THE KENNEL CLUB
DOG HEALTH

Breed Health and Conservation Plan

Neapolitan Mastiff

2019

BHCP/Version 2/June 2019

INTRODUCTION

The Kennel Club launched a dynamic new resource for breed clubs and individual breeders – the Breed Health and Conservation Plans (BHCP) project – in September 2016. The purpose of the project is to ensure that all health concerns for a breed are identified through evidence-based criteria, and that breeders are provided with useful information and resources to support them in making balanced breeding decisions that make health a priority.

The Breed Health and Conservation Plans take a holistic view of breed health with consideration to the following issues: known inherited conditions, complex conditions (i.e. those involving many genes and environmental effects such as nutrition or exercise levels, for example hip dysplasia), conformational concerns and population genetics.

Sources of evidence and data have been collated into an evidence base (Section 1 of the BHCP) which gives clear indications of the most significant health conditions in each breed, in terms of prevalence and impact. Once the evidence base document has been produced it is discussed with the relevant Breed Health Coordinator and breed health committee or representatives if applicable. Priorities are agreed and laid out in Section 2. A collaborative action plan for the health of the breed is then agreed and incorporated as Section 3 of the BHCP. This will be monitored and reviewed.

SECTION 1: EVIDENCE BASE

Demographics

The number of registrations per year is shown in Figure 1. The numbers registered have been decreasing fairly steadily since a peak in the late 1980s.

The number of Neapolitan Mastiffs registered by year of birth between1990 and 2018 are shown in Figure 1. Trend of registrations over year of birth (1980-2018) was 6.93 per year (with a 95% confidence interval of 1.83 to 12.03).

[Put simply, 95% confidence intervals (C.I.s) indicate that we are 95% confident that the true estimate of a parameter lies between the lower and upper number stated.]

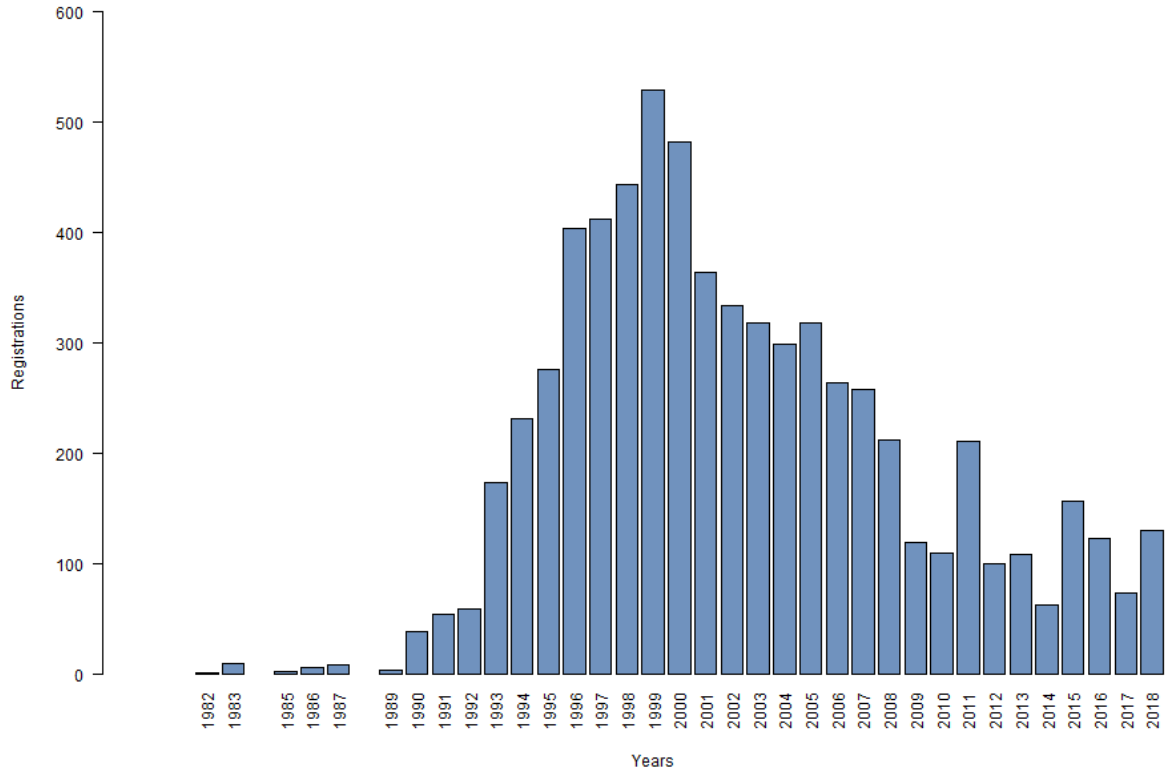

Figure 1: Number of registrations of Neapolitan Mastiffs per year of birth, 1980 – 2018

BHC annual report

The Breed Health Coordinators' Annual Health Report 2017 yielded the following response to the question 'please list and rank the three health and welfare conditions that the breed considers to be currently the most important to deal with in your breed':

1. Prolapsed third eyelid gland
2. Entropion
3. Corneal ulcers

With regard to actions the Breed Health Coordinator noted that the breed club has updated the website and disseminated health leaflets to raise awareness.

The same top concerns and actions were given for 2018.

Purebred/pedigree dog health survey results

2004 Morbidity results: the response rate for the Neapolitan Mastiff was less than 15% in the 2004 Purebred Dogs Health Survey so a breed-specific report on the survey responses was not prepared. However, responses were received for 25 individual Mastiffs and the five most frequently reported conditions are shown in Table 1.

Table 1: Most frequently reported health conditions for 25 Mastiffs in the 2004 Purebred Dog Health Survey. The proportion of dogs affected is the number of cases divided by the total number of responses received for the breed, except uterine inertia which is divided by the number of bitches (15).

Disease condition	Number of cases reported	Proportion of dogs affected
Cherry eye	17	68.0%
Uterine inertia	2	13.3%
GDV	2	8.0%

2004 Mortality results: Only seven Neapolitan Mastiff deaths were reported. The most frequently reported cause of death was GDV, with two cases (28.6%). Median age at death was two years and four months (minimum eight months, maximum 16 years and one month).

2014 Morbidity results: Health information was collected for 10 live Neapolitan Mastiffs of which four (40.0%) had reported no conditions and six (60.0%) reported affected by at least one condition. The most frequently reported specific conditions were ectropion, entropion, prolapsed third eyelid gland (Cherry eye), corneal ulcer and dermatitis. No prevalence or proportional percentiles could be established for these conditions due to the small number of dogs included.

2014 Mortality results: Only four deaths were reported. The range of death for Neapolitan Mastiffs was 4 – 7 years. The most frequently reported causes of death were gastric dilation-volvulus syndrome, bone tumour and cardiac failure.

VetCompass results

No VetCompass data relating to the Neapolitan Mastiff were available.

Insurance data

There are some important limitations to consider for insurance data:

- Accuracy of diagnosis varies between disorders depending on the ease of clinical diagnosis, clinical acumen of the veterinarian and facilities available at the veterinary practice.
- Younger animals tend to be overrepresented in the UK insured population.
- Only clinical events that are not excluded and where the cost exceeds the deductible excess are included (O'Neill et al, 2014)

However, insurance databases are too useful a resource to ignore as they fill certain gaps left by other types of research; in particular they can highlight common, expensive and severe conditions, especially in breeds of small population sizes, that may not be evident from teaching hospital caseloads (Egenvall et al, 2009).

UK Agria data

Insurance data were available from Agria UK. It was difficult to determine the underlying population at risk for these conditions so prevalence estimates are not provided for these conditions, nevertheless the number of settlements due to particular conditions provides useful information about the relative frequency of these conditions.

'Exposures' are equivalent to one full policy year; in 2017 there were 4 free exposures, 13 full exposures and 41 claims, in 2018 these figures were 6 , 10 and 29 respectively.

Full policies are available to dogs of any age. Free policies are available to breeders of Kennel Club registered puppies and cover starts from the time the puppy is collected by the new owner; cover under free policies lasts for five weeks from this time. It is possible that one dog could have more than one settlement for a condition within the 12-month period shown.

Conditions by number of settlements, for authorised claims where treatments started between July 2017 and June 2018, are shown in Table 2 below.

Table 2: Top 9 conditions and number of settlements for each condition between 1st July 2017 and 31st June 2018 for Neapolitan Mastiffs insured on full policies with Agria UK

Condition	**Number of settlements**
Cruciate ligament rupture - caudal and cranial	11
Hip dysplasia developmental	6
Hypersensitivity (allergic) skin disorder (unspecified)	3
Oral cavity (mouth) disorder finding	1
Trichiasis	1
Syncope (unspecified)	1
Anal sac infection	1
Gastric dilation-volvulus syndrome (GDV)	1
Foreign body - intestinal small	1

Swedish insurance data were not available for the Neapolitan Mastiff.

Breed-specific health surveys

2009 breed heath survey

The Neapolitan Mastiff Club conducted a breed-specific health survey in 2009, in which 145 Neapolitan Mastiffs participated. A total of 43.4% (63 of 145) of these dogs were reported to have died before the survey, and of these20.6% had died due to GDV/bloat. A subsequent survey in 2012 found that 20.9% of 165 dogs had died due to GDV/bloat. Therefore the Club consider GDV/bloat to be the most common cause of death in the breed.

The Kennel Club held a breed health survey for the Neapolitan Mastiff in late 2017. In total 118 responses were received, relating to 216 individual dogs, with responses coming from 16 countries. A full report on all survey responses has been provided to the Neapolitan Mastiff Club, but a summary of the responses for UK dogs is provided below.

2017 breed health survey

A total of 93 responses were collected for dogs living in the United Kingdom, representing 118 individual dogs, of which 47 were males and 43 females. Respondents were asked how many (if any) of their dogs had been affected by conditions for the following categories: eyes, skin, gastrointestinal (with more information asked for those who had dogs suffer from bloat/gastric dilatation volvulus), muscle/bone, reproductive, cardiovascular, strokes/epilepsy, liver, respiratory, kidney/urinary, blood/immune, hormonal and cancers/tumours. The results for these categories have been split into subheadings, please see below.

Eye conditions

A total of 60 dogs (50.8%) of the 118 were reported to have been affected by an eye condition. The most frequently reported conditions were cherry eye (22.0%), entropion (15.3%) and ectropion (7.6%), as shown in Figure 2. Some 5.9% of dogs were reported to be affected by another eye condition; when asked to specify the condition, owners noted: eye discharge, ulcers and extra loose skin around the eyes, causing redness (n=1 respectively).

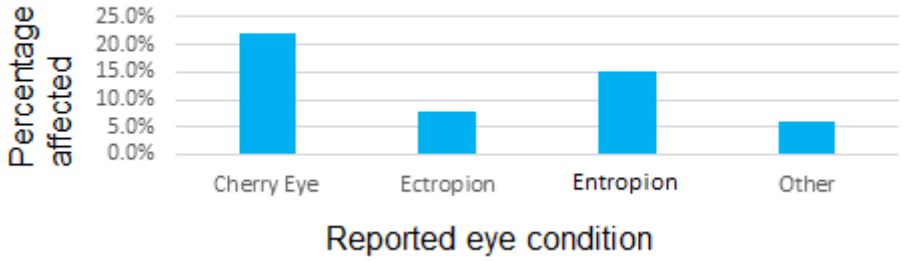

Figure 2: Conditions reported and percentage of dogs affected for the 60 dogs which were reported to be affected by an eye condition

Skin conditions

A total of 40 dogs (37.3%) of the 118 were reported to have been affected by a skin condition. The most frequently reported conditions were skin allergies (11.02%), hot spots (7.63%), dermatitis (4.24%), *Malasezzia* dermatitis (3.39%), mange/parasitic infestation (3.39%) and unknown (0.85%), as shown in Figure 3. Some 6.78% were reported to be affected by 'other', noted to be: bacterial infection, chronic ear infection and yeast infection (n=1 respectively).

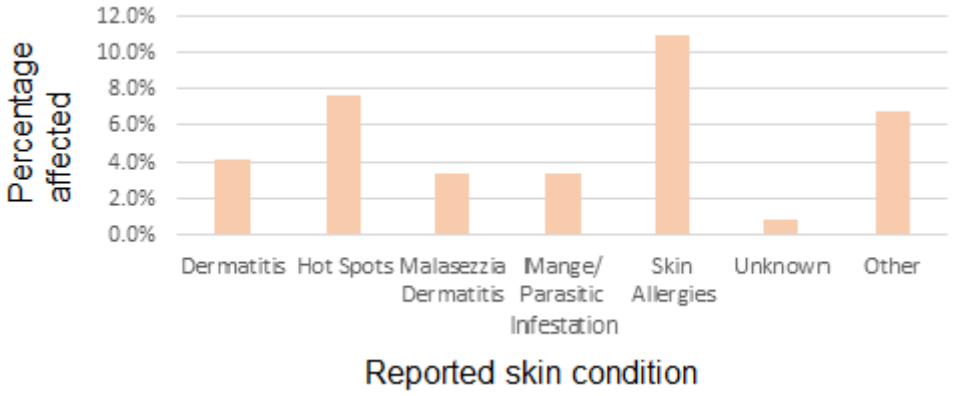

Figure 3: Conditions reported and percentage of dogs affected for the 40 dogs which were reported to be affected by a skin condition

Gastrointestinal conditions

A total of 16 (13.6%) of dogs in the survey were reported to have been affected by a gastrointestinal condition. The most frequently reported conditions were food allergies or intolerance (5.93%), bloat (3.39%), chronic diarrhoea (1.69%) and gastric dilatation volvulus/torsion (0.85%), as shown in Figure 4. One dog (1.69%) was reported to have been affected by 'other', specified as pancreatitis.

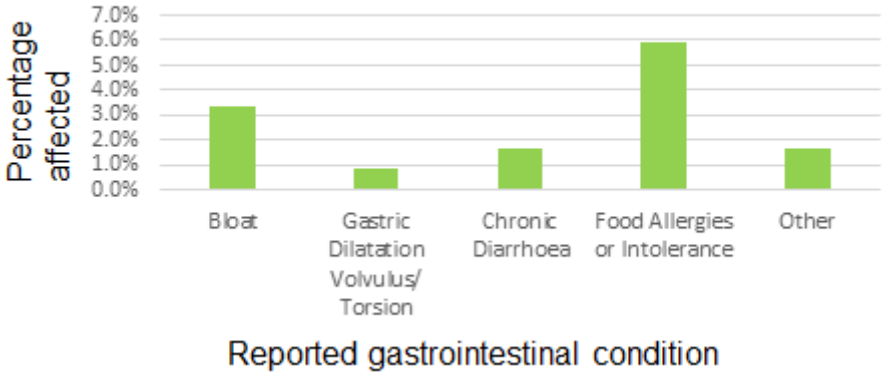

Figure 4: Conditions reported and percentage of dogs affected for the 16 dogs which were reported to be affected by a gastrointestinal condition

Musculoskeletal conditions

A total of 31 dogs (26.3%) were reportedly affected by one musculoskeletal condition. The most frequently reported conditions were arthritis (7.6%), hip dysplasia (6.8%), cruciate ligament rupture (3.4%), elbow dysplasia (2.5%), osteoarthritis (1.7%) and luxating patella (0.8%), as shown in Figure 5. Some 3.4% of dogs were reported to have been affected by 'other', with one dog specified as having the back legs collapse and suffering from paralysis.

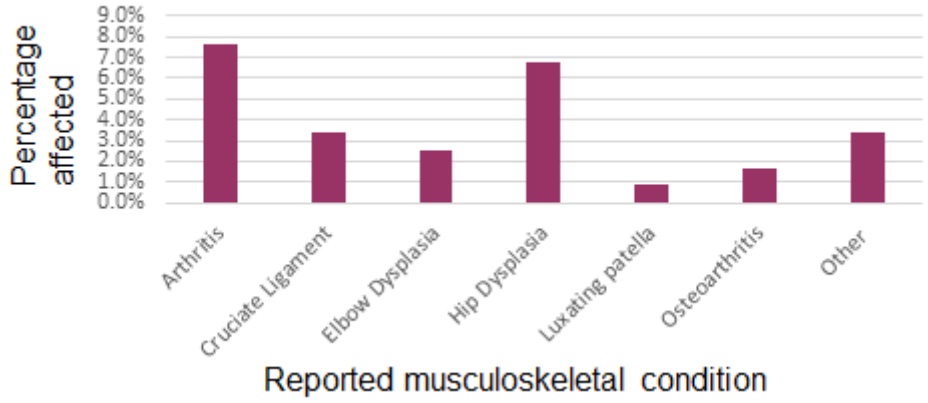

Figure 5: Conditions reported and percentage of dogs affected for the 31 dogs which were reported to be affected by a musculoskeletal condition

Reproductive

A total of 10 dogs (8.47%) were reported to have been affected by one reproductive condition. The most common condition being pyometra (5.08%), vaginitis (1.69%), vaginal hyperplasia (0.85%) and other (0.85%) unspecified, as shown in Figure 6.

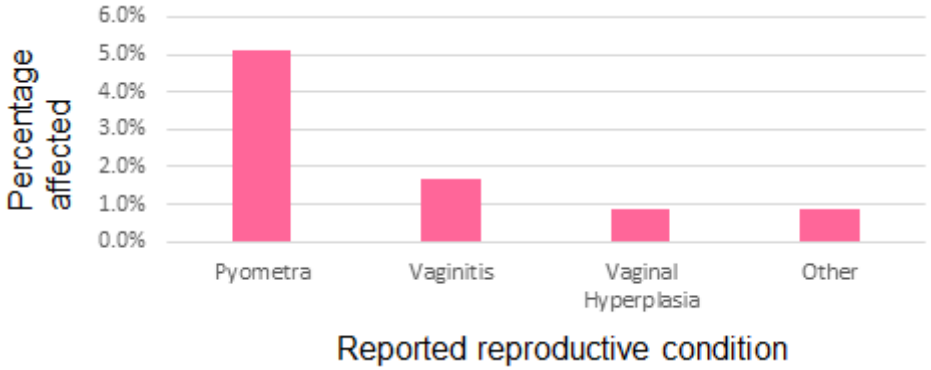

Figure 6: Conditions reported and percentage of dogs affected for the 10 dogs which were reported to be affected by a reproductive condition

Other Conditions

For all other conditions for the categories: cardiovascular, strokes/epilepsy, liver, respiratory, kidney/urinary, blood/immune, hormonal and cancers/tumours, 3 specific conditions were noted. These were: stroke, Addison's disease and stomach tumour (n=1 respectively).

Owners were also asked to note the cause of death for any of their dogs. Information was gathered for 5 dogs, of which cause of death was: old age (n=2), paralysis (n=1), stroke (n=1), and epilepsy, eye and skin problems and immune problems (n=1).

Visual health check reports/clinical reports/judges' health monitoring

As a category three breed judges' health monitoring forms are mandatory. The points of concern reported are shown below in Table 3.

Table 3: Percentage of Neapolitan Mastiffs exhibited at dog shows with points of concern for 2016 to 2018.

Point of concern	**2016**	**2017**	**2018**
* Eyelid surgery	1.05%	0.00%	1.67%
* Loose eyelids	0.00%	1.65%	0.00%
* Weak Pasterns	0.00%	1.65%	0.00%
* Wet eyes	0.00%	4.13%	0.00%
Excessive dewlap	0.53%	4.96%	5.00%
Excessive facial skin with eyelid defects	2.11%	3.31%	13.33%
Significantly overweight	0.60%	0.83%	0.00%
Unsound movement from weak hind movement	1.32%	2.48%	11.67%
Total shown	**168**	**121**	**60**

Breed Club Health Activities

The breed has a health committee/group council, an active Breed Health Coordinator and there is dedicated health section on the Neapolitan Mastiff Club's website.

THE NEAPOLITAN MASTIFF CLUB HEALTH SCHEME

This scheme is open to **ANY Neapolitan Mastiff**, club membership is not required to participate. Dogs must be Kennel Club (KC) registered, micro-chipped and of 12 months of age or over. The owner is responsible for payment of this service or any testing to the vet involved. There are three awards on offer as detailed below for which the owner will be given a certified certificate from The Neapolitan Mastiff Club, upon completion.

BRONZE AWARD

Owners must request a Bronze health test form from the club's BHC, providing KC name and number, microchip number and date of birth. They will then receive a numbered three-part NCR form (top copy to be sent to the BHC by owner to claim their certificate, middle copy to be retained by vet, bottom copy to be retained by owner) which they should take to one of the four breed specialist vets. The Bronze Award vet check will cover the following points:

Check microchip corresponds to the one provided on the form

Basic auscultation

Breathing, visual and auditory assessment, while at rest and after a few minutes exercise

Visual assessment of, skin, ear canals, teeth and nostrils

Normal clinical assessment of eyes

Establish hearing (or not)
Tail, testes (intact) and temperament

General comments to include the following:

- Body grading one to five with three being normal/average body weigh according to the vets chart
- Concerns regarding, mouth/teeth and movement
- Provide details of any condition requiring referral to a specialist

The vet will complete, sign & stamp the form, ensuring that the vets name & address is clearly shown.

SILVER AWARD

The dog must have previously obtained a Bronze award (as above) as well as the following criteria:
Heart test by KC-approved cardiologist
Eye test by an Examiner of the BVA/KC/ISDS
All copies of the said tests plus a copy of the Bronze Health Test Report (that the vet has previously completed) has to be sent to the club. Upon receipt the Silver certificate will be issued.
Hip and elbow tested under the BVA/KC Schemes

GOLD AWARD

The dog must have previously obtained a Bronze and Silver award, as well as the following criteria:
Clear heart test
Clear eye test
Zero elbow score
Hip score equal to or less than the breed average score, as recorded by the KC.
All copies of the said tests plus a copy of the SILVER Award certificate has to be sent to the club. Upon receipt the GOLD certificate will be issued.

To date (20/06/2019) 15 dogs have undergone the Bronze level, with a further one having achieved Silver.

<u>Assured Breeder Scheme</u>

There are currently no requirements for Assured Breeders, however it is recommended that breeding stock are:

- Hip scored under the British Veterinary Association (BVA)/Kennel Club (KC) Hip Dysplasia Scheme
- Eye tested under the BVA/KC/International Sheepdog Society (ISDS) Eye Scheme
- Seek breed club advice on heart testing

DNA test results

There are currently no DNA tests available for the Neapolitan Mastiff.

Canine Health Scheme results and EBVs

HIPS

To date (19/06/2019) a total of 80 Neapolitan Mastiffs have been tested through the BVA/KC Hip Dysplasia Scheme. The 15 year median score for the breed was 19.5 (range 3-97), with the 5 year median being 13, indicating a potential improvement in hips, although the number of dogs involved is small.

ELBOWS

Although participation in the BVA/KC Elbow Dysplasia Scheme is neither an ABS requirement nor recommendation, participation in the schemes is open to dogs of any breed. Some 19 Neapolitan Mastiffs have participated in the scheme since its launch in 1998, their scores are shown in Table 4.

Table 4: Elbow scores and number of dogs receiving those scores since 1998 for the 19 Neapolitan Mastiffs which have participated in the BVA/KC Elbow Dysplasia Scheme.

Elbow score	Number of dogs	Proportion
0	12	63.2%
1	4	21.1%
2	0	0.0%
3	3	15.8%

EYES

The Neapolitan Mastiff is not on Schedule A or B of the BVA/KC/International Sheep Dog Society (ISDS) Eye Scheme for any condition so there are no clear/affected results to report. Schedule A lists the known inherited eye conditions in the breeds where there is enough scientific information to show that the condition is inherited in the breed, often including the actual mode of inheritance and in some cases even a DNA test. Schedule B lists those breeds in which the conditions are, at this stage, only suspected of being inherited.

However, the scheme is open to dogs of any breed and the findings are recorded in the annual Sightings Report. The results of Eye Scheme examinations of Neapolitan Mastiffs which have taken place since 2012 are shown in Table 5.

Table 5: Reports on Neapolitan Mastiffs which have participated in the BVA/KC/ISDS Eye Scheme since 2011.

Year	Number seen	Comments
2011	3 adults	3 – ectropion
2012	11 adults	2 – ectropion 2 – entropion 11 – macropalpebral fissure 6 - distichiasis
2013	1 adult	1 – entropion
2014	0 dogs	No sightings reported
2015	0 dogs	No sightings reported
2016	0 dogs	No sightings reported
2017	0 dogs	No sightings reported

Other ocular conditions: Literature produced by the American College of Veterinary Ophthalmologists (ACVO) reported the Neapolitan Mastiff to be predisposed to ectropion, entropion, macroblepharon, distichiasis, prolapsed gland of the third eyelid ('cherry eye'), and cataract. Between 2010 and 2018, 16 dogs of the breed were examined, prevalence data is shown in Table 6 alongside data from previous years. Overall, 33.3% (21 of 63) Neapolitan Mastiffs examined during this time had normal eyes with no conditions diagnosed. However, it is important to consider that the sample of dogs is numerically small and the dogs were based within the United States.

Table 6: ACVO examination results for Neapolitan Mastiffs, 1991 - 2018

Disease Category/Name	Percentage of Dogs Affected		
	1991-1999 (n=13)	**2000-2009** (n=9)	**2010-2018** (n=63)
Eyelids			
Distichiasis	0.0%	11.1%	11.1%
Entropion	30.8%	0.0%	23.8%
Ectropion	30.8%	44.4%	36.5%
Macropalpebral fissure	30.8%	11.1%	14.3%
Nasolacrimal			
Keratoconjunctivitis sicca	0.0%	0.0%	1.6%
Nictitans			
Prolapsed gland of the third eyelid	7.7%	0.0%	6.3%
Third eyelid cartilage anomaly	0.0%	11.1%	0.0%
Cornea			
Pigmentary keratitis	0.0%	0.0%	4.8%
Corneal dystrophy	0.0%	0.0%	1.6%
Uvea			
Persistent pupillary membranes (iris to cornea)	7.7%	0.0%	0.0%
Lens			
Cataracts (significant)	38.5%	0.0%	1.6%
Retina			
Retinal dysplasia – folds	0.0%	11.1%	1.6%
Retinopathy	0.0%	0.0%	1.6%

Adapted from: https://www.ofa.org/diseases/eye-certification/blue-book

Breed Club breeding recommendations

Breeders are recommended to participate in breed club heart testing.

Reported caesarean sections

When breeders register a litter of puppies, they are asked to indicate whether the litter was delivered (in whole or in part) by caesarean section. In addition, veterinary surgeons are asked to report caesarean sections they perform on Kennel Club registered bitches. The consent of the Kennel Club registered dog owner releases the veterinary surgeon from the professional obligation to maintain confidentiality (vide the Kennel Club General Code of Ethics (2)). There are some caveats to the associated data; it is doubtful that all caesarean sections are reported, so the number reported each year may not represent the true proportion of caesarean sections undertaken in each breed. In addition, these data do not indicate whether the caesarean sections were emergency or elective. The number of litters registered per year for the Neapolitan Mastiff and the number and percentage of reported caesarean sections in the breed for the past 10 years are shown in Table 7.

Table 7: Number and percentage of litters of Neapolitan Mastiffs registered per year and number of caesarean sections reported per year, 2008 to 2017.

Year	Number of Litters Registered	Number of C-sections	Percentage of C-sections	*Percentage of C-sections out of all KC registered litters (all breeds)*
2008	24	0	0.0%	0.05%
2009	19	0	0.0%	0.15%
2010	29	0	0.0%	0.35%
2011	21	0	0.0%	1.64%
2012	21	1	4.76%	8.69%
2013	18	2	11.11%	9.96%
2014	12	1	8.33%	10.63%
2015	22	5	22.73%	11.68%
2016	19	3	15.79%	13.89%
2017	10	1	10.00%	15.00%
2018	25	5	20.00%	17.21%

Genetic diversity measures

The effective population size is the number of breeding animals in an idealised, hypothetical population that would be expected to show the same rate of loss of genetic diversity (rate of inbreeding) as the breed in question. It may be thought of as the size of the 'gene pool' of the breed. When the effective population size drops below 100 (inbreeding rate of 0.50% per generation) the rate of loss of genetic diversity in a breed/population increases dramatically (Food & Agriculture Organisation of the United Nations, "Monitoring animal genetic resources and criteria for prioritization of breeds", 1992). An effective population size lower than 50 (inbreeding rate of 1.0% per generation) indicates the future of the breed many be considered to be at risk (Food & Agriculture Organisation of the United Nations, "Breeding strategies for sustainable management of animal genetic resources", 2010). Where the rate of inbreeding is negative (implying increasing genetic diversity in the breed), effective population size is denoted 'n/a'.

In the population analysis undertaken by the Kennel Club in 2015, the estimated population size for the Neapolitan Mastiff was n/a. For full interpretation see Lewis et al, 2015 https://cgejournal.biomedcentral.com/articles/10.1186/s40575-015-0027-4. Annual mean observed inbreeding coefficient (showing loss of genetic diversity) and mean expected inbreeding coefficient (from simulated 'random mating') over the period 1980-2014 are shown in Figure 7. The number of animals of this breed registered with the Kennel Club in the 1980s was fairly small. The small population size and possible influence of migrant animals mean there may be large fluctuations in the rate of inbreeding and effective population size over this period. From the mid-1990s the rate of inbreeding in this breed has been relatively slow, appearing to be within the level thought to be sustainable.

The current breed average inbreeding coefficient is 6.1%.

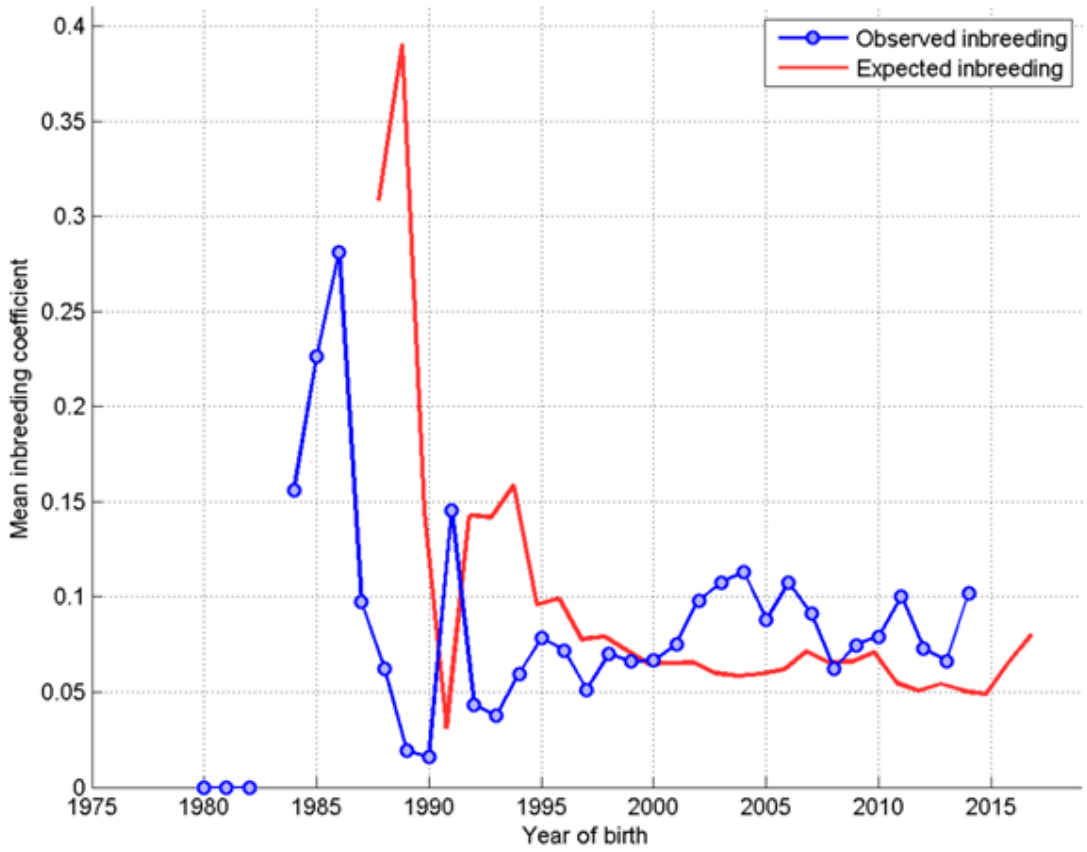

Figure 7: Annual mean observed and expected inbreeding coefficients

Below is a histogram (‘tally’ distribution) of number of progeny per sire and dam over each of seven 5-year blocks (Figure 8). A longer ‘tail’ on the distribution of progeny per sire is indicative of ‘popular sires’ (few sires with a very large number of offspring, known to be a major contributor to a high rate of inbreeding). There appears to be extensive use of popular dogs as sires in this breed (the 'tail' of the blue distribution in figure 3).

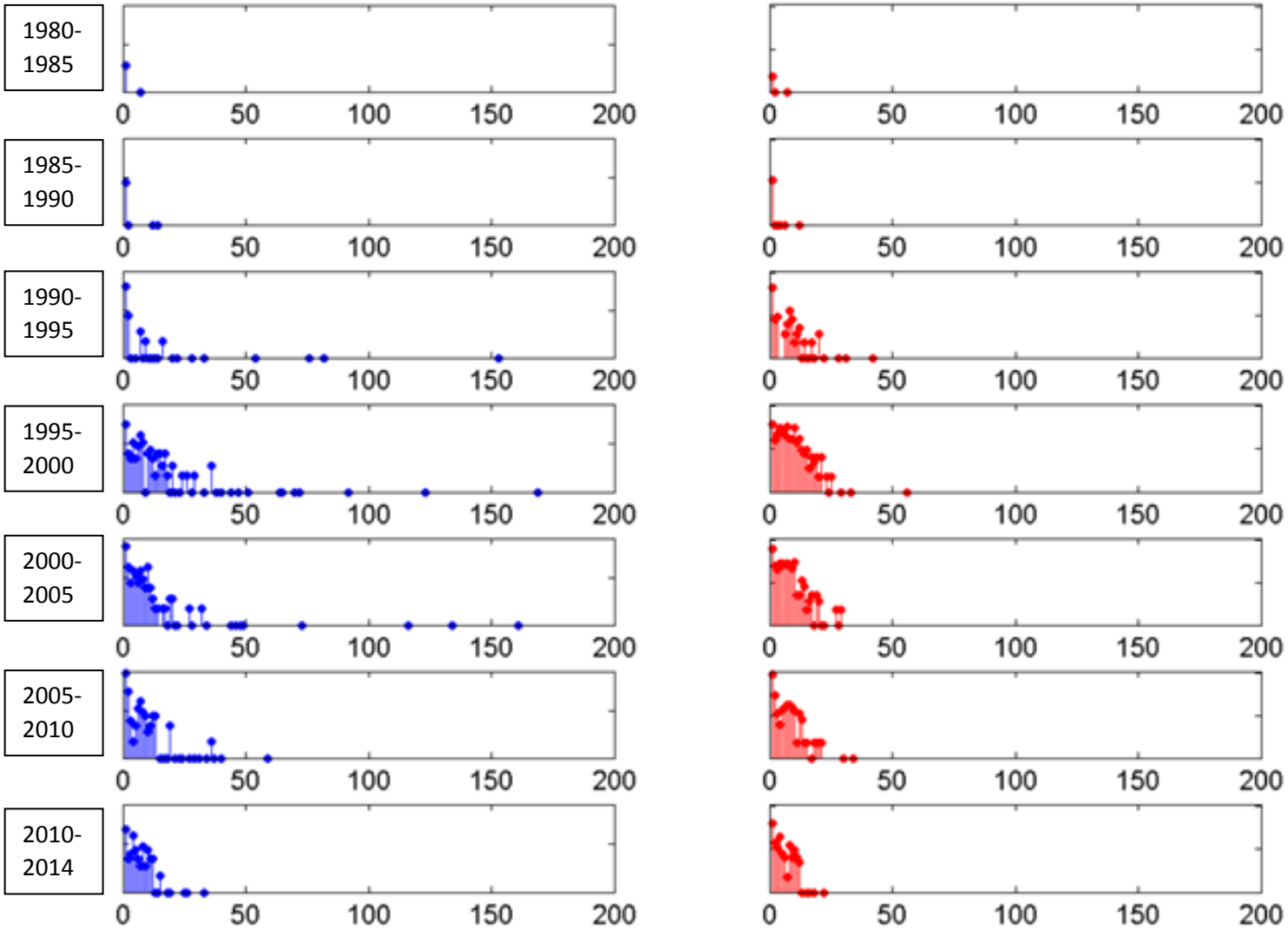

Figure 8: Distribution of progeny per sire (blue) and per dam (red) over 5-year blocks (1980-4 top, 2010-14 bottom). Vertical axis is a logarithmic scale.

Current research projects

The Neapolitan Mastiff in the UK is not currently involved in any health research projects, and there is no evidence of any ongoing research projects involving the breed internationally.

SECTION 2: PRIORITIES

A meeting was held with the Neapolitan breed representatives on 4th July, following the discussion of the breed's BHCP in 2018. This meeting was to discuss any further health research or developments in the breed's health that had occurred in the interim and to review the action points and priorities confirmed at the previous meeting.

The updated evidence base was reviewed, and the group discussed the recurrence of GDV throughout the evidence base. The breed representatives noted that bloat is a main concern for the breed but emphasised the current lack of treatment or management techniques due to the deficiency in research. The Office raised the ongoing development of a disease priority index for all registered breeds and noted that it is hoped the KC will be directing further research into bloat in the future for all affected breeds, and agreed that updates will be provided when available.

The group also highlighted the reoccurrence of cruciate ligament rupture, and the breed noted the condition as an ongoing concern for the breed. The breed updated the group to their current education being disseminated to puppy buyers and on the club's website regarding moderating exercise. The Office updated the group to the unfortunate delay of the planned cruciate ligament research study, however, it was agreed that updates would be provided when available.

The group recapped the Purebred and Pedigree Breed Health Surveys and raised that care should be taken when drawing conclusions from the data due to the statistically insignificant sample size. The breed club health surveys of 2009 and 2017 were also discussed with eye conditions being the most prevalent, followed by skin and musculoskeletal conditions. The group noted the positive uptake of both surveys. The group raised the high percentage of dogs affected with skin allergies in the health survey. The breed noted that allergies were a main concern for the breed, however, anecdotal reports had suggested a reduction in the prevalence, which was believed to be owed to many owners introducing a raw food diet; which is actively promoted by the breed clubs. The Office suggested for the breed to disseminate a new survey in the upcoming years to investigate an up-to-date prevalence of skin allergies.

With regard to Breed Watch, the Neapolitan has remained a category three breed, and the data collected from the mandatory breed judges' health monitoring forms for 2018 were discussed. The breed representatives raised their concern regarding the rise in excessive facial skin with eyelid defects, as they have seen an increase in moderate dogs within the show population due to the breed's efforts to embrace the Breed Watch health initiative. It was raised that care should be taken when drawing conclusions from the data, as dogs with a concern who are repeatedly shown can cause the data to be artificially raised, as well as the recent rise in reporting and the increase in judges' awareness over the last few years. The breed representatives expressed interest for the breed to be reclassified, as they believe there has been a significant improvement in their breed. The Office informed the breed of the reclassification criteria and noted if the breed wishes to be reclassified, they would

need to provide supporting evidence of improvement within their accessible population.

With regard to breed club health activities, the breed currently run a bronze, silver and gold level health scheme which unfortunately has had a slow uptake to date. The breed noted that the scheme has been moderated over the years and they plan to review the scheme again in the near future which they hope will encourage participation. Additionally, the group agreed for the breed to hold further discussion with their breed clubs regarding making the scheme a recommendation under the ABS, to make novice breeders aware of the scheme.

Canine Health Schemes data were discussed, and it was noted that to date, a total of 80 Neapolitans have been hip scored and 19 elbow scored with a five-year median hip score of 19.5, and 36.9% being affected by some degree of elbow dysplasia. The group noted that further data is required for conclusions to be drawn and discussed the possibility for the BVA/KC hip and elbow schemes to become a recommendation under the ABS to increase data collection and facilitate significant analysis. The breed explained that breeders are apprehensive of the schemes due to the general anaesthetic required, but noted that further education is required to inform breeder that light sedation can be used, and the reduced risks associated with this type of sedation and modern anaesthesia methods.

Regarding the BVA/KC/ISDS Eye Scheme the breed are currently not on a schedule, however, it is acknowledged that the breed can suffer from conformation associated conditions such as entropion, ectropion and cherry eye. The breed noted a reduction in anecdotal reports of these conditions, which they owe to the recent preference for moderate features, however, it was agreed that these conditions need to continue to be monitored. The breed raised that many breeders are apprehensive to participate in the scheme due to the anxiety of a specialist reporting affected results due to the conformation of the breed. The group discussed the possibility for the development of an entropion and ectropion grading scheme, as it was believed that this could be beneficial and favoured by the breed.

The breed representatives raised their concern regarding the prevalence of DCM amongst the breed and categorised the condition as a main priority for the breed, however, raised their frustration regarding their lack of successful research due to the breed being numerically small. The Office raised the ongoing development of the disease priority index as discussed previously and mentioned the hope for a DCM study in the near future, which will include the Neapolitan.

The group agreed from the evidence base and their own experience that the priorities for the Neapolitan were to remain the same as eye conditions, movement, breeder engagement and with the addition of DCM.

SECTION 3: ACTION PLAN

- The breed clubs to hold a breed health day in 2020
- The breed clubs to give advice on cruciate ligament disease in puppy welcome packs
- The breed clubs to review their health scheme, with the possibility of the revised scheme at bronze level being put forward as a proposal to be added onto the Assured Breeder Scheme
- The Kennel Club to inform the breed on any updates with the Veterinary Cardiologist Society on a DCM scheme
- The Kennel Club to inform the breed of any updates made to the development of a BVA/KC entropion grading system
- The breed clubs to make a proposal of any breed club breeding recommendations as a recommendation under the Assured Breeder Scheme
- The breed clubs to continue to encourage the uptake of the BVA/KC Hip Dysplasia scheme
- The Kennel Club to update the breed on any updates on the cruciate ligament disease study with the University of Surrey
- The breed to continue to participate in the Large and Giant Breed Working Group
- The Kennel Club will review progress with the breed in Summer 2021

References

Genetics Committee of the American College of Veterinary Ophthalmologists (2015) Ocular disorders presumed to be inherited in purebred dogs, Eighth Edition http://www.acvo.org/new/diplomates/resources/ACVOBlueBook20158thEdition.pdf [Accessed 30/06/2017]