

HOW MANY FOUNDERS DOES IT TAKE TO MAKE A BREED?

The Oct/Nov/Dec 2011 BCOA Bulletin magazine published a copy of the August 2011 letter in which the the 2008 AKC agreement to open the

Shortly after that letter was made stated number of founders BCOA recommended to establish a viable breed population. The statement from the BCOA letter read: "In response to this who believe at least 50 founders are concerned breeders have made several founders. When I read the statement geneticists who advised BCOA that 50 was the minimum number of founders for I delved into the volumes of research on population founders and contacted learned.

What is a founder?

are unknown and is the beginning of a newly established population cut off from the source. An individual is only truly considered to be a founder once it has surviving descendants in the new unrelated to any other representative of the source population and non-inbred.

When individuals from the source population are known or is an individual that actually reproduces and contributes descendants to the new is currently living and capable of reproduction but has not yet contributed genetically to the new population.

What is the minimum number of founders recommended to establish a long-term, viable population?

population survivability depends on what

genetic diversity of the source population.

Founders are a sample of the source population and therefore the statistical laws of sampling apply. Sampling and genetic theory show that a minimum of 20 unrelated individuals theoretically will source population.

Chicago Zoological Society told me that the general rule-of-thumb is 20 founders minimum founder number is likely somewhere around 10 but more would

by Dr. Jo Thompson

When writing about rescuing the minimum number of foundation animals better. established that the minimum number of founders for a viable population is 5 females and at least 1 is male.

So the absolute minimum numeric range recommended to develop a new that minimum founder populations should consist of at least 10 animals but

Now we know the general rule-of-thumb for establishing a new population is 20 genetically effective founders. Often we hear "more is better." Is that true?

Dr. Lacy agreed that it would be better to have more than 20 founders but not going to effectively be better than 20. population rapidly approaches that of the source population when the number of

20 randomly selected the source population's gene the source population diversity. diminishing returns at least in establish a population since additional founders do not contribute substantially more genetic variability.

Basenji Club of America, Inc. BULLETIN - 22

So, where did the number "50" come from?

There seems to be confusion between effective population size and number of founders. This is an easy mistake to make and often discussions slip back and forth without clearly delineating what is being referenced. I admit that I have been guilty of this myself.

breeding individuals in a population that contribute genes to succeeding generations. The "founder population who are the ancestors from which the foundation of the population. These are two meaningfully different genetic parameters.

M.E. Soulé (1987) calculated a minimum effective population of 50 individuals with a generation interval of greater than 10 years for the healthy persistence of a population for up to 100 years, allowing for continual reduction of genetic variation over time.

It is the lack of understanding of the difference between the recommended minimum current effective population size of 50 versus minimum number of

original new population founders that has lead to the misinformation in BCOA's above cited letter to AKC.

founders into the Studbook over the past the 2008 agreement permitting native December 2018 to be registered in the 2020.

add approved founders for 10 more years.

that 50 was the minimum founder number genetic research and technology have now provided us with a more accurate an accurate and up-to-date understanding of the science behind population

References

Probability of Small Populations of

Populations for Conservation.

Pineywoods in the 21st Century. In: From Pineywoods Cattle Registry and Breeders