

Analysis of litters registered in the years 2000 to 2012 inclusive

This report is based on details of Clumber Spaniel puppies registered with Kennel Club in the years 2000 to 2012 inclusive.

Number of puppies registered per year

Over this 13-year period a total of 2387 puppies were registered with an average of 184 puppies per year. The actual number of puppies registered per year is shown in Figure 1 below where the blue line represents the number of puppies in each year. The red dotted line represents the trend over this period. Which shows a steady increase although there has been a dramatic reduction over the last two years.

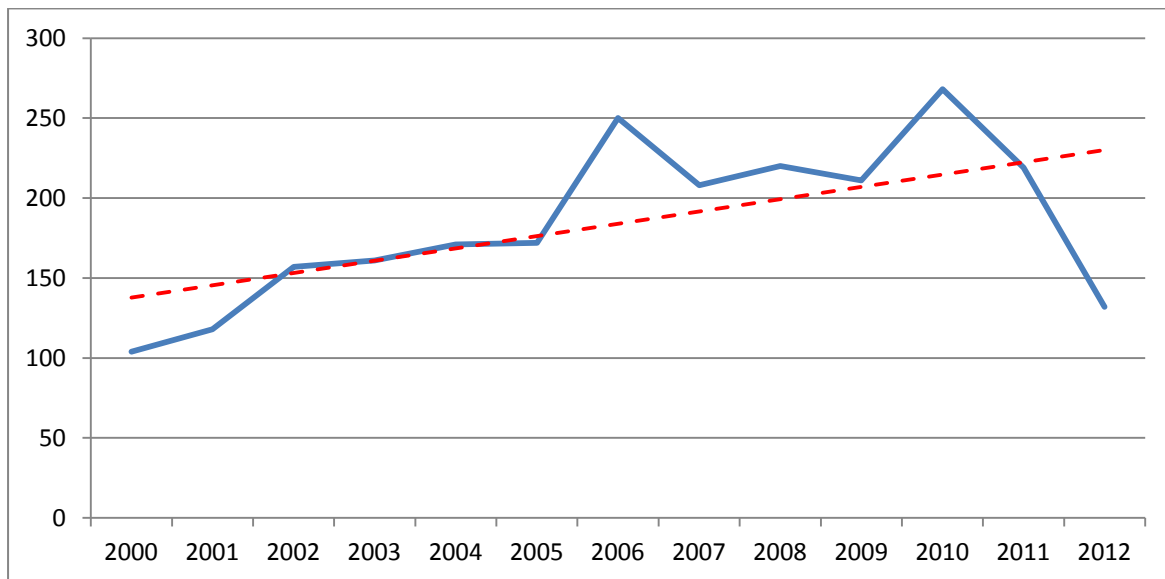


Figure 1: Number of puppies registered per year from 2000 to 2012

The second figure shows the number of dogs and bitches registered in each year.

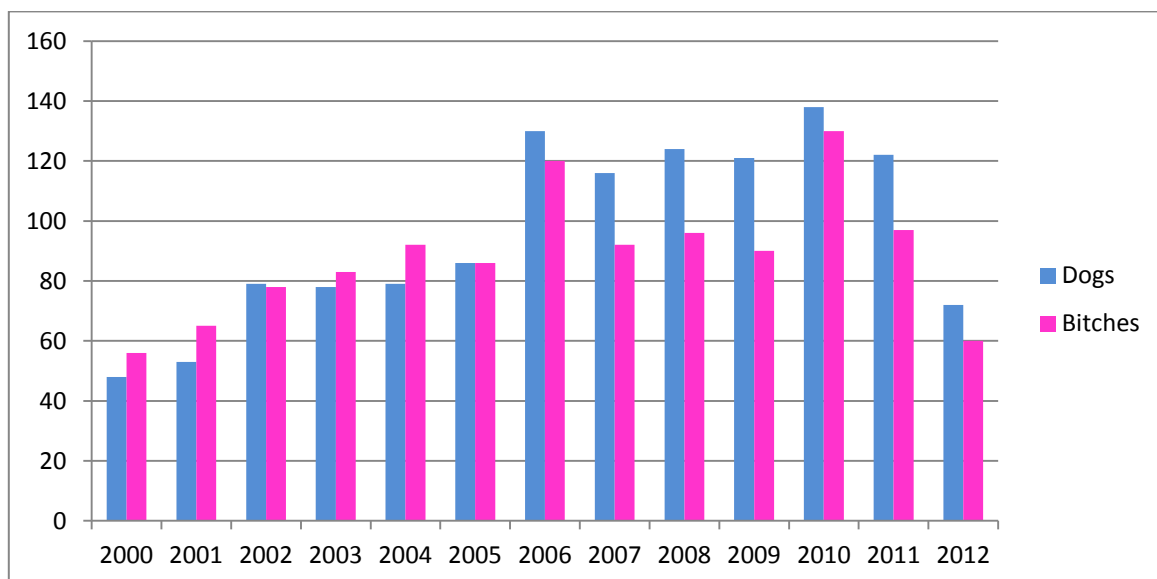


Figure 2: Number of dogs and bitches registered per year

Number of litters per year

During this 13 year period, puppies were registered from a total of 454 litters with an average of 35 litters per year.

The number of litters per year with puppies registered is shown in Figure 3 below where the blue line represents the actual number of litters, and the red dotted line shows the trend which is increasing although there has been a drop in the number of litters in the last two years.

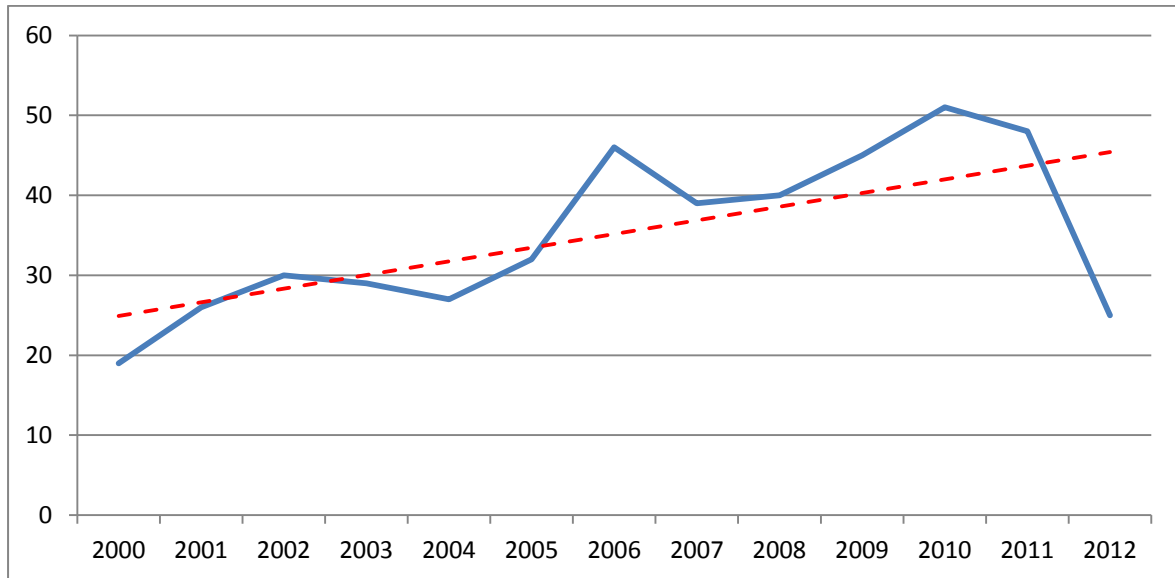


Figure 3: Number of litters per year

Number of puppies per litter

The average number of puppies per litter over this period is 5.26. However as is shown in Figure 4 below the average has fallen slightly over this period.

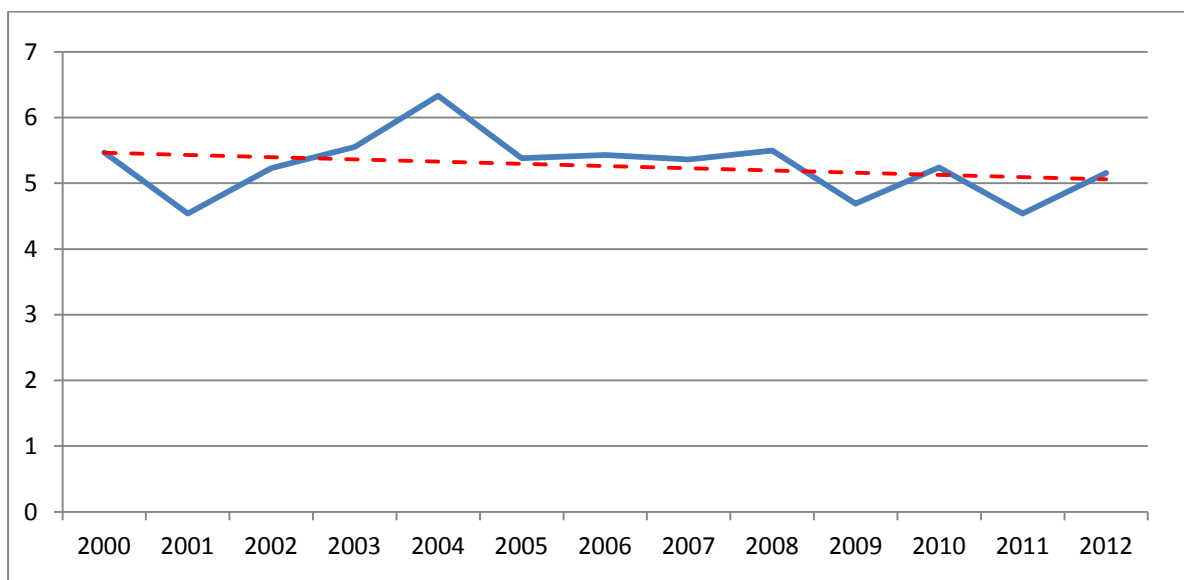


Figure 4: Number of puppies per litter

Coefficient of Inbreeding

The Kennel Club currently shows the COI for Clumber Spaniels as 21 although they do not say on the web page how they have calculated this. The following table shows the averages over this 13 year period for COIs based on the puppies born and on the matings each year:

	Average COI 5 Gen	Average COI 10 Gen
Based on matings	12.64%	26.92%
Based on puppies	12.86%	27.10%

The next two figures show how the average per year has changed over the 13 year period based firstly on matings and secondly based on puppies registered. Both sets of data show a clear decrease in the average COI 10 Gen over the period but there appears to be a slight increase in the average COI 5 Gen.

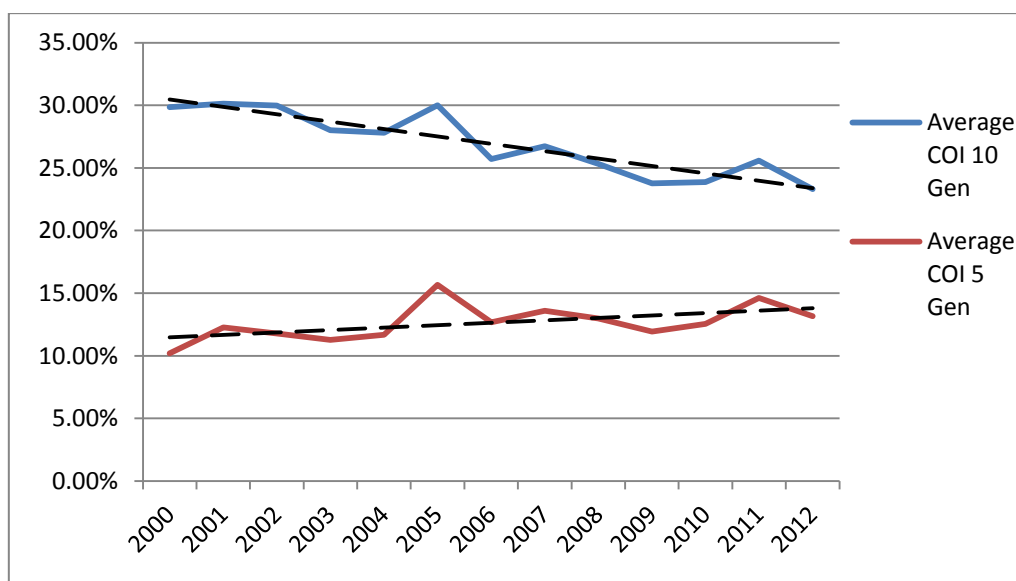


Figure 5: Average COI per year based on matings

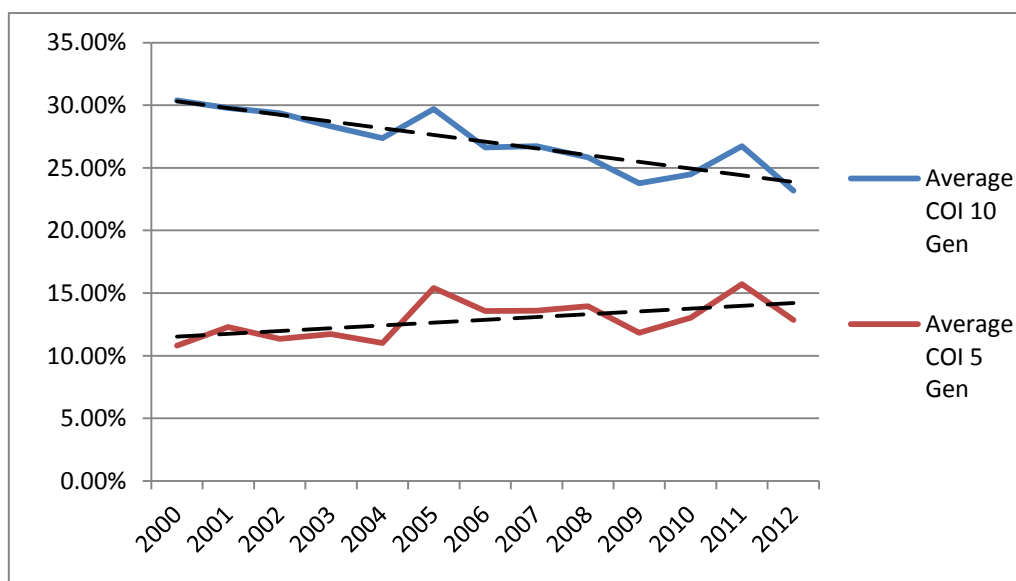


Figure 6: Average COI based on puppies born

Stud dogs

During this 13-year period 142 stud dogs each successfully produced at least one litter. The range was from 1 to 20 successful matings and the table below shows the number of stud dogs for each number of matings in this range, for example at the top of the table 54 dogs achieved one successful mating; and at the bottom there is one dog who had 20 successful matings.

Number of stud dogs	Number of successful matings
54	1
35	2
18	3
8	4
7	5
5	6
7	7
2	8
1	9
3	10
2	11
12	12
1	14
1	18
1	20

Further analysis of the number of puppies produced by each stud dog showed that 50% of the total number of puppies produced in this period (2387) were sired by just 21 stud dogs. This is illustrated in the next figure.

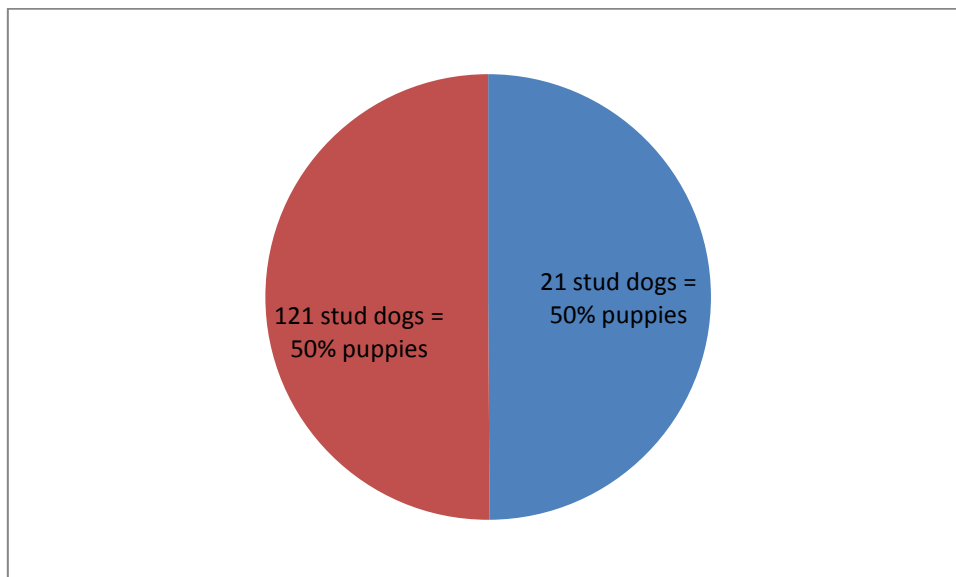


Figure 7: Percentage of the total number of puppies produced by the top 21 stud dogs

The next table lists these 21 dogs in order of the number of litters they produced, which includes the total number of puppies and the average COI scores for their litters.

Those with an average COI 5 Gen of less than 10 for their matings have been highlighted in green, and those with an average COI 5 Gen of more 20 have been highlighted in red.

Sire	no litters	no puppies	Average COI 5 gen	Average COI 10 gen
SEDGEHURST HAWKRIDGE	20	109	18.57%	31.10%
TWEEDSMUIR TOP GUNNER	18	105	9.44%	24.61%
WESTERLY GAELS DIAMOND DOGS AT SEDGEHURST	14	87	13.29%	24.00%
TWEEDSMUIR WHITE HUNTER	12	68	7.25%	20.50%
BELCRUM BILL CODY	12	65	6.67%	21.67%
SEDGEHURST NETHERSTOWEY	12	62	23.58%	34.42%
BELCRUM ANOTHER ANGUS	11	65	10.18%	26.09%
SEDGEHURST TEMPEST	11	62	24.64%	35.27%
SEDGEHURST WITHYCOMBE	10	67	18.50%	31.30%
SEALUMBER NEXT GENERATION	10	63	5.10%	15.60%
BURNCHILD DOLLAR BILL BELCRUM	10	50	8.70%	22.50%
SCHERZANDO HAMISH	9	73	19.00%	35.00%
ERINVEINE EXONERATE FOR ABBYFORD	8	46	8.22%	18.44%
TWEEDSMUIR FLY THE FLAG	8	30	16.13%	33.13%
ABBYFORD TAW	7	51	12.75%	25.13%
CLUMBERDALE ROYAL WULFF	7	33	15.00%	25.71%
FLINTWOOD FELLOW	6	35	25.00%	35.00%
ANBROOK MACALLAN	6	33	7.83%	24.67%
FOULBY WILD BIRD AT TAVIROSH	6	30	12.17%	30.83%
VANITONIA U BET I AM	6	30	4.33%	14.00%
JUBILWELL RIFF RAFF FOR MAURSETT	6	27	11.00%	25.67%

Brood Bitches

During this period 289 different bitches each produced at least one litter with live puppies who were registered. The full breakdown of the number bitches and the number of litters they produced is shown in the table below. The top row in the table shows that 185 bitches had one litter while the bottom row shows that one bitch had six litters.

Number of bitches	Number of litters
185	1
63	2
25	3
10	4
5	5
1	6

The sixteen bitches that had 4 or more litters together produced 428 puppies which is 18% of all the puppies registered in this period. This is shown graphically in the next figure:

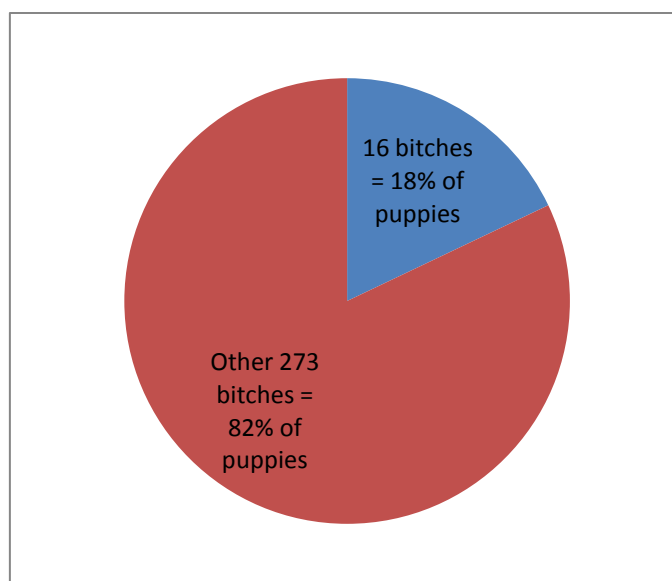


Figure 8: Percentage of total number of puppies produce by the 16 bitches that had 4 or more litters

The next table shows details of the sixteen bitches that had 4 or more litters. Those with an average COI 5 Gen of less than 10 for their matings have been highlighted in green, and those with an average COI 5 Gen of more 20 have been highlighted in red.

	No of litters	Total no puppies	Average COI 5 Gen	Average COI 10 Gen
BELCRUM HOLLY BUSH	6	31	9.50%	24.83%
FLINTWOOD SNOWSTORM	5	23	26.60%	37.20%
RADEGONDE LUCIE OF WINDMILLWOOD	5	20	19.00%	30.80%
SEDGEHURST ASHBITTLE OF FLINTWOOD	5	43	23.00%	35.80%
SEDGEHURST HENRIETTA	5	39	19.60%	34.60%
THE WHITE PRINCESS OF UIG	5	27	5.20%	19.20%
ANBROOK MASQUERADE TO TWEEDSMUIR	4	25	6.75%	19.75%
BRONX PLENTY O'TOOLE	4	18	4.75%	22.75%
FLINTWOOD SNOWDRIFT OF SLINKETT	4	23	22.00%	33.00%
FLINTWOOD SNOWFLAKE MACGIRIAGHT	4	29	14.00%	26.00%
SEDGEHURST ARTEMIS	4	22	27.75%	38.00%
SEDGEHURST FOXTWITCHEN	4	23	18.50%	30.75%
SEDGEHURST LUCINA	4	24	27.00%	37.50%
SEDGEHURST MYRTLEBERRY	4	24	22.25%	32.75%
SEDGEHURST STORMWIDGER	4	34	22.50%	35.50%
TWEEDSMUIR SOLITAIRE	4	23	11.50%	25.50%

Analysis of matings

By sorting the names of the stud dogs and the brood bitches it was found that four matings had been repeated three times during this 13-year period; there were seven instances of a mating being repeated three times; and there were 46 repeat matings.

	frequency
Mating repeated x4	3
Mating repeated x3	7
Mating repeated x2	46
Mating repeated x1	401

The next table shows the details of the matings which were repeated three or four times and shows the number of puppies produced and the COIs for the mating. Again those with a COI 5 Gen of less than 10 for the mating have been highlighted in green, and those with a COI 5 Gen of more than 20 have been highlighted in red.

Sire	Dam	Frequency of mating	total no puppies	COI 5 gen	COI 10 gen
SEDGEHURST HAWKRIDGE	FLINTWOOD SNOWDRIFT OF SLINKETT	4	23	22%	33%
SCHERZANDO HAMISH	SEDGEHURST HENRIETTA	4	31	19%	35%
DEUCHARS RUAN	FLINTWOOD SNOWFLAKE MACGIRIAGHT	4	29	14%	26%
SEDGEHURST TEMPEST	SEDGEHURST ARTEMIS	3	17	28%	38%
RADEGONDE HUBERT OF BABBINSBRIAR	DEEPFLEET FLICK OF BABBINSBRIAR	3	11	22%	33%
GALADHRIM RAGAMUFFIN ROMEO	ANTONINE FOR YOUR EYES ONLY	3	21	21%	41%
CLUMBERDALE ROYAL WULFF	ALLORJENN BREE	3	11	15%	26%
BELCRUM ANOTHER ANGUS	BELCRUM HOLLY BUSH	3	18	13%	28%
BELCRUM BILL CODY	THE WHITE PRINCESS OF UIG	3	19	4%	19%
ICKYTICKER GORDON WALTER	SUNRISE SMILE OF SAMDAN	3	5	0%	9%

CONCLUSIONS

1. The number of puppies registered with the Kennel Club per year increased gradually over this 13-year period, although there has been a clear drop in numbers over the past two years.
2. The number of litters per year has also shown an increase over the whole period but a decline in the past two years.
3. The number of puppies per litter has decreased slightly.
4. The yearly average COI 10 Gen has decreased but the average COI 5 Gen has increased slightly.
5. 50% of all puppies registered over this period were sired by just 21 out of a total of 142 stud dogs.
6. 18% of puppies registered were produced from just 16 bitches out of a total of 289 who had puppies.
7. Analysis of the top stud dogs, bitches that had had most litters, and of repeat matings suggests that some while some breeders may be making use of COI information to reduce levels of inbreeding, others appear not to be doing so.