

Black Rhino Husbandry and Breeding at the Cincinnati Zoo

Submitted by Adrian Haft, Animal Keeper
Cincinnati Zoo & Botanical Garden, Cincinnati, OH

The black rhino (*Diceros bicornis*) at the Cincinnati Zoological and Botanical Garden began on 4 April, 1957, with the acquisition of our first pair of black rhinos. This pair produced its first offspring on 27 July, 1961. Since that first birth, we have had 16 additional births. The success of our breeding program has been a direct result of the commitment made by several people to save the black rhino from extinction - our Director, Ed Maruska, this institution and all of the people who have been involved in this program.

Presently, our black rhinos are housed in a facility that contains three stalls. The perimeter walls of these stalls are constructed of concrete block on the interior and gunite on the exterior. The walls between are constructed of eight-inch poured concrete and each wall is 9 ft. (2.74m) tall. Two walls measure 15 ft. x 16 ft. (4.57m x 4.87m), while the third is 12 ft. wide by 20 ft. long (3.65m x 6.0m). The floors are concrete with a light broom finish and slope toward a gutter that runs the length of all three stalls. Each stall is equipped with vertical bars, positioned in the front, that are seven inches in diameter (18 cm), spaced 13 inches (33cm) apart and are 7 ft. tall (2.13m).

Water is provided by troughs with walls that are four inches (10cm) thick, 13 inches (33cm) deep and 1 ft. 7 in. x 2 ft. 3 in. (.53m x .70m). These are filled by a manual fill line from outside of each stall. There is a barred window between each stall that measures 4 ft. x 5 ft. (1.2m x 1.5m).

There are shift doors between each stall and each stall has a door that is accessible to the outside enclosure or exhibit yard. These are solid doors, constructed of 4" x 6" (10cm x 15cm) wooden boards, framed by five-inch square tubular pipe, and operated on a hydraulic system. These doors measure 7ft. tall x 5ft. 6 in. wide (2.13m x 1.70m). A chute outside one of the stalls allows the opportunity to manipulate animals in a safe manner (i.e. medical exams, etc.). It is 4 ft. (1.2m) wide and can be lengthened from 7 ft. (2.1m) to 11 ft. (3.35m) easily. The building also has a load ramp that accesses the building directly into one of the stalls.

There are two exhaust fans in the ceiling that provide ventilation for the building. Lighting in stalls and service areas is provided by fluorescent lighting. The heat source is a forced-air furnace.

The outside enclosure is oval in shape and measures 100 ft. x 120 ft. (30.5m x 36.6m). The substrate is a mixture of limestone soil and grassy areas. There is a pool in the center of the enclosure which measures 26 ft. x 19 ft. x 3 ft. (7.9m x 5.8m x .91m) at the deepest part. A gunite wall surrounds the outside enclosure.

Food provided is 1-2 flakes of alfalfa in the morning; 3/4 - 1 whole bale alfalfa in the afternoon, along with 10 qts. Mazuri® ADF-16 large pellets, six apples, six carrots, and six

bananas with 2 Tbsp. trace mineral salt and six vitamin E capsules. Honeysuckle and mulberry are offered for browse as often throughout the year as it is available.

The rhinos are hosed thoroughly every morning, removing any fecal matter, urine, dead skin, and hay.

The temperature guidelines for giving animals access to the outside enclosure are as follows: 35°F (2° C) depending on cloud cover and dampness. During the colder temperatures, animals are only allowed outside for a few hours.

To tell if a female is cycling, we watch the behavior of the male. He is more aggressive, sprays urine more often, and vocalizes more. The female cycles approximately every 28-30 days and this behavior lasts for about two days. Once estrus is determined, the male and female are introduced. Heavy sparring may occur occasionally when the male will lift the female off of the ground. When the female comes into full estrus, the male usually places his chin on the female's rump and tests her and will then attempt to mount. If she's ready, she will stand for copulation which usually lasts for 20-30 minutes. Gestation is approximately 490 days.

At approximately 10-12 months into the pregnancy, the female is separated from the male. Additional bars are added between the existing bars of the stalls to aid in prohibiting the calf from walking between the bars. At the time the female is separated from the male, she is given access to two stalls. Alfalfa bedding is added after the calf is born. The calf is weaned and separated from the mother at approximately 8-10 months of age.

As zoo keepers, our responsibility doesn't only lie in the everyday husbandry of the animals in our care. Our responsibility is also in the concern that many of the species on this planet are in serious jeopardy. Although we may not contribute to saving the black rhino from extinction by being involved in SSP programs, etc., we all play an important role in our everyday husbandry of these animals. We should all feel proud to have the opportunity to care for these magnificent animals.

For further information on the Cincinnati Zoo's black rhino program, contact Paul Reinhart, Head Keeper, Ungulate Dept., Cincinnati Zoo, 3400 Vine St., Cincinnati, OH 45220-1399.

(Editor's note: According to the June issue of the AZA Communiqué, the Cincinnati Zoo & Botanical Gardens recorded its 17th black rhino birth on 9 December 1994 and holds the world's record for black rhinoceros births in captivity.)

