

Landraces

This wonderful piece was posted on CANGEN. To its writer I apologize for not getting full information!

I was invited by an English Shepherd colleague to share some comments about livestock breed conservation as affects rare breeds and maybe not so rare breeds of dogs. This may be a useful outside-the-box approach to canine genetics, or it may not be useful to you at all. Obviously there are differences between livestock and the dogs who work them, but perhaps there are more similarities than you might think.

My experience comes from 12 years as program coordinator of the American Livestock Breeds Conservancy (ALBC), the U.S. nonprofit organization which protects genetic diversity in domestic animals through the conservation of rare breeds in ten species of livestock and poultry. Following is a short summary of three main points in A Conservation Breeding Handbook (1995) I co-authored with Phil Sponenberg. (For information on ALBC or on the Handbook, consult www.albc-usa.org or call 919-542-5704 in Pittsboro, North Carolina, USA).

1. The significance of breeds: A true breed, in the genetic sense, is a significant agricultural resource because it is predictable genetic package for farmers and animal breeders. Stefan Adalsteinsson refers to the breed as a genetic heritage of survival, meaning that each breed's unique history is reflected in its genetic makeup.

When I became an ES owner and involved in the breed, I was surprised to find that many dog geneticists were eager to throw away the breed concept, finding it hopeless corrupt. I think this assumption results from only looking at corrupted breeds. In fact, conservation of the distinct, true breeds within a species is essential to the survival of the genetic health, breadth, and utility of that species.

There are four kinds of livestock breeds in North America: landraces, standardized breeds, industrialized strains, and feral stocks. The first two are of relevance here. Almost every domestic animal breed started as a landrace. The landrace is generally a local population that is consistent enough to be called a breed but more variable than a standardized breed. In livestock, landraces have been shaped by founder effect, geographic isolation, and environmental adaptation as well as by breeders' goals. Landraces tend to be more consistent in complex characteristics than they are in appearance, though they are still unique enough to be distinguished from other breeds. Landraces generally lack the tight organizational structure that people associate with standardized breeds.

It is very common for people unfamiliar with landraces to deny their existence as breeds, to 'improve' them through crossbreeding until they are nearly extinct, and to even try to destroy them, such as the U.S. government attempting to kill all of the Churro sheep owned by the Navajo people in the 1930s and giving them improved breeds instead that could not survive in that extreme environment.

Standardized breeds are what most people think of when they think of breeds; in fact, standardized breeds are the only kinds of breeds that many people recognize as breeds. Standardized breeds began as landraces but were developed further when a group of breeders agreed upon a standard, or definition, and bred towards this ideal. As a result, uniformity and predictability were increased and diversity was reduced. There are generally written records, a registry (or more than one), and a breed association, all of which serve to isolate the breed genetically. The mindset in standardized breeds is that there is a single ideal to

which all breeders should direct their intentions. Often this ideal is the founder male (ie. Justin Morgan of the Morgan breed).

Most landrace breeds are now becoming standardized breeds. While there is the danger of loss of diversity in the search for greater uniformity and organization, there may also be more potential for conservation. What's essential is that breeders of landraces and standardized breeds alike recognize that there is always a balanced between the pull of uniformity and the need for diversity.