Summary of Kennel Club Breed Records: Bulldog 2021

Standard Colour Only

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Methods

Information on bulldog litters registered by the Kennel Club in 2021 was retrieved from the utility group breed record supplements AX1 – AX4. This included information on the sire and dam of the litter, the date of birth of the litter, the number and colour of the registered puppies, any Caesarean section information (elective or emergency), artificial insemination information, and Kennel Club Assured Breeder (KCAB) information.

Further information was gathered from the Kennel Club database, including: the sex of the puppies, the date of birth of the sire and dam, the grandparents of the litter, the registered coat colour of the parents and grandparents, the coefficient of inbreeding for the litter, the litter count for each parent, date of the first litter for each parent and Hyperuricosuria (HUU) DNA testing, Respiratory Function Grading (RFG) testing & hip testing results for the parents. Only RFG results dated prior to the birth of the litter were included.

This document only includes information on standard colour litters, defined as follows:

- Litter consists of only standard coloured puppies,
- Both parents of the litter are a standard colour,
- All grandparents of the litter are a standard colour.

Some dogs are registered under an incorrect colour – either as a standard colour when they should be CNR, or vice versa. These were identified by looking at the results of a Google search using the search phrase: '"<Registered Name>" Bulldog'. Where there was evidence of this, the corrected colour has been used.

Additional health testing results were also retrieved from the results of this search where available. These are listed in Appendix I.

Parents results from the Bulldog Breed Council Health Scheme were retrieved from the council's website: https://www.bulldogbreedcouncil.co.uk/vet-results-2. Only health scheme results dated prior to the birth of the litter were included.

Data summarisation was carried out using Microsoft Excel and RStudio.

Litter Summary

776 standard colour bulldog litters were registered with the KC in 2021, consisting of 3,619 puppies. 48.3% (1,749) were dogs and 51.7% (1,870) were bitches.

The most common puppy coat colour was Red & White (65.0%). *Figure 1* shows the breakdown of puppy coat colours in these litters.

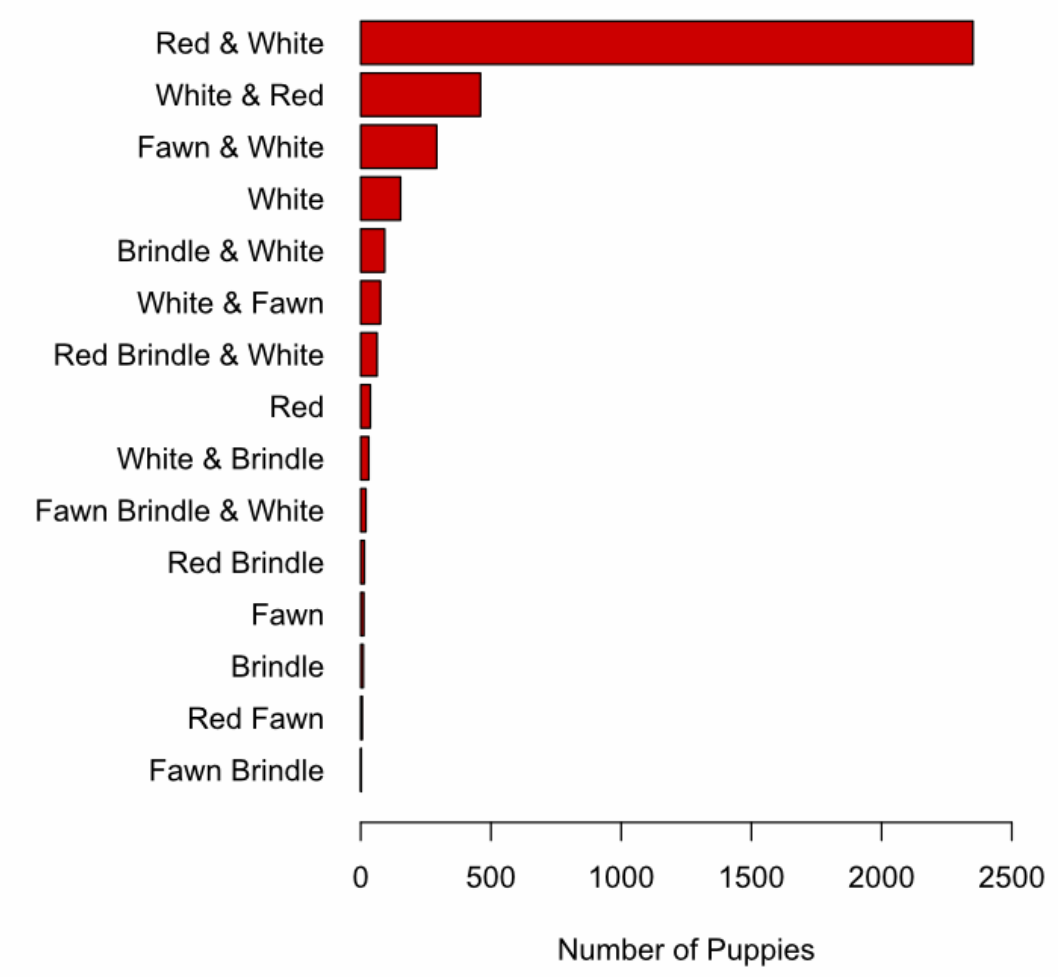

Figure 1. Coat colour of puppies from standard colour litters (n=3,619)

Litter Size

The mean number of puppies in standard colour litters was 4.7, whilst the median was 5. The distribution of puppy numbers per litter is shown in *Figure 2*.

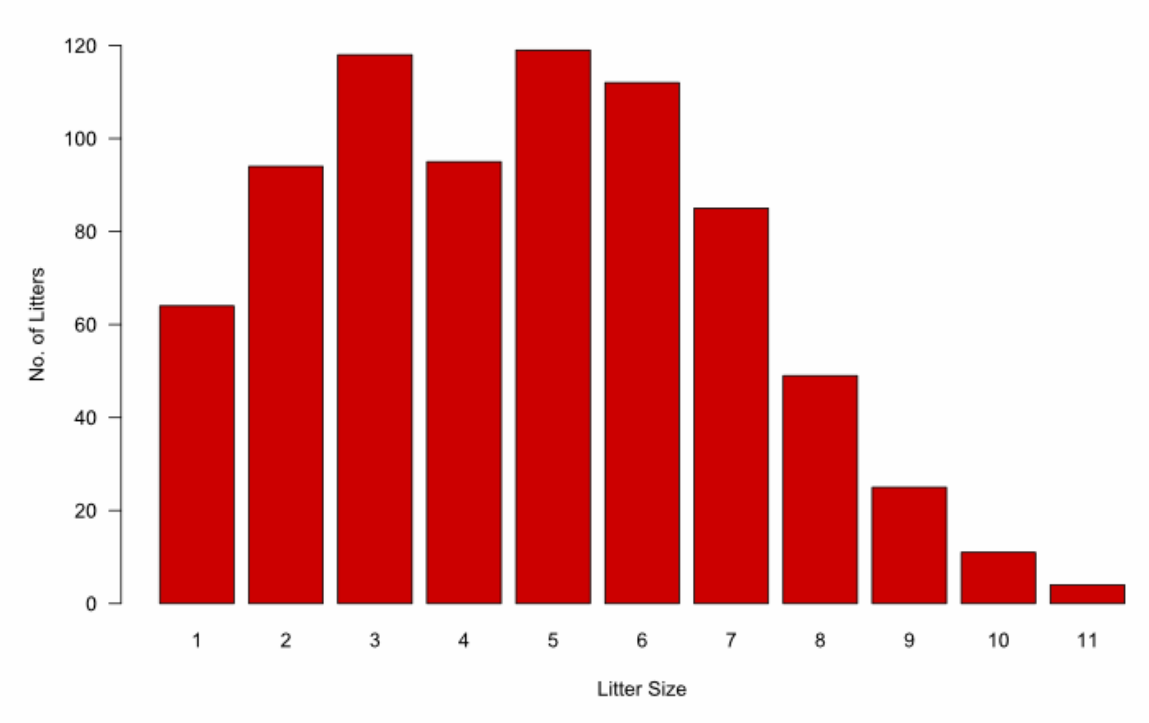

Figure 2. Litter size of standard colour litters (n=776)

Coefficient of Inbreeding

The coefficient of inbreeding (COI) is a measure of estimated inbreeding, expressed as a percentage probability of the same variation being inherited from the sire and the dam. A lower percentage indicates a lower estimated level of inbreeding.

The Kennel Club calculates the COI for each dog using all generations in their database.

The mean COI for these litters was 10.6% and the median COI was 9.6%. The median number of complete generations in this calculation was 8 (range 2 – 12), with at least part of the pedigree extending back a median of 28 generations (range 24 – 30). The solid line in *Figure 3* shows the distribution of COI percentages for these litters.

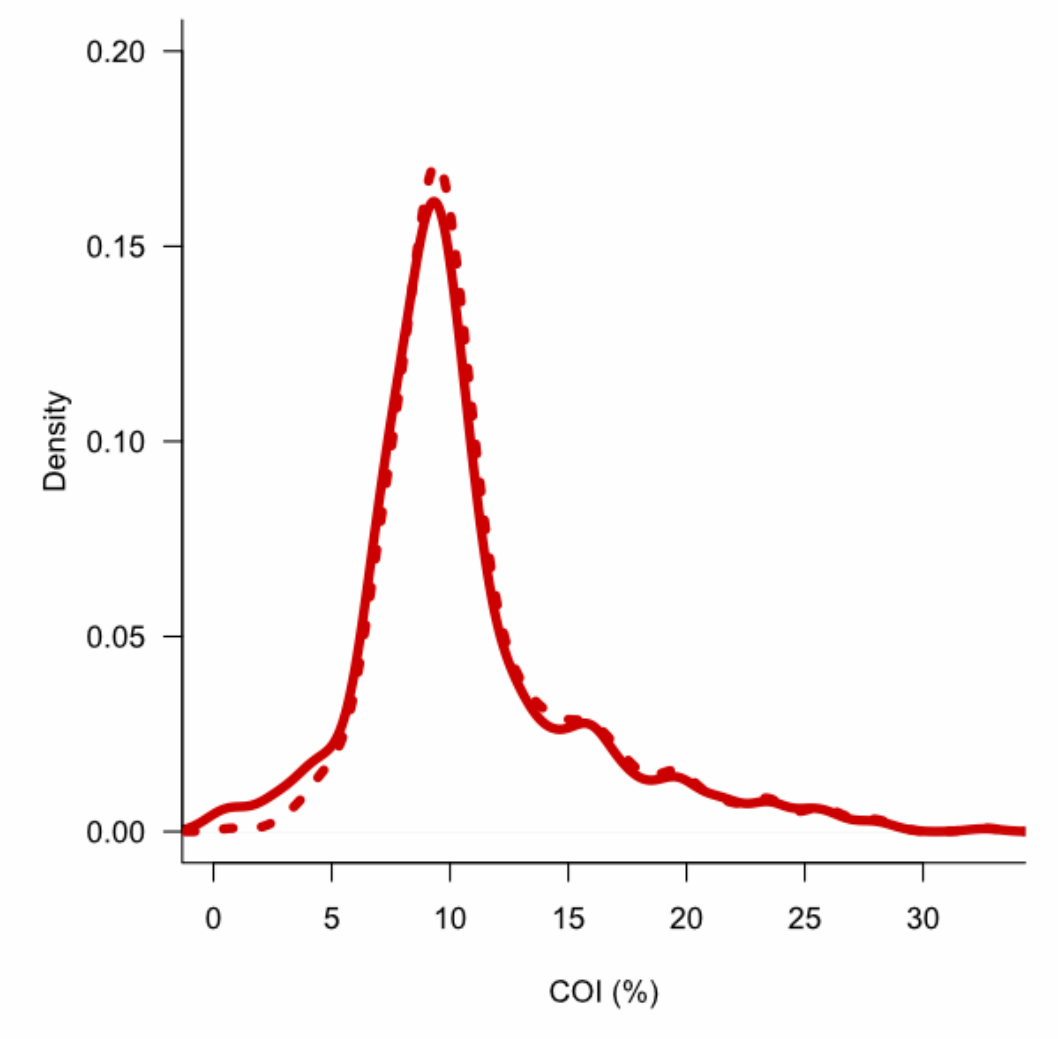

Figure 3. Distribution of COI percentages for standard colour litters
solid line = all litters (n=776); dotted line = litters with no imported parents (n=667)

The highest recorded COI was 32.6%, and 13 litters were recorded with a COI over 25% (the equivalent of a parent/child or brother/sister mating). 75 (9.7%) litters had a calculated COI under 6.5%.

One limitation of the COI calculation is that a reduced number of available generations in a pedigree decreases how informative the calculation may be. For imported dogs, the Kennel Club database may only contain three generations.

Removing litters with one or more imported parents, the mean COI for these litters was 11.1% and the median COI was 9.8%. The median number of complete generations in this calculation was 8 (range 3 – 12), with at least part of the pedigree extending back a median of 28 generations (range 25 – 31). The dotted line in *Figure 3* shows the distribution of COI percentages for these litters.

Caesarean Sections & AI

60.6% of these litters were delivered by a reported Caesarean section (C-section). Of those litters where natural birth is presumed to have been attempted (i.e. excluding elective C-sections), 43.2% of litters were reported to be delivered by emergency C-section.

Figure 4 shows the proportion of litters reported to have been delivered by C-sections.

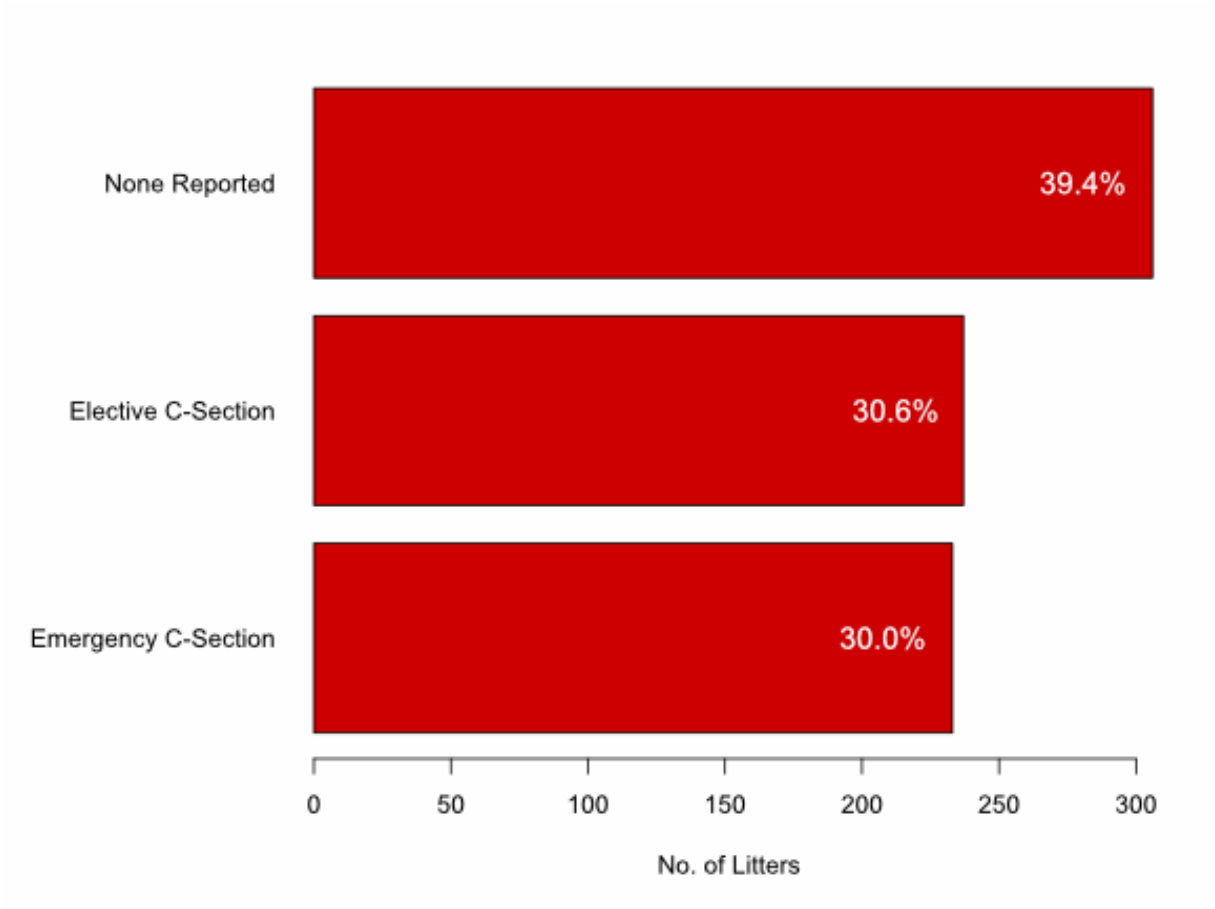

Figure 4. Reported Caesarean section information for standard colour litters (n=776)

Thirteen litters were reported to have been conceived by artificial insemination (AI).

Parents

The 776 standard colour bulldog litters were produced by 309 different sires and 762 different dams. This is a ratio of ~2.5 dams for every sire.

34 of the sires are imports from other countries, whilst 32 of the dams are the same (*Table 1*).

Table 1. Origin of foreign and imported parents of standard colour litters

Country of Origin	No. of Sires	No. of Dams
Belarus	1	1
Bulgaria	2	1
Croatia	0	1
France	3	1
Hungary	4	1
Ireland	2	1
Italy	1	1
Latvia	0	1
Lithuania	0	4
Norway	1	0
Poland	4	11
Portugal	1	0
Romania	0	1
Serbia	1	3
Slovakia	0	1
Spain	8	4
The Netherlands	1	0
Unknown	3	0
USA	2	0

Sire Age

The mean age of sires at the birth of these litters was 3.98 years, whilst the median age was 3.81 years. The maximum age of sire at birth of a litter was 11.18 years, whilst the minimum was 0.76 years.

Assuming a gestation time of approximately 60 days (or 0.17 years), the predicted mean age of sires at conception of the litter is 3.81 years, whilst the median age is 3.64 years. Under the same assumption, 14 litters (18%) are predicted to have been conceived when the sire was under 2 years of age. *Figure 5* shows the distribution of the estimated age of sires at the conception of the litters.

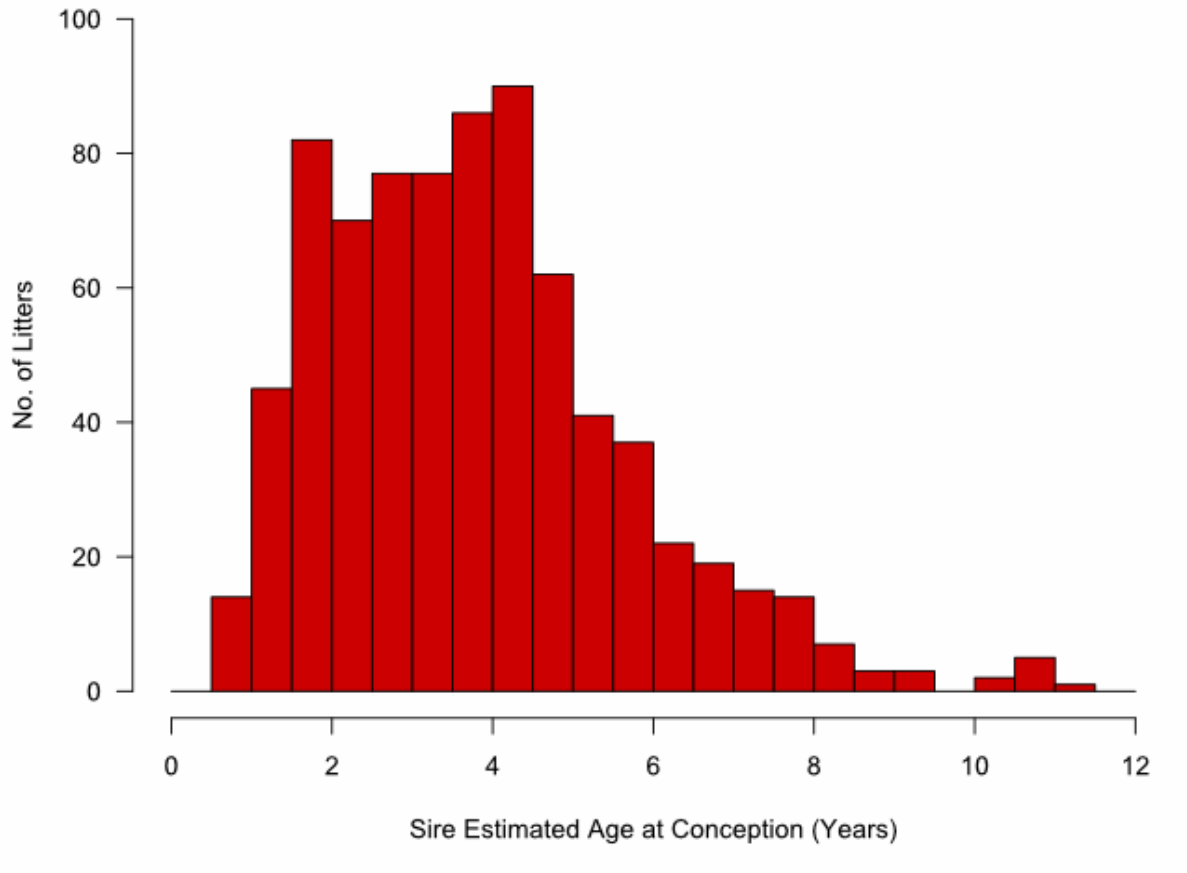

Figure 5. Estimated sire age at conception of standard colour litters (n=772)
estimated age at conception = age at birth of litter – 0.17

86 litters were registered from first-time sires, excluding foreign dogs and imports as they are more likely to have sired a litter abroad, potentially prior to any Kennel Club registered litter. Assuming a gestation time of approximately 60 days (or 0.17 years), the predicted mean age of first-time sires at conception of the litter was 2.72 years, whilst the median age was 2.39 years. The maximum age of sire at estimated conception of a litter was 7.23 years, whilst the minimum was 0.59 years.

Figure 6 shows the distribution of the estimated age of first-time sires at the conception of the litters.

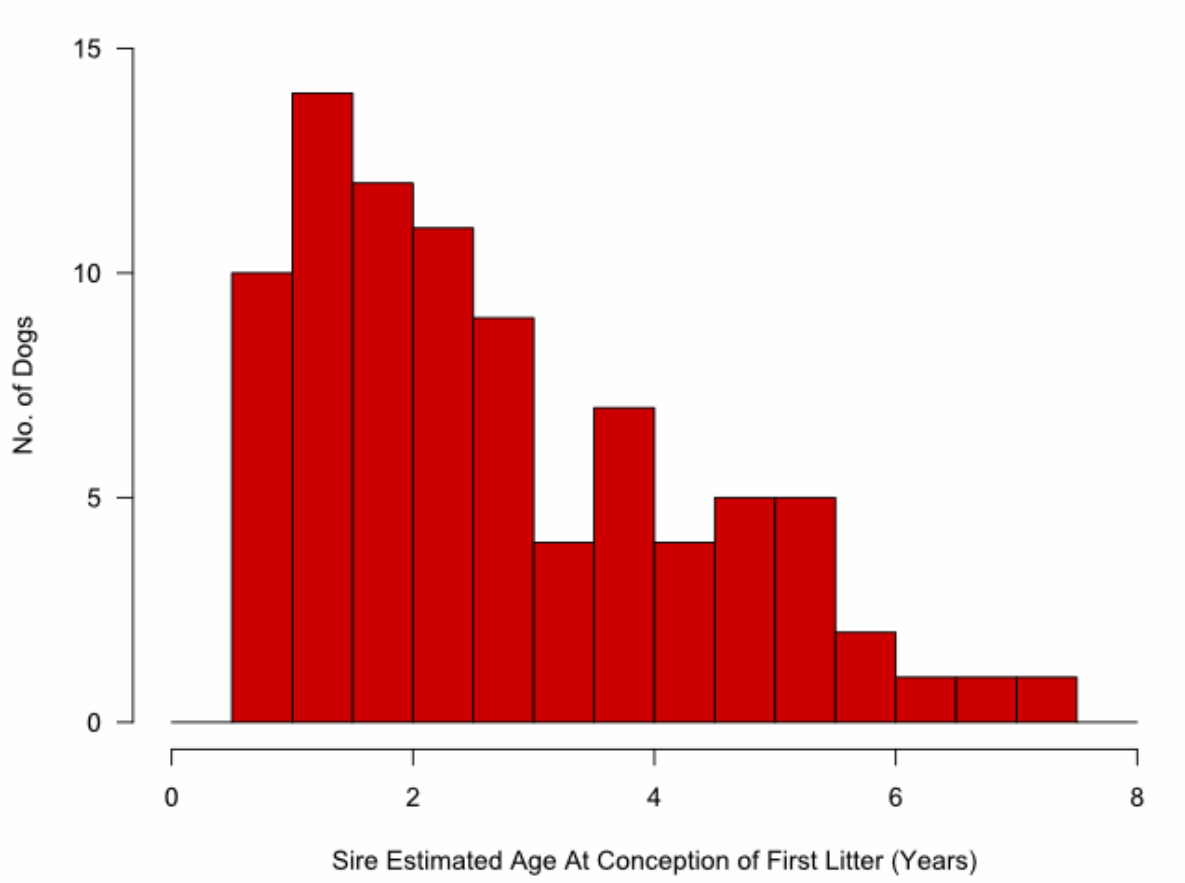

Figure 6. Estimated age at time of conception of first-time sires of standard colour litters, excluding foreign dogs (n=86); estimated age at conception = age at birth of litter – 0.17

Dam Age

The mean age of dams at the birth of these litters was 3.33 years, whilst the median age was 3.18 years. The maximum age of dam at birth of a litter was 7.80 years, whilst the minimum was 1.23 years.

Assuming a gestation time of approximately 60 days (or 0.17 years), the predicted mean age of dams at conception of the litter is 3.16 years, whilst the median age is 3.01 years. Under the same assumption, 138 litters (18%) are predicted to have been conceived when the dam was under 2 years of age. *Figure 7* shows the distribution of the estimated age of dams at the conception of the litters.

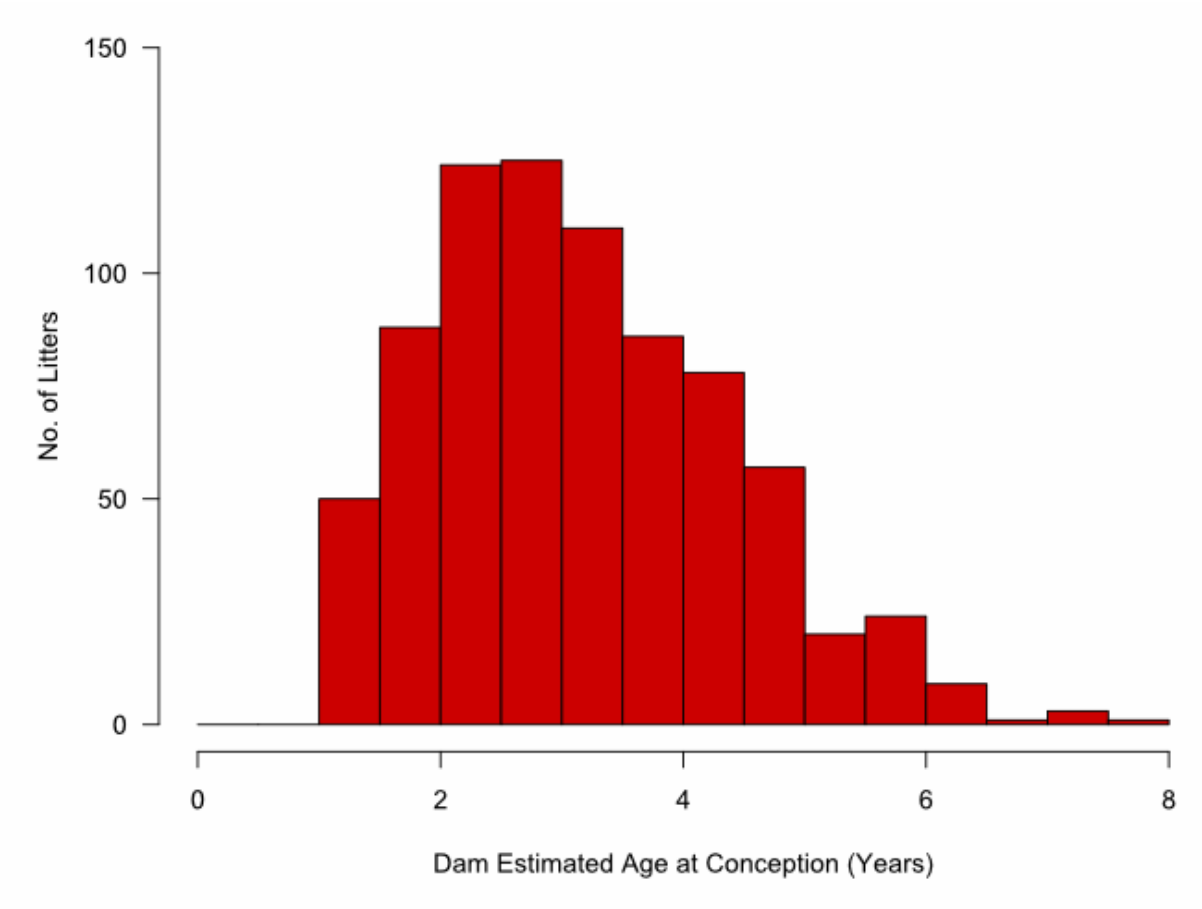

Figure 7. Estimated dam age at conception of standard colour litters (n=776)
estimated age at conception = age at birth of litter – 0.17

480 litters were registered from first-time dams, excluding foreign dogs and imports as they are more likely to have birthed a litter abroad. Assuming a gestation time of approximately 60 days (or 0.17 years), the predicted mean age of first-time dams at conception of the litter was 2.75 years, whilst the median age was 2.54 years. The maximum age of dams at estimated conception of a litter was 7.11 years, whilst the minimum was 1.06 years.

Figure 8 shows the distribution of the estimated age of first-time sires at the conception of the litters.

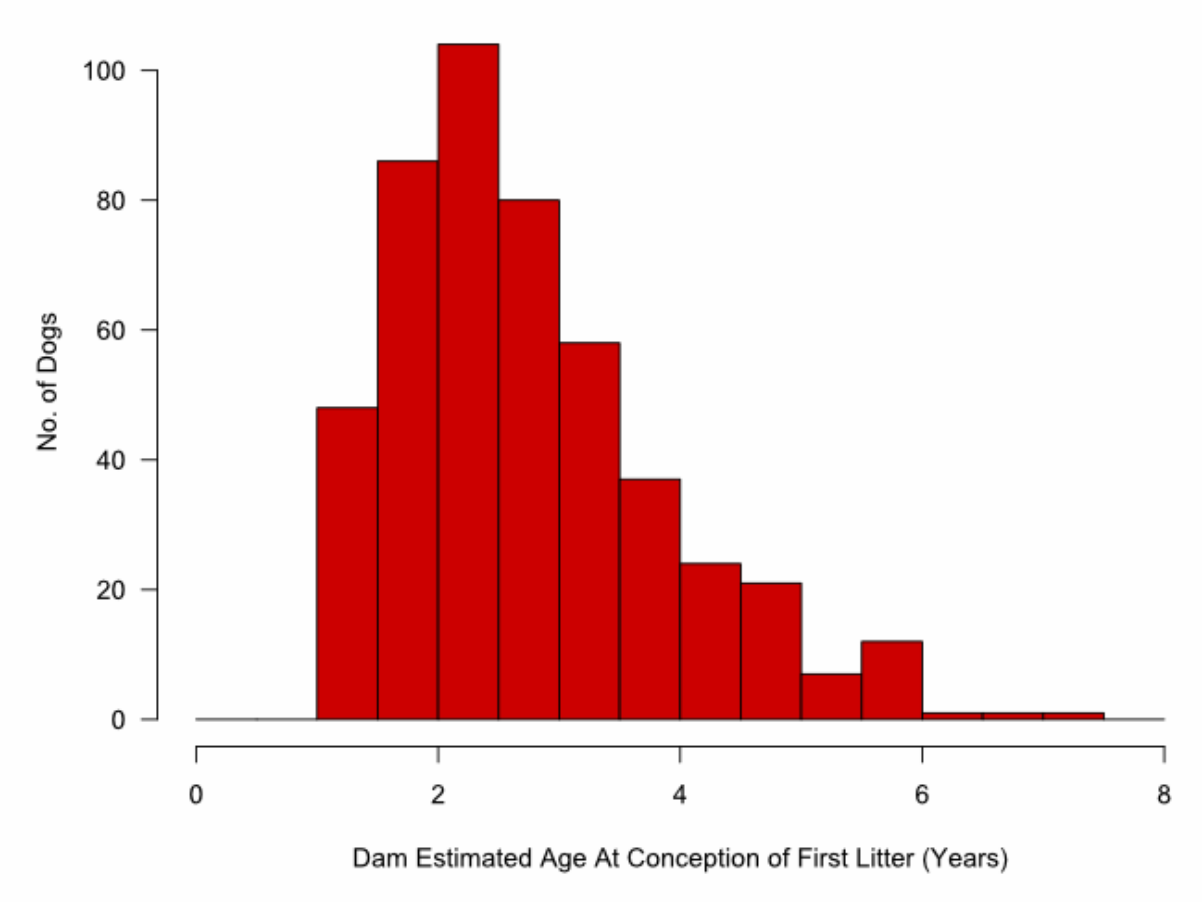

Figure 8. Estimated age at time of conception of first-time dams of standard colour litters, excluding foreign dogs (n=480); estimated age at conception = age at birth of litter – 0.17

Popular Sires

Table 2 lists standard colour sires with ten or more litters registered in 2021.

Table 2. Standard colour sires with 10 or more litters registered in 2021. Includes Health Scheme and Respiratory Function Grading (RFG) scheme dated before the end of 2021.

Registered Name	No. 2019 Litters	Health Scheme	RFG
Our Patch There's No Match	19	Silver	0
Aidabullyz He's Roman	17	N/A	N/A
Bullycar Uriah's Pride At Croftthorn	15	N/A	N/A
Neibull Show Maker	14	N/A	N/A
Bagibeli Ace Of Spades	13	Gold	1
Ricatori Redesigned	12	Gold	1
Teredactol Teri	12	N/A	N/A
Andlare Bobby Dazzler	11	Gold	1
Lilylove Last Tango In Paris At Ragmarte	11	Gold	2
Lumbuse Mr Douglas Home For Ryjarlow	11	Gold	0
Kadreya Rough And Tough	10	Silver	N/A
Milasha No Retreat Ocobo	10	Silver	N/A
Rhydycroesau I'm Tarquin	10	Silver	1
Rosebull I Am Thor	10	N/A	N/A
Willbebulls Optimus Prime	10	Bronze	1

Table 3 lists the ten standard colour sires with at least one 2021 litter, with the highest number of total registered litters (up to the last litter registered in 2021).

Table 3. Standard colour sires with the most total litters to the end of 2021. Includes Health Scheme and Respiratory Function Grading (RFG) scheme dated before the end of 2021.

Registered Name	Total Litters	Health Scheme	RFG
Sealaville He's Tyler	163	Silver	N/A
Honourabull Chile'n Salsa For Ragmarte	89	Silver	N/A
Mojaka Burugog Fflawiau For Croftthorn	85	Gold	N/A
Testwood Tom	85	N/A	N/A
Ricatori Roman King	81	Gold	N/A
Andlare Willy Nilly	73	Silver	1
Lilylove Last Tango In Paris At Ragmarte	58	Gold	2
Nobozz King Kong	53	N/A	N/A
Milasha No Retreat Ocobo	51	Silver	N/A
Ricatori Redesigned	50	Gold	1

Health Testing

The Kennel Club currently recommends bulldog breeders use the following schemes and tests:

Priority (required for Kennel Club Assured Breeders (KCAB)):

- Respiratory Function Grading (RFG) scheme,

Important:

- DNA test for hyperuricosuria (HUU),
- Bulldog Breed Council Health Scheme to at least Bronze level,
- Check COI.

34 standard colour litters and were produced under the KCAB scheme.

35 (4.5%) standard colour litters were produced with both parents fulfilling all recommended schemes and tests (tested for HUU, RFG tested and Health Scheme to at least the Bronze level).

HUU DNA Testing

Hyperuricosuria (HUU) is a disease affecting uric acid metabolism. In affected dogs, uric acid can build up and form painful crystallised stones in the urinary tract. Correction may require surgery. A DNA test is available for the mutation in the *SLC2A9* gene causing HUU in bulldogs.

HUU in bulldogs is recessively inherited, meaning if at least one parent has tested clear or is hereditary clear for the HUU mutation all puppies from that litter should be safe from HUU.

Table 4 shows the available testing results for the standard colour litters. Dogs classified as 'No Result' may be tested, but the result is not publicly available. Hereditary results are combined with their tested counterparts (e.g. hereditary clear dogs are combined with clear tested dogs).

Table 4. HUU testing results for the parents of standard colour litters (n=776)

		Sire			
		Affected	Carrier	Clear	No Result
Dam	Affected	0	0	1	0
	Carrier	0	0	31	6
	Clear	0	9	241	58
	No Result	0	1	269	160

609 (78.5%) of standard colour bulldog litters had at least one parent either tested clear or hereditary clear for the HUU mutation, meaning all puppies were clear. For 160 (20.6%) litters, no public HUU test results were available for either parent.

No litters were produced from two carrier/affected parents, putting the offspring at confirmed risk of HUU.

For an additional seven litters, public HUU testing results were only available for one parent, who was a carrier for the HUU mutation. These litters were potentially at risk for HUU, depending on the HUU status of the second parent.

Bulldog Breed Council Health Scheme

The Bulldog Breed Council have developed a health scheme to promote healthier breeding of bulldogs and enable data collection about bulldog health.

The current scheme consists of three levels: gold, silver, and bronze (see *Table 5*).

Table 5. Current criteria for the Bulldog Breed Council Health Scheme

Level	Age	Assessment

Bronze	1 year	• Approved vet completed Health & Conformation form
		• Not awarded if:
		  · Referred to a cardiologist (heart abnormality found),
		  · Eye conditions detrimental to dog's health,
		  · Signs of aggression,
		  · Palpable abnormalities in the spine.

Silver	1 year	• Clear result on eye exam • Putnam test Grade 0/1 • HUU tested – clear/carrier • Tail must be present and not inverted • Breathing assessed under the Respiratory Function Grading scheme – Grade 0,1 or 2 • Males must not be monorchid or cryptorchid • Does not have green/blue eyes • Does not have a Dudley (pink) nose • Standard coat colour
Gold	2 years	• BVA or ECVO eye scheme assessed at over 2 years • Heart screened by auscultation approved vet – grade 0 • Breathing assessed under the Respiratory Function Grading Scheme – Grade 0 or 1

The level a dog has achieved may have different meaning depending on when it was awarded. For example, silver tested dogs did not use to have to have their breathing assessed and breathing assessment at the gold level was not under the RFG scheme, as this had not yet been developed/made official. There is no division made between these versions in the subsequent summaries.

Table 6 summarises the health scheme levels achieved by parents of standard colour litters. Only health scheme results achieved in the month of or before the date of birth of a litter are included.

Table 6. Breed Council Health Scheme results for the parents of standard colour litters (n=776) Numbers in brackets indicate the number of individual dogs with litters in the row/column

		Sire			
		Gold	**Silver**	**Bronze**	**No Result**
Dam	**Gold**	18	4	6	1
	Silver	19	38	6	26
	Bronze	11	18	11	14
	No Result	81	167	27	329

2.3% of standard colour litters were produced from two gold-tested parents. 79 (10.2%) of litters were produced from parents who have both achieved at least the silver level in the health scheme. 57.6% of litters had at least one parent tested to some level, and 16.9% of litters had both parents achieving some level in the health scheme.

Respiratory Function Grading Scheme

The Respiratory Function Grading (RFG) scheme was developed in association with the University of Cambridge to assess breathing in three breeds known to suffer from brachycephalic obstructive airway syndrome (BOAS), including the bulldog. BOAS is a respiratory condition seen in short-headed (brachycephalic) dogs.

Trained assessors listen to the dog's breathing whilst they are relaxed. The dog is then moved at a fast pace for three minutes, and the breathing assessed again. Dogs are graded between 0 and 3 (see *Table 7* for explanation).

Table 7. Respiratory Function Grading scheme grades

Grade	Meaning
0	Clinically unaffected and free of respiratory signs of BOAS
1	Clinically unaffected, but with mild respiratory signs linked to BOAS
2	Clinically affected, with moderate respiratory signs of BOAS which may require treatment
3	Clinically affected, with severe respiratory signs of BOAS which requires treatment

The RFG scheme was officially launched in February 2019 with scores before this, assessed by the scheme developers at the University of Cambridge, entered into the database on request. Only RFG grades dated before a litter was born are included in the below summary.

Sires of 245 standard colour litters have been assessed under the RFG scheme, with dams of 90 standard colour litters assessed. Both parents have been assessed for 58 litters.

Table 8. Respiratory Function Grading grades for dogs assessed prior to birth of a litter.

Grade	Sires	Dams
0	18	32
1	41	42
2	4	16
3	0	0

Figure 9 shows the summarised results of the 153 tested bulldogs by age.

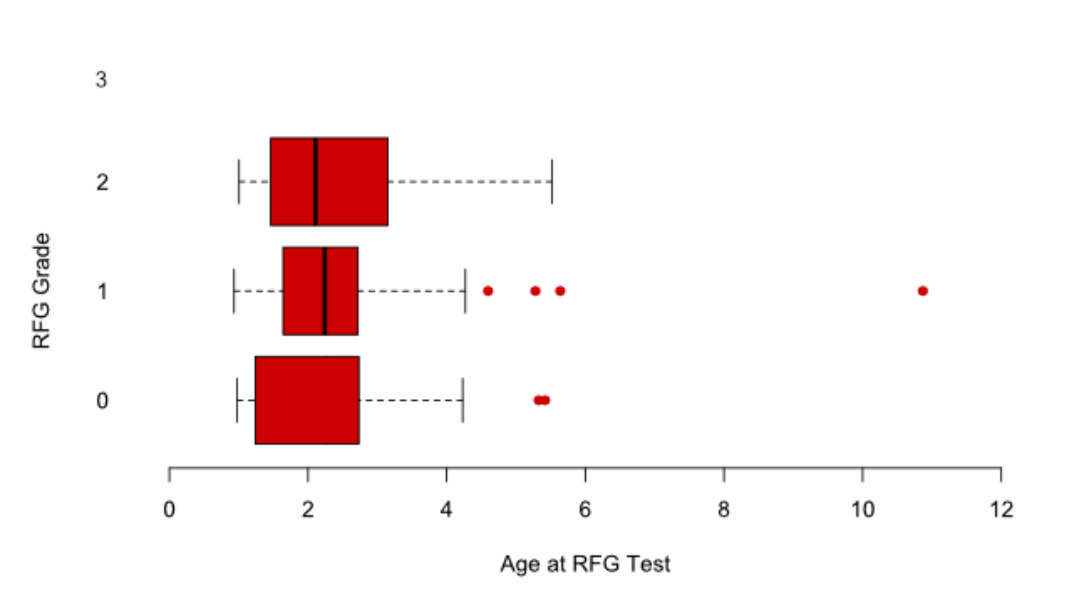

Figure 9. Respiratory Function Grading scheme results for dogs with standard colour litters (n=153).

The mean age of these dogs at time of RFG assessment was 2.4 years, with the median age of 2.2 years. The oldest assessed dog was 10.9 years at time of RFG assessment, with the youngest being 0.9 years.

Of the twenty dogs assessed to be grade 2, six were bred to dogs without an RFG grade at the time of the litter, 12 twelve were bred to grade 0 or 1 dogs, and two were bred to a grade 2 assessed dog.

No parents of standard colour litters were assessed to be a grade 3.

Other Testing

Eye Testing

Eye testing is included in the gold level of the Bulldog Breed Council Health Scheme.

Nineteen litters were registered in 2021 where both parents had been tested under a registered eye scheme.

In total, 74 different bulldogs with eye testing results had litters registered in 2021. Results were available for 31 of these, of which 8 were recorded with 'Observation Made' and the others 'Unaffected'.

Hip Testing

Testing for hip dysplasia in bulldogs is not currently recommended by the Kennel Club or the Bulldog Breed Council.

The BVA/KC hip dysplasia scheme is a method of scoring abnormal hip development. As dogs age the hip joint deteriorates, which may lead to loss of function, pain, discomfort, stiffness and/or lameness. Hip dysplasia is a complex disorder, influenced both by genetics and the environment (e.g. diet).

Each of the two hip joints is given a score between 0 and 53, based on nine aspects of the hip. The total hip score is the combination of these two scores, with a lower hip score meaning a lower degree of hip dysplasia. Dogs must be one year of age and are scored once in their lifetime.

Two bulldogs with litters registered in 2021 had BVA/KC hip dysplasia scheme testing results. Results are shown in *Table 9*.

Table 9 BVA/KC hip testing scheme scores for bulldogs with registered litters in 2021

Sex	Left Hip	Right Hip	Total
Dog	7	5	12
Bitch	11	13	24

Elbow Testing

Testing for elbow dysplasia in bulldogs is not currently recommended by the Kennel Club or the Bulldog Breed Council.

The BVA/KC elbow dysplasia scheme is a method of scoring abnormal elbow development. As dogs age the elbow joint deteriorates, which may lead to loss of function, pain, discomfort, stiffness and/or lameness. Elbow dysplasia is a complex disorder, influenced both by genetics and the environment (e.g. diet).

Each of the two elbow joints is given a score between 0 and 3 Dogs must be one year of age and are scored once in their lifetime.

One bulldogs with litters registered in 2021 had BVA/KC elbow dysplasia scheme testing results, with a result of 0/1 = 1.

Appendix I: Additional Health Testing Results

Registered Name	HUU	Source
Brarabus Lord Fredrick Of Hillsidebull	Clear	http://www.britishgoldbulldogs.co.uk/studs/
Ellsberry Heart And Soul	Clear	https://www.champdogs.co.uk/dog/66427
Eynsbrooke Jiminy Cricket	Clear	https://www.friday-ad.co.uk/slough/pets/kc-reg-britis-bulldog-pups-raised-in-16976761/
Karbecabull Got The Face On	Clear	https://www.champdogs.co.uk/dog/83595
Lilylove Last Tango In Paris At Ragmarte	Clear	https://www.champdogs.co.uk/dog/66277
Lilylove Notorious McGregor At Wencar	Clear	https://www.facebook.com/Wencarbulldogs/photos/pcb.3095750870468167/3095747790468475/
Mattero Av Wesbasian Mystyle	Clear	https://www.champdogs.co.uk/dog/82650
Seren Medi	Clear	https://www.gumtree.com/p/dogs/1-boy-1-girl-left-english-bulldog-puppies.-ready-now-kc-registered.-amazing-bloodline./1422834050
Smackerjacks Red Son	Clear	https://www.freeads.co.uk/uk/buy-sell/pets/dogs/bulldog/37016834/stunning-handsome-bulldog-for-stud-/view
Suzuka's Love And Happiness	Clear	https://www.champdogs.co.uk/dog/78971
This Is Murphy At Tinopark	Clear	http://www.tinoparkbulldogs.com/studs
Tinopark Captain Jack	Clear	http://www.tinoparkbulldogs.com/studs