A second chance for rhino subspecies

Scientists say DNA sequence from the cells of the last northern white rhino holds promise of its revival

When the last male northern white rhinoceros died in March, people mourned the beloved mammal's step toward extinction.

With no members of the subspecies left in the wild and just two females remaining in captivity, it felt as if the last bit of sand was draining through the rhino's hourglass.

But several teams of scientists are working to flip the hourglass back over.

One group, led by researchers at the San Diego Zoo Institute for Conservation Research, hopes to revive the northern white rhino using preserved cells. In a study published on Thursday in *Genome Research*, the scientists sequenced the DNA of these cells and concluded that they hold a promising amount of genetic diversity for re-establishing a viable population of the northern whites. With the right advances in assisted reproduction or cloning, there could be a second chance for this "unique form of rhinoceros," said Oliver Ryder, director of conservation genetics at San Diego Zoo Global.

Not everyone agrees that having the capacity to bring back the northern white rhino means it should be done.

**Challenges remain**

Critics question whether the buzz around resurrecting a functionally extinct creature takes attention and resources away from other animals with greater chances of survival. They also point out that any resurrected northern white rhinos would likely remain in captivity, rather than roaming free in their former habitat in central and eastern Africa, where poaching for horns remains a serious threat.

In their study, Mr. Ryder and his colleagues focused on the feasibility of recovering the northern white rhino using cells stored in the Frozen Zoo, a large collection of cryopreserved samples at the San Diego Zoo. These cell lines represent eight presumably unrelated northern whites, Mr. Ryder said.

The researchers sequenced these genomes and compared them to genomes from southern white rhinos, the northern white rhino's closest kin, which underwent a spectacular recovery under protection over the past century, although it remains near-threatened.

They confirmed scientists' long-held hypothesis that the two rhinos are subspecies, rather than distinct species.

This close relationship might bode well for using southern white rhinos as surrogates for northern white embryos.