

## **Berner For the Future (BFF) – Project Overview**

### **Project Leadership**

Led by Tony Cathrine Torp and Kjersti Olsen

### **Presenter: Kjersti Olsen**

- Involved with Bernese Mountain Dogs since 1981; breeder since 1996 under the kennel name Hubba Bubba's
- Certified veterinary nurse
- Employed at Agria Pet Insurance
- Has held positions in NBSK's breeding and health committees over several terms
- Co-responsible for completing the RAS (Breed-Specific Breeding Strategy) in 2018

### **Why Are We Here?**

The Bernese Mountain Dog breed faces significant health challenges:

- Over 50% die from cancer, many at a young age
- High prevalence of kidney disease, immune-related disorders, and skeletal issues
- Average lifespan remains around 7 years
- Severe fertility issues: 54% cesarean rate, frequent infertility in females, high incidence of uterine infections, and poor sperm quality in males—even at a young age
- Breeding pairs are difficult to match without high inbreeding coefficients or shared health issues

Sources: Agria Breed Profiles, RAS Berner Sennen, NBSK Health Survey 2016, NBSK Health Registry, NKK, Bernergarde, SLU Research Report on Fertility

### **Genetic Challenges**

- High average genetic inbreeding coefficient (COI): 39.5% in 2023; 31% in Norwegian population (2025)
- Low genetic diversity; large identical DNA segments across individuals

Sources: NBSK COI Mapping 2025, Genomic Diversity and Runs of Homozygosity in Bernese Mountain Dogs 2023

## **Measures Taken**

Over the past decade, several strategies have been implemented:

- Relaxed requirements for HD, AD, and show results to increase breeding pool
- Introduced conformation assessments
- Facilitated use of foreign breeding dogs and imports
- Recommended SH testing for breeding dogs
- Gradually lowered acceptable inbreeding increases
- Established a health fund for biopsies, autopsies, and SH tests
- Promoted longevity: minimum average age of 8 years for breeding combinations
- Enhanced use of health registry and pedigree simulations
- Public stud dog list
- Educational initiatives for breeders, including webinars and meetings

## **Why These Measures Are Insufficient**

- Current measures slow further genetic loss but do not reverse it
- Genetic progress requires diversity, which cannot be created without introducing new bloodlines
- All Bernese dogs carry some predisposition to common breed-specific diseases
- Selective breeding for specific traits (e.g., HD, AD, SH, DM) may yield short-term gains but risks further genetic depletion

## **Ethics and Legislation**

According to NKK's ethical guidelines:

“The goal of dog breeding is functionally healthy dogs with breed-typical conformation and temperament, capable of living long, healthy lives.”

- Continuing to breed Bernese Mountain Dogs without effective health improvements is ethically and legally unacceptable

- Norwegian Animal Welfare Act prohibits breeding animals with heritable traits that negatively affect physical or mental function
- Additional regulations expected in 2026

### **Next Steps**

Due to health and fertility issues, genetic COI data, ethical concerns, and legal requirements, the Norwegian Kennel Club (NKK) has decided to include a crossbreeding program in the Bernese Mountain Dog breeding strategy.

- Supreme Court ruling (10.10.2023): Breeding Cavalier King Charles Spaniels banned under Animal Welfare Act §25

### **Responsibilities**

<b>Role</b>	<b>Responsibility</b>
NKK Board	Develop breeding programs and ensure legal compliance
Clubs	Implement, monitor, and support breeding programs; liaise with breeders
Breeders	Follow the breed-specific breeding program as mandated by regulations

### **Goals of Crossbreeding**

- Increase genetic diversity and reduce COI
- Improve health and reduce breed-specific diseases
- Preserve breed traits: temperament, behavior, and original purpose
- Mitigate signs of inbreeding depression (e.g., fertility and immune issues)

Quote:

“Crossbreeding, when done correctly, should be viewed not as a last resort, but as a valuable strategy for breed preservation and health.” – Carol Beuchat, PhD

### **Choosing Breeds for Crossbreeding**

- Select breeds with similar traits and good health
- Avoid breeds with similar genetic issues (e.g., cancer-prone breeds like Golden Retriever, Labrador, Rottweiler)
- Prefer breeds with high fertility and low birth complications
- Coat color/type is not a priority
- Use multiple breeds (e.g., 3) for broader genetic input
- Prefer breeds with similar behavior or neutral/social temperament

- Health and fertility data will be sourced from insurance statistics, NKK Dogweb, breed clubs, research, and testing

### **Selecting Individuals for Crossbreeding**

- Must meet health requirements
- Preferably older with reliable health data and previous litters
- Good temperament is essential

### **Selection from Crossbred Litters**

- F1 generation may look atypical—trust the process!
- Greater variation expected in F2 generation
- Shyness and aggression are undesirable in any generation

### **Crossbred Litters and NKK's Appendix Registry**

- Goal: minimum of 5 crossbred litters annually
- NKK's new appendix registry (ANO) starts 1 September 2025
- ANO dogs have same rights as NO (FCI) dogs, except CACIB eligibility
- Can be used in breeding if program requirements are met
- Eligible for shows and trials

### **Breeding Strategy Model**

- Common model: crossbreed with 2–3 breeds, register offspring in ANO
- Backcross with Bernese 3 times, then re-register in FCI
- NKK prefers a slower return to FCI to preserve genetic input
- Breeding can occur in both registries simultaneously

### **Article Reference: Carol Beuchat PhD**

#### **“The 5 Most Important Things to Know About Crossbreeding” – Institute of Canine Biology**

Key points:

- Use multiple unrelated outcross dogs
- Combine selection with genetic tools (e.g., DNA testing)
- Prioritize diversity early before selecting heavily for traits
- Crossbreeding protects genetic health and breed viability

### **Current Bernese Breeding Strategy**

- Maintain or increase registration numbers

- Promote diversity and recruit new breeders
- More dogs in breeding, fewer offspring per dog (max 30)
- Relax conformation standards to encourage diversity
- Prefer low or no inbreeding in combinations
- Require HD and AD screening
- Recommend SH testing
- DNA testing for COI/genotyping may be introduced

### **Integration of Bernese Breeding and Crossbreeding**

**October 4–5, 2025:** Meeting to discuss breeding program model, crossbreeding breeds, and integration of traditional and crossbreeding strategies.

**Collective Effort:** NKK, NBSK, HAK, BFF, breeders, stud dog owners, club members, and enthusiasts all play a role.

### **Collaboration and the Road Ahead**

- The breed's challenges are global, stemming from a small founder population and closed studbooks
- Genetic bottlenecks have led to the current situation
- Norway aims to lead in animal welfare; new EU regulations expected by spring 2026
- International collaboration is vital for sustainable breeding and preserving the Bernese Mountain Dog

**The more who participate, the greater the impact. We aim for a Bernese For the Future.**