



# Drill News



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## The Drill: Endangered in the Wild and Captivity

*The Drill monkey is one of the most endangered monkeys in Africa*

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The Drill (*Mandrillus leucophaeus*) is a type of primate that is highly endangered in the wild. Drills are found in only three countries in Africa; Northern Cameroon, South Eastern Nigeria, and the Island of Bioko (off the coast of Equatorial Guinea), with a total range roughly the size of Switzerland!. Drills prefer undisturbed forest and retreat from human disturbance.

Many people have never heard of a drill or confuse the drill with the mandrill (*Mandrillus sphinx*). These two species are actually very closely related - they are the only two species in a unique Genus '*Mandrillus*' and are the most colorful primates known to man.

Drills and mandrills are very similar. However, these two primate species live in different places. A large river called the Sanaga bisects Cameroon and divides the drill's range from the mandrill's. The mandrill's range is much larger than the drill's (Southern Cameroon, Gabon, Equatorial Guinea, and parts of the Congo), and includes smaller human populations.

Because of this, the mandrill has a larger population and is not yet endangered.

It is also interesting to consider the history of drill and mandrill populations in zoos. Early collecting expeditions occurred more often in mandrill range areas. Zoo visitors readily recognize the highly colorful face of the mandrill. It is likely that when early zoo curators made a decision as to which of these two species to exhibit, the mandrill won out over the drill.

There are very few zoos worldwide that exhibit drills and the zoo population is small and declining. Together, EAZA (European Association of Zoos and Aquaria) zoos maintain a captive population of only about 60 individuals, spread across a number of zoos. In the United States, only 3 zoos have drills and recent efforts to conserve primates by the AZA (American Association of Zoos and Aquaria) resulted in the smallest populations of captive primates, including the drill, being placed into a category known as 'manage to extinction'. While this was done in order to conserve space for those primates with more viable population sizes, it is not good news for the drill. The most viable captive population of drills is that found at the Drill Rehabilitation and Breeding Center (DRBC) in Nigeria. Read more about the Drill Rehabilitation and Breeding Center on the next page!

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**The face of a male drill versus that of a male mandrill:** it is likely that in the early history of animal collections, zoos made a decision to exhibit mandrills over drills.



**A YOUNG DRILL ORPHANED BY THE BUSHMEAT TRADE:** Drills often come to the DRBC project about the age of this juvenile male. Usually, the mother has been killed for her meat, while the young drills are often sold as pets in the market.



**LIFE IN A SOCIAL GROUP:** Three generations of drills At the DRBC; a mother holds her newest daughter while her mother inspects the new baby.



**DRILLS ARE CURIOUS:** A young drill, born at the DRBC.

## Captive Breeding Efforts for Drills in Nigeria

*The Drill in Nigeria; Drill Conservation Efforts*

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The Drill Rehabilitation and Breeding Center (DRBC) in Nigeria is a conservation project for drills that focuses its captive breeding efforts inside of Nigeria. While reproduction in zoo drills is poor and zoos have difficulty in maintaining even a small group of drills, the DRBC project holds the largest captive drill population in the world.

DRBC staff rescue drills from markets or pet owners; these are usually young drills that have been orphaned by the bushmeat trade – mothers and other group members were likely killed for their meat, but young drills, too small yet to be sold for food, are often sold in the market as pets.

The DRBC has been in operation in Nigeria since 1981, and the project maintains two sites; one located in Calabar, where project operations and quarantine facilities are located. The second is a field site, located adjacent to the Afi Mountain Wildlife Sanctuary. The hope for these drills is to one day supplement the diminishing wild populations, once the habitat is better protected.

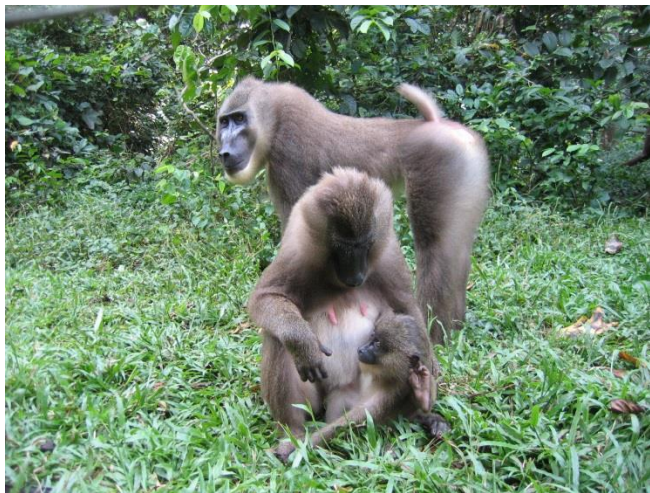
Once a newly acquired drill has gone through the quarantine period, it is placed in one of six large social groups, living in natural forested enclosures. Inside these vibrant social groups, the drills behave much as wild drills, following daily foraging routes through the forest, and interacting with one another within a complex social structure. Reproduction is so successful that many females must now be contracepted, but the population currently numbers close to 400 individuals. Because the zoo population is so small, the DRBC drill population is currently the only viable captive breeding effort for drills.

The Drill Rehabilitation and Breeding Center is managed and funded by Pandrillus, a U.S. non-profit corporation. Co-founders Liza Gadsby and Peter Jenkins have led this conservation effort in Nigeria for over 20 years. The DRBC also houses a non-breeding group of over 30 chimpanzees that are orphans from the pet and bushmeat market.

For more about this project, see [www.pandrillus.org](http://www.pandrillus.org)



**DRILLS IN THE FOREST:** A dominant male tenderly grooms an adult female of his group while her infant holds on. Grooming strengthens and maintains social bonds in primates.



**A FAMILY OF DRILLS:** A mother drill nurses her latest offspring while a subadult son stands nearby. Family members can be depended upon to support one another in social conflicts.



**MOTHER AND SON:** A young drill receives a thorough grooming from his mother.

## Drills: Threatened by the Bushmeat Trade

*The Drill is threatened by the Bushmeat Trade*

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The Drill prefers dense, primary forest and will flee from a human's approach. This flight is part of their predatory escape pattern. Unexpected loud noises or sudden movement will result in group flight - i.e. everyone startles and runs. Part of this behavior is a nonspecific 'go up' response. Often, drills will climb up into the nearest tree to get away from danger. When the predator is part of their natural habitat, such as the leopard, this is a good idea - drills can climb much higher than leopards and can also leap from tree to tree. However, when it is a hunter with a dog chasing them, climbing up may not be a good plan - especially as the tree they climb may not be the largest or tallest in the forest, but only the closest, leaving them exposed. Hunters exploit this, sending dogs in first to frighten the drills upward and then easily shooting a large number out of the trees with guns - a lucrative enterprise since drills are the largest monkey species in their forest habitat. Among the forest primates of Nigeria and Cameroon, only the great apes (i.e. chimpanzee and gorilla) are bigger than drills and mandrills. Because of this, Drills are threatened by the bushmeat trade.



**DRILLS FLEE FROM DANGER:** These drills are showing the characteristic flight response to a sudden unexpected noise. Hunters often use hunting dogs to startle the drills into the trees and are then able to kill a large number of drills at one time. Drills have one of the largest size differences between adult males and females of all the primates. While a female drill weighs 6-15 kg, an adult male drill weighs about 25 kg. Because of this, drills are sought after by hunters because they bring high prices. Young drills found with their mothers are often sold in the markets as pets.



**ONE OF THE MOST COLORFUL PRIMATES:** The genus *Mandrillus* is most well-known for their colorful posteriors. While the mandrill's face is more colorful, the Drill has a jet black face with a bright red chin patch and red flanks. The dominant male of a group is the most colorful, but all drills have patches of colorful skin.



**GROWING UP DRILL:** Drills are all born in the same season. Growing up in the forest with other drills your own age can be fun! Young drills cling to their mother's stomachs and nurse until around 6 months of age – after weaning, they spend most of their time with other weaned juveniles in large, boisterous play groups. These groups spend their days climbing trees, wrestling, and chasing one another, learning how to be a drill in the forest. . Female drills reach maturity and start having offspring between 3 and 5 years of age, while males have it a little easier – they grow to be twice as large as females and that takes time - a male is not fully adult until around 7 to 10 years of age.



**THE MOTHER IS THE FIRST SOCIAL BOND:** Left, a mother grooms her young son. Drills stay with their mothers for the first 6 months of life. Even then, they are learning and growing up within the social connections she maintains. As an adult, a female will rank close to her mother in the group hierarchy. Males become more peripheral as they age and must leave a group when they reach maturity and find another group, where they must fight for dominance over other adult males.



**SUBADULT MALE:** A subadult male drill eating a mango. Subadult males are often full of mischief and in the DRBC groups, they are known as 'area boys' (a term similar to hooligans!). They spend their extra growing time learning how to fight one another via the safety of play. Wrestling is one of a juvenile male drill's favorite games. As they grow older, they watch and learn from the dominant male also, often incurring his wrath when they are too boisterous. Eventually, a young male may be driven from the group's center by the dominant male, and become more peripheral, or sometimes may leave on their own to find a new group.



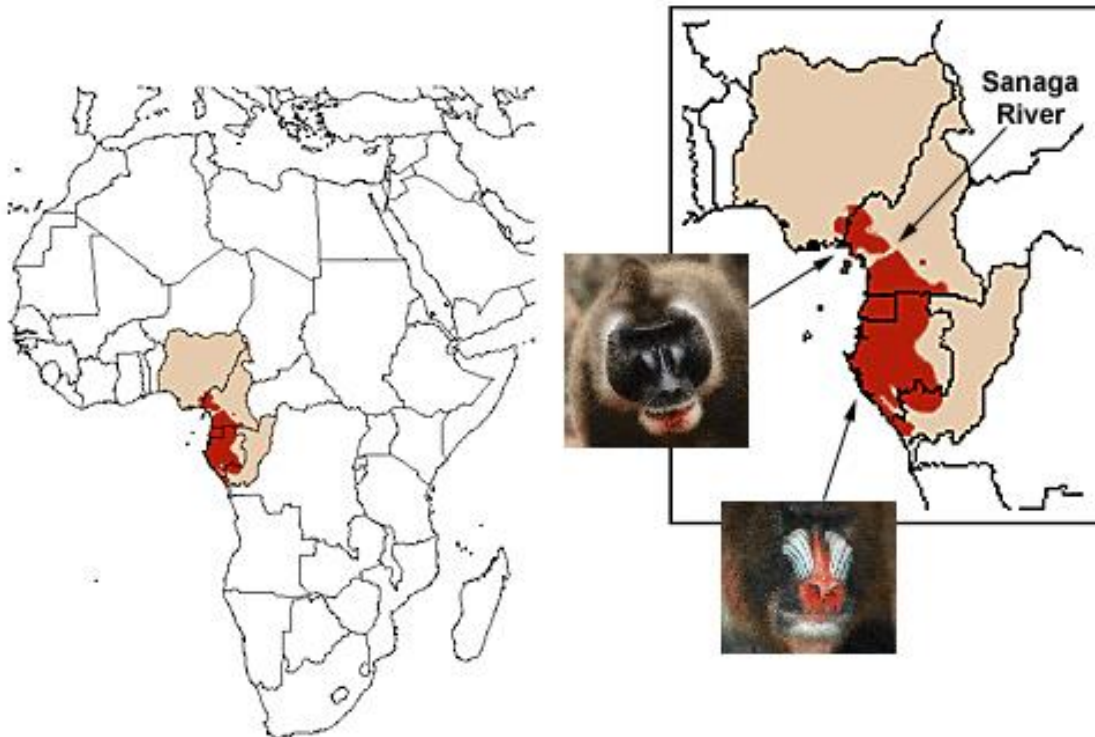
**LEARNING HOW TO BE A MALE:** Two juveniles playfully wrestle with one another (on left), while on the right, two young adult peripheral males posture at one another during a tense moment. The yawn is a drill threat behavior that functions to show an opponent the status of one's weaponry - two inch long canine teeth, which can be formidable in a fight.



**LIVING LIKE WILD DRILLS:** The drills at DRBC are living like drills in the wild. At night, they sleep high in the trees and in the morning, climb down in the early light to forage *en masse* in the leaf litter of the forest floor for insects and seeds. A drill group's day is spent moving through the forest, visiting favorite fruiting trees or other feeding areas. Adults forage and socialize while juveniles spend a considerable amount of time in play. The drill groups at DRBC do well because they live in extended family groups, with many social connections and opportunities to manage life in their natural forest environment.



THE RANGE OF THE GENUS MANDRILLUS: Shown in red, the smaller range of the drill is north of the Sanaga River, and the larger range of the mandrill is south of the Sanaga River.





**THE DRILL SMILE:** This subadult male is showing a characteristic 'drill smile'; a behavior very similar to the human smile – it is used when meeting one another, and conveys that the 'smiler' means no harm.



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