

Where Do Llamas Come From?

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1. During the last 22 years, I have carried five passports. All of these have been stamped with either entrada Bolivia, or salida Peru. Last year, I logged 250,000 miles on three airlines.
2. My South American odyssey began in 1975 when I began importing llama and alpaca wool from the woolen mills of Arequipa, Peru.
3. This slide show is a work in progress, which I would like to invite all of you to contribute too. It is designed to show you what llamas and alpacas actually look like in their country of origin. I have asked experienced South American travelers to help me put this show together, rather than rely on my own experience. I would like to thank, Susan Tellez from Camelidos Chilenos Ltda. and Jim Mitchell from Pan American Alpacas for their beautiful photographs from Chile, Kurt Burrel for photos from Bolivia, Brad Sprouse for photos from Argentina, and Kay Sharpneck on recent photos from Peru.
4. According to normally reliable sources, 67% of all llamas in the world come from a single country, the poor land locked republic of Bolivia.
5. 90% of alpacas come from Peru.
6. Unless you have traveled to Bolivia, you really don't know what llamas look like.
7. Unless you have traveled to Peru, you can't really say what a typical alpaca looks like either.
8. The purpose of this presentation is to help you identify what a true llama and a true alpaca look like. This has enormous significance in any discussion of species purity for the purpose of registration, establishing a breed standard, or ones own breeding program.
9. Let's take a giant step back and take a macro view of this fascinating subject.
10. According to Maximo Gamarra's census, there are 2.5 million llamas in Bolivia, 1 million in Peru, 85,000 in Chile, and 75,000 in Argentina.
11. It is interesting to note, that after 22 years of intensive breeding, there may be 109,000 llamas in the United States, though these ILR statistics are somewhat misleading since so few deaths have been reported to the registry. At any rate, its probably fair to say that the U.S. and Canada have as many camelids as Chile or Argentina.
12. Peru has maintained a virtual monopoly on alpaca production. 90% of all alpacas come from this single country, while only 10 % come from Bolivia.

13. It is interesting to note, that prior to Bolivian independence in 1825, Bolivia was referred to as "Lower Peru," and Peru was referred to as "Upper Peru." If you ask most llama or alpaca breeders where llamas come from, they will probably tell you, Peru. While in fact, only 28% of all llamas come from this country.

14. Wild camelids, the ancestors of the llama and the alpaca, are found mostly in Argentina.

15. It is interesting to overlay the historical population range of the guanaco with the current camelid producing regions. This explains quite graphically why the short woolled llamas of Southern Peru, Northern Chile, and Argentina look the way they do.

16. When I worked at La Raya, Peru in 1980, I took 360 photographs of llamas. Over ten percent of these had obvious wild type characteristics despite the fact that guanacos had not populated the region for nearly 100 years.

17. The total llama population in South America is about 3.7 million, compared to 3 million alpacas, 575,000 guanacos, and 160,000 vicunas.

18. It will probably come as a surprise to most of you, that the vast majority of llamas in the world are medium to long woolled.

19. After spending much of the last 4 ½ years in Bolivia, it is probably fair to say that about 80% of all llamas in Bolivia are medium to long woolled.

20. Most of these are long woolled.

21. Even pack llamas.

22. In Peru and Chile, I would estimate that about 25% of llamas are long woolled, 25% medium, and half short woolled.

23. This is most obvious at expo ferias, where show organizers and veterinarians make the somewhat artificial division of long and short woolled llamas.

24. At shows in Bolivia, there are two obvious classes, like these heavy wool females.

25. Here is the 1995 national and reserve national champion.

26. I imported both of these females. The Champion weighs 330 pounds, and stands 42 inches at the withers, and 5 foot 10 inches at the pole.

27. The Reserve Champion is 44 inches at the withers, 350 pounds, and stands 6 feet tall.

28. Here are entrants from the ccara, or meat class, in Bolivia in 1997.

29. This is the champion juvenile male.

30. And the overall champion ccara.

31. Compare these champions with the long wool champion and ccara females.

32. In the Aymara language, a long wool llama is called a tampuli. These are long wool males.
33. The 1996 Champion male.
34. And tampuli females.
35. So-called "suri" llamas occur in both North and South America.. It appears to be firmly fixed in the llama genotype, as we see in this Peruvian male from 1980.
36. Or this Chilean from 1997.
37. At the Bolivian nationals in 1996, the judges have made a separate class for this fine wooled llama. He was awarded a special prize, because there was only one animal in the class!
38. At shows in Peru, there are large classes of short wooled llamas. It's probably fair to say that the long wools are more like medium wool in Bolivia.
39. Llama imports to the United States total only about 2,500 females and 1,300 males, for a total imported population of 3,300 head.
40. Out of a llama population of 109,000 animals, only 3% have been imported from South America. These handful of imported llamas offer an essential component to the well being of our gene pool.
41. In 1975 when I first began raising llamas, I was the youngest member of the American Association of Zoological parks and Aquariums. AAZPA maintained the first llama registry. The International Species Inventory System, or ISIS, kept track of all captive wildlife in US and Canadian zoos. According to ISIS there were only 600 llamas in zoological institutions in North America, and about 60 alpacas, most of whom were not breeding.
42. Even including the large privately held herds in 1975 like, Catskill, Natural Bridge, or the Via and Bermann herds, brings our initial llama population in the US and Canada in 1975 to only 1,100 - 1,200 llamas.
43. This is a very small gene pool which has increased one hundred times in 22 years.
44. Any distinction the CLRC makes between what is termed foundation stock, or pure bred (i.e. domestic) llamas, should take this into account. Whether you like them or not, we need imports.
45. If you need a template of what a llama is for a breed standard, it should describe a llama from Bolivia.
46. If you require a template of what an alpaca is, it should describe a dense, crimpy, white huacaya from Peru.
47. On a macro scale, this is what llamas and alpacas really look like. Here we see the Grand Champion wooly llama, huacaya alpaca and suri alpaca from the 1995 Bolivian national expo feria.

48. This makes your colored Chilean alpacas a valuable resource. Adding the ten percent of Peruvian alpacas together that are colored with the 35% of Bolivian, and the majority in Chile means that only 12% of all alpacas in the world are colored.

49. In South America, most llamas are only about 38 inches tall to the withers, and 240 - 260 pounds.

50. Two-thirds of all llamas in the world fit into this template.

51. If you grow up a baby from two South American parents that has been born in the United States, they will probably reach 40 - 42 inches to the withers and weigh 350 - 400 pounds.

52. South American llamas are human, or perhaps I should say, lady sized. They look you in the eye. They have probably evolved to be a relatively small ruminant due to the lack of forage in Bolivia. Look at this landscape in the department of La Paz, and tell me what there is to eat?

53. The answer is . . . nothing. Llamas live on about 5% crude protein for 6 month of the year, and virtually nothing the other six months.

54. The situation is no better in Northern Chile.

55. Though in Central Chile, and parts of Southern Peru where there is more rainfall, you will find "green valleys" like this one. Typically llamas are allowed to graze for three or four hours a day, and then herded off into the dry hillsides to nibble on rocks and lichen.

56. This explains why European livestock have never flourished here, even after 400 years of adaptation. Note how small these full grown sheep are.

57. And these full grown bulls.

58. Even the coarse paja brava grass is too valuable to allow llamas or other livestock to eat. Instead, it is used to thatch roofs.

59. Also note the absence of trees in the highlands. I must admit that I have been amused by proclamations by back country llama packers who have never traveled to South America that their 47-50 inch tall pack llamas are the "true" llama. Please note that there are no down falls to step over in the altiplano.

60. The fact is that most pack llamas are woolly llamas, since most llamas are medium to long wooled.

61. Both man and beast are worked to the point of exhaustion in the highlands. It does not matter if a llama is short, medium or long wooled. It is used first as a source of meat,

62. second as a source of fiber,

63. and third as a beast of burden.

64. In recent times, the 2 ½ ton truck has replaced the llama as, "The truck of the Andes."

65. As a young man I was fortunate to see the salt caravans exchange rock salt for maize, like this one reported on by Terry West in Llama World magazine in 1982.

66. These photos from the late 1970's are so old I shot them in black and white.

67. This way of life is all but gone, and with it the use of llamas as a beast of burden, though you can still occasionally see a pack string like this one in the Colcha Valley in Southern Peru on a much shorter trek than the historic routes described by Mr. West. Note the three types of llamas in this picture; one with wild type coloration, a long wool, and a short wool.

68. This does not mean that a well bred dedicated pack llama is not a thing of beauty. It is to me. The best pack llamas in the world are probably bred in North America. However, this is not the true llama any more than a mule is a horse. It is a very recent experiment in selective breeding that has adapted the South American camelid to the timber country of the Pacific North West.

69. Many of you have asked if you can tell the difference between a Bolivian, Chilean, and Peruvian llama. The answer is, maybe.

70. While a national character may have more to do with the personal taste of the exporter, and what was readily available to him, than actual differences between the countries, it is probably fair to stereotype South American llamas something like this:

71. **BOLIVIA**

Personality
Fiber quality
Color
Long Wool

72. **PERU**

Tall
Double coat
Distinct Short and Long wool types

73. **CHILE**

Tall
Fiber quality
Short and Long Wool

74. **ARGENTINA**

Wild Type Characteristics, except in two well established breeding programs like this one in Cordoba. . .

75. . . .or this one in Rio Cuarto.

76. It is probably fair to say that all four South American countries have above average maternal ability. A virtual state of nature has ensured vitality and milk production in these mothers.

77. Most of the size difference you may have noticed between the countries has more to do with the quality and nutrition in each region, rather than any inherent difference between llamas in each country.

78. For instance, the pastures of Southern Peru in the rainy season look quite a lot more inviting . . .

79. than the desert of Northern Chile, or the highlands of Bolivia.

80. It is even difficult to say if a llama or alpaca actually came from one country or the other. Camposinos will often barter for services rather than pay cash they don't have. In the Aymara language, this is known as troike.

81. Contrabondo in Spanish means To Smuggle. This is openly discussed, and in great detail, in the South American press. This newspaper article from July 1987 details the smuggling of llamas from Bolivia to Chile.

82. As recently as 1995, the head of the economic section of the US embassy in La Paz, Bolivia told senior USDA-APHIS officials he saw 200 llamas being driven across the border into Chile. Llamas are shipped weekly for slaughter from Oruro and Sajama in NW Bolivia to Arica, Chile, a fact which is quietly overlooked by both Ag Canada and USDA.

83. This does not make any exporter a smuggler. It simply means that Aymara and Quechua speaking camposinos barter with each other for services. Troike is a way of life.

84. Any one of us in this room could walk into a large herd of llamas or alpacas in any of the South American countries and pick out a beautiful animal, and have no idea where it actually came from.

85. When Pizzaro conquered the Andes in 1532, an artificial line was drawn between traditional linguistic groups. This left Aymara and Quechua families divided by an artificial border. It is useful to think of the Aymara and Quechua speaking camposinos as members of an Indian reservation. First cousins and extended family members trade with each other throughout this reservation with little significance given to whether they carry a Chilean, Bolivian or Peruvian passport.

86. One reason that Chilean llamas have become so popular is that they are probably a cross between a Bolivian and Peruvian. This hybrid vigor is also seen in our own North American/South American cross.

87. I have four unrelated Chilean males and five unrelated Bolivian. It is relatively easy for me to maintain a separate Chilean and Bolivian breeding program. However, as a nation, with only 3,300 direct imports, it would probably be wise for us to start intentionally crossing our South American llamas within the three main nationalities.

88. The same is true of our Peruvian, Bolivian and Chilean alpacas.

89. Bolivia has the lowest Gross National Product of any country in South America. The average Bolivian earns only \$600 a year, compared to \$1,170 in Peru, and \$2,560 in Chile. The camposinos who actually own llamas and alpacas earn only about \$150 a year. Their average life expectancy is between 40 and 51 years of age.

90. Campo in Spanish means field, a camposino, is a field worker. This is the polite way to refer to the Aymara and Quechua speaking people who actually own llamas and alpacas. My fellow breeders in both the U.S. and Canada refer to camposinos as "Peasants" or "Indians." Both terms have ugly racial and Colonial overtones in South America and should be avoided.

91. About 50% of all Bolivians are pure blooded Aymara or Quechua, compared to 39% in Peru, and 2% in Chile.

92. The same people who bred the llama from the guanaco, and the alpaca from the vicuna,

93. selectively bred 250 species of corn from a wild plant, and 400 kinds of potato, each specialized for a different altitude and micro-ecosystem.

94. The screening and listing process used by our own registries may itself be racist, since it assumes, wrongly, that Aymara and Quechua speaking men and women of color cannot and do not keep their herds species pure. This is a common misconception among US and Canadian breeders, and is almost entirely false.

95. The reason is simple. Huarizo wool has almost no economic value. While alpaca wool in the grease has sold for as much as \$14.50/kg, huarizo wool sells for about \$1.60 a kilogram, if it can be sold at all.

96. You cannot possibly fool a Bolivian or Peruvian wool sorter into thinking that huarizo wool is alpaca. It lacks the density and crimp of alpaca that most of us can identify.

97. Even a fleece without crimp like this gray Peruvian can be distinguished from a huarizo by its staple length and tensile strength. (Huarizo wool breaks in two when you snap it between your fingers, and alpaca wool will not).

98. Even the best llama wool has guard hair that takes a full day to remove from a single fleece by hand, which adds substantially to the cost of processing.

99. None the less, international standards have recently allowed the blending of llama and alpaca fiber provided the llama fiber is of suitably low average fiber diameter. This may over time have the effect of increasing the value of llamas and llama wool for the producer.

100. In my experience, it is much more common to find hybrids in American, Canadian, and European zoos than it is in Chile, Bolivia, or Peru. Here we see an alpaca breeding a guanaco llama at one of the worlds great zoos, London's Hyde Park.

101. In South America, hybridization if it occurs, is usually intentional, as in this herd of alpaca llamas in Argentina. The virtual monopoly of Peru on alpaca production has forced some of these marginal countries to try and breed a 7/8 or 15/16 alpaca from

an initial alpaca/llama cross. This takes three to four generations, or nine to twelve years.

As Jim Mitchell said, who took this picture, "What they really need, is a good male."

ALPACAS

102. There are about 3 million alpacas in the world. 2.7 million, or 90% of these come from Peru. The Peruvian national herd is about 90 percent white.

103. In contrast, the Bolivian herd of some 300,000 alpacas, is about 65 percent white, with the remaining 35% being colored alpacas.

104. I do not have any statistics on Chile, though it appears that the vast majority are colored.

105. According to ARI statistics, 3,060 huacaya alpacas have been imported to the United States, and 902 suris, for a total imported population of 3,962 head.

106. Fifteen percent of all imports have come from Peru compared to 16% from Chile, and only 4% from Bolivia, like this white huacaya.

107. This compares to the national population of 11,558 alpacas. Currently, one alpaca in three has been imported directly from South America.

108. Far from alarming me, this simply means that we are at a very early stage in the development of the alpaca industry. Remember, that we have 109,000 registered llamas in the United States, fully ten times the number of alpacas, and we still have a healthy llama business.

109. Provided we are willing to cross breed these alpacas together, and not get hung up on country of origin, we have much more genetic diversity than we do in the llama population.

110. If we don't cross breed our alpaca population, we will increase the likelihood that lethal recessive genes like this case of polydactylism, will be expressed. Most of the alpacas imported to the United States come from the same few large collective farms in Southern Peru. Most of our Chileans come from the same geographic region in Northern Chile. And there have only been two shipments of Bolivian huacayas. While we have a rich collection of genetic material as a whole, no one country has enough diversity to be closely bred.

111. Many of you have asked me at past conferences, sales and shows, what you should do with your Chilean alpacas. By all means keep breeding them! All you need is a good dense, crimped male, and in three generations you will have one of the best colored alpacas in the world.

112. Based on my experience in Bolivia, the first generation cross of a colored alpaca to a dense white male will give you about 80% of the males crimped.

113. Density is much harder to introduce into your herd, and you will probably get regression to the mean where the babies fleece is half way between the sire and dam. This is why I say that significant progress takes three generations, or nine years.

114. Density and crimp are often mentioned in the same breath. They are in fact separate characteristics. You can have incredible crimp without density,

115. or you can have density without crimp.

116. The great alpacas have both. Here we see the 1995 Bolivian Grand Champion who was awarded the Grand Champion over the winners of the white and brown class.

117. Bolivian alpacas appear to have more leg and facial wool than Peruvian. Notice the connection between the top knot, cheek wool and neck wool. I think this is probably due to the fact that the camposinos are so poor in Bolivia that they have tried to maintain leg and face wool in their herds.

118. The leg wool of this beautiful fawn suri may be of second quality, but is still worth up to five dollars a kilogram. When you only make \$150 a year, a few extra pounds of fleece is a precious resource.

119. My yearling Bolivians have been producing 7.5 - 8.5 pound fleece weights. This is twice as much as many adult Chileans.

120. Adult Bolivian huacayas are producing 12- 14 pound fleece weights, which is similar or superior to the best Peruvian huacayas.

121. At IVITA in La Raya, Peru, the veterinarians selected against alpacas with excessive face wool for fear the alpacas would become wool blind. This has become something of a breed standard at expo ferias (shows) in Peru.

However, these alpacas will seldom have much leg wool coverage.

122. After intentionally trying to blend the top knot and cheek wool on my own alpacas, it appears that the genetic code for face wool and leg wool are probably different loci on the same gene, because when you get one, you usually get the other.

123. In other words, if you select against face wool, you are probably whacking 3-4 pounds off your fleece weight.

124. I have found that it is relatively easy to leave a vision slit open in front of the eyes. If wool still blocks your animals vision, it is quickly remedied with a pair of clippers.

125. On a macro scale, the best alpacas in the world probably come from the large collective farms in Southern Peru. Here you can see thousands of dense, white, crimped huacaya alpacas and nothing else.

126. Rural Alianza, near Macusani, Peru is perhaps the best known of these. Here you will see a collection of animals who all possess exactly the same type, the hall mark of any breeding program.

127. When I worked at La Raya in 1980, IVITA was still trying to maintain a gene pool of natural alpaca colors. Here you see a colored suri baby that was born out of a colored huacaya dam. On collective farms, it is more common to see alpacas selectively bred by color than by breed. This may tell you something about where colored suri alpacas come from .

128. Well bred colored suris can still exhibit excellent suri character. Here we see the third place suri from the 1995 Bolivian nationals. This black female beat out many beautiful whites.

129. I realize that this is tumultuous time for your association as it comes to terms with the prospect of free trade with the United States and Chile. No matter what protectionist policies either your registry or federal government put into place, you cannot and will not change the fact that most alpacas in the world have extraordinary density and crimp compared to your initial foundation stock. Failure to welcome these animals into your registry will guarantee that the CLRC stands for an inferior breed of alpaca. This does a great disservice to the many fine breeders I have met in Canada.

130. Don't be afraid of the future. You can breed the best alpacas in the world by crossing a dense, crimped male to your lavish and richly colored Chileans.

131. Neither do you need to fear American llamas. Exporting a llama from the US to Canada is like bearing a child. It takes nine months to give birth!

132. Neither do you need to fear an influx of llamas from Chile. There are so few export quality llamas and alpacas in Chile that this will be a self limiting population.

133. Recent efforts to begin a Chilean llama and alpaca registry like ACASUR will help put an end to the contrabando between Bolivia and Chile. In fact, ACASUR may be the most stringent registry in the world. A veterinary exam is required for every llama or alpaca entering the registry, not just imported parents, but also their domestic production.

134. I began raising llamas in 1975. We called them llamas, but really, they were guanaco-llamas. This was my first llama, Le Beau.

135. I love all kinds of llamas, from the Cadillac of back country packers, to the suri fleeced show llama I have been breeding since Federico slipped into my arms from his mother's womb fifteen years ago.

136. I enjoy the challenge of breeding a pure South American llama. After 22 years of breeding llamas, I would be bored unless I made a challenge for myself.

137. Like this ten-sided stone from the foundation of an Inca temple in Cuzco, Peru, there are many facets to the llama business. Whether you raise a back country pack llama, cart puller, huacaya alpaca, suri alpaca, Bolivian, Chilean, or Peruvian llama, or North American show llama, we are all part of the same foundation.

138. We have all been cut from the same stone. The cordillera of the Andes.

139. No matter what kind of llama you raise, remember to say what's good about your llama, not what's bad about someone else's.

Thank you for your hospitality. And remember, we all raise llamas, no matter where they come from.