# THE FJORD FOAL SHORTAGE - WHY IT MATTERS AND WHAT WE CAN DO

**By Solveig Watanabe**

For a few years now there has been major concern in the world-wide Fjord community about the lack of foals being born. It has been the topic of one research thesis in Norway, and continues to be discussed in the European countries, at FHI meetings, and in the Norwegian membership magazine, Fjordhesten.

What it all comes down to is that there is a recommended number of foals needed to maintain a genetically healthy population. In 2010, Jenny Johnson and Janne Seilen (current president of Norges Fjordhestlag) completed a master's thesis they co-authored on the genetic health of the Norwegian Fjord Horse. Based on their research, in a presentation before the Fjord Horse International General Assembly of May, 2010, they recommended that a minimum of 200 foals be born EACH year in order to maintain genetic viability in a population of 5,000 - 6,000. This is approximately the size of Fjord populations in both Norway and North America. By contrast to this recommendation, in 2012 there were 81 foals registered with the NFHR (USA) and 51 in Canada. In 2013 there were 64 foals registered with the NFHR and 20 in Canada. A few of these foals are registered in both countries which further reduces the actual numbers. In Norway, their stallions covered 203 mares in 2013 - which will very likely put them short of the 200 mark for 2014.

**Why does it matter?**

We all know (or should know!) that Fjords are one of the most inbred horse breeds. This is what gives Fjords their remarkable similarities and consistency. At the moment Fjords are still a very healthy and hearty breed - partially due to Norway's insistence of breeding only the highest quality individuals and aggressively culling from the genetic pool. Any horse exhibiting weakness is not allowed to reproduce.

While there isn't anything we can do about the genetics and breeding of the past, we should definitely be looking to the future and be monitoring, if not doing something, in regard to maintaining a healthy and genetically viable population.

There are many reasons to be concerned about genetic viability and plenty of scary stories about what happens when breeders are not diligent: when they focus so strongly on a specific trait that they disregard the others, unintentionally compromising the genetic health of the population. Almost everyone knows of the genetic issues found in Quarter Horses and Paints, for example. But, there are less obvious issues that we may be facing in the future. There is a phenomenon called "inbreeding depression" in which deleterious mutations have the possibility to be copied when close relatives are bred together. This can shorten an individual's lifespan. This is a relatively new issue being studied by genetic scientists.

I truly feel that the Fjords have not, until now, been in danger of this or other kinds of problems. There have always been safeguards and a continuous flow of new genetics to keep our small and relatively inbred population going strong. However, if we continue on our current path and don't use the new scientific information available, we may have issues cropping up in the future.

**What can be done?**

Obviously there has to be a balance between supply and demand, economics and the number of Fjords versus the number of horses in general. I'm not advocating that everyone go out and start breeding just to increase the population count. Breeding is a

fairly expensive proposition and each new horse should be a wanted individual. When you choose to breed, you choose to bring another horse into the world and it is your responsibility to make sure it is cared for - either with you or in a new quality home.

However, for those interested in breeding, who have the resources and time to commit, and who care about the Fjord breed as a whole, I urge you to consider breeding. But, not just any breeding - I'm urging everyone breed based on quality, health, and with at least a slight knowledge of inbreeding coefficients.

**Determining inbreeding coefficients**

An inbreeding coefficient is the percentage that a horse is related to itself. There have been a number of studies done on the overall inbreeding percentages of the Fjord breed, and some European countries track the inbreeding coefficients of their breeding stallions, but these are not of much use to the individual here in North America. It is not very difficult to find an inbreeding calculator on the internet and plug in your horse's pedigree (The more generations the better!!! I've personally done 8 - 10 generation calculations on my stallions and on some of my mares). If you are looking at breeding, you can plug in the potential foal's pedigree.

Even if you don't want to go to the trouble of calculating inbreeding, it doesn't take a lot of time or skill to examine the pedigrees of potential mares and stallions and determine if they are closely related. The registries have rules and regulations about how close individuals may be related and still be registered, which is good, but I believe that breeders can do even more to protect the breed as a whole and insure that our pedigrees are as diverse as possible. If we had a lot of foals, this may not be as big of an issue, but when we are already breeding below scientifically recommended numbers, every little step towards diversity is a necessity.

For interest sake, I examined the pedigrees of the NFHR stallions who produced the 64 foals in 2013 (some are also registered with the CLRC). There were 35 stallions, of which 18 produced more than one foal. The highest number of foals produced by one stallion was 5 (which means that that one stallion is responsible for almost 8% of foals born last year!). 19 of the stallions were over 11 years of age, 10 over 16. This doesn't sound too bad from a diversity standpoint, but when looking at the 5 generation pedigree, 12 of the stallions are decedents of Gjestar, 14 go back to King Harald, 16 are descended from Grabb. Of course, these are very nice stallions, and there is nothing wrong with these stallions or having them in the pedigree... but you can see from a genetic standpoint that it is something to be mindful of. Again, we can't turn back time and undo the breeding of the past, but we can take all this into consideration when breeding for the future.

**The market**

As I mentioned this is not just a North American phenomenon. Norway and Europe are watching the population numbers, inbreeding coefficients, and monitoring the breed's overall health. They are looking at the average numbers of buyers and making plans to strengthen the market.

We all know that when foals are born, they have to go somewhere. Europe has a long tradition of keeping, breeding, and even selling only the best Fjords to breeding, performance and pleasure homes - Fjords unfit for those markets are destined for slaughter. While that method of breeding selection is abhorrent to many on this side of the Atlantic, it does make the problem of unwanted horses fairly non-existent. My personal feeling on marketing and selling horses is that when I have

produced a horse of good quality (able to pass breeding standards, etc), who is sound, raised well and trained well, there is a market for that horse. While there are sometimes unforeseen circumstances, the majority of horses out there who can't find good quality homes are in that position because of lack of quality, training, or temperament. If we all would make breeding decisions based on these factors, we would find it much easier to market and sell horses.

**But what if I'm not a breeder?**

There are things to be done to help the Fjord population even if you are not putting foals on the ground. Think about the impact of a good horse out in the world - one never knows who will be influenced to get a Fjord in the future because they saw yours winning ribbons or doing therapy work (and being adorable doing it!).

If you are in the market for a new Fjord, try talking to a breeder about their stock and look into purchasing one who meets breed standards - who has been thoughtfully bred, owned, and cared for. Every horse purchased from a reputable breeder makes room for another quality horse to be put on the ground.

**In Conclusion:**

In today's modern age we have the luxury of understanding the problems associated with too much inbreeding, how conformation relates to soundness, how traits are passed from parent to offspring and how to breed quality, healthy individuals. We know we need certain numbers of foals to keep the genetic pool fresh and flowing instead of stagnant and eventually deteriorated. With the internet, the evaluation systems, and access to pedigree databases world-wide, there isn't a lot of excuse for anyone to be still breeding in the Stone Age.

I believe that almost everyone who owns a Fjord loves and values them and feels strongly that the Fjord breed is worth preserving. If we can take that passion a step further and each assess what we can do to help out in this time of genetic instability, we will all be able to enjoy healthy and hearty Fjords far into the future.

**Editor's note:** CFHA member Solveig Watanabe is the owner/operator and main trainer for Olivia Farm in Ford, WA, USA.