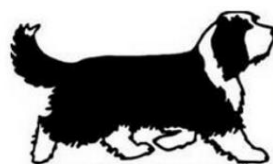




# Breed specific breeding strategy RAS for **BEARDED COLLIE**



Artwork by Doriene McQueen depicting GBCH Bravo of Bothkennar, born 1959.



**SPECIALKLUBBEN FÖR  
BEARDED COLLIE**

Sedan 1971  
Specialklubb under Svenska Kennelklubben



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## INTRODUCTION

### Breeding policy

The special club for the bearded collie (SBC) has the overall responsibility of arousing interest in and promoting the breeding of mentally and physically healthy as well as externally perfect and breed-typical individuals. Hereditary variation is necessary for the breed's ability to survive. Therefore, breeding must be goal-oriented, long-term and sustainable. Sustainable means that it does not lead to deficiencies in terms of health, mentality and function or drains the breed of genetic variation.

Breeding and rearing must take place in accordance with the animal welfare legislation, the Swedish Kennel Club's basic rules, the Consumer Purchase Act as well as breed-specific health programs and the breeding policy drawn up based on the breed standard, with guidelines to support the breeding work, which SBC worked out.

### *Overall breeding goals for the breed*

- Maintain genetic variation, maintain a low inbreeding rate and increase the available breeding base.
- Maintain the breed's good health, which enables a long life without health disorders.
- Maintain a racial mentality.
- Maintain functional exterior and counteract extremes.
- Maintain a good reproductive capacity (genitalia, mating, pregnancy,

puppyhood and care of puppies).

### The work with RAS

The breed-specific breeding strategy (RAS) is an action plan for breeding. It describes both problems and strengths that may exist within the breed and contains the breeding recommendations agreed upon by SBC members. The RAS for the bearded collie was established by the Swedish Kennel Club's breeding committee on 2006-04-26.

SKK's breeding committee issued a statement on the RAS for bearded collies in 2006, with advice on what was appropriate to consider when revising:

#### Statement on RAS for bearded collie

The undersigned has, on behalf of SKK/AK, reviewed the Special Club for Bearded Collies' breeding strategy for bearded collies. We find the strategy well worked out and properly anchored in the club. The following comments can serve as suggestions in your further work with RAS.



- Given the very high inbreeding rate and the declining available breeding base - what strategies do you have to bring in new blood? In which countries can you find unrelated dogs?
- A slightly more detailed account of the population would have been interesting, such as for example for the use of male dogs, the grandchild curves and a table showing the proportion of litters per mating type.
- What is known today about the frequency of nail capsule problems and Addison's?
- What did the health survey give other than comments about the mentality? How perceive owners dogs health?

Färgelanda 2006-04-24  
Anna Uthorn

In 2011, a revision was made with several updates. Among other things, information regarding symmetric lupoid onychodystrophy (SLO) was added following research results from the Norwegian University of Agriculture (SLU) and SBC conducted a targeted health survey to map the prevalence of SLO and Addison's.

Before this revision, in 2018, among other things, the section on the breed's population and breeding structure has been expanded to give a more detailed account and an analysis has been made on the breed's mentality based on MH results, BPH results and the survey that was done on bearded collies' fears in 2014. SBC's breeding policy has also been updated.

RAS has been anchored in SBC's board on 24/09/2018 and RAS was discussed with breeders and members at the breed conference on 10/01/2017 and 10/06/2018 in Strömsholm. After the 2018 conference, the RAS was available on the SBC website and members could email comments. Based on the comments received, the last changes were made in December 2018 when the RAS was sent to SKK for approval.

### ***Evaluation of RAS***

The Breeding Council must continuously report on the development of the breed and how the goals of the RAS are met. The reporting must take place through the appropriate information channel. Every five years, SBC's board and breeding council must initiate a thorough follow-up and, if necessary, start a revision process of RAS. It is then the responsibility of each breeder to make the right decisions taking into account genetic variation, health, mentality and conformation.



## ORIGIN AND HISTORY

The Bearded Collie is probably one of Britain's oldest herding dog breeds. Unfortunately, there is not much documentation about the breed, but a widely accepted theory is that the Bearded Collie is descended from dogs similar to the Komondor.

In the 18th century bearded collies drove cattle from the Scottish Highlands down to southern Scotland and England where the cattle were sold in markets. The shepherds sent the dogs up into the mountains where, barking eagerly, they set the animals in motion. The journey south could take several weeks and when the cattle were sold, the dogs often had to make it home by themselves. There were originally two types, a gray-white that came from the southern border regions, and a brown-white that came from the highlands. Later the two types were mixed.

In 1944, what happened that made the race what it is today, worldwide. Mrs GO Willison ordered a working Shetland sheepdog through a dealer. However, he did not get hold of a suitable sheltie. Instead, he sent a puppy for a bearded collie mated with his own male bearded collie. When Mrs. Willison got the chocolate brown puppy, she assumed it was a mixed breed, but the puppy exceeded all expectations and Mrs. Willison was more than satisfied. Two months later, a shepherd came to visit the farm.

He told me that the dog was a bearded collie. This was the legendary bitch Jeannie of Bothkennar.

Mrs. Willison was eager to have a litter of puppies after Jeannie, a wish that would result in many sorrows and worries. Finding a breed-typical male was next to impossible, but just when she was close to giving up, she caught sight of a lovely, young bearded collie male during a walk. It transpired that the dog was to be rehomed and Mrs. Willison of course immediately offered to buy him. His name was David and he was recorded as Bailie of Bothkennar. All registered bearded collies today are descended from Jeannie, David and a couple more dogs that were added in the years that followed.

The bearded collie came to Sweden in 1960. The first imported dogs came with a returning family who had spent some time in England. They brought the female Aweltun Lass and then imported the male Wishanger Winterberry. Aweltun Lass was also the mother of the first Swedish-born Beardis; Hannibal. Elsa Edgren imported her first beardis in 1964; the bitch Brynhilde of Bothkennar who became a stock bitch at kennel Bifrost.

Maine Lundell brought in the bitch Jayemji Clunie in 1965 and she consequently became a stock bitch at the kennel Farmeren, which is still very active today. Kennels that followed in these early years were Happy Dogs, Stardogs, Jarlabankes, Lässebackens, Ingel-Bert, Bellbreed, Lännaby, Trollfløjten and Hillgrove.

In 1970, ten years after the breed came to Sweden, 66 bearded collies were registered. The following year, the breed association Bearded Collie Group was formed, since 1990 a special club under the name Special Club for Bearded Collies or SBC. The newspaper Skocken came out with it



its first issue in 1972 when the club also held its first annual meeting. In 1973, they held their first special show where Farmarens Tonic became BOB under Carin Lindhé.

In 1974, the club's first working test, prepared especially for bearded collies of thoroughbreds, was carried out. In 1976, the club named Bearded Collie of the Year for the first time, the award was awarded to Farmer's Black Xhibit, who also later became the breed's first obedience champion.

The club's relocation center was added in 1977 and since then has helped bearded collies in need of new homes. Show Beardis of the Year was crowned for the first time in 1982. The first to receive this award was Ch Farmaren's Emily Blue. In 1983 the club started publishing its yearbook and it also organized the first obedience championship, which was won this year by the dog Cesar.

Both enrollment and membership continued to increase throughout the 1970s and 1980s. The club became increasingly active with more special shows, obedience championships, work tests etc. and bearded collies became an increasingly common sight not only on the streets but in the show ring, on the agility course etc. 1992 was a record year with 724 registrations and 2,127 members in the club.

The breed came, as I said, to Sweden in 1960 and was placed in the companion dog group. After just over 30 years, the bearded collie was placed in 1994 in the new Group 1, Herding and herding dogs, when SKK switched to the same group classification as other FCI countries. That division is based more on the historical area of use of the breeds than the old division as more sorted breeds according to current use.

## **BREED POPULATION / BREEDING STRUCTURE**

### **Current status description**

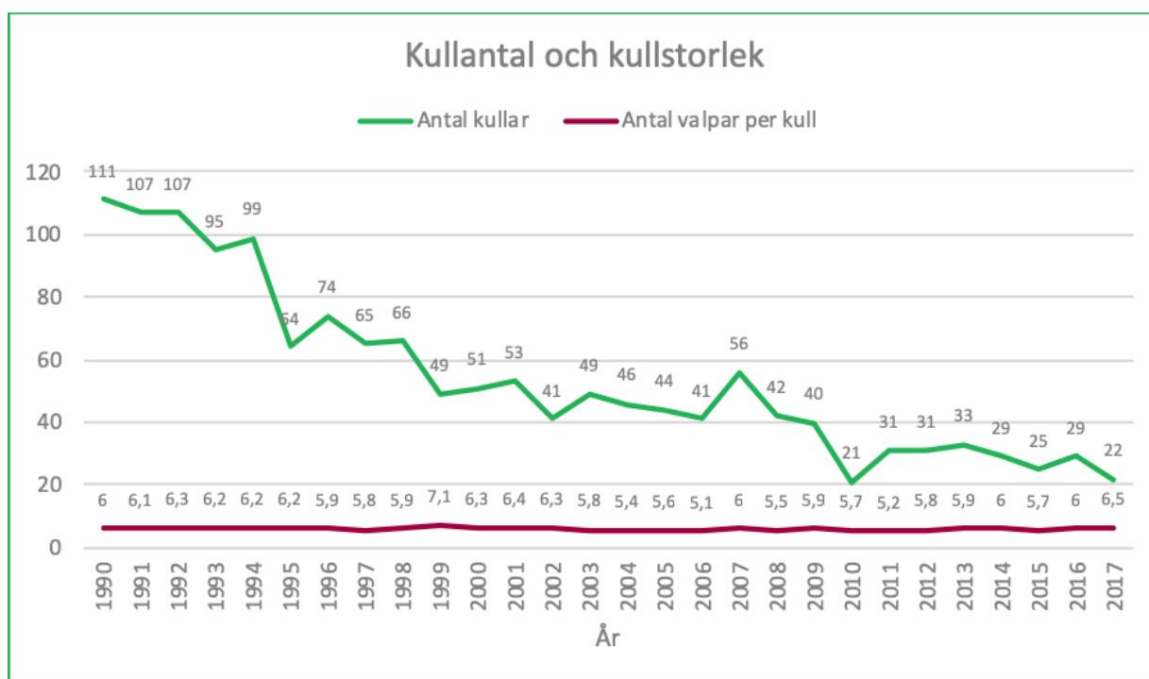
#### ***History population 1995-2010***

The breed shows from 1995, when 75 litters with a total of 431 puppies were registered, a successive downward trend in the number of litters born and thus also the number of registered puppies. In 2010, only 24 litters with a total of 148 puppies were registered. The number of puppies per litter is on average between 5.3 and 6.9. The number of imported dogs was between 1-4 per year until 2004. From 2005-2010, the number of imported dogs increased to an average of 8 per year.



### Current population 2011-2017

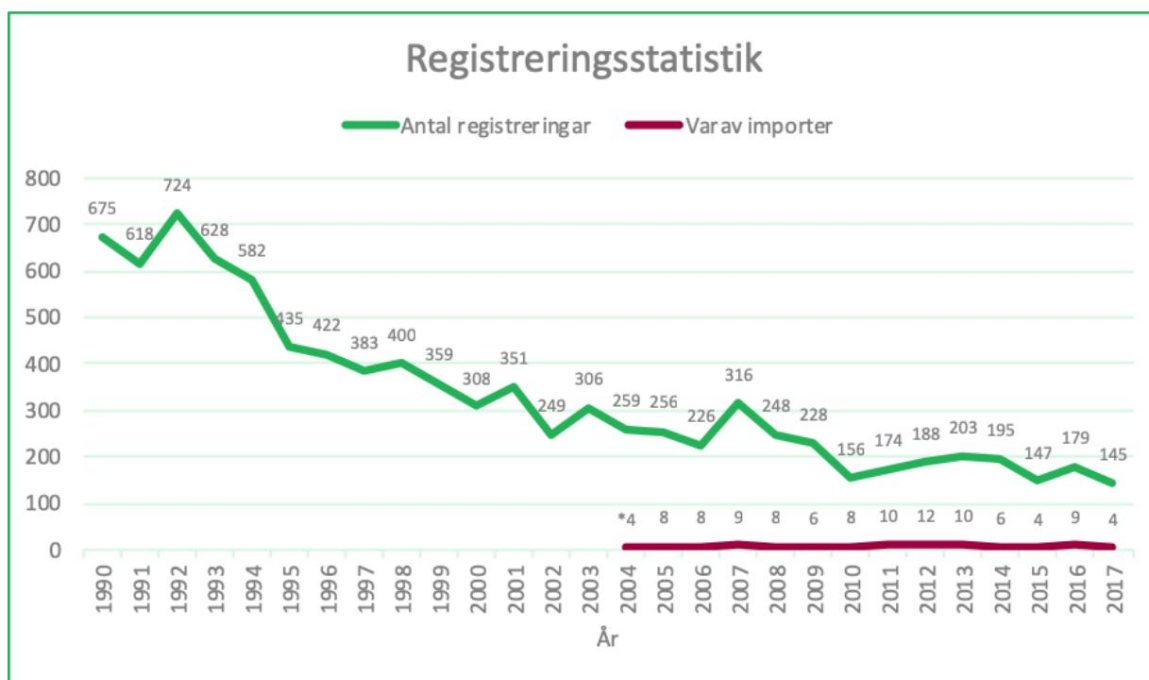
The downward trend in registrations seems to have leveled off with an average of 170 puppies per year. Highest number from 2013 with 193 puppies and lowest from 2017 with 138 puppies. The number of imports has increased slightly to around 9 per year. The number of puppies per litter was on average between 4.9 and 7.1. Viewed over the entire period 1995-2017, there is no trend that indicates a change in the number of puppies per litter.



Source: SKK breeding data

It is estimated that there are 2,500 bearded collies in Sweden today





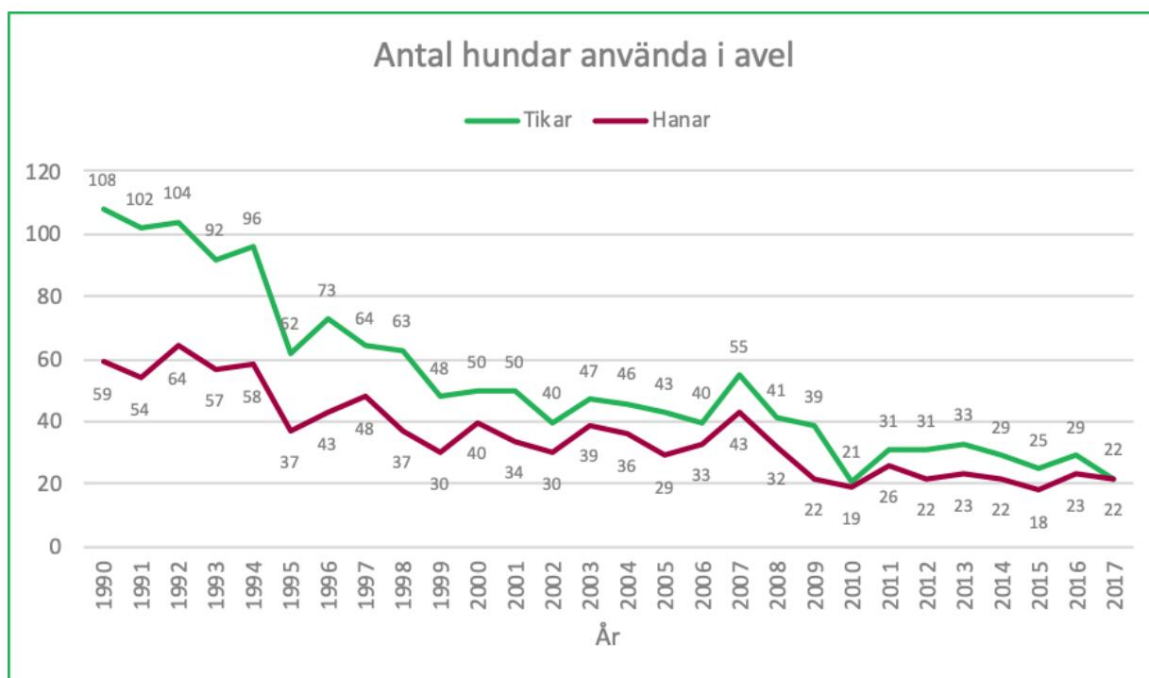
Source SKK breeding data

\*Imports are only available for statistics from 2004 on SKK breeding data

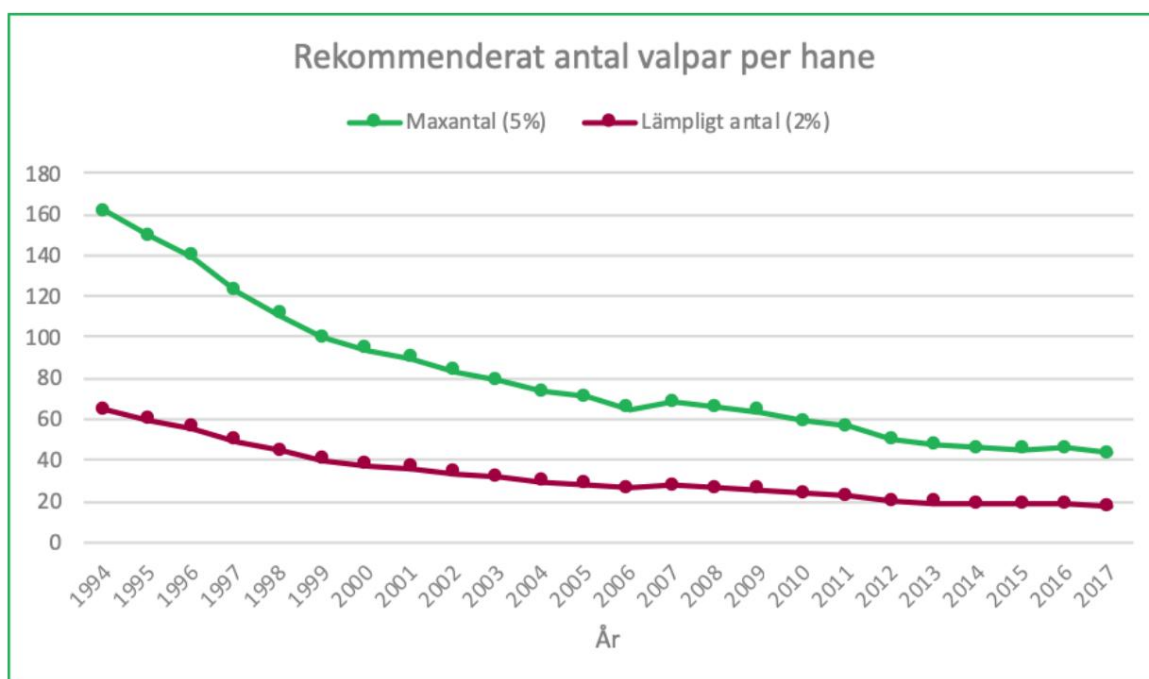
### ***Use of breeding animals***

In order to preserve hereditary variation, it is necessary to consider the number of male dogs in breeding and how they are used. Recommended number of puppies per male dog is 2% of a generation (5 years). 5% is a maximum limit that should not be exceeded. A desirable maximum level for the number of grandchildren for both male and female is approximately twice that number.

In 2018, the recommended number of puppies per male is 17 with a maximum number of 43. Males with a high degree of relatedness should have fewer puppies than that. SBC will annually, before the annual meeting, calculate the current recommended number which corresponds to 2% and the maximum number which corresponds to 5%. It will be available on SBC's website [sbc.beardedcollie.com](http://sbc.beardedcollie.com) and in the annual meeting documents.



Source: SKK breeding data



Source: SKK breeding data

The maximum number of puppies per male, according to the 2011 revision of the RAS, was 60. The recommended maximum number was based on how the population looked in the years leading up to 2011. Since then, the number of registered puppies has dropped significantly.

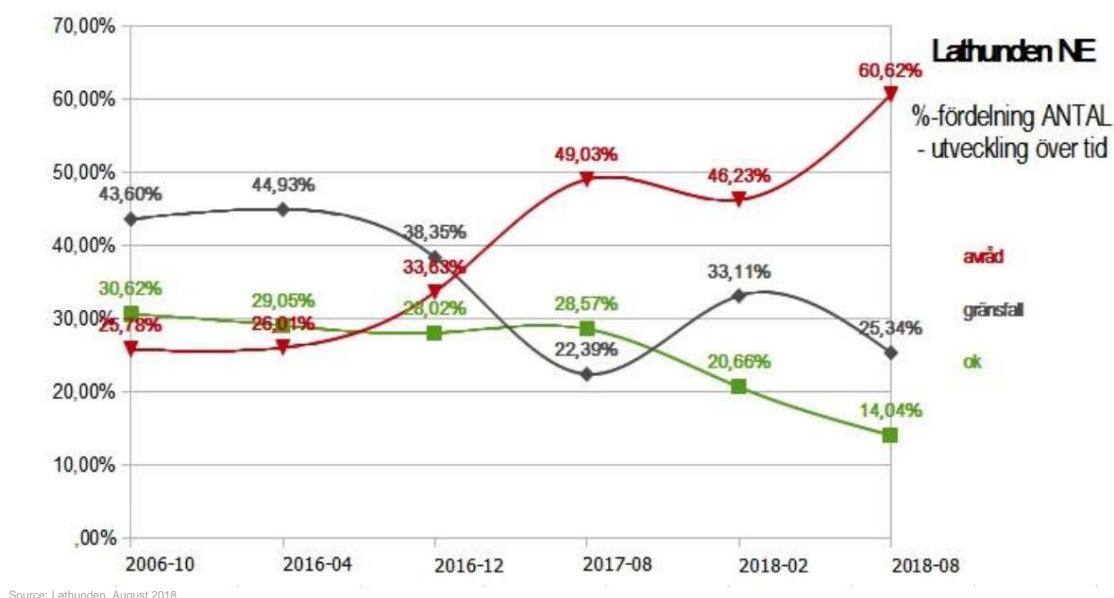


In 2018, one male exceeded the maximum number of 60 offspring and a number of dogs are very close. Several of the males used have a high average degree of inbreeding and therefore do not contribute significantly to the genetic variation within the breed.

Lathunden is a program to produce statistics for a certain breed from the Swedish Kennel Club's dog and breeding data and statistically handle the information that is officially registered.

The Lathunden was originally developed by the geneticist Per-Erik Sundgren as an aid to Swedish breeders in order to be able to carry out breeding evaluations in a more efficient way. Using statistics from the latest bearded collie update, made in August 2018, a chart has been made to show the percentage distribution of dogs with high, medium and low relatedness.

Dog relatedness chart:



The higher the degree of relatedness, the more related the dog is to other individuals in the breed (referred to as "relationship" in the diagram). Low inbreeding dogs have rarer lineages and contribute to the breed's genetic variation (referred to as "ok" in the diagram).

The diagram shows that dogs with unusual pedigrees are becoming increasingly rare in the Swedish population and that the genetic variation is decreasing remarkably.

### **Inbreeding rate**

The table on the next page shows the degree of inbreeding within the breed since 1990. It is calculated over 5 generations and shows how much inbreeding has increased in the breed during the previous 5 generations. The inbreeding rate for a breed should not exceed 2.5% calculated over 5 generations.



Year of birth	Number	Inbreeding rate 5 generations (%)
1990	667 3.5	614 3.0 720 4.3 621
1991	4.6 579	3.0 431 3.0 418 4.8
1992	381 5.0	398 4.3 359 3.9 305
1993	4.5 348	4.2 245 5.3 302 4.1
1994	255 2.9	248 3.5 218 1.7 307
1995	2.1 240	2.3 222 2.0 148 2.1
1996	164 1.9	176 1.4 193 1.6 174
1997	1.4 143	1.3 170 1.2 142 0.7
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2016		
2017		

Source: SKK breeding data  
 Table determined 2018-07-09

The average inbreeding rate has been below 2.5% each year during the last 10-year period. The average during the period is 1.7%.



### ***Grandchild curves***

Recommended number of grandchildren per breeding dog is 10% of a generation (5 years). In 2018, that corresponds to 86 grandchildren. In most cases, breeders are good at staying within the maximum limit when it comes to the number of puppies per breeding dog. However, there are some dogs that have had more grandchildren than is appropriate, some of these have also produced too many puppies. A dog that has more puppies, or more grandchildren, than the recommendations is called a breeding matador.

Listed below are the breeding dogs born in 1997 or later with more than 86 grandchildren:

- Synvillans Power Quest 221 •  
Heather Mist Everybody's Business 209 • Diotima  
Sea Wolf at Ramsgrove 172 • Malandex Xpatriate  
139 • Woolpack's Quality Zweet 118 • Beardmarked's  
Quite A Lady 116 • Goonie's Highlander Lad 109 •  
Woolpack's No Matter What 99 • Hairdog's Picco  
Piccaro 95 • Heather Mist This Is My Life 95 •  
Alistair's Fly Me To The Moon 94 • Alistair's King of  
the Castle 87 • Breaksea Norwegian Wood 86

\*List determined 2018-07-08

### ***Generation interval***

The generation interval is important for inbreeding in the breed, as inbreeding increases with each generation.

Recommended generation interval for dogs is 5 years. A shorter generation interval than 5 years can pose a threat to the breed's health and viability. According to Lathunden, the generation interval was 5 years in 2015, 4.9 years in 2016, 4.7 years in 2017 and now in 2018 the generation interval is 4.6 years. We should aim for a generation interval of at least five years.



### **Breeding debut**

For the period 2008-2017, the average breeding debut age for males is 2 years and 6 months and for bitches 3 years and 11 months according to Lathunden. The minimum age of onset for males is 12 months and for bitches 24 months.

Male and female dogs should not be used in breeding until the age when they show the physical maturity and behavior of an adult individual. A bearded collie cannot be considered an adult before the age of 2.

## **Goal**

- To continue to maintain an average inbreeding rate below 2.5%.
- To slow down the loss of genetic variation as much as possible.

## **Strategies**

- Encourage the use of older and non-breeding males.
- Encourage breeders to select dogs or semen from as far as possible dogs that broaden the Swedish breeding base.
- Recommended number of puppies per male dog is 2% of a generation (5 years). 5% is a maximum limit that should not be exceeded. In 2018, 5% corresponds to 43 puppies.  
Breeders should be aware that the number of puppies born in Sweden varies from year to year. SBC will annually, before the annual meeting, calculate the current recommended number which corresponds to 2% and the maximum number which corresponds to 5%.
- When planning breeding, take into account grandfather curves and Lathunden's kinship analyses.
- Urge breeders to take advantage of the opportunity to check the inbreeding rate via SKK's breeding data and continue to avoid combinations with inbreeding rates exceeding 6.25%.
- Arrange regular breeder meetings where common breeding strategies can be discussed.



## HEALTH

### Current status description - joint health

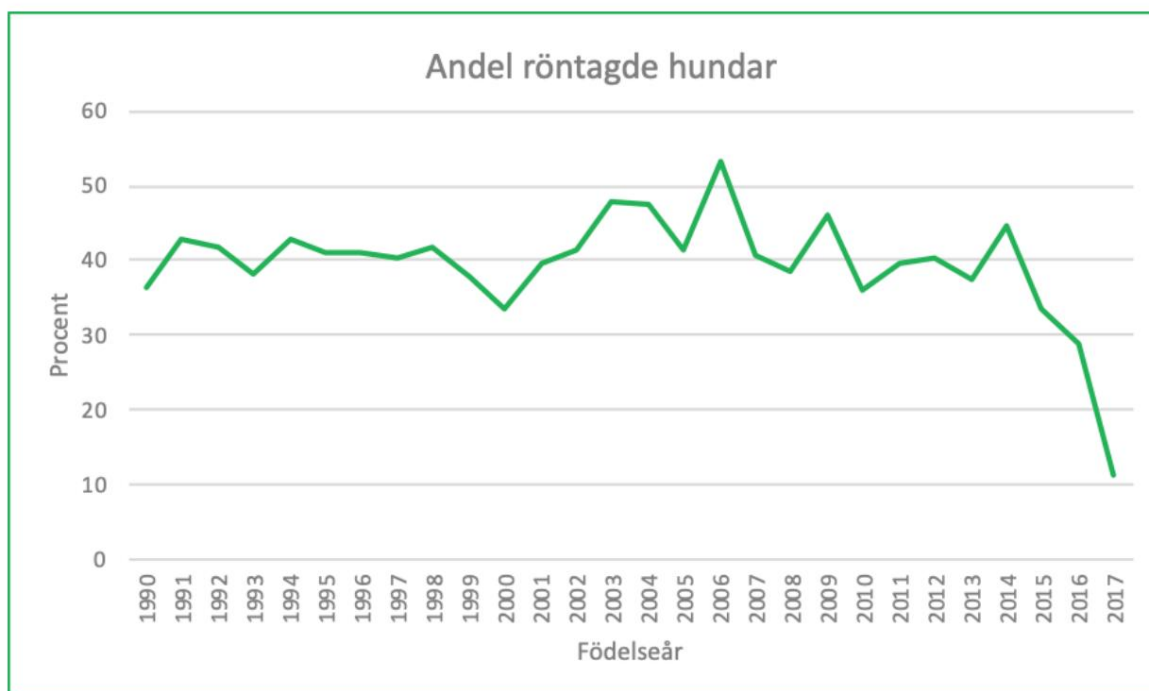
#### *Hip Dysplasia (HD)*

Bearded collie has been connected to SKK's health program regarding hip dysplasia (HD). This means that a known hip joint status of the parent animal and also free hip joints (A or B) were required for the litter of puppies to be registered. In 2017, the Special Club for Bearded Collies made an application for the requirement of free hips to be abolished, which was granted. Now only known hip joint status is required.

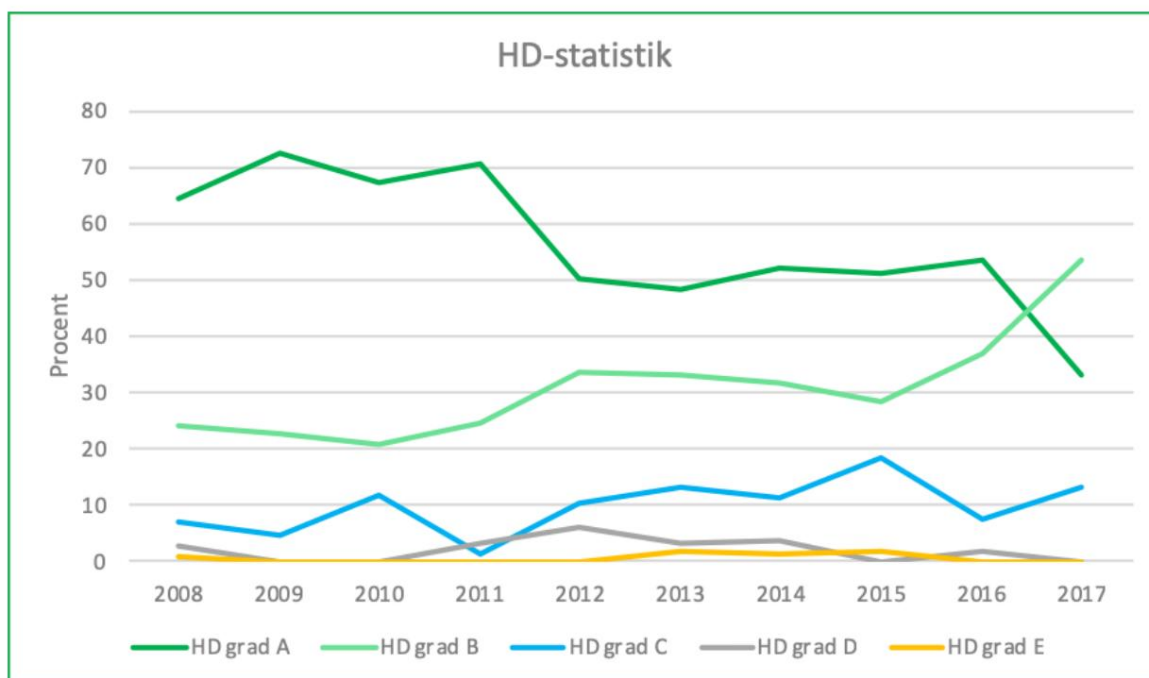
In January 2018, the bearded collie index will be introduced. Index means that, in addition to the individual's own X-ray results, relatives' results are also taken into account to estimate heritability (breeding value) regarding HD. HD index is published in SKK Breeding data and updated every week. A dog that has an index above 100 can be expected to inherit a better HD quality to its offspring than the breed average.

Since the index is a better measure of the dog's heritability than its x-ray results alone, breeding work for HD in breeds where an index is available should be based on the dog's index value rather than the x-ray result. SKK's general recommendation is that the average index of the parent animal at the time of mating (ie the offspring's preliminary litter index) should be greater than 100, which means that the offspring are expected to have an index that is better than the average in the breed. If this recommendation is followed, the genetic development regarding HD can be expected to go in the right direction!

In the breeding work, there are many characteristics relating to health, mentality, etc. that must be weighed into the breeding decision. For that reason, breeders may in some cases judge that it is justified to make a mating combination that has a slightly lower preliminary litter index than the recommended index of 100, due to the fact that the parent animal is considered to have other merits that justify the mating. Dogs with HD grade D or E may not be used in breeding, regardless of the HD index. When mating with a foreign breeding animal, where the index for HD is missing in SKK's database, the foreign breeding animal must be x-rayed with a known HD result.

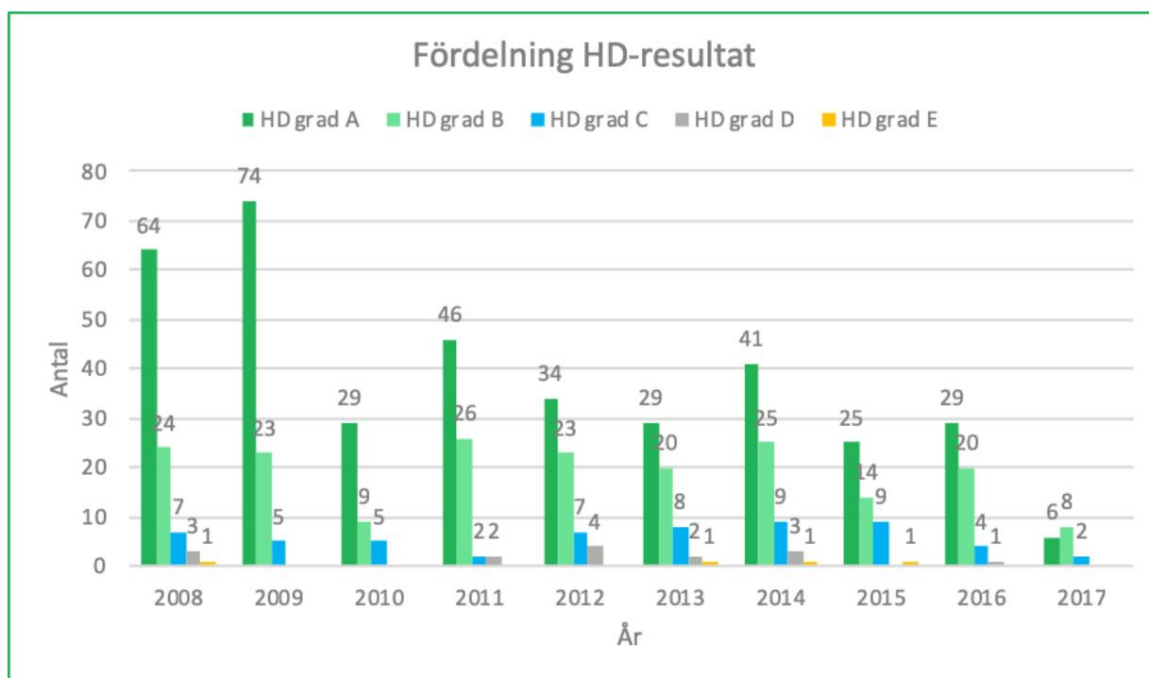


Source: SKK breeding data  
 Statistics determined 2018-07-08



Source: SKK breeding data  
 Statistics determined 2018-07-08



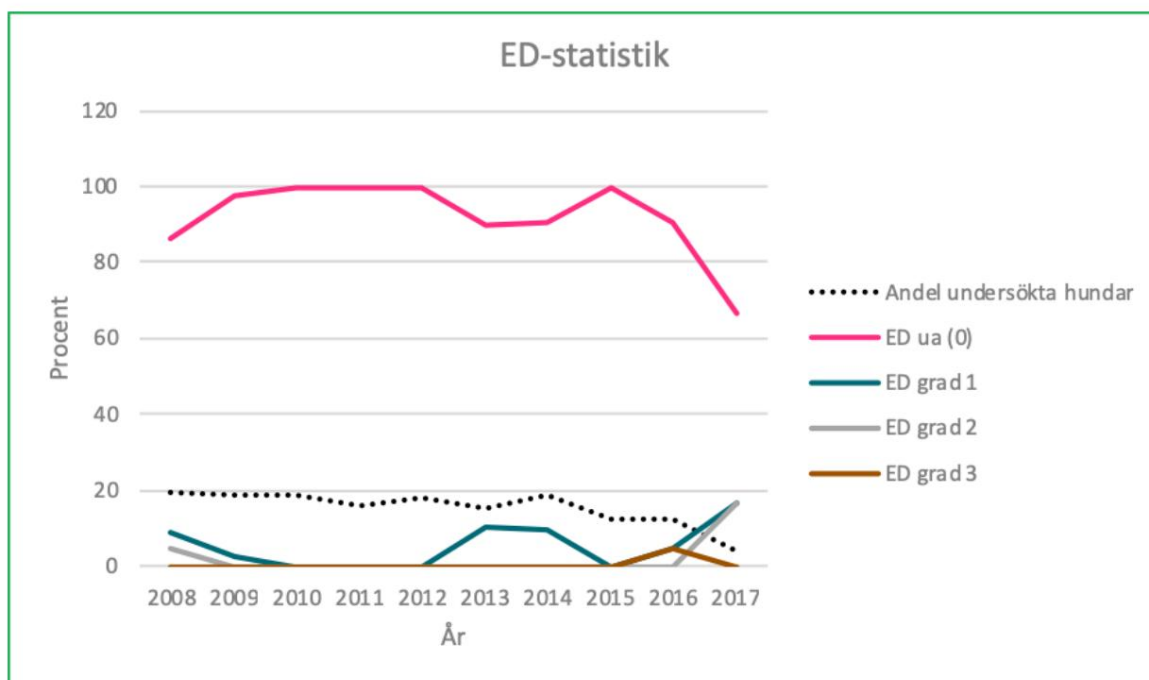


Source: SKK breeding data  
 Statistics determined 2018-07-08

Since 2012, the percentage of HD-read dogs with C, D or E has been at a slightly higher level than before.

### ***Elbow Dysplasia (ED)***

In the bearded collie's country of origin, it is recommended that the elbow joints be X-rayed, but in Sweden there is currently no requirement for elbow joint X-rays. Of dogs born in 2008-2017 in Sweden, a total of 286 dogs have elbow joints x-rayed. Of these, 17 (5.9%) have confirmed errors, 13 with grade 1, 3 with grade 2 and 1 with grade 3.



Source: SKK breeding data  
 Statistics determined 2018-07-08

## Goal

That the breed's joint health should be improved.

## Strategies

Work to

- at least 50% of each year's registered dogs HD X-ray to be able to create a more reliable HD index.
- that breeders motivate their puppy buyers to HD-X-ray their dog.
- that the average index of the parent animal at the time of mating (ie the offspring's preliminary litter index) should be greater than 100



## Current status description - autoimmune diseases

### *Illness disposition and insurance statistics*

Insurance statistics are a way to get a rough idea of the health problems that affect a breed where the costs of diagnosis/treatment exceed the deductible. A review has been made with the help of compilations from four insurance companies during the years 1999-2004. The compilations from the companies vary in the level of detail and the number of insured dogs. Estimating the incidence of a disease within the breed is, however, very uncertain as the deductible that must be exceeded is quite high and some dogs are not covered by any insurance cover either. The insurance statistics show, however, that all companies classify the bearded collie as a "normal dog" with regard to veterinary care costs and that the general injury frequency within the breed is therefore not a concern at the moment. In all insurance companies' summaries, however, it appears that claw capsule/claw problems and Addison's disease are two diseases that affect bearded collies and that should be included in a breed-appropriate breeding strategy regarding health.

### *Targeted health survey 2013*

In 2013, a survey was conducted on the prevalence of autoimmune diseases in bearded collie born between 1998 to 2012. This was prompted by wanting to know how frequent SLO and Addison's disease were within the breed. As both belong to autoimmune diseases, it was interesting to also find out if other autoimmune diseases were present. The survey also included occurrence of pigment loss. The survey was carried out by posting a questionnaire on the website of the Special Club for Bearded Collies. 323 responses were received.

Below is a brief account of the health survey:

#### Addison's disease •

7 cases of the disease were reported, 3 bitches and 4 males. • The disease mainly started between 16 months and 5 years of age. • 2 of the dogs also had pigment loss.

#### SLO (claw capsule disease)

• 15 cases have been diagnosed with SLO, 12 females and 3 males. • The disease mainly started between 1.5-2 years of age. 3 pcs at the age of 3, 1 at age 7 and one at age 9. • One of the dogs also had hypothyroidism. • 7 other dogs have been reported to have recurring problems with weak and cracked claws, all were bitches.



#### Established autoimmune disease

- 9 dogs had hypothyroidism (reduced thyroid function), 6 bitches and 3 males.
- The disease started between 1.5-10.5 years of age. • 1 also had SLO and 1 had pigment loss. • 1 bitch had autoimmune hemolytic anemia (acute anemia) that started at 5 years of age.
- 1 male had an autoimmune disease that caused him to produce an unusual amount of mucus, onset at age 6.

#### Pigment loss • 18

- dogs have been reported to have pigment loss, 9 females and 9 males. • In 13 cases it debuted between 7 months - 2 years, in 5 cases between 3-7 years of age. • 1 has been diagnosed with DLE, an autoimmune disease that causes pigment loss. • 1 has diagnosed Vitiligo.
- A few have regained the pigment. Has anyone tried zinc tablets, feed supplements with good result.
  - There is uncertainty here as the way pigment loss is assessed can vary greatly. What was meant by the question is total disappearance, in whole or in part, where there was previously full pigment. So no fading or "flaming" pigment.

#### Other diseases reported • 2 dogs with

- allergies • 1 with IBD (inflammatory bowel disease) • 1 with Cushing's disease, at age 11 • 1 with primary seborrhea' • 1 with chronic diarrhea' • 1 with lymphoma

#### ***Claw capsule/ claw problem***

The insurance statistics show that bearded collies suffer from problems with claw capsules/claw waste to a greater extent than other breeds. An increased incidence of the diagnoses of specific chronic inflammation of claws, claw capsule inflammation, claw fracture, claw capsule detachment, acute purulent inflammation of claws and onychonychia is seen. These diagnoses may stem from the same root cause and taken together it gives the impression that this could at least in part be a problem with genetic predisposition.

Claw damage can have a varying cause depending on whether it affects the claws asymmetrically or symmetrically. Asymmetric claw lesions can be caused by trauma (external violence/injury), bacterial or fungal infections, or tumor disease (ie, squamous cell carcinoma).

Symmetrical claw damage can be caused by parasites (eg demodex), infections, metabolic diseases, zinc deficiency and autoimmune diseases. Symmetrical lupoid



onychodystrophy is an autoimmune disease that can cause claw capsule detachment in otherwise healthy dogs. The disease occurs among other things in Gordon setters and is considered to have a genetic predisposition. SLO has been shown to be strongly related to DLA in the Gordon setter and there appears to be a similar relationship in the bearded collie. The diagnosis is established with the help of biopsy. The disease is treatable, but often returns after treatment ends.

The research regarding SLO (symmetrical lupoid onychodystrophy), which occurs in bearded collies, has taken a step forward. In a research project where researchers from SLU (Swedish University of Agriculture), NVH (Norwegian Veterinary College) and UU (Uppsala University) collaborated, one of the genetic risk factors for claw capsule detachment, an autoimmune disease in dogs, has been found. The studies are based on a well-established collaboration between geneticists and veterinarians active at the three universities.

The researchers want more blood samples from both sick and healthy dogs. The blood sample is best taken when you are still at the vet for something else. It is free of charge and you should contact the dog genetics group at SLU for a form and information: [www.slu.se/fakulteter/vh/forskning/forskningsprojekt/hund/hundgenetikgruppen-slo/](http://www.slu.se/fakulteter/vh/forskning/forskningsprojekt/hund/hundgenetikgruppen-slo/)

In *RAS appendix 1 – autoimmune diseases*, you can read more about SLO.

### **Addison's disease**

Addison's disease is a disease caused by an underfunction of the adrenal glands. The adrenal cortex is gradually destroyed, which results in the adrenal cortex secreting too small amounts of the vital hormones glucocorticoids and mineralocorticoids. The most common cause of Addison's is an autoimmune disease where the body forms antibodies against the adrenal glands. Addison's can also arise from other causes (eg cancer of the adrenal glands, amyloidosis, etc.) but this is very rare. In bearded collies, it has been established that there is a genetic predisposition within the breed to develop Addison's. The symptoms of the disease vary but are usually seen weakness, fatigue, reduced appetite and vomiting. The diagnosis is made using an ACTH stimulation test. The treatment is lifelong administration of cortisone.

From the insurance statistics, it appears that bearded collies also suffer from underfunctioning of the thyroid gland and diabetes. At present, however, these diseases are not higher than in normal dogs. Single cases of von Willebrand's (bleeding disease) and autoimmune hemolytic anemia are also included in the insurance statistics. Currently, the frequency of these diseases is not a problem within the breed, but an observandum for future breeding work.

Researchers at SLU would like to have blood samples from both sick and healthy older dogs over seven years of age. They are also interested in samples from entire families with Addison's disease



occurs. More information and contact details are available on SLU's website: <https://www.slu.se/fakulteter/vh/forskning/forskningsprojekt/hund/addisons-sjukdom/>

In *RAS appendix 1 – autoimmune diseases*, you can read more about Addison's disease.

## Goal

- To reduce the incidence of SLO, claw capsule problems within the breed.
- To reduce the incidence of Addison's disease within the breed.

## Strategies

- Map how much of the breed has SLO and Addison's disease throughout targeted health survey.
- Urge breeders and owners to submit blood samples of dogs with confirmed SLO and also blood samples from healthy dogs to SLU, so that research can hopefully find gene variants associated with risk of SLO. Take part in the research results regarding the "claw release project" that SLU, NVH and UU are collaborating on.
- Urge breeders and owners to send in blood samples of dogs with a diagnosis of Addison's and healthy dogs over the age of 7 so that we contribute to a DNA analysis hopefully being produced.
- Communicate with breed clubs in other countries about research to keep us

updated.

- Arrange regular breeder meetings where common experiences can be shared reported and discussed.
- Work to ensure that SBC's officials, breeders and dog owners together create a trusting environment regarding autoimmune diseases. This requires an open attitude where breeders and owners inform about known sick dogs, which are related to the breeding animals, in case of intended matings.
- Sick animals must be removed from breeding. Matings between two individuals who both have close relatives with autoimmune disease should be avoided.



## Current status description – eye disease

### *Collie Eye Anomaly (CEA)*

CEA stands for Collie Eye Anomaly and is a hereditary developmental disorder in the eye. It is found in most collie breeds and has recently also been discovered in bearded collies. The disease consists of several partial symptoms, which are divided into primary and secondary. Primary symptoms are Chorio Retinal Dysplasia (CRD) and Coloboma. Secondary symptoms, i.e. secondary symptoms, are bleeding and/or retinal detachment. CRD is a malformation in the eye's choroid (choroid) and retina (retina). In the changed areas, the vision is probably reduced, but overlap between the visual fields of the two eyes means that the dog can function normally even if it has blind areas in both eyes. Coloboma is an abnormal pit in or next to the optic nerve that forms during the early growth of the eye. The size can vary both laterally and in depth. Coloboma can rarely cause bleeding and/or detachment of the retina. A minor detachment may heal, but a total detachment of the retina and extensive bleeding leads to blindness.

The disease is inherited autosomal recessively and can be DNA tested for. A dog that is a carrier of the disease can thus be mated with a dog that has been DNA tested and found to be free of the disease, without any risk of disease in the offspring.

SBC is aware of 63 dogs in Sweden that have been DNA tested (November 2018). Of them, 10 are carriers of CEA and 53 are free. There are also 84 dogs that are hereditary free, as both parents are free. So far there are not that many tested dogs in Sweden because we only became aware of CEA a few years ago. More tested dogs will be required before a fair picture of CEA within the breed in Sweden is obtained.

According to PawPrint's lab, which is one of the labs in the US where most test their dogs for CEA, 201 bearded collies in North America have been tested and of those, 176 are free and 25 are carriers.

This means that 12.4% are carriers of the dogs tested with them (November 19, 2018).

According to a list on BCX (The British Bearded Collie Connexion), 306 dogs in the UK have been tested (November 2018), and of those, 20 are carriers and one is affected.

In addition to these, 1235 dogs are hereditary free. Of tested dogs in Great Britain, approx. 6.5% are carriers, but if you count all dogs that are hereditary free, the figure is instead 1.3%. In the USA, the BCCA Health Committee and BeaCon (The bearded collie foundation for health) recommend that dogs to be bred should be tested. The Bearded Collie Breed Liaison Committee in the UK also recommends that breeding animals be tested. In Germany it is recommended that at least one parent should be tested and free of CEA and in Holland it is recommended that breeding animals should be tested.



## Goal

- In the short term, reduce the incidence of CEA within the breed and in the longer term, completely eradicate the disease.

## Strategies

- Act so that more people DNA test their bearded collies for CEA, especially the dogs that are going to breed. • Publish the DNA answers for Swedish-owned dogs on the website of the Special Club for Bearded Collies.
- Exclude sick dogs, diagnosed with CEA (affected), from breeding. • Tested carrier can be mated with free-tested breeding partner without risk of disease in the offspring. The offspring that will continue in breeding must then be tested because they will either be free or carriers. Do not mate a tested carrier with an untested dog.

## MENTALITY AND BREEDING CHARACTERISTICS

According to the breed standard, the bearded collie should be "...awake, lively, active and have good self-confidence. It must be a mentally stable and intelligent herding dog, without any signs of nervousness or aggressiveness."

The bearded collie is a very capable herding dog that worked long shifts in hard terrain, often independently at great distances from the shepherd. Thanks to its origin as a herding dog, the bearded collie has many fine qualities that allow it to be activated in several different ways and is thus an excellent all-round dog. It is attentive, alert and compliant by nature. It is easy to learn different things and has a willingness to be ready. It is often social and happy around people and animals. It rarely gets into arguments or fights. Unfortunately, there are bearded collies that have problems with sound sensitivity. There are also bearded collies that are exemplary stable in the face of noise. A herding dog is a reactive dog that can react to sounds, but should not have any exaggerated reactions. It is of utmost importance that it reacts within a reasonable time.





### ***Piling team test***

Herding traits are not static behavior that dogs automatically inherit because they are herding dogs. Some things can be trained in, but herding behavior is very much a matter of aptitude. In 2003, the Special Club for Bearded Collies began using an unofficial herding team test in collaboration with the Swedish Vallhundsklubben. After this, the Special Club for bearded collies chose to develop a herd team test which became official in 2007.

The characteristic prerequisites required for useful herding work are that the bearded collie shows interest in the animals, has endurance, cooperates with the handler and that it has a natural ability to balance and reacts to the movement of the herd and other unspoken signals.

### ***Mental descriptions***

One way to evaluate the breed's mentality is to use the Dog Behavior and Personality Description (BPH) or the Dog Mental Description (MH). By getting as many bearded collies described as possible, you can get a picture of the mental situation within the breed. It is of the utmost importance that the breeders work so that their puppy buyers describe their dogs and that the breeders themselves describe their breeding animals to the greatest extent possible. Individuals that reflect the entire population must be described to give as accurate a picture of the breed as possible. As the breed has certain problems with noise fears, it is important that bearded collies with noise fears are also described. When 200 individuals of the breed are described as BPH, SKK makes a specific report and a discussion document that is sent to the club. In the case of 500 BPH-described dogs, SKK, in collaboration with SLU, makes an estimate of the heritability of the various characteristics for the breed.

In *RAS appendix 2 – Mentality*, you can read more about the bearded collie's results from BPH and MH, see spindle diagrams and average values for the various elements.

### ***Survey: Fear + Bearded Collie = True?***

In 2014, Kristina Westberg did an investigation of the bearded collie's mentality through her degree project *Report on beardies' fears* in order to become a problem dog consultant. This behavioral inventory is the only one that has been done in the 21st century on the bearded collie's mentality. 273 dogs participated in the survey.

The study examined how the owner perceived his dog's reactions in different situations. A summation of the mean value of the different categories showed that fear of sound was the most prominent category of fear. A relatively large proportion of the fear of sound was also of the more severe degree compared to other categories of fear.



The behavior inventory can be read in its entirety on SBC's website <http://sbcbeardedcollie.com> and a summary can be read in *RAS appendix 1 - Mentality*.

## Current status description

### *Piling team test*

Statistics for the Valla team test since the test became official in 2007:

Year	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	Total				
Number tested	93	64	48	41	28	27	33	17	29	12	24	416				
Number of passes %	67	44	41	32	24	23	29	13	29	11	20	333				
pass	72%	69%	85%	78%	86%	85%	88%	76%	100							
													%			

Source: Special Club for Bearded Collies, annual reports

### *Mental descriptions*

Up to and including 2017, a total of 253 bearded collies have undergone Mental Description Dog (MH).

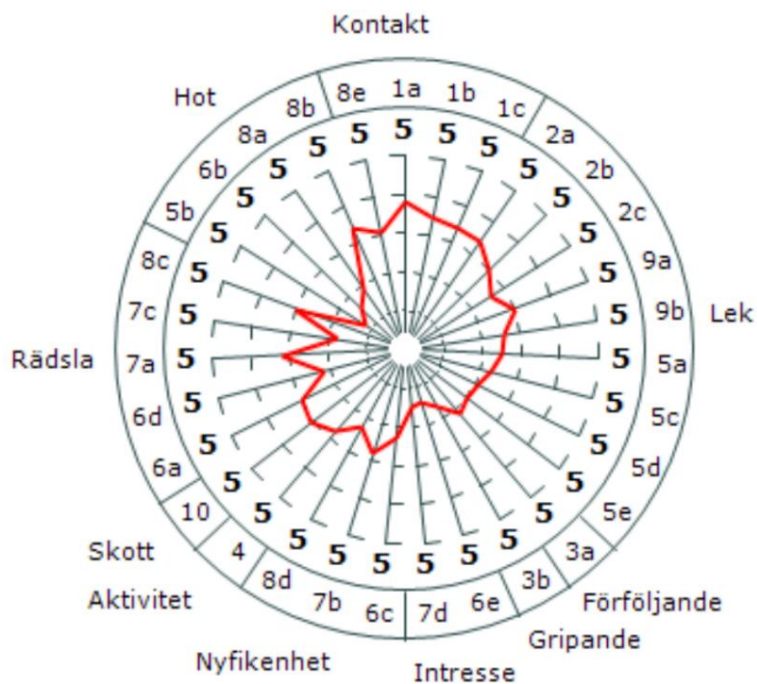
MH overview for dogs born 2008-2017:

Sammanställning per år	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Antal födda	229	235	119	161	181	195	174	143	173	142
Känd mental status	9	17	5	5	-	4	2	2	1	-
varav - hanar	5	10	1	3	-	2	1	1	1	-
- tikar	4	7	4	2	-	2	1	1	-	-
Beskrivaren avbryter	-	1	-	-	-	-	-	-	-	-
Ägaren avbryter	-	2	1	1	-	-	-	-	-	-
Avbrutit MH (före 2002-07-01)	-	-	-	-	-	-	-	-	-	-
Oacceptabelt beteende	-	-	-	-	-	-	-	-	-	-
Ägaren avstår skott	1	-	-	-	-	-	-	-	-	-
Avsteg från avreaktion	-	-	-	-	-	-	-	-	-	-

Source: SKK Breeding data  
 Chart compiled on 07/08/2018

In each description step, a scale from 1 to 5 is used, where 1 means that the dog reacts with low intensity and 5 means that the dog reacts with high intensity.

The red line in the spider diagram below shows the average value within the breed for all moments:



Source: Skk Breeding data  
 Compiled 2018-11-12

Kod	Beskrivning	Medel
1a	Kontakt hälsning	3,8
1b	Kontakt samarb.	3,5
1c	Kontakt hantering	3,4
2a	Lek 1 leklust	3,4
2b	Lek 1 gripande	3,0
2c	Lek 1 grip/dragk	2,6
3a2	Förföljande	2,2
3b2	Gripande	1,7
4	Aktivitet	2,8
5a	Avst.lek intresse	2,5
5b	Avst.lek hot/aggr	1,2
5c	Avst.lek nyfiken	2,3
5d	Avst.lek leklust	2,1
5e	Avst.lek samarb.	2,0
6a	Överr. rädsla	3,0
6b	Överr. hot/agg	1,6
6c	Överr. nyfikenhet	2,3
6d	Överr. kv. rädsla	2,2
6e	Överr. kv. intr.	1,4
7a	Ljud rädsla	3,2
7b	Ljud nyfikenhet	2,8
7c	Ljud kv. rädsla	1,8
7d	Ljud kv. intresse	1,5
8a	Spöken hot/agg	1,9
8b	Spöken kontroll	3,4
8c	Spöken rädsla	3,0
8d	Spöken nyfikenhet	2,3
8e	Spöken kontakt	3,1
9a	Lek 2 leklust	3,0
9b	Lek 2 gripande	2,6
10	Skott	3,1



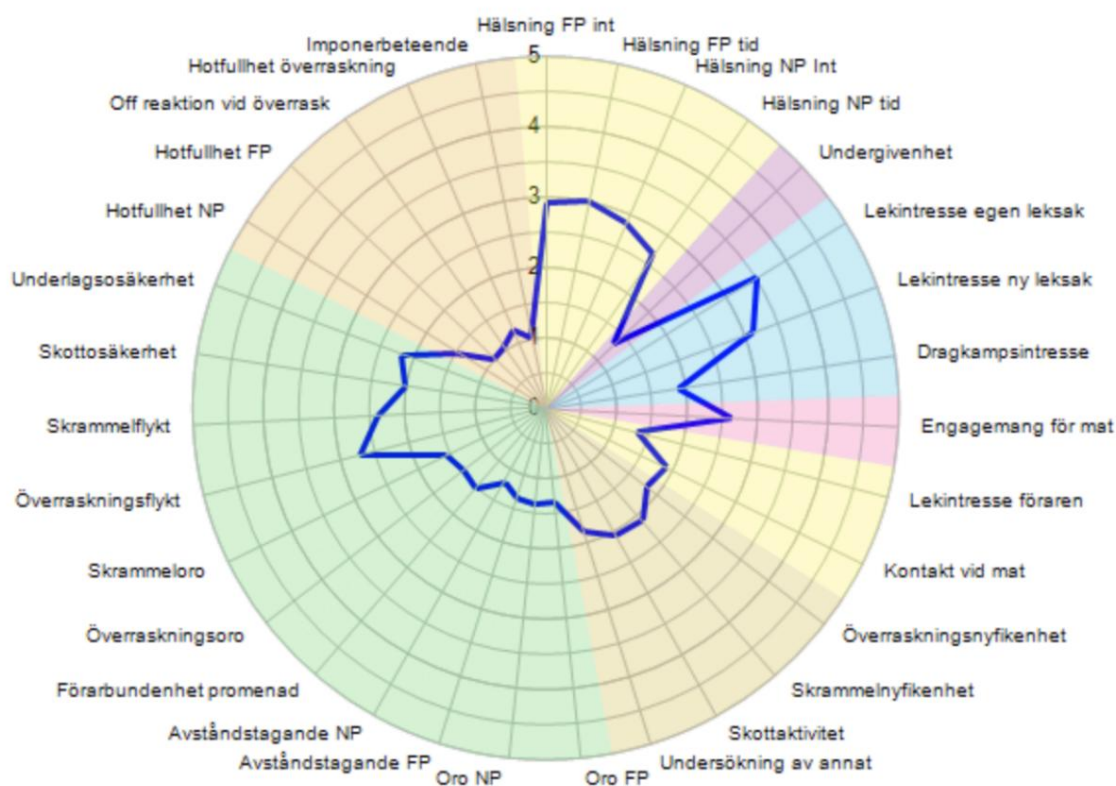
A total of 116 bearded collies born in 2017 or earlier have completed the Dog Behavior and Personality Description (BPH).

BPH overview for dogs born 2008-2017:

Sammanställning per år	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Antal födda	229	235	119	161	181	195	174	143	173	142
Antal starter BPH	2	7	7	9	17	15	25	19	15	2
varav genomförda BPH	2	7	7	8	16	12	21	17	13	2
Med skott	2	6	7	7	13	11	20	17	13	2
varav - hanar	0	2	2	4	8	5	9	7	5	1
varav - tikar	2	4	5	3	5	6	11	10	8	1
Utan skott	0	1	0	1	3	1	1	0	0	0
varav - hanar	0	1	0	0	1	0	0	0	0	0
varav - tikar	0	0	0	1	2	1	1	0	0	0
Ägaren avstår skott	0	0	1	0	1	0	0	2	0	0
Beskrivaren avbryter	0	0	0	0	0	1	0	0	0	0
Ägaren avbryter	0	0	0	1	1	2	4	2	2	0
Oacceptabelt beteende	0	0	0	0	0	0	0	0	0	0
Fördjupad genomgång	0	0	0	0	0	0	0	0	0	0

Source: SKK Breeding data  
 Chart compiled on 07/08/2018

The blue line in the spider diagram below shows the mean value within the breed for all moments in BPH:



Source: SKK Breeding data  
 Compiled 2018-11-12



The spider diagram is graded from 1 to 5, with 5 indicating the strongest reaction. The diagram is color-coded according to the behavioral groups described in BPH:

#### *Förklaring av färgkodning*

Hälsning
Undergivenhet
Lekintresse
Matengagemang
Förarkontakt
Nyfikenhet
Rädsla/osäkerhet
Hot/aggressivitet

The mental descriptions show that a bearded collie rarely shows menace, it greets intensively and for a longer time than the average dog both at strangers and people approaching. It does not feel any major anxiety when approached by strangers, nor does it feel the need to seek distance. These are examples of behaviors consistent with the breed standard.

In both MH and BPH, the bearded collie exhibits low curiosity. With a low level of curiosity, the dog does not dare to investigate what at first contact seemed dangerous. It also shows escape behavior. Exhibiting flight behavior and noise fears is not consistent with the breed standard.

#### ***Mentality and herding characteristics in relation to the breed standard***

The breed standard describes the dog's character as follows:

*"The breed must be awake, lively, active and have good self-confidence. It must be a mentally stable and intelligent herding dog, without any signs of nervousness or aggressiveness."*



## Goal

- Increase the number of dogs that are fearless and curious
- Preserve the paddocks

## Strategies

- Work to ensure that Swedish bearded collies that go into breeding have undergone BPH, MH or have passed the herd law test.
- Work to prevent dogs with strong fears of noise from breeding. Dogs with mild fears of noise should be combined with safe and stable dogs as far as possible.
- Act so that more bearded collies, regardless of fear of sound or not, undergo BPH or MH.
- Act so that more bearded collies take herding team tests.
- In 2019 make a new behavior inventory with the same questions as was used in the inventory made in 2014 by Kristina Westberg to be able to compare and see if any difference has occurred.

# EXTERIOR AND FUNCTION

## Current status description

The Bearded Collie is a long, flexible and extremely well-built dog. The healthier the more beautiful applies to the highest degree for a bearded collie! The dog's origin, appearance and function go hand in hand.

It should move with a long stride. The head is lowered in motion in typical herding dog fashion. It should not be heavy and coarse but also not finely limbed and too elegant. As a result of its well-angled presentation, it has a marked front chest. The well-shaped long chest provides support for the elbows and gives the dog firmness. The well-positioned cross and the strong, well-angled rear stand provide the necessary push.

The tail is carried smoothly but never bent over the backline. The head is very important to the type. The skull is square and flat, the stop marked, the muzzle as long as the skull and well filled out. The expression should be intelligent and researching. The coat should consist of underwool and rough top hair. A correct coat is dirt-repellent and should protect against cold and wetness. It should not be so abundant that it hides the dog's lines.



That the proportions are correct is of utmost importance for the breed type. They should not be low-set dogs. Nor should they be tall, short dogs. The bearded collie gives a long impression where the proportions should be 4:5. The impression is reinforced by the fur. Many full-coated dogs can be perceived as longer than that, but few dogs are measured to be too long. However, it is important that the length sits in the chest and not in an excessively long loin.

We should watch out for chests that are too short.

The long flowing stride of a well-built bearded collie is a feast for the eyes.

Unfortunately, you often see dogs with short trippy steps. This is a consequence of the barely angled designs that are so common today. Protruding straight shoulders occur as well as short upper arms.

The highly desirable well laid back shoulder also gives the correct beautiful neck line both when the dog is standing and when it lowers its head in trot.

Fronts with poor foreches and shallow chests are also very common and are definitely not desirable. This does not mean that we should have plump front breasts and deep, barrel-shaped chests. Everything in moderation. The dog must stand with parallel front legs. Even in motion there must be stability.

The rear rack must be well angled and stable, but not too angled. Dogs with over-angled hindquarters and worse angled presentation will have an incorrectly sloping topline.

It should be a well-balanced dog with a flat strong back. There are steep crosses and also crosses that are too flat, both variants counteracting the desired fluid movements.

There are many different head types on our dogs. Long narrow noses, barely marked stops and long narrow skulls spoil the special expression. Other variants are peaked bony heads and excessively short thin noses. Thin and narrow jaws also occur. We should guard against the typical head and expression. It should be pointed out that the stronger the better, not even with regard to the head. Of course, we want a clearly visible gender identity.

The breed standard specifies an ideal withers height of 53-56 cm for males and 51-53 cm for bitches.

"The size should not be decisive if the dog is otherwise of good quality and has good proportions, but excessive deviations from the above-mentioned sizes should not be encouraged."

## Goal

- To continue to breed externally perfect dogs and maintain the high class Swedish Bearded Collie has had for a long time.



## Strategies

- Work to ensure that breeders are well acquainted with the breed standard and its meaning and constantly strive to advance and improve their breeding work. This is done, among other things, by:
  - o critics from all official exhibitions must be available at SBC's website
  - o judges who judged our specials give a comment in Skocken, which is the club's member magazine.
  - o the club organizes pleasant recurring symposia and member meetings where the breed's exterior, function and development are discussed.
  - o invite breed specialists to judge at special exhibitions in order to increase the exchange of experience.
  - o work for cooperation between breeders both within and outside Sweden
- be expanded.
- o encourage the organization of non-prestige unofficial exhibitions around i the country. This is an excellent training opportunity as breeders get the opportunity to judge and feel many dogs and also an excellent training opportunity for both dog and dog owner. Perhaps an interesting breeding animal will be found here and perhaps an interest in dog shows will be born in the dog owner.
- Work for judges to be familiar with the breed standard. This is done, among other things, by:
  - o the club is well prepared for upcoming referee conferences and at one clearly conveys what we believe is important to consider when assessing our breed.
  - o present good dogs in the rings and thus increase the judges' knowledge and interest in our breed. Great demands must be placed on the bearded collie's anatomy. The coat must not mislead our judges. More must be required of a winning bearded collie, which is often a prospective breeding animal, than that it is well presented and well brushed.





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# Appendices to Breed specific breeding strategy RAS for **BEARDED COLLIE**





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# APPENDIX 1 – AUTOIMMUNE DISEASES

## Lecture by Jeanette Hansson

Jeanette Hansson is a veterinarian at SLU who researches hormonal diseases and works with a project on adrenal insufficiency in dogs - i.e. Addison's disease.

At the 2017 Bearded Collie Breed Conference Special Club, Jeanette gave a talk on Autoimmune Diseases.

It is now known that there is a strong connection between autoimmune diseases and genes in MHC (major histocompatibility complex) class II. These genes are called DLA in dogs (dog leukocyte antigen) and depend on variation to function optimally.

There are a number of different haplotypes (clusters of genes) within each breed and each dog has one from mom and one from dad. The more similar these are, the worse the dog's protection against autoimmune disease.

Jeanette urged us to cherish these racial differences.

(According to studies from Finland, about 80% of the bearded collie population has haplotype 1 and/or 2, while 3-7 are considerably more uncommon.)

### ***Hypothyroidism***

A common autoimmune disease is hypothyroidism, which often manifests itself in the dog being tired and lethargic, the coat becoming thin and the skin darkly pigmented. Here you can do a thyroid test to measure the level of hormones, including TT4, fT4, TSH and TgAA. Hypothyroidism is a very common disease but also one that is often overdiagnosed according to Jeanette. The dogs suffering from hypothyroidism can be medicated and the treatment is both simple and effective.

After supplementation, the dog may at first seem somewhat worse, but quite quickly the fur begins to grow and the dog becomes itself again.

### ***Addison's disease***

Addison's disease is one of two autoimmune diseases that are slightly overrepresented in the bearded collie breed. Bearded collies have a seven times higher risk of being affected than the normal dog, but it must be remembered that it is still an unusual disease, only a few percent are affected. The most vulnerable breeds are 1. Portuguese water dog, 2. Great poodle, 3. Bearded collie. 75% of affected bearded collies are bitches - it can be completely different relationships in other breeds.

Primary adrenal insufficiency is what is called Addison's disease and 90-95% of cases are primary. The secondary form is not really Addison's disease, but can be due to diseases of the pituitary gland, for example. Symptoms of Addison's disease are often diffuse, such as recurrent vomiting, emaciation, lethargy, thirst, large amounts of urine, joint pain, etc.

The dog can also end up in an Addison crisis and become acutely very ill. Such a dog must quickly see a veterinarian as the condition can be life-threatening. Treatment includes



intravenous drip, ACTH stimulation (ACTH is a hormone that stimulates the adrenal glands to produce more steroids) and cortisone. Addison's disease is a "great imitator" - the symptoms vary and can resemble, for example, Lyme disease. The intestines may become more sensitive and result in bloody diarrhea.

When making a diagnosis, you first look at clinical manifestations and then take samples. It is possible to see whether it is primary adrenal insufficiency (Addison's) or secondary. The secondary form needs a different treatment with fewer medications, but for both primary and secondary it applies that you must be able to treat the dog so that it can live a completely normal life without side effects. The treatment consists of glucocorticoid (hydrocortisone - body-identical - is preferable to prednisolone), mineralcorticoid (florinef), sodium chloride.

For research into Addison's disease, more blood samples are needed. The researchers primarily seek blood from dogs that have the disease, but also from healthy dogs over the age of seven. If you want to contribute to this, you print out a donor agreement and instructions to the veterinarian from SLU's website: <http://hunddna.slu.se>. You pay for the sampling and the postage to SLU yourself. There is also an interest from the researchers at the biobank to learn about dogs that are to be euthanized, for a possible autopsy, in case the dog owner might consider donating the body.

### ***Symmetrical lupoid onychodystrophy (SLO)***

Jeanette did not mention much about the disease SLO - symmetric lupoid onychodystrophy - (claw shedding) but gave tips on some supplements such as the fatty acids omega 3 and omega 6, gelatin and biotin. Pentoxifylline and immunosuppressive drugs may be prescribed.

When the disease SLO is fully developed, the claws on all paws are affected and all claw capsules fall off. In a research project where researchers from SLU (Swedish University of Agriculture), NVH (Norwegian Veterinary College) and UU (Uppsala University) collaborated, one of the genetic risk factors for claw capsule detachment, an autoimmune disease in dogs, has been found. The researchers have studied some breeds that are more often affected; gordon setter, bearded collie and giant schnauzer.

The genes that code for proteins that control the immune system have been shown to be important genetic risk factors for autoimmune diseases. When the immune system is switched on, it is the MHC proteins that recognize which substances the body should react against. If MHC instead incorrectly recognizes the body's own molecules, it can lead to so-called autoimmunity as the system reacts against the body's own tissue. Such disorders can in some cases lead to the development of autoimmune diseases such as nail capsule loss. MHC class II has previously been shown to be a genetic risk factor for some other autoimmune diseases in dogs.



In the now published study on claw capsule loss, they were able to demonstrate both a protective MHC type and a type that gave an increased risk. A greatly increased risk of suffering from SLO was found in gordon setters in those individuals who have inherited the same harmful MHC II type from both parent animals. In dogs that have inherited both variants, the protective MHC type is stronger than the harmful one. Which of the body's own molecules in the claw tissue to which the dogs react is unknown. The researchers hope to identify additional genetic risk factors for this disease in studies now underway. That dogs that have two copies of the MHC type that gives an increased risk are at extra risk of being affected, and that the effect of the protective MHC type dominates, are two important findings that have increased knowledge of how this disease develops.

In breeding, it is recommended for the time being not to use sick animals and to avoid mating between two individuals who have close relatives with SLO.



## APPENDIX 2 - MENTALITY

The Bearded Collie is a herding dog that originates from Scotland. Thanks to its origin as a herding dog, the bearded collie has many fine qualities that allow it to be activated in several different ways. A breed-typical bearded collie is a good all-round dog.

According to the breed standard, the bearded collie should be "...awake, lively, active and have good self-confidence. It must be a mentally stable and intelligent herding dog, without any signs of nervousness or aggressiveness." A bearded collie is often social and happy with people and animals. It rarely gets into arguments or fights. It is easy to learn different things and has a willingness to be ready. These qualities are highly appreciated by the bearded collie owner. What is less appreciated by both the dog itself and its owner is whether it suffers from noise fears or other fears. Unfortunately, there are bearded collies that have problems with sound. There are also bearded collies that do not suffer from these problems and are exemplary stable in the face of noise. A herding dog is a reactive dog. It can react to sound, but should not have any exaggerated reactions. It is of the utmost importance that it then reacts within a reasonable time.

One way to evaluate the mentality of the breed is to use BPH (behavior and personality description dog) or MH (mental description dog). By getting as many bearded collies described as possible, you can get a picture of the mental situation within the breed. It is of the utmost importance that the breeders work so that their puppy buyers describe their dogs and that the breeders themselves describe their breeding animals to the greatest extent possible. BPH and MH may in the future serve as a breeding tool when enough bearded collies have been described. As the breed has certain problems with sound fears, it is important that dogs with sound fears are also described.

If only dogs with few or no fears of sound are described, a distorted and incorrect picture of the breed is given. Individuals that reflect the entire population must be described to give as accurate a picture of the breed as possible.

Curiosity is an important characteristic of all dogs, an interest in wanting to explore new things regardless of whether they seemed frightening at first contact or not. If a dog has a good curiosity, it overcomes its fear faster and reacts faster than a dog with a poor curiosity. There are even dogs that react to things that seem scary by showing no reaction at all. It falls into inactivity and does nothing. Some other dogs can hide their insecurities by becoming overly social towards people around them, often by greeting too intensely and excessively.

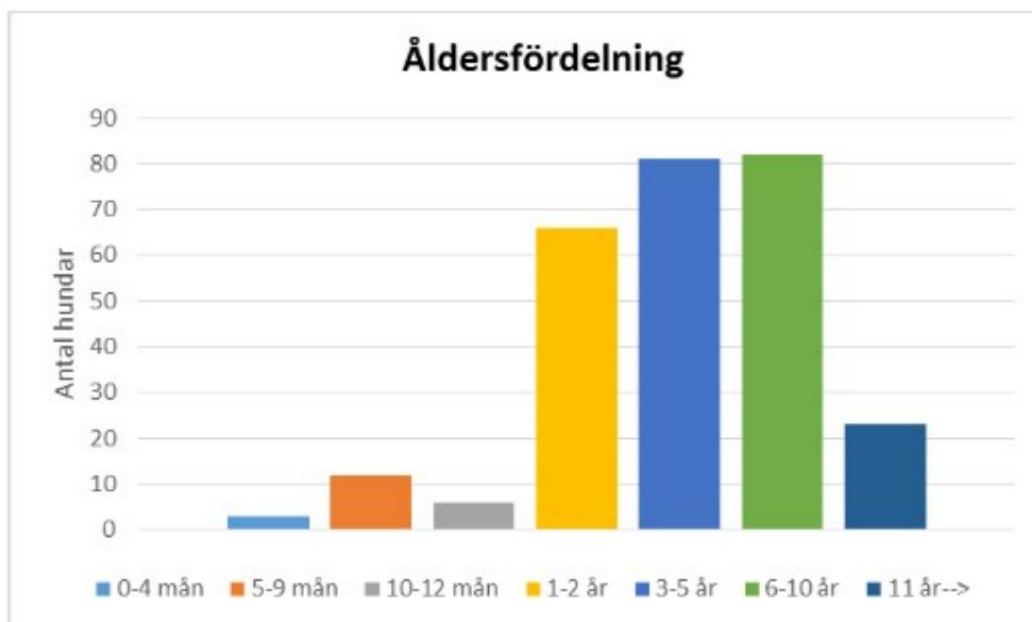
### ***Summary of the thesis "Fear + bearded collie = true?"***

In 2014, Kristina Westberg did an investigation of the bearded collie's mentality through her degree project "Report on beardies' fears" to complete

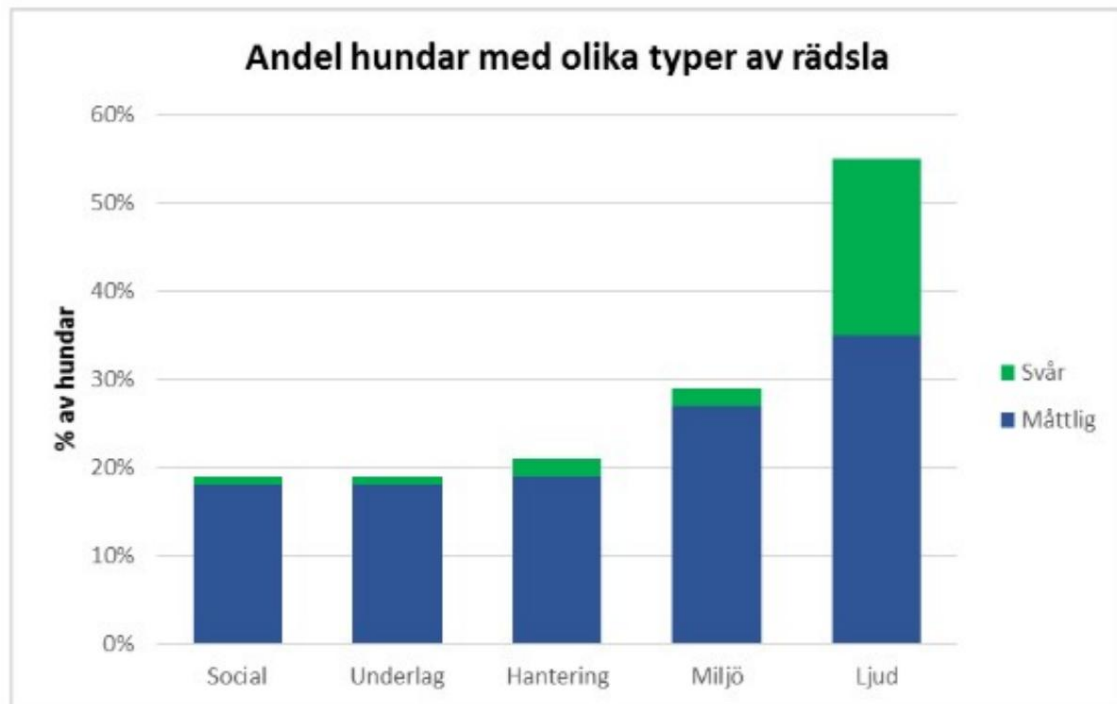


problem dog consultant. This behavioral inventory is the only one that has been done in the 21st century on the bearded collie's mentality.

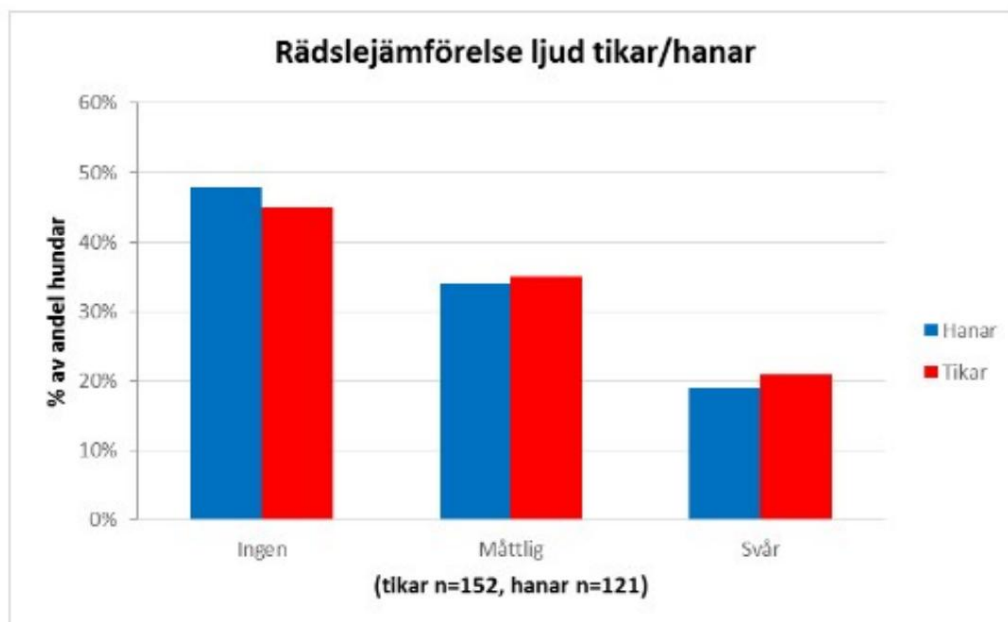
273 bearded collies participated in the survey. Of these, 73 of the dogs in the survey responses were the dog owner's first bearded collie, and in 25 of the survey responses, the dog was the owner's first dog at all. The gender distribution of the dogs was 55% (n=158) females and 45% males (n=127).



The study examined how the owner perceived his dog's reactions in different situations. A summation of the mean value of the different categories showed that fear of sound was the most prominent category of fear. A relatively large proportion of the fear of sound was also of the more severe degree compared to other categories of fear. Therefore, the continued results were chosen to mainly focus on sound fear in relation to various variables that occur in the dog's everyday life, in order to investigate possible differences and similarities.



Fear of noise in dogs that lived together with other dogs in the family compared to dogs that live as single dogs differed somewhat. The results showed that more than twice as many (52%) of pack dogs had no fear of noise at all, compared to solitary dogs (24%). The moderate fear was evenly distributed with 34% of pack dogs versus 36% of solitary dogs. The severe fear appeared strongly in the lone dogs (40%), while the dogs in packs only showed the corresponding 14%.





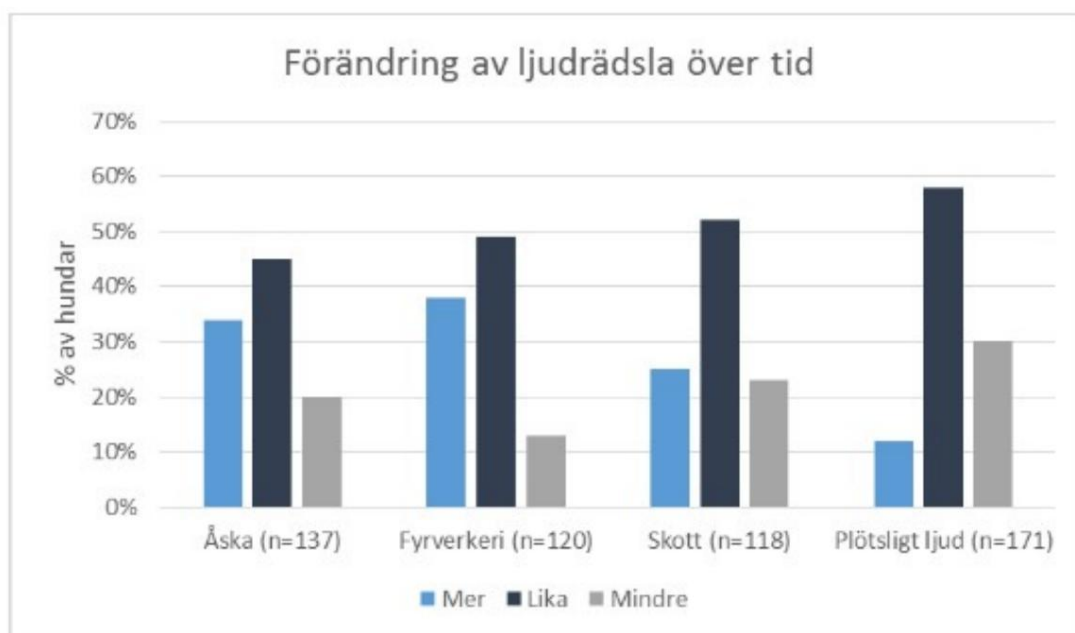


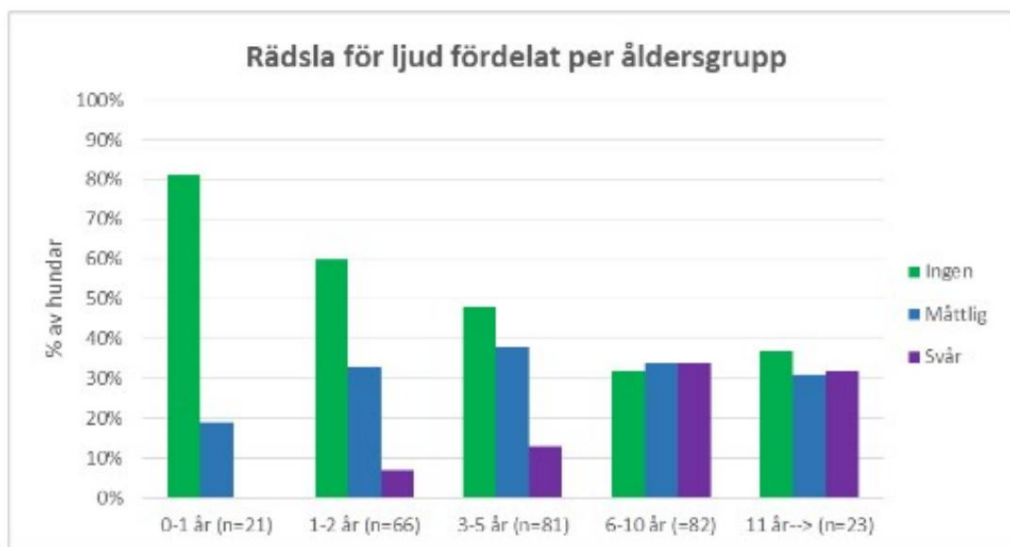
Comparisons in noise fear between those who had previously owned a dog (regardless of breed) and those who had their first dog were also made and showed that noise fear was found to be more common in first-time dogs, and that it was also significantly more often of a severe type. However, it is difficult to draw this conclusion because the number of first-time dogs was so small, but the results should be seen more as an indication.

Regarding the living environment, there were just as many fearless dogs regardless of the environment they lived in. Of the dogs that showed some form of fear, it seems to be more common that the fear is of a more moderate form if you live in the country than in an urban environment or residential area

The fear of noise increases the older the dog gets; only 20% of dogs between 0-1 years of age appeared to experience some form of noise fear compared to just over 60% of those over 6 years of age. These figures can be compared to the same ages for handling where 12% of dogs between 0-1 years of age showed some form of fear and those over 6 showed approximately 20% fear. The dogs that showed some form of fear at 0-1 years in the social category are 13% against 20 for those over 6 years.

The fear of sound seems to increase as the dog gets older. Up to the age of one year, 2 out of 10 dogs show a moderate degree of fear of noise, but in the age group of six to ten years, the percentage of noise fear has increased to as much as 7 out of 10 dogs, half of which show fear to a severe degree. This can be compared to social fear and fear of handling where the corresponding figures show fear in 1 in 10 dogs up to one year of age, and 2 in 10 in the six to ten year group. Most of all, the fear of fireworks seems to be increasing.





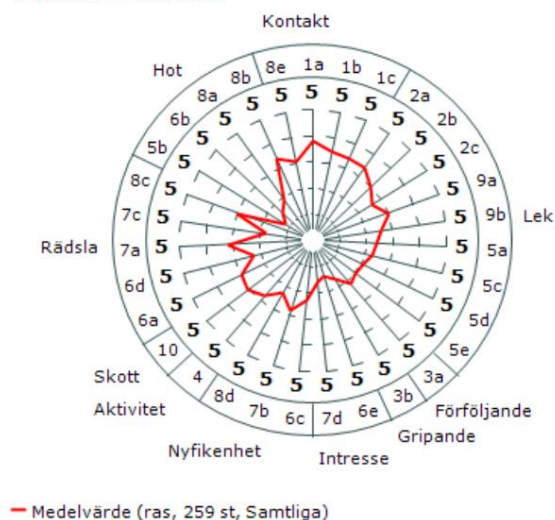
The behavior inventory can be read in its entirety on SBC's website:  
<http://sbc-beardedcollie.com>

### **Behavior and personality description dog (BPH) and Mental description dog (MH)**

At the end of 2016, the Special Club for Bearded Collies made an analysis of the results from completed MH and BPH. Until 2016-12-31, 66 bearded collies had undergone BPH and 259 bearded collies had undergone MH.

**MH:**

Faktiska värden





Kod	Beskrivning	Medel
1a	Kontakt hälsning	3,8
1b	Kontakt samarb.	3,5
1c	Kontakt hantering	3,4
2a	Lek 1 leklust	3,4
2b	Lek 1 gripande	3,0
2c	Lek 1 grip/dragk	2,6
3a2	Förföljande	2,2
3b2	Gripande	1,7
4	Aktivitet	2,8
5a	Avst.lek intresse	2,4
5b	Avst.lek hot/agg	1,2
5c	Avst.lek nyfiken	2,3
5d	Avst.lek leklust	2,1
5e	Avst.lek samarb.	2,0
6a	Överr. rädsla	3,0
6b	Överr. hot/agg	1,6
6c	Överr. nyfikenhet	2,3
6d	Överr. kv. rädsla	2,3
6e	Överr. kv. intr.	1,4
7a	Ljud rädsla	3,2
7b	Ljud nyfikenhet	2,8
7c	Ljud kv. rädsla	1,8
7d	Ljud kv. intresse	1,6
8a	Spöken hot/agg	1,9
8b	Spöken kontroll	3,4
8c	Spöken rädsla	3,0
8d	Spöken nyfikenhet	2,3
8e	Spöken kontakt	3,1
9a	Lek 2 leklust	3,0
9b	Lek 2 gripande	2,6
10	Skott	3,1

The compilation of MH shows that the bearded collie easily makes contact with other people. It shows an interest in playing with another human, but is slightly less prone to a tug-of-war. When it comes to following an object unknown to the dog that moves and resembles a hare, the bearded collie does not show a huge interest in this. It can start and run, but rarely runs all the way to the toy. It relaxes fairly quickly and can unwind. In the distance game, an unknown person with a coat tries to attract the dog from a distance of 40 meters. The bearded collie shows no great interest in the helper, running out to the helper or playing with it.

At the moments describing the nervous constitution, the bearded collie makes an evasive maneuver without taking his eyes off what seems frightening. It shows few threatening behaviors. When you look at the dog's curiosity, the bearded collie rarely goes forward on its own, but needs support from the handler in order to approach the dangerous. It likes to go in an arc around what was scary, but this arc diminishes on the second pass. Some dogs stop and smell the dangerous thing in it, which means it reacts. It doesn't have much residual fear once it's allowed to investigate what at first appeared to be dangerous. As for the dog's sensitivity to sound, it makes an avoidance maneuver from it

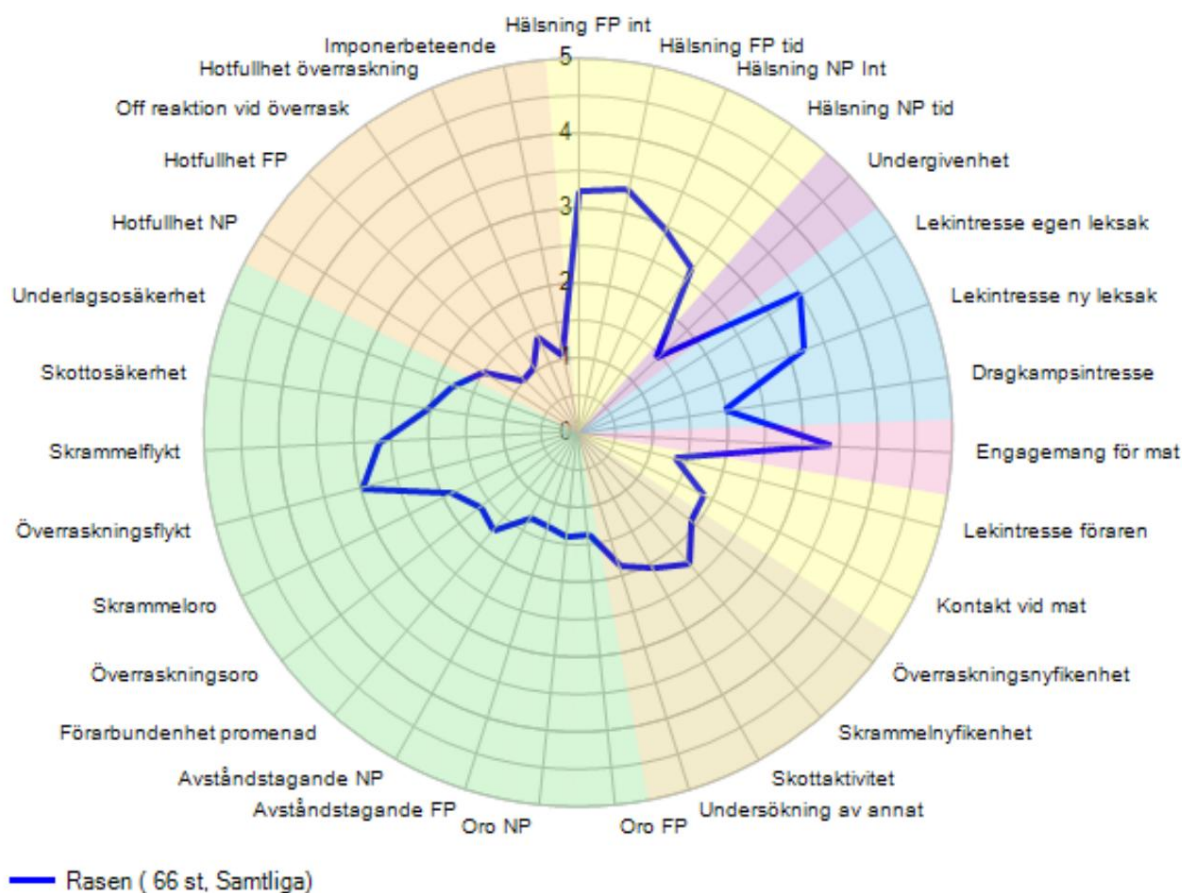


rattling object, but without taking his eyes off it. At the moment of the shot, the dog directs its interest towards the shooter and then chooses to take up activity.

If the values for game 1 and game 2 are compared, there is a difference. This may have its explanation in the fact that the dog has not really reacted after the various moments, as game 1 is at the beginning of the description and game 2 is at the end. Bearded collie starts the second play more slowly and grabs worse compared to the first play.

That the bearded collie does not run after the hare/toy that moves on the MH may have to do with a lack of curiosity or a lack of object interest. It also shows during steps 6-8 that it needs support from the driver to venture towards something unknown that seems dangerous at first contact.

*BPH:*




*RM = Rasmedelvärde*

Moment	RM
Hälsning FP int	3,2
Hälsning FP tid	3,3
Hälsning NP Int	3,0
Hälsning NP tid	2,7
Undergivenhet	1,4
Lekintresse egen leksak	3,5
Lekintresse ny leksak	3,2
Dragkampsintresse	2,0
Engagemang för mat	3,4
Lekintresse föraren	1,3
Kontakt vid mat	1,9
Övrraskningsnyfikenhet	1,9
Skrammelnyfikenhet	2,3
Skottaktivitet	2,1
Undersökning av annat	1,9
Oro FP	1,4
Oro NP	1,4
Avståndstagande FP	1,3
Avståndstagande NP	1,3
Förarbundenhet promenad	1,7
Övrraskningsoro	1,6
Skrammeloro	1,9
Övrraskningsflykt	3,0
Skrammelflykt	2,7
Skottosäkerhet	2,0
Underlagsosäkerhet	1,8
Hotfullhet NP	1,5
Hotfullhet FP	1,0
Off reaktion vid övrrask	1,1
Hotfullhet övrraskning	1,4
Imponerbeteende	1,0

There are still few bearded collies that have been described, therefore the results are not really reliable.

The BPH results show that the bearded collie greets intensively and for a longer period of time than the average dog, both at strangers and people approaching. The bearded collie likes to play with his own toy, but is also interested in new toys.

Tug of war interest is quite low and they also have limited interest in involving the driver in the game. The commitment to food is roughly as great as the interest in playing, and in some cases the driver is contacted to get help with the closed cans. The bearded collie shows low curiosity when surprised. Curiosity increases somewhat when that



noise is added in the form of a rattle. It does not feel any major concern when approached by a stranger, nor does it feel the need to seek distance.

The bearded collie likes to take flight when it is surprised and wants to escape from the rattle. It considers the rattle to be nastier than the shots but has no major problems with different surfaces. A bearded collie rarely shows menace in any situation.

The shot part is a so-called additional element, i.e. optional to do. However, a majority of the dogs have completed shot tests, where a concern/nervousness around shots has been shown.

### ***Comparison MH and BPH***

Both the MH and BPH descriptions are reported in SKK's Breeding data in the form of spider diagrams. The diagrams are not completely comparable, among other things as BPH has more description points and defines some properties slightly differently than MH. However, both give an image of characteristics such as sociality, curiosity, fear and aggressiveness. The descriptions differ to the extent that BPH gives a more nuanced description of the dog's behavior in that several parameters are observed at each point, but also in that the same characteristic complex is described several times along the BPH path. In order to be able to make a relevant comparison between the spider diagrams of the descriptions, however, insight into the model is required for how each diagram has been calculated.

The purpose of both MH and BPH is for these to function as breeding tools. In order for us to be able to use these tools, we need to ensure that more bearded collies are described. When 200 individuals of the breed are described, SKK makes a specific report and a discussion document that is sent to the club. In the case of 500 BPH-described dogs, SKK, in collaboration with SLU, makes an estimate of the heritability of the various characteristics for the breed.

If only a few dogs are described, or if you as a dog owner choose to forgo a BPH because you know that the dog is sensitive to sound or will not show desirable behavior at any of the other points, then the descriptions of the breed will be misleading. They may even oppose our breeding work as it gives a false image of the breed. It is of great importance to have many dogs described, regardless of whether they are, for example, bulletproof or not.

If the analysis values between BPH/MH and the behavioral inventory made by Kristina Westberg are compared, there is a big difference between description results and survey results regarding noise fears. From the behavioral inventory, it is felt that the fear of sound increases the older the dog gets, dogs over 6 years of age are perceived by their owners as being afraid of sound 60% of the time. A bearded collie undergoing BPH/MH is usually younger than 6 years old. Another explanation could be that non-sound sensitive bearded collies are overrepresented in BPH/MH. This gives a misleading picture of what the bearded collie is like as a breed.

In both MH and BPH, the bearded collie exhibits low curiosity. With a low level of curiosity, the dog does not dare to investigate what at first contact seemed dangerous. It also shows escape behavior.



Exhibiting flight behavior and noise fears is not compatible with the breed standard, which states "It must be a mentally stable and intelligent herding dog, without any signs of nervousness or aggressiveness."

### ***Piling team test***

The Bearded Collie is a herding dog from Scotland dating back to the 16th century. In the past, many breed fans believed that the herding instinct either did not exist in the breed, or that it was something negative that you would rather get rid of! Now, however, it has been realized more and more that herding instinct is something that is definitely present in our breed, and that it is also very desirable in a typical bearded collie. The beauty of a Beardie is that the same dog can work perfectly both as a working herder and a family dog.

In 2003, an unofficial electoral law test (VA) began to be used. This first took place in collaboration with SVaK, but after this SBC chose to develop its own field team test. This herding team test became official in 2007. From 2007 to the end of 2016, 331 bearded collies had passed the (official) herding team test. Of all tested, four out of five bearded collies passed the herd team test.

About a third of the Swedish breeding dogs that were bred in 2012-2016 had completed BPH, MH or herd law tests.

