



Irish Glen of Imaal terriers

facts and figures

July 2018



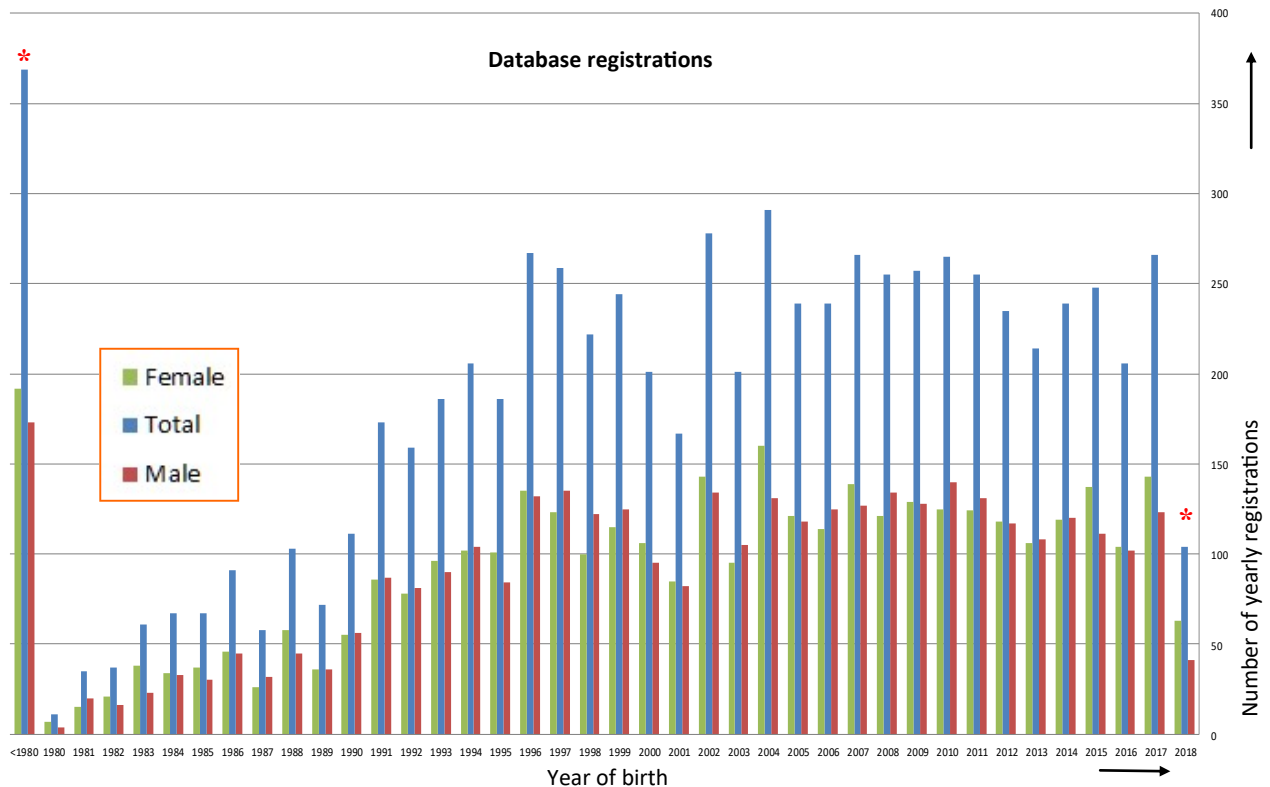
Database registrations

As per July 2018 Glen-Footprints Database keeps record of **7500** Glens from all over the world.

The chart below shows the number of registrations (males + females) per year of birth.

Overall by gender: **Female = 50.6%**; **Male = 49.2%**, **Unknown = 0.2%**.

Please note * : registrations earlier than 1980 are summarized and the 2018 data only cover half a year.

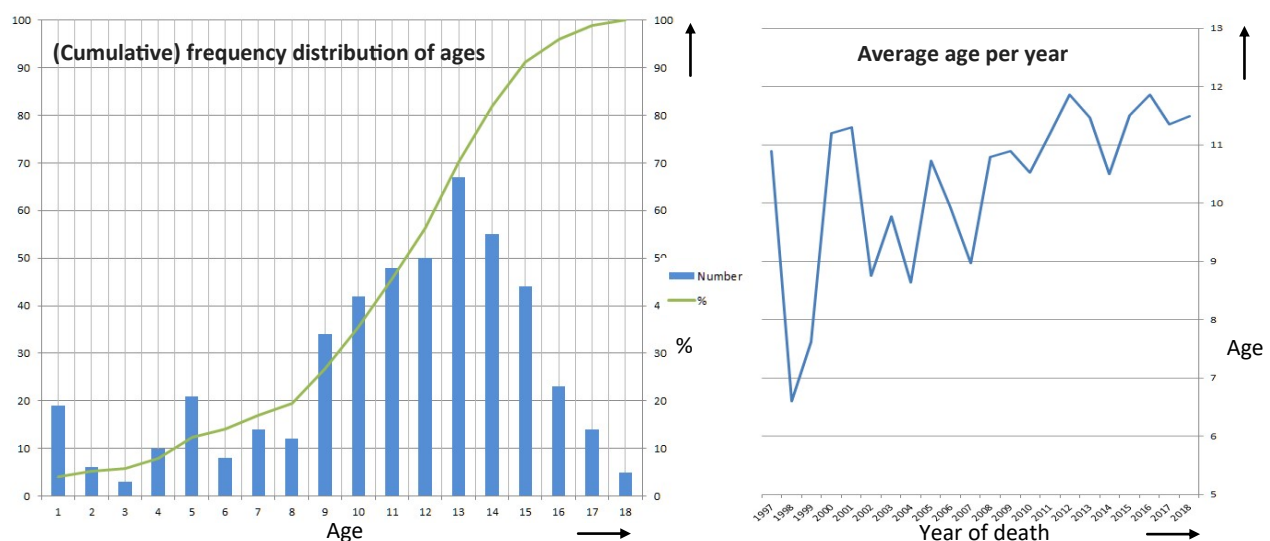


Age

Of about 500 Glens we have a reliable date of death. The **average** age of a Glen is **10.7 years**; there is **no** significant difference between males and females. The **median** value is **11.4 years**.

The left chart below shows a histogram and a cumulative frequency distribution of their ages at death.

The chart on the right shows that the average age of a Glen has been increasing over the last 20 years.



Population

The population size worldwide is roughly estimated at **3000**. Trend is fairly constant. Approximately **70%** of the Glens live in the England, USA, Finland and Ireland and **30%** in other countries (Denmark, Germany, the Netherlands, Sweden, Norway, Scotland, Australia, Czech Republic, France, Poland, Austria, Canada, Switzerland, Belgium, Italy and others).

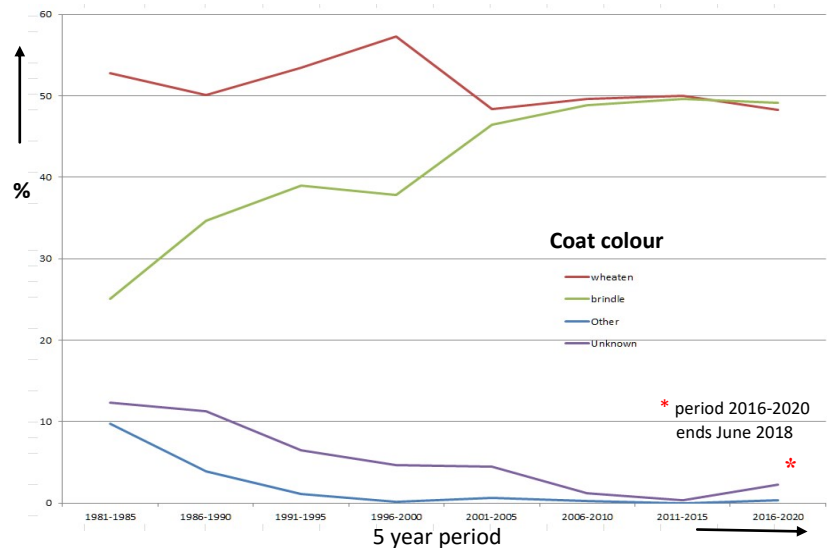


Coat colour

The chart on the right shows the development of the ratio of the coat colours, wheaten and brindle, summarized over 5 year periods (1981-1985, ..., 2016-2020).

The majority of the Glens has a wheaten coat, especially before 2000.

After 2000 the ratio wheaten - brindle has changed considerably, wheaten vs brindle became more and more equal.



Glen-Footprints inbreeding calculator

In August 2015 we introduced and implemented with great success an online inbreed calculator. Since then this calculator has been used approx. **5400** times, so in average **1800** calculations per year! This undoubtedly has a positive effect on the overall Coefficient of Inbreeding of our small breed.



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Hypothetical Mating

Sire Dam Generations

Results

Sire	Dam	Generations	COI (limited)	COI (all)	Known Ancestors	Unique Ancestors (AVK)
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Coefficient of Inbreeding (COI)

Inbreeding is inevitable in closed populations with a finite number of ancestors and where there is selection. Irish Glen of Imaal terriers are more or less closely related to each other. The coefficient of inbreeding is the probability that an individual has a pair of alleles that are identical by descent from a common ancestor.

Glen-Footprints calculates the COI according the formula of Sewall Wright: $F = \sum (\frac{1}{2})^n (1 + F_{cs})$

There is no limitation in the number of generations used for calculation.

From many Glens we have more than 10 generations (over 2046 ancestors!) in the pedigrees.

The chart below shows 3 graphs:

- the mean COI (blue) of all database registrations per year of birth with trend graph
- the maximum COI (red) in any year
- the minimum COI (green) in any year

The mean COI (blue) trend is slowly increasing over the years to 21.5%* in 2015. But due to substantial lower COI's from 2016 to present (20.7%), we even see a slightly decreasing trend to **21.0%*** per 2018.

(* calculated over 20 years)

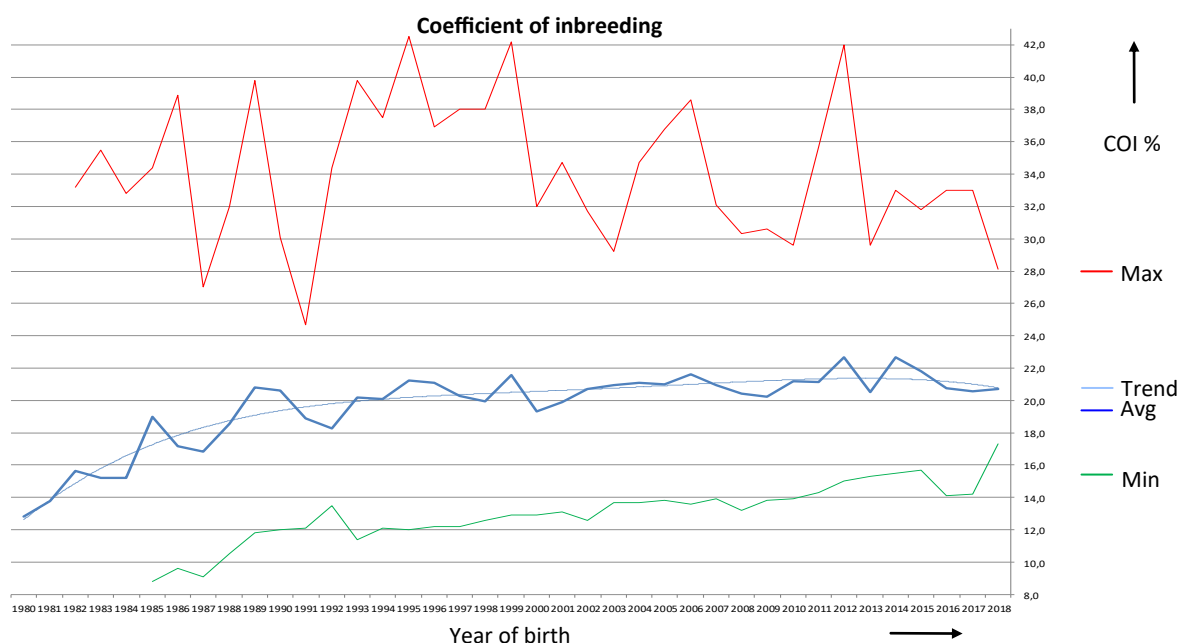


Minimum COI is slowly increasing, currently around **15%**. With the current population it's impossible to select a pair for mating with a COI less than **13%**; there are no unrelated Glens.

BTW... should this (13%) be considered as outcross????

Other databases (eg. KC or Koiranet) mostly show for the same Glen (much) lower COI's because:

- they have less generations or more gaps in their pedigrees
- they limit the number of generations for calculation
- they don't possess pedigree history of imported dogs, these are considered as unrelated. As you know lots of Glens are imported and they all are more or less related to each other.

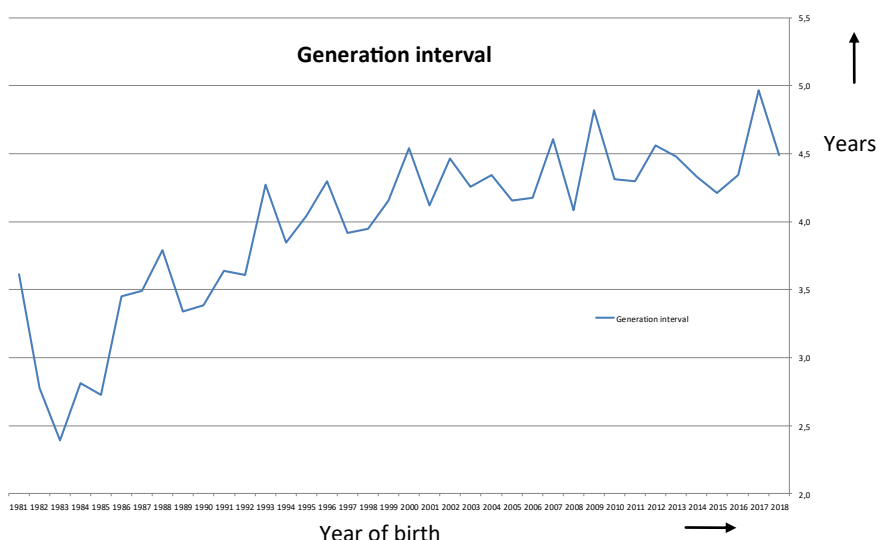


Generation interval

Generation interval is the mean interval of time (in years) between the birth of parents and the birth of their offspring. The chart shows the mean generation interval of all database registrations per year of birth.

From 2000 till now the mean generation interval is slightly increasing to **4.4 years**.

(respectively vs sire: 4.8 and vs dam 4.0 years).



Inbreeding rate

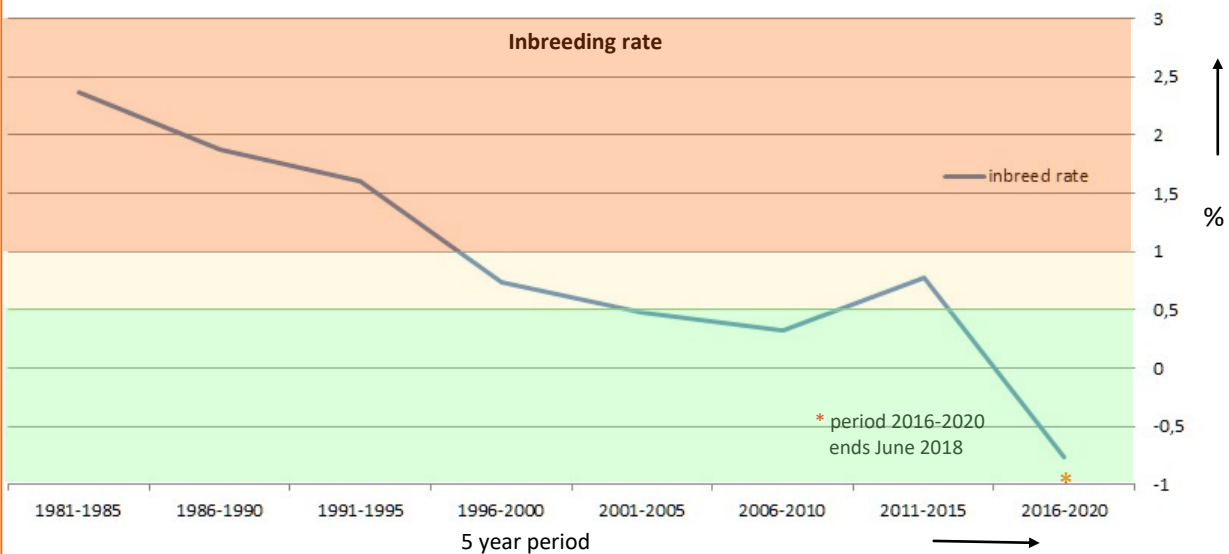
The inbreeding rate is an indication of the loss of genetic diversity in the breed. Inbreeding rate is calculated as the average of the difference in COI between the parents and their offspring per year of birth.

Literature says that the loss of genetic diversity dramatically increases if the inbreeding rate is higher than 0.5% per generation and the future of the breed is to be considered at risk if the inbreeding rate is over 1%.

The chart below shows the progression of the average inbreeding rate over 5 year periods (1981-1985, ...2011-2015, 2016-2020).

The average inbreeding rate over the period 1980-2018 is **1,05%** and from 2000-2018: **0,3 %**.

During the last period (2016-2018) the average inbreeding rate was even negative which means that offspring has lower COI's than their parents have. This is a positive development.



PRA

In the summer of 2010 the gene defect, responsible for causing PRA in Glens, was found.

At that time appr. 8% of the population was affected, 40% was carrier and 52% was normal/clear.

Because of our small gene pool it was strongly recommended to use the carriers for breeding as well in order to keep the gene pool stable. The DNA test was useful to avoid riskful matings (eg with 2 carriers).

We made an analysis of the newborn Glens, born between 2011 and 2016 and born after 2016 until now.

	2011-2015	2016-2018
Affected	0%	0%
Carrier	25% *	21%
Normal/Clear	75%	79%

The table shows that carriers actually are used for breeding and that PRA is slowly disappearing from our breed. PRA is not a serious issue anymore.

* Period 2011 to 2015 includes 6 litters (30 offspring) out of a (safe) combination "affected x normal/clear"; offspring = 100% carrier.

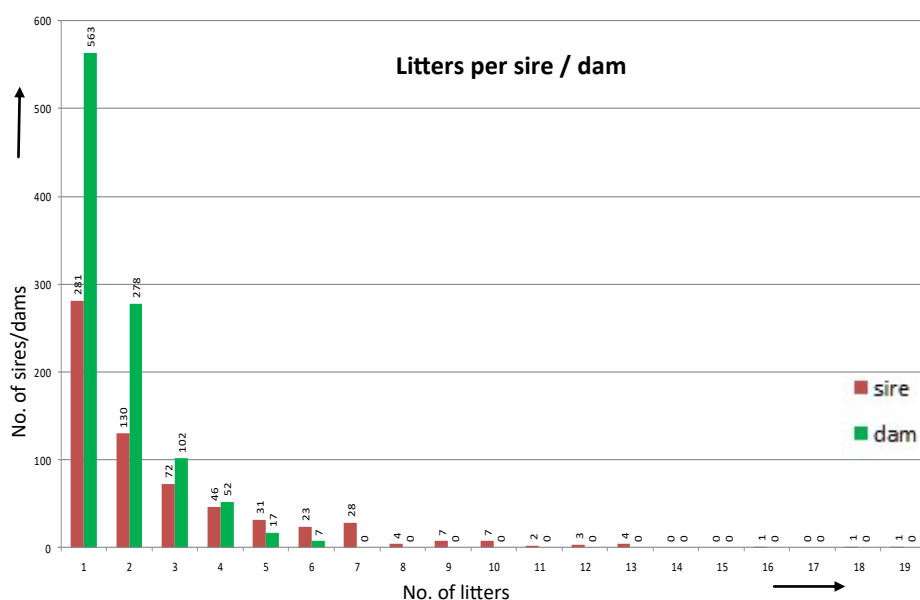
Litter analysis

Period	All	1980-2018	2000-2018
• Number of litters analysed	1826	1631	952
• Repeat matings	332 = 18.2%	261 = 15.9%	104 = 10.9%
• Average litter size	4.1	4.4	4.6
• Males/females/unknown	49.2 - 50.6 - 0.2%	49.5 - 50.3 - 0.2%	49.0 - 50.8 - 0.2%
• Number of distinct sires	641	586	404
• Number of distinct dams	1019	938	613
• Litters per sire	2.8	2.8	2.4
• Litters per dam	1.8	1.7	1.6
• Males used for breeding	17.6%	16.9%	18.6%
• Females used for breeding	27.2%	26.3%	27.2%
• Total Glens used for breeding	22.4%	22%	23%
• Not used for breeding	77.6%	78%	77%

Litters per sire / dam

The table below shows the number of litters per sire and dam. E.g.: - 281 sires produced 1 litter but there was 1 sire who even produced 19 litters! - 563 dams produced 1 litter where 7 dams produced 6 litters!

Litters	Sires	Dams
1	281	563
2	130	278
3	72	102
4	46	52
5	31	17
6	23	7
7	28	0
8	4	0
9	7	0
10	7	0
11	2	0
12	3	0
13	4	0
14	0	0
15	0	0
16	1	0
17	0	0
18	1	0
19	1	0
total	641	1019



Offspring per sire/ dam

The table below shows the offspring per sire and dam in classes, 01-10, 11-20, etc. E.g. 404 sires have 1 to 10 offspring; and one Glen having 85 offspring! And... 5800 Glens (77.6%) don't have any offspring!

Offspring	Sires	Dams
01-10	404	815
11-20	140	177
21-30	50	23
31-40	24	2
41-50	13	2
51-60	4	0
61-70	5	0
71-80	0	0
81-90	1	0
total	641	1019

