

**BLACK AFRICAN RHINO (*Diceros bicornis*) &  
GREATER ONE-HORNED ASIAN RHINO (*Rhinoceros unicornis*)  
ADAPTATIONS TALKING POINTS**

The following items should be on the cart, if they are not let someone in education know. If you discover a new problem with any biofact (broken pieces, loose teeth, etc.), it is your responsibility to let the staff know **and** make a notation with the date, time and your name on the sign out clipboard.

**RHINOCEROS CART INVENTORY**

- Greater One-horned Rhino skull and mandible
- Greater One-horned Rhino femur
- Horse femur
- Box of traditional Chinese medicine (ingredients contains 5% rhino horn)
- Rhinoceros Resource Notebook

**Note:** Please return all items to their appropriate place on the cart, and make sure lids and bungee cords are secured. Things should be left exactly as you found them.

**Note:** Do not try to open the Lucite containers with the food. We are trying to prevent animals from getting into the bone room.

**Note:** Please be Careful – Rhino skull and mandible are heavy.

**DO NOT** use teeth as handles to move skull; people can come up and touch the skull if they like but don't allow them to pick it up, or to pull on the teeth.

**GENERAL RHINOCEROS INFORMATION:**

The rhinoceros is one of the oldest groups of mammals, virtually living fossils in the Order Perisodactyla. They are generally large herbivores, but some are specialized in browsing, while others are grazers. All species can weigh more than a ton, with the White Rhino being the second largest land mammal weighing up to 2,700 kg.

Today there are five species of surviving rhinos: the Black and White rhinos occur in Africa, the Greater one-horned rhino, Javan, and Sumatran species occur in Asia. (see photos) Thousands of years and even millions of years ago, rhinos were more diverse, widespread and abundant. Rhinos occurred in North America and Europe as well as in Africa and Asia. The surviving rhinos are representatives of the approximately 40 million years of history of the rhino family.

## **BLACK AFRICAN RHINO (*Diceros bicornis*) ADAPTATIONS TALKING POINTS**

**GENERAL BLACK RHINO INFORMATION:** The black rhinoceros is the most well known of the five living rhinoceros species, in part because of its aggressive reputation and highly publicized international efforts to conserve the species. Black rhinoceros are grey in color and are distinguished from the other African species, the white rhinoceros, by its smaller size and its pointed, prehensile upper lip; white rhinoceros have square lips. Both African species possess two horns, made from keratin fibers rather than bone. The longer, front horn may be 24 inches or longer.

### **BLACK RHINO RANGE/HABITAT (see map)**

- Currently found in eastern and southern Africa; scattered populations in Kenya, Tanzania, Zambia, Zimbabwe, Angola, Namibia, Botswana and Mozambique
- Once found throughout much of sub-Saharan Africa with the exception of the Congo Basin and other equatorial forest areas of West Africa
- Live in wide variety of habitats from desert areas in Namibia to wetter forested areas; most commonly found in grasslands, savannahs and tropical bush lands
- Accessible water sources are essential to habitat
- The largest populations can only be found in national parks, where they are highly protected. South Africa, Namibia, Zimbabwe and Kenya currently conserve the majority (96.1%) of remaining wild Black Rhino.

### **BLACK RHINO PHYSICAL ADAPTATIONS**

#### **1. Skull/Dentation**

- Broad skull able to support weight of two densely packed, keratin horns
- Skull is very long, with eyes on either side of head
- Herbivore dentition: broad, flat molars with ridges, adapted for grinding up plant matter
- Lack incisors and have vestigial canines, use prehensile lip for browsing and molar teeth for grinding food.

#### **2. Size /Weight/Lifespan**

- Average height at shoulder: 4.5 – 5.5 ft.
- Average length of head and body: 10 – 12.5 ft.
- Average weight: 1,800 – 3,000 lbs.
- Lifespan 30 – 35 yrs. in wild, 45+ yrs. in captivity
- With poaching pressures lifespan: 16 – 20 yrs.

#### **3. General Physical Characteristics**

- Black rhino have two horns, which are made of densely packed keratin.
- The thick skin protects against acacia tree thorns and the occasional predator attack.
- Skin is layered with subcutaneous fat used as insulation from both extreme heat in the day and for warmth during cold nights.
- In spite of its name, the black rhino is actually grey.
- Black rhino or hook-lipped rhino has a characteristic pointed, prehensile upper lip, which is adapted for feeding from trees and shrubs
- Due to large body, these animals have no digit reduction and deploy the digits in a circle around the axis of the limb for maximum support, like the pedestal of a column to accommodate massive weight ( graviportal locomotion).
- They are able to reach speeds of 28 - 35 mph.

#### **4. Senses**

- Their eyesight is poor, with small eyes set on side of head.
- Being nearsighted, they are very unpredictable for they may not be able to distinguish what an object is and tend to charge when they feel threatened.
- Relatively broad snout for acute sense of smell; they can sense a human standing upwind from as far as a mile away.
- Prominent erect ears are able to swivel to pick up faint sounds for detection of predators. Ears are able to move independently to differentiate the direction of a sound.
- Motionless creature is nearly invisible to the rhino if they cannot smell or hear it.
- Exhibits flehman response to transfer pheromones and other scents into Jacobson's Organ (also known as VMO).

#### **5. HORN**

- Black rhinos have two horns: front (anterior) horn is larger (20 - 50 inches), rear (posterior) horn is smaller (22 inches).
- Horn is made of hardened and densely compressed keratin, which continues to grow through its lifetime and can even repair itself if broken or damaged.
- Horn is not attached to the rhino's skeleton; instead it is rooted in the skin of the nose.
- Horns are used for defense; most male bull rhinos engage in territorial defense, and use their horns to defeat lesser males in contests of raw strength, or to scare off predatory advances. They are also used for courting and foraging.

### **BLACK RHINO BEHAVIORAL ADAPTATIONS**

#### **1. Life Style**

- Males are generally solitary and may be territorial. Females have overlapping ranges.
- Home ranges vary greatly, depending on the habitat and to some extent on sex and age.
- Rhinos feed morning and evening (crepuscular), sleep in the shade or wallow in mud during the hot part of the day. Wallowing provides cooling and protection from flies and biting insects. It also keeps the skin supple and protects the skin from sunburn.
- Rhinos have no sweat glands to help maintain a constant body temperature. To cool off the Indian one-horned rhinos has folds that increase his surface area but the black rhino lacks these folds. The black rhino will seek shade during the day or uses the cooler nights to dissipate heat.

#### **2. Communication**

- Due to their bad eyesight and solitary nature, black rhinos scentmark for communication among other black rhinos; scent may orient them in their habitat.
- Rhinos scent mark by spraying urine on shrubs and rocks; males urinate to the rear and can spray a distance of 10 to 13 feet.
- Rhinos mark their territory with middens (dung piles).
- Trails are further marked by males trampling their fresh dung piles, thus soaking the soles of their feet.
- Vocalizations include grunts, squeals, gurgling, loud puffing snorts when alarmed
- Have been known to exhibit social interaction; when gathered near a watering hole, salt lick, or public wallows, rhinos will grunt and snort to one another

### **3. Diet/Eating Habits/Digestion**

- Black rhinos are browsers, not grazers.
- A prehensile lip is used to browse longer grasses, trees and shrubs. Black rhinos favor small Acacias and other palatable woody species.
- Hindgut fermentation – they have a simple stomach and fermentation occurs in the large intestine. One disadvantage of this method is that by the time the food reaches the caecum and colon, it has passed the main absorptive region of the gut (the small intestine) and so less absorption of the products of digestion is possible. Therefore, rhinos need to eat a great deal of food so their systems can get enough nutrients.

### **4. Breeding/Reproduction/Growth/Parental Care**

- Mating habits: ovulating female enters the territory of a bull male; the male will attempt to bar the female's path. If the male can contain the female, after a period of acclimation lasting as long as three days, the pair will copulate. After copulating, the pair will stay together for up to a month. When giving birth, the female finds a secluded area to give birth to a single calf (Twins are very rare).
- Gestation lasts approximately 15-16 months. Mothers give birth to one calf every 2 - 4 years. Births can occur throughout the year and each calf tends to remain with its mother until the birth of her next offspring
- Precocial young; calf can walk in about a day. When traveling, a calf will remain close behind their mother.
- Female may not mate again for 8-10 months after calf is born or may take up to three years to mate again.
- The mother will wean the calf off of milk after as much as a year. The calf will stay close to its mother's side for protection.
- A mother will raise her calf from two to four years. When it is old enough to feed and protect itself, the mother will drive the calf away to fend for itself. Generally the females are able to stay with their mothers for the longest periods of time. The young males are often run off when they are about 2 years of age.
- Females reach sexual maturity ~ 6 years of age, males mature ~ 8 years of age

### **BLACK RHINO INTERESTING/FUN FACTS**

- Exhibits coprophagus - observed eating wildebeast dung during the dry season. This may indicate a mineral or other deficiency in their diet and is meant to balance their diet.
- Rhinos are important seed dispersers by depositing them in their dung.
- There are three remaining recognized subspecies of Black rhinoceros occupying different areas of Africa. A fourth recognized subspecies once ranged through the savanna zones of central-west Africa, but it is now considered to have gone extinct in its last known habitats in Northern Cameroon.
- Rhinos play a significant role in promoting ecotourism, which provides needed income to the impoverished people in countries where they exist.
- The protection of black rhinos creates large blocks of land for conservation purposes. This benefits many other species, including elephants.

## **BLACK RHINO CONSERVATION STATUS:**

- Listed as Critically Endangered on the IUCN Red List
- Black Rhino have been listed on CITES Appendix I since 1977. All international commercial trade in Black rhinos and their products have been prohibited.
- Throughout most of the 20th century, the Black Rhino was the most numerous of the world's rhino species, which at one stage could have numbered around 850,000.
- Just prior to 1960, the population of black rhinos throughout the eastern and southern parts of Africa was approximately 200,000. Hunting and loss of habitat due to clearances of land for settlement and agriculture was responsible for the declining rhino population.
- Between 1960 and 1995, large-scale poaching caused a dramatic 98% collapse in Black rhino populations, with numbers bottoming out at 2,410 in 1995.
- Since 1995, numbers have been steadily increasing. There are currently approximately 4,880 black rhinos alive and most of those are protected by armed guards.
- Main threat to the Black rhino remains poaching for its horn. The horn is valued for use in Asian medicine, and for ornamental uses (i.e. horn is a highly prized for making ornately carved handles for ceremonial daggers in Yemen).
- Rhino horn in Chinese medicines is thought to treat a variety of ailments including fever, nosebleeds, strokes, convulsions and various blood disorders, as well as a cure for hangovers. Recently, the horn has been used to treat cancer. Note: Medicinal claims are without merit and are based on beliefs that have persisted for centuries.
- Over the past six years, there has been an upsurge in black market prices for rhino horn (\$100,000 per kilogram), which has coincided with an increase in poaching in some range states. This increase has coincided with new use of rhino horn to supposedly treat cancer
- Currently, Vietnam has the largest market for rhino horn.
- In areas where both African species co-exists, the white rhino acts as buffer against black rhino poaching; white rhinos are easier to find given their preference for more open habitats and the fact they cluster in small groups.
- Increases in rhino population sizes have occurred in countries where investments in conservation programs, including monitoring and law enforcement, have been high.
- African rhino conservation efforts have been significantly impacted by civil unrest, the free flow of weapons and better communication systems in Africa. With better communication, poachers are able to coordinate their efforts over a larger area.
- With the growing purchasing power of many Asian countries and the existence of organized gangs of poachers, who sell rhino horn to black market syndicates in some range countries, the poaching threat remains great and anti-poaching efforts must be continued and accelerated.

## **BLACK RHINO CONSERVATION ACTION:**

- The most effective conservation efforts have involved the rigorous protection of rhinoceros in fenced sanctuaries, often in partnerships between the State and private sectors, or in intensely protected unfenced zones within larger areas.
- Dehorning has also been used in some countries to reduce the incentives to poach.
- In 1997, Yemen became a signatory of the Convention on International Trade in Endangered Species (CITES), thus greatly reducing the demand for rhino horn in the Middle East.
- The San Francisco Zoo is supporting and promoting with the Wildlife Conservation Society's 96 elephants Campaign, to raise awareness to the plight of elephants and the

ivory trade and includes the illegal trade of rhino horn. Why 96 Elephants? One elephant in Africa dies every fifteen minutes! And one rhino dies every nine hours! That's 96 elephants and two to three rhinos a day!!!

- 96Elephant Campaign is working to close loopholes in existing California ivory trade ban law in order to be effective. California is the second largest retail market in illegal ivory sales in the U.S. Approximately 80% of ivory for sale in San Francisco is likely illegal under California law—much of it advertised as antiques and/or crafted to look older so it would appear legal, though the pieces were more likely from recently-killed elephants.
- AB96 would prohibit a person from purchasing, selling, offering for sale, possessing with intent to sell, or importing with intent to sell elephant ivory or rhinoceros horn, except as specified under very limited educational and scientific circumstances, and would make this prohibition enforceable by the Department of Fish and Wildlife.
- An experimental technique is being used in South Africa to render the horn worthless; a indelible red dye is being injected into the horn. Stay tuned for results!

## **GREATER ONE-HORNED RHINOCEROS (*Rhinoceros unicornis*)**

### **TALKING POINTS**

#### **GENERAL GREATER ONE-HORNED RHINO INFORMATION:**

The greater one-horned rhinoceros is the largest Asian rhino. It is also called the Indian rhino. The Latin scientific name "*Rhinoceros unicornis*" can be translated as "one horn up on the nose". It is an odd toed ungulate (perissodactyl) and is the second largest rhino – second to the white rhino. The elephant is the only larger terrestrial animal. The other two Asian rhinos are the Sumatran and the Javan, both of which are critically endangered.

#### **GREATER ONE-HORNED RHINO RANGE/HABITAT/DISTRIBUTION**

- They once ranged extensively in the Gangetic Plains – a very fertile plain comprised of most of northern and eastern India, parts of Nepal and Pakistan and all of Bangladesh.
- Today they are found in much smaller areas of India and Nepal, with the greatest concentration in a few national parks and reserves.
- Preferred habitat includes alluvial flood plains, humid swamps and areas containing tall grasslands along the foothills of the Himalayas.
- Home ranges of males extend up to 3 sq. miles and can overlap with other males and females.

#### **GREATER ONE-HORNED RHINO PHYSICAL ADAPTATIONS**

##### **1. Skull/head/dentition**

- Massive, heavy skull is supported by very large, strong neck and shoulder muscles and wide shoulders.
- Eye placement is on sides of head.
- Dentition features molars and pre-molars similar to black rhino, but also features large incisor and canine teeth. These are used as weapons of defense and are far more dangerous than the horn.
- Mouth is fairly broad with a small prehensile lip.

##### **2. Horn**

- Single, black nasal horn on head composed of compressed keratin fibers is present on both males and females, but not on new-born calves.
- Average length of horn is about 9.8", but has been known to reach up to 22".
- Horn used primarily to dig up waterbeds or uproot trees and shrubs, but not for defense or fighting.

##### **3. Skin**

- Thick, grey-brown with pinkish folds and armor-like in appearance (pink coloration caused by abundance of blood vessels near the skin surface)
- Upper legs and shoulders are covered in wart-like bumps.
- Males have huge neck folds of skin.
- Folds of skin increase body surface area, help regulate body temperature and retain water after wallowing.
- Skin is very sensitive to flies, leeches and ticks, so wallowing in mud helps protect skin.
- Body hair consists of eyelashes, ear fringes and tail brush.

##### **4. Size/weight/lifespan**

- Sexually dimorphic: Males larger than females
- Average head and body length males: 12 – 12.5 Feet; shoulder height: 5 – 5.7 feet

- Female head and body: 10 – 11.2 feet; shoulder height: 5 – 5.7 feet
- Average weight: males: 4,000 – 6,000 lbs; females: 3500 lbs
- Average lifespan: wild: up to 40 years; captive: up to 47 years

#### **5. Senses**

- Excellent senses of smell and hearing
- Ears move independently of one another, thus increasing the range of hearing
- Relatively poor eyesight

#### **6. General information**

- Short, thick legs with three toes on each foot (COMPARE FEMURS ON CART)
- Although large and bulky, can run for short distances up to 25-30 MPH
- Surprisingly agile and able to turn quickly

### **GREATER ONE-HORNED RHINO BEHAVIORAL ADAPTATIONS**

#### **1. Life Style**

- Mostly solitary with the exception of mothers with calves and breeding pairs
- Males fairly territorial and can be aggressive if threatened
- May be seen in temporary groups at wallowing spots and in good grazing areas
- Tend to be active at night and early morning
- Spend midday wallowing in mud holes, lakes, ponds, rivers, etc. to keep cool and protect skin from sun and insects.
- Excellent swimmers, diving to eat aquatic plants

#### **2. Diet/Eating**

- One-horned rhinos are primarily grazers, consuming large quantities of tall grasses, with a browsing diet augmented by leaves, branches of trees and shrubs, fruits and aquatic plants.
- They are crepuscular, tending to feed in the mornings and evenings.
- They use their prehensile lip to grasp grass stems and use their feet to bend the tall grass down so they can more easily bite off the tops.

#### **3. Communication**

- Rely heavily on their acute sense of smell for communication (the olfactory area of brain is its largest)
- Gain scent information from piles of dung and sprayed urine
- A pile of dung is called a midden and it can provide sensory information about other rhinos in the area, including females in estrus and serve as a territorial marker.
- When a rhino encounters a midden, it will deposit its dung next to it as a marker – territorial or otherwise and may also walk through the dung they deposit; middens can become very large and are important communication centers for solitary rhinos.
- They also have scent glands in the bottoms of their feet that are used to mark forest paths.
- They exhibit a variety of vocalizations that are used when they encounter other rhinos or in mother to calf or calf to mother calls. Different sounds communicate different messages and include snorting, bleating, growling, squealing and trumpet sounds.

#### **4. Breeding/Reproduction/Parental Care**

- Females become sexually mature at five to seven yrs. of age and males at about 10 yrs.
- Breeding can occur throughout the year



- Adult males may fight fiercely to gain access to females, often inflicting serious wounds to opponents with their sharp incisor and canine teeth.
- Gestation periods are 15 – 16 months with birth intervals of 34 – 51 months.
- The female usually gives birth to a single precocial calf, which is able to walk a few hours after birth.
- The calf will nurse for 12 – 18 months, but will also begin eating solid food regularly at about 3-5 months.
- Calves put on more than a pound of weight every day by drinking up to 20-30 liters of milk daily.
- A calf may stay with its mother for up to four years unless another birth occurs, in which case they must leave.
- Calves are vulnerable to large cats, hyenas, crocodiles and adult male rhinos and need the protection supplied by their mothers.
- Males are not involved in the lives of calves.

## **GREATER ONE-HORNED RHINO CONSERVATION**

### **1. Population and distribution**

- Though one-horned rhinos once ranged over most of northern India, Pakistan, Nepal, Bangladesh and Myanmar, the species came close to extinction in the early 20<sup>th</sup> century. In 1975 only 600 individual animals survived in the wild.
- Conservation efforts of strict protection have been successful and overall populations are increasing, especially in India, but are decreasing in Nepal, mainly because of poorly controlled poaching.
- Rhinos are confined to fewer than ten sites with 70% living in India's Kaziranga National Park.
- Habitat fragmentation is a major issue adversely affecting genetic diversity, and hence the species, largely because many of the corridors between populations of the rhino have been closed.
- The IUCN Red List population assessment of 2007 revealed a population of about 2575, mostly in India.
- The IUCN lists the conservation status of the one-horned rhinoceros as "vulnerable"

### **2. Major threats to conservation efforts**

- Sport hunting, which accounted for major loss of rhinos up until the early 1900s is now illegal in most parts of India and Nepal.
- Widespread conversion of the alluvial plain grassland rhino habitat to agricultural use is a major issue facing conservation efforts; the human population explosion in India has increased the need to convert fertile land that is vital rhino habitat to agricultural uses.
- Habitat quality has also been degraded by the intrusion of non-native invasive plants, silting and draining of wetlands, woodland encroachment and livestock grazing in the grasslands and wetlands favored by the rhino.
- Poaching of animals for their horns continues to be a big problem; ground horn is used in some traditional Asian medicines and Asian horn is believed to be more effective than African horn. Though laws have been passed in China and other countries, barring the export and import of the horn, the practice continues and is driven by the increased financial resources now available among Asia's growing middle class.
- Rhino horn is also poached to make dagger handles, particularly in Yemen.

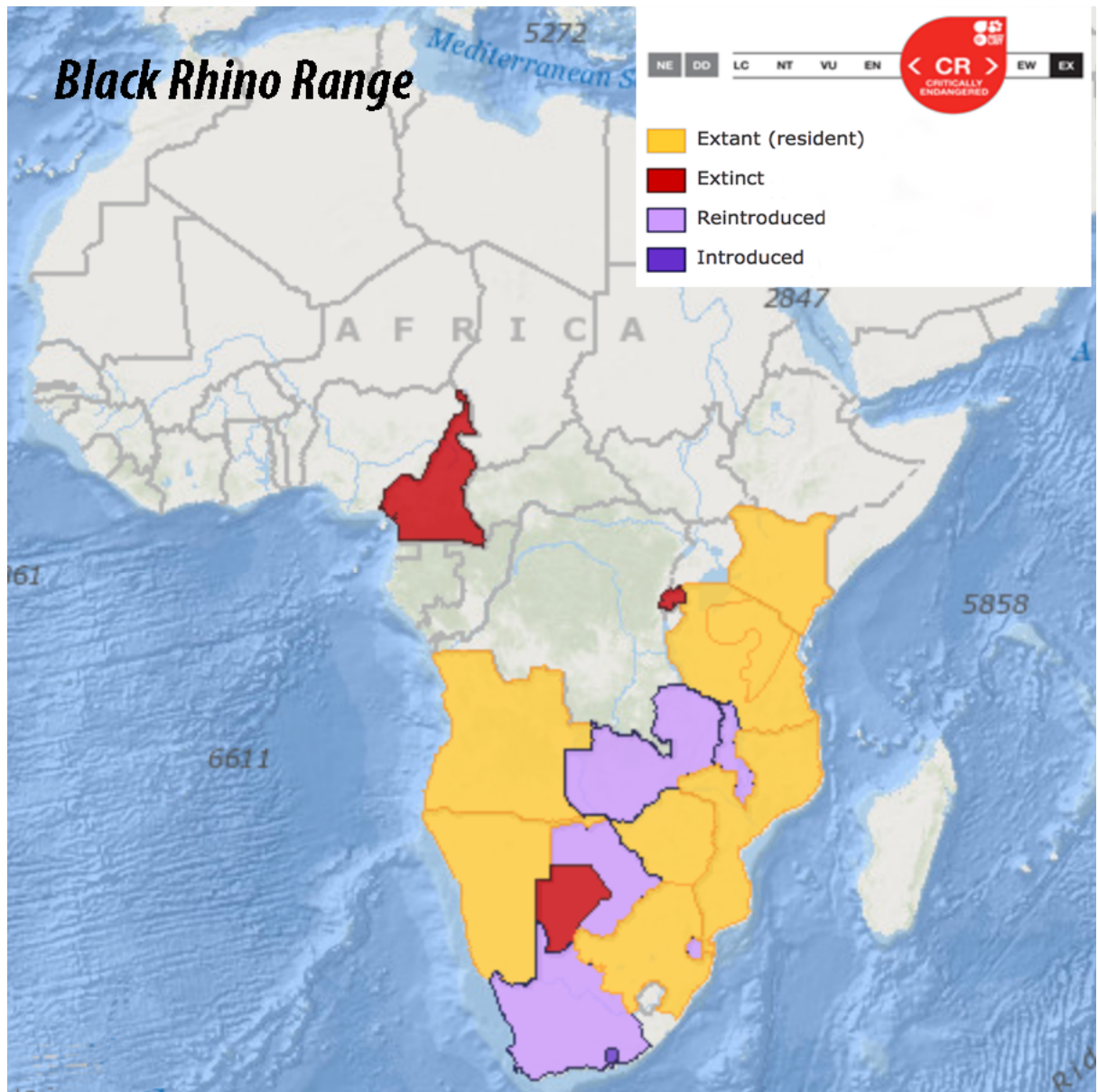
- Increased enforcement and protection is needed to stop the poaching; trying to effect a change in the cultural values of the peoples using the horns and their products is more difficult.
- Conflict with humans results when rhinos wander outside of protected parkland and graze on farmland; farmers act to protect their land and that can mean taking measures against the rhinos.

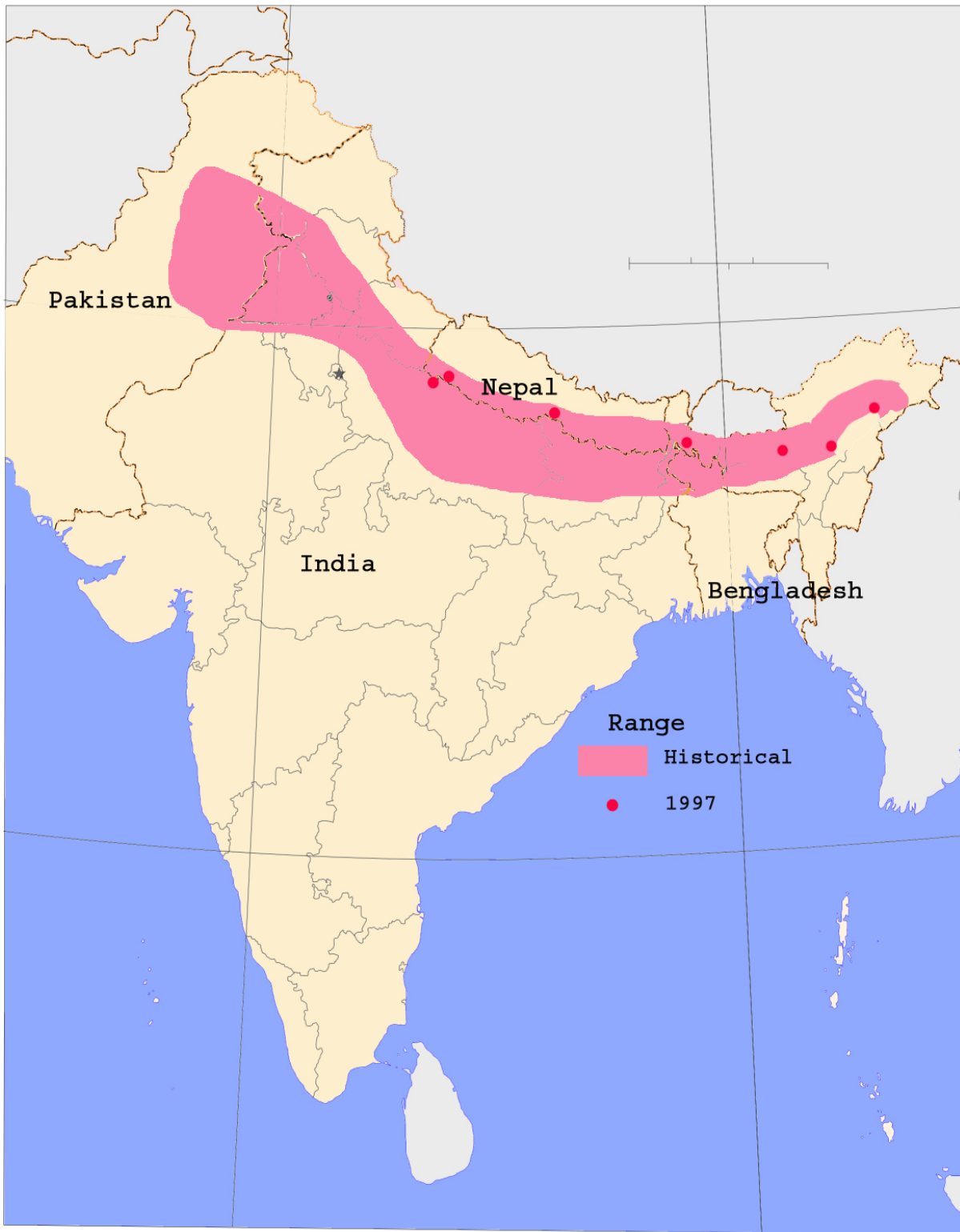
### **3. What measures are working or are needed**

- Increased enforcement of laws and treaties in the countries where the illegal trade occurs is vitally needed.
- Support and training for park rangers and others involved in protecting rhinos requires additional funding and resources.
- Efforts are being undertaken to translocate rhino populations to suitable areas where the species once flourished, particularly in the eastern Himalayan areas of India and in Nepal. This is important since some protected areas cannot support additional rhinos.
- Conservation groups are working to improve connectivity between protected areas, giving the rhinos access to a greater area, including areas outside parks when the monsoon season brings floods to parklands.
- It is essential to work with local communities to decrease conflict between people and rhinos; one example is encouraging farmers to grow crops that are not palatable to rhinos, but are still profitable and desirable to the human population.
- Other measures that can be taken by local communities include the building of fencing and restricting livestock grazing in rhino habitat.

### **GREATER ONE-HORNED RHINO INTERESTING/FUN FACTS AND INFORMATION**

- The closest living relatives to the rhino are tapirs, horses and zebras.
- An adult rhino can produce up to 50 lbs. of dung every day.
- A group of rhinos is called either a crash or a herd.
- In the 1700's an orphaned female greater one-horned rhino named Clara was hand raised and then transported to the Netherlands by a Dutch sea captain. It then toured Europe for 17 years and became a celebrity. A book titled "My Travels with Clara" by Mary Holmes tells the story.
- World Rhino Day is celebrated every year on September 22 to spotlight the need to preserve the species.
- At our Zoo the greater one-horned rhino eats grain, hay, fruits, vegetables and acacia.
- Our rhino routinely wears down his horn by rubbing it on rocks. Our keeper and vet staffs have worked with the rhino to be able to file and trim his horn when needed to keep it growing and healthy.





**GREATER ONE-HORNED RHINOCEROS RANGE MAP**





**Black rhino with calf**



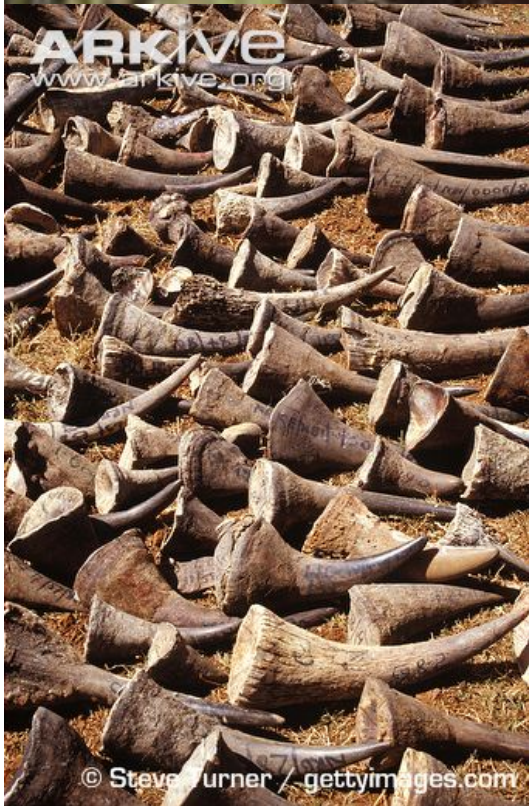
**Black Rhino's pointed, prehensile upper lip, which is adapted for grasping leaves and twigs**



**Black rhino feeding**



**Poached Black Rhino horn:  
rhinoceros left to die**



**Confiscated Black Rhinos' horns**



**Some black rhinoceros (*Diceros bicornis*) are under 24 hour armed guard due to risk of poaching fueled by the demand from Asian medicine market.**

© Martin Harvey / WWF-Canon

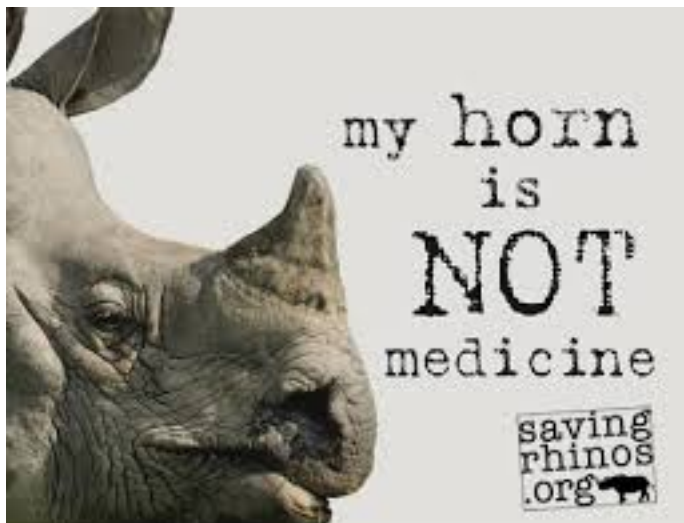




**GREATER ONE-HORNED RHINO  
FEMALE WITH CALF**



**PREHENSILE UPPER LIP of  
GREATER ONE-HORNED RHINO**



**GREATER ONE-HORNED RHINO  
CONSERVATION MESSAGE**



**GREATER ONE-HORNED RHINO CALF BESIDE MOTHER POACHED FOR HORN**



**THE START OF A MIDDEN (DUNG PILE) of GREATER ONE-HORNED RHINO**





**GREATER ONE-HORNED RHINO  
CALF TAKING A WALK**



**GREATER ONE-HORNED RHINO IN HIS FAVORED MARSHY GRASSLAND HABITAT  
WITH A HITCHHIKER**

# HANGING BY A THREAD

**ILLEGAL TRADE IN RHINO HORN** is threatening the survival of these incredible animals.

3 of the 5 living species of RHINOS are classified as **CRITICALLY ENDANGERED** by the IUCN RED LIST.

**SOURCE COUNTRY**  
South Africa

**DEMAND COUNTRY**  
Viet Nam

## POACHING IS EVOLVING

Over the years poachers have gone from using bows, arrows and spears to high powered rifles, helicopters, night vision equipment and veterinary tranquilizers. Some are also putting poison into carcasses to avoid vultures that may call attention.

## DEMAND IS RISING

Originally associated with reducing temperature (especially internal heat in the blood) and purging the body and blood of toxins, rhino horn has recently been attributed also as a cure for cancer and as an aphrodisiac.

## KILL THE TRADE THAT KILLS THE RHINO

Follow our

Campaign against **ILLEGAL WILDLIFE TRADE** at [wwf.panda.org](http://wwf.panda.org)  
Find us on [facebook.com/WWF](https://www.facebook.com/WWF) to **JOIN THE FRONTLINE**

and Tweet to

**#killthetrade**

### TRADE CHAINS

- poachers
- middlemen buyers
- exporters
- couriers
- end users

### CRIMINALITY

- criminal syndicates
- national obsession
- low risks
- high profits

### LAW ENFORCEMENT

- + greater intl cooperation
- + database of rhino DNA
- + greater capacity
- + better communication
- + tighter control of ports

### GROW NUMBERS

- + secure rhino habitat
- + extend protected areas
- + monitor populations
- + relocate to new homes if necessary

### AFRICAN RHINOS

**20,000**  
white

**4,880**  
black

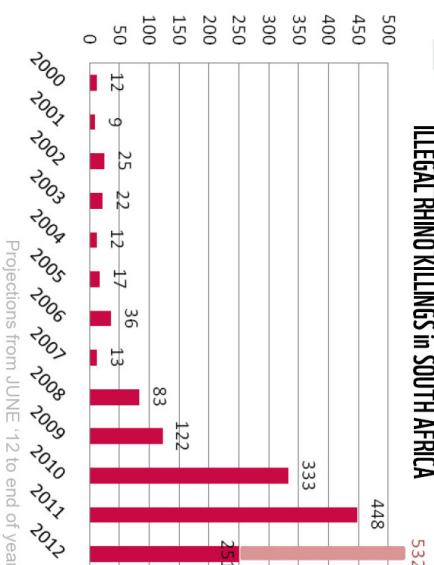
### ASIAN RHINOS

**2,913**  
greater one-horned

**200**  
Sumatran

**50**  
Javan

### ILLEGAL RHINO KILLINGS in SOUTH AFRICA



**INTERNATIONAL COMMERCIAL TRADE** in rhino horn is **ILLEGAL** for all rhino species.

Sources: 2012 Traffica Report "The South Africa - Viet Nam Rhino Horn Trade Nexus" / WWF Factsheet African Rhinos







**The 5 rhino species of Africa and Asia.** Left to right:  
Greater one-horned rhino; black rhino; Sumatran rhino; white rhino; Javan rhino.

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