

# **Rare White Bison Calf Slain--Genetic Makeup of White Bison is Complex, Mysterious**

by

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On May 12, 2011, Arby and Pat Little Soldier of Lakota Ranch near Greenville, Texas, rejoiced over the birth of a rare white buffalo calf, named Lightning Medicine Cloud. The white buffalo, more accurately called a bison (*Bison bison*), has long been a symbol of Native American spirituality, hope and rebirth.

On April 30, the much-revered calf, called "The Hope of All Nations" by the Little Soldiers, was slaughtered and skinned by an unknown rustler or rustlers. What are the chances that another white bison calf will be born any time soon? The National Bison Association estimates that only one out of 10 million births results in a white calf. While the genetics of white bison are not fully understood, four mechanisms are possible.

First, a calf may be albino, which means that the animal has a congenital decrease in or complete absence of an enzyme that produces melanin, a pigment which is the primary determinant of skin color. Albinos typically have white skin and pink eyes. A number of other defects often accompany albinism, including blindness and deafness.

Schmutz et al. ([Mamm Genome](#). 2004 Jan;15(1):62-7) found a mutation in the tyrosinase gene, in Braunvieh cattle, which was responsible for albinism when the offspring inherited one copy of the mutated gene from each parent. Mutations in the tyrosinase gene cause albinism in many mammals including mice, dogs, humans and possibly bison.

Second, a calf may be leucistic, which involves a reduction in all skin pigments, not just melanin. A leucistic animal would typically have white skin and blue eyes. Mutations in at least three genes are known to cause leucism.

Third, certain rare genetic conditions might cause a calf to be born with a white coat which changes to brown as the calf matures.

A fourth mechanism, sometimes producing white bison, is the interbreeding of white cattle (often Charolais) with bison. Crossing of cattle with bison is controversial in some quarters, and white bison resulting from these crosses are often not considered sacred by Native peoples.

The genetics of Lightning Medicine Cloud's snowy white coat might be of no consequence now as his mother also died, possibly the victim of poisoning. A reward is offered for information leading to the killer or killers of the calf and his mother.

<http://lightningmedicinecloud.com/>

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