could be because of the hormones .

Vampire bats hunt at night , using echolocation and olfaction to track down prey . They feed in a distance of 5 to 8 km (3 @ . @ 1 to 5 @ . @ 0 mi) from their roosts . When a bat selects a target , it lands on it , or jumps up onto it from the ground , usually targeting the rump , flank , or neck of its prey ; heat sensors in the nose help it to detect blood vessels near the surface of the skin . It pierces the animal 's skin with its teeth , biting away a small flap , and laps up the blood with its tongue , which has lateral grooves adapted to this purpose . The blood is kept from clotting by an anticoagulant in the saliva .

They are protective of their host and will fend off other bats while feeding . It is uncommon for two or more bats to feed on the same host , with the exception of mothers and their offspring .

= = = Mating and reproduction = = =

A male and several females compose a group sometimes called a harem . A dominant male mates preferentially with the females of the roost and sires more of the offspring than other males . Male vampire bats guard roosting sites that attract females , but females often switch roosts

During estrus , a female releases one egg . Mating usually lasts three to four minutes ; the male bat mounts the female from the posterior end , grasps her back with his teeth , holds down her folded wings , and inseminates her . Vampire bats are reproductively active year around , although the number of conceptions and births peak in the rainy season . Females give birth to one offspring per pregnancy , following a gestation period of about seven months . The young are raised primarily by the females . Mothers leave their young to hunt , and call their young to feed upon returning . The young accompany their mothers to hunt at six months , but are not fully weaned until nine months . Female offspring usually remain in their natal groups into adulthood , unless their mothers die or move . The occasional movements of unrelated females between groups leads to the formation of multiple matrilineal within groups . Male offspring tend to live in their natal groups until they are one to two years old , sometimes being forced out by the resident adult males .

= = = Cooperation = = =

Regurgitated food sharing in common vampire bats (*Desmodus rotundus*) has been studied in

both the lab and field , and is predicted by kinship , association , and reciprocal help In a field study conducted in Costa Rica from 1978 to 1983 , vampire bats frequently switched between several roost trees and co @-@ roosted with kin and non @-@ kin . Mean genetic kinship within roosting groups was low ($r = 0.03 \pm 0.11$) , but 95 % of food sharing observed in the wild occurred between close kin (first cousins or higher) . Most observed food sharing (70 %) was mothers feeding their pups . The non @-@ maternal sharing events were kin @-@ biased suggesting that vampire bats prefer to help relatives . However , non @-@ maternal food sharing is even better explained by frequency of interaction , even after controlling for kinship . Food sharing was only observed when co @-@ roosting association was greater than 60 % . Food sharing appears to require social bonds that require development over long periods of time . Among familiar bats , the amount of food given from bat A to bat B is best predicted by the amount of food given from bat B to A. Reciprocal sharing is most obvious over longer time spans as found in primate cooperation .

Vampire bats also participate in mutual grooming ; two bats groom each other simultaneously to clean one another , and to strengthen social bonds . Bats that groom one another also share food . It was suggested that while grooming , a bat might assess the size of its partner 's abdomen to determine if it really needs to eat .

= = Relationship with humans = =

According to the Centers for Disease Control and Prevention , most bats do not have rabies . For example , even among bats submitted for rabies testing because they could be captured , were obviously weak or sick , or had been captured by a cat , only about 6 % had rabies . However , of the few cases of rabies reported in the United States every year , most are caused by bat bites .

The highest occurrence of rabies in vampire bats occurs in the large populations found in South America . The danger is not so much to the human population , but rather to livestock . Dr. Joseph Lennox Pawan , a government bacteriologist in Trinidad , found the first infected vampire bat in March 1932 . He soon proved various species of bat , including the common vampire bat , are capable of transmitting rabies for an extended period of time without artificial infection or external symptoms . Fruit bats of the *Artibeus* genus were later shown to demonstrate the same abilities . During this asymptomatic stage , the bats continue to behave normally and breed . At first , Pawan 's finding that bats transmitted rabies to people and animals were thought fantastic and were ridiculed .

Although most bats do not have rabies , those that do may be clumsy , disoriented , and unable to fly , which makes them more likely to come into contact with humans . There is evidence that it is possible for the rabies virus to infect a host purely through airborne transmission , without direct physical contact of the victim with the bat . Although one should not have an unreasonable fear of bats , one should avoid handling them or having them in one 's living space , as with any wild animal . Medical attention should be given to any person who awakens to discover a vampire bat in their sleeping quarters . It is possible that young children may not fully awaken due to the presence of a bat (or its bite) .

The unique properties of the vampire bats ' saliva have found some positive use in medicine . A genetically engineered drug called desmoteplase , which uses the anticoagulant properties of the saliva of *Desmodus rotundus* , has been shown to increase blood flow in stroke patients .