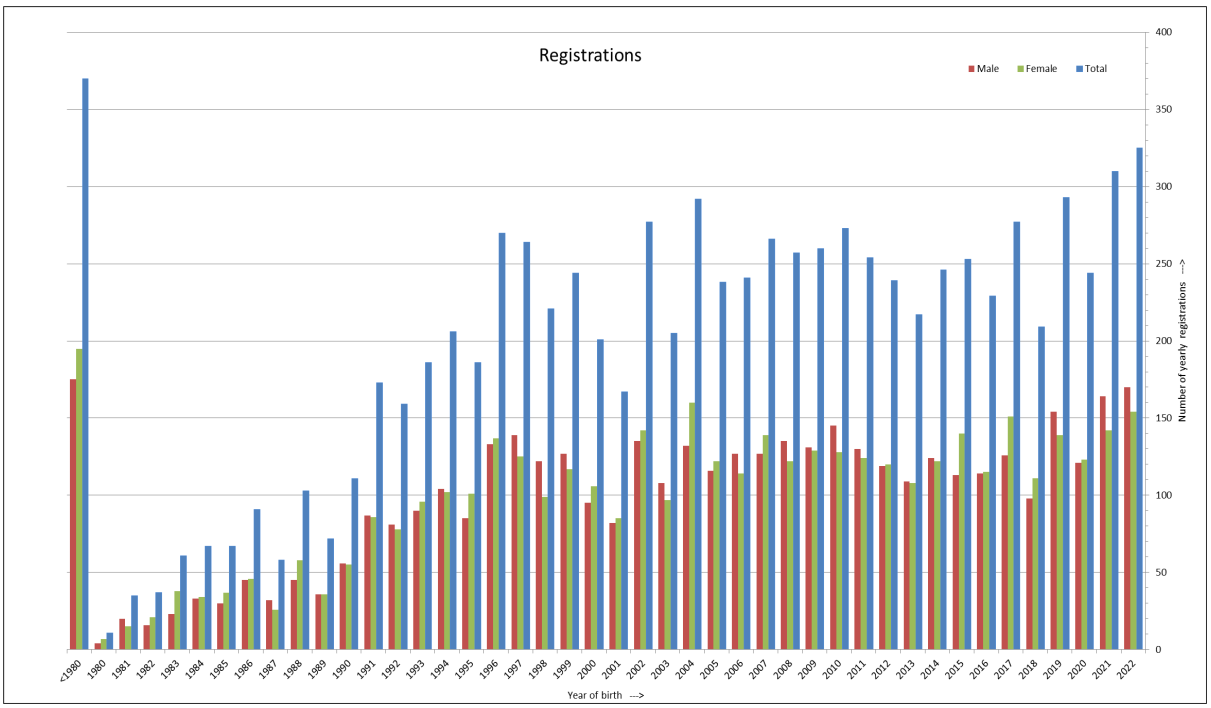
Irish Glen of Imaal terriers

Facts and Figures

January 2023

Database registrations

As of December 2022, the Glen-Footprints Database contains **8758** Glen of Imaal records worldwide.
The chart below shows the number of registrations (males + females) per year of birth.
Overall by gender: **Female = 50.2%**; **Male = 49.8%.**



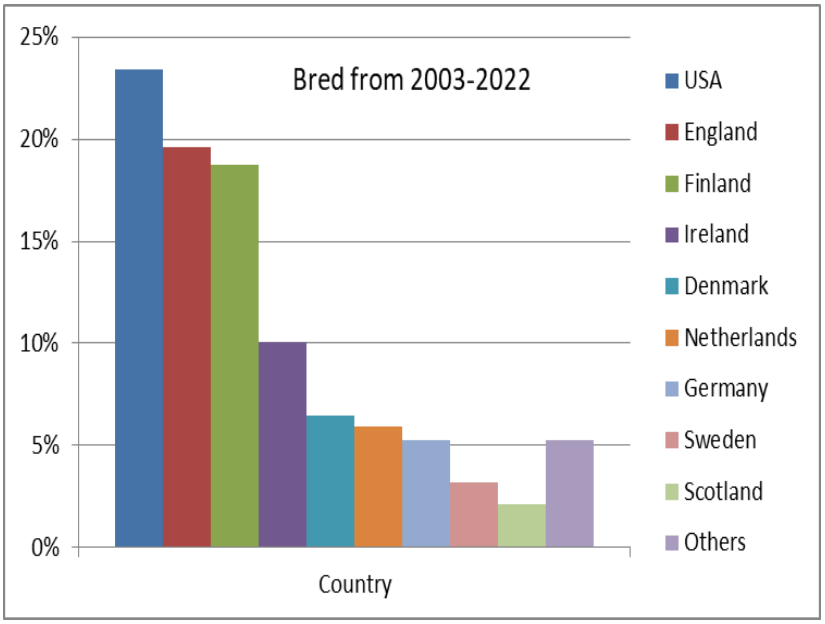
Please note: registrations earlier than 1980 are summarized.

Population

The current global Glen **population size** is estimated at **3100**.
Until 2021 the trend was fairly constant at 3000; in 2021 and 2022 record numbers of glens were born and this causes the population growth to about 3100.

Breeding

The chart below shows the breeding share per country over the past 20 years.

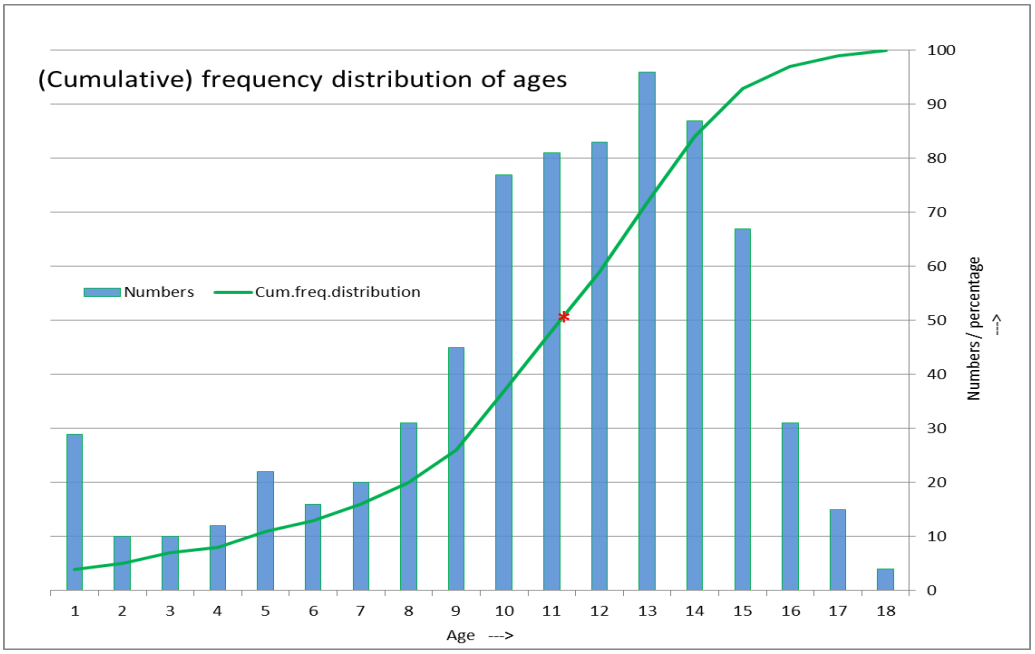


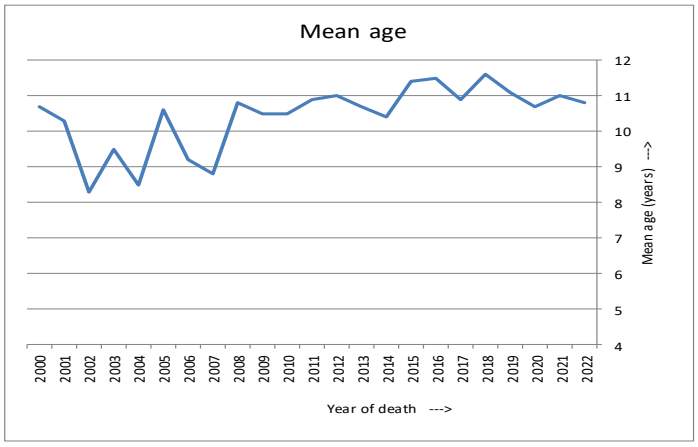
Country	Share
USA	24%
England	20%
Finland	19%
Ireland	10%
Denmark	6%
Netherlands	6%
Germany	5%
Sweden	3%
Scotland	2%
Others *	5%

* Others:
Norway, Australia, Austria, Czech Republic, France, Poland, Northern Ireland, Canada, Italy

Age

From 740 Glens we have reliable dates of death.
The average (**mean**) age of a Glen is **10.5 years**; there is **no** significant difference between males, females, brindles and wheatens.
The **median** value* is **11.3 years** which means that half of the Glens gets older than **11.3** years.
The chart below shows a histogram and a cumulative frequency distribution of their ages at death.



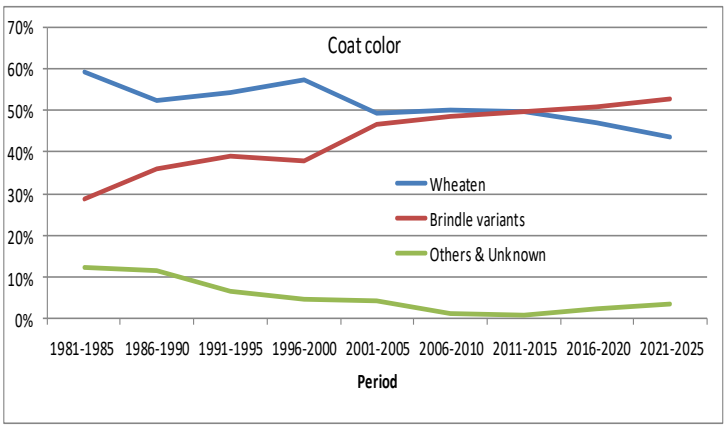


The graph on the left shows that the average (mean) age of a Glen has increased slightly to 10.5 over the past 20 years.

Color

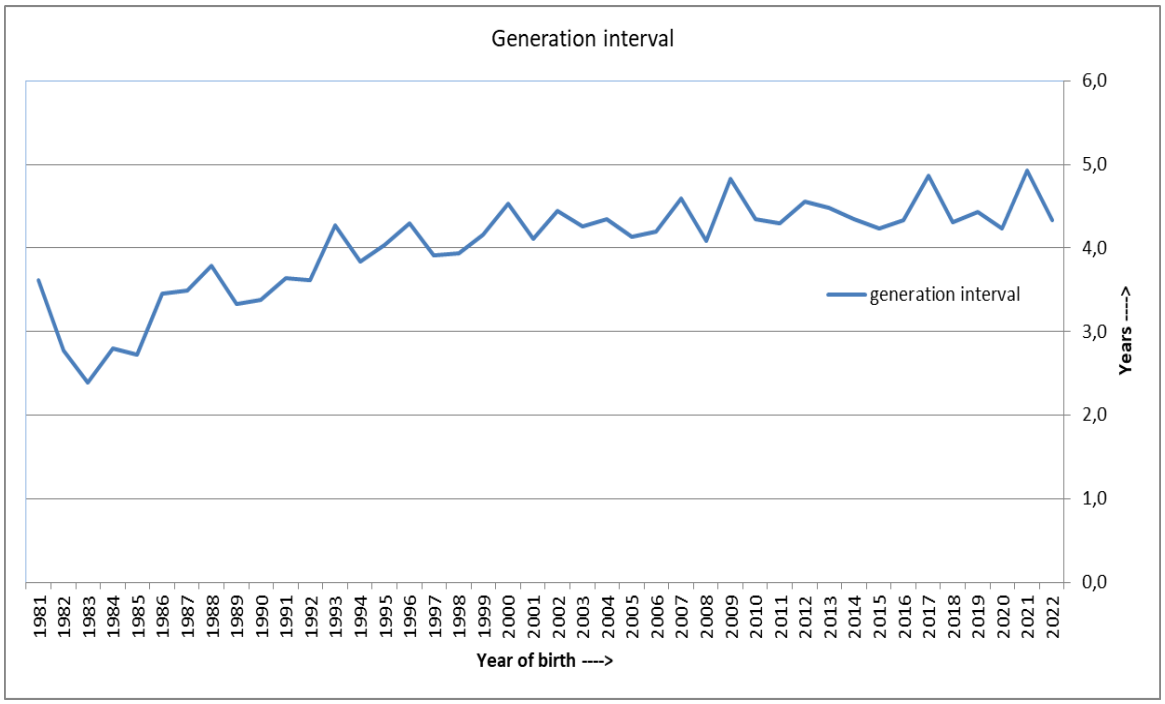
The chart on the right shows the development of the coat color ratio, wheaten versus the brindle variants, summarized over 5-year periods (1981-1985, …., 2021-2025).

Prior to 2010 the majority of the Glens had a wheaten coat.
From 2010 to 2015 brindle and wheaten were almost equal and from 2016 the brindle coat appears to be more common.



Generation interval

Generation interval is the average interval of time (in years) between the birth of parents and the birth of their offspring.
The chart shows the average (mean) generation interval from 1981 to 2022 per year of birth.
From 2000 to 2022 the average generation interval is nearly constant at **4.4 years**.
(Respectively **vs sire: 4.8** years and **vs dam 4.0** years).



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 close 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: $F = \Sigma(\frac{1}{2})^n(1+F_{ca})$
There is no limitation in the number of generations used for calculation.
From many Glens we have more than 12 generations (4096 ancestors!) in the pedigrees.

The chart on next page shows 3 graphs:

- the average (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

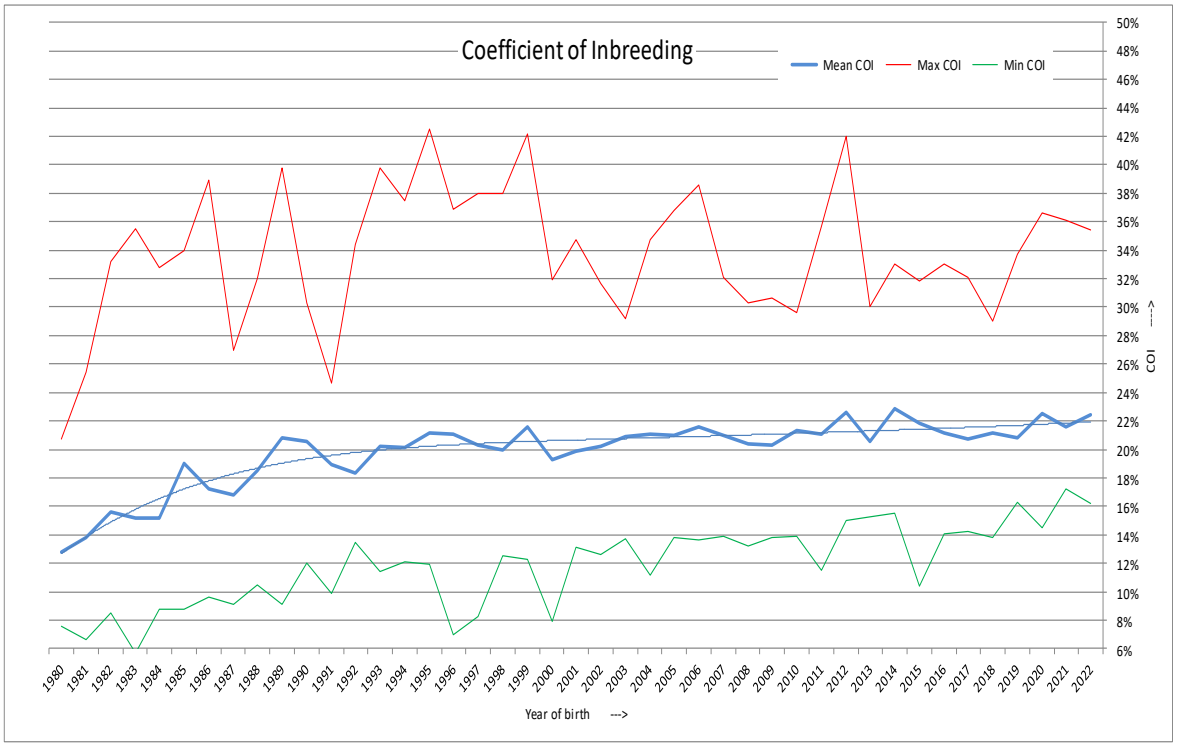
The trend of the average COI (blue) is slowly increasing over the years to reach **22** % at the end of 2022.

(*to put this value into perspective: a COI of 25% is the genetic equivalent of a dog produced from a father to daughter mating or from a full-sib mating.)*

Unrelated Glens don't exist!

Other databases (eg. KC or Koiranet) usually show (much) lower COI's for the same Glen and the reason for that is quite simple:

- they have fewer generations and/or more gaps in their pedigrees
- they limit the number of generations for computation
- they have no pedigree history of imported dogs; these are considered unrelated, but as said before **all Glens are related to each other**.

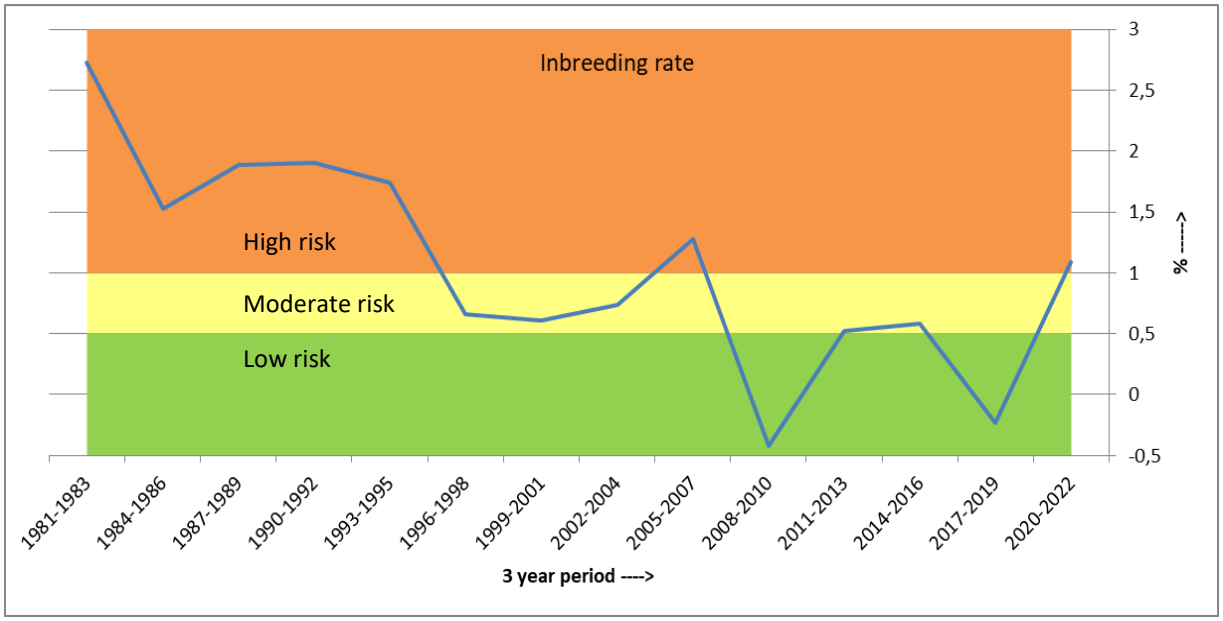


Inbreeding rate

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 3-years periods from 1981 to 2022.
The average inbreeding rate over the period 1981-2022 is **0,8 %** and from 2011-2022: **0,5 %.**
From 2020 the trend is increasing: 2020-2022: **1,09%**



Litter analysis

Total Glen-records in the database: 8758 (per December 2022).
Suitable for analysis: 8691 Glen-records.
The calulation results are shown in the table below.
This table is divided into two columns, “All years” and “1996 - 2022”; the first column shows the calculation results of all registrations. The second column shows the results in a specific period (1996 - 2022) in which the annual numbers of registrations became more representative compared to the period < 1996.

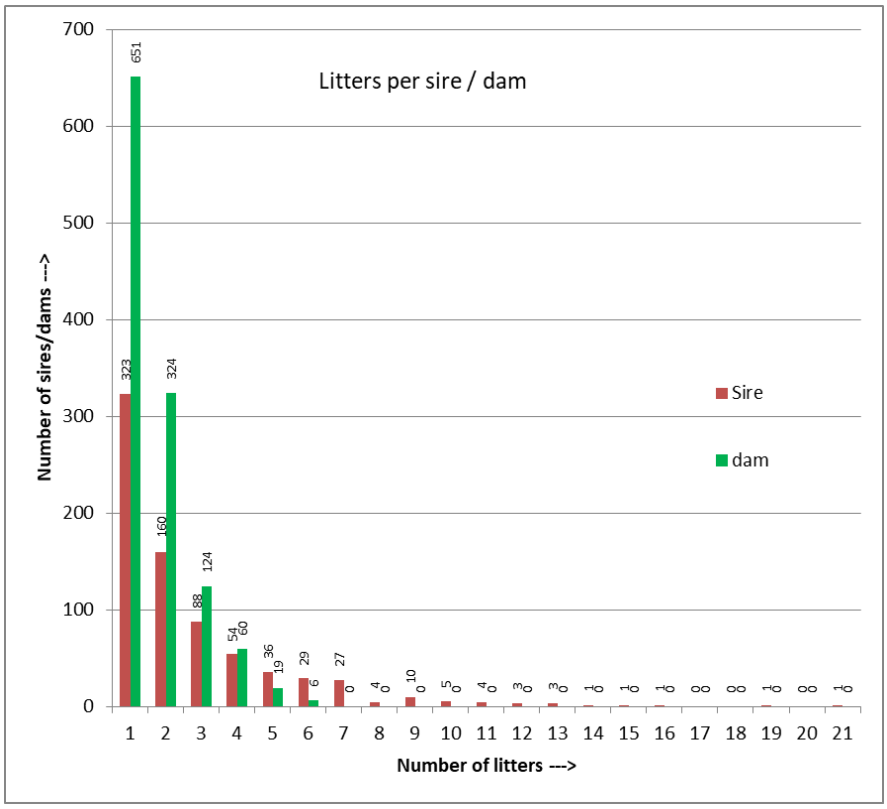
- Number of repeat matings has clearly declined over the years.
- The average litter size has increased to 4.6 partly because we have more litter information than in the period before 1995. Actual litter size over the last 12 years is **4.9**.
- Roughly said 1 of 5 males and 1 of 4 females are used for breeding.

Period	**All years**	**1996-2022**
• Number of litters analysed	**2111**	**1471**
• Number of repeat mating litters	**17.1%**	**12.2%**
• Males vs Females	**49.7 - 50.3%**	**50.1% - 49.9%**
• Average litter size	**4.1**	**4.6**
• Number of distinct sires	**751**	**579**
• Number of distinct dams	**1184**	**902**
• Litters per sire	**2.8**	**2.5**
• Litters per dam	**1.8**	**1.6**
• Males used for breeding	**17.4%**	**17.0%**
• Females used for breeding	**27.1%**	**26.7%**
• Total Glens used for breeding	**22.2%**	**21.9%**
• Not used for breeding	**77.8%**	**78.1%**

Litters per sire/dam

The table and chart below show the number of litters per sire and dam.
E.g.: - **323** sires produced **1** litter and **1** sire produced **21** litters!
- **651** dams produced **1** litter and **6** dams produced **6** litters!

Litters	**Sires**	**Dams**
0	3565	3191
>0	751	1184
Total	**4316**	**4375**
Litters	**Sires**	**Dams**
1	323	651
2	160	324
3	88	124
4	54	60
5	36	19
6	29	6
7	27	0
8	4	0
9	10	0
10	5	0
11	4	0
12	3	0
13	3	0
14	1	0
15	1	0
16	1	0
17	0	0
18	0	0
19	1	0
20	0	0
21	1	0
total	**751**	**1184**



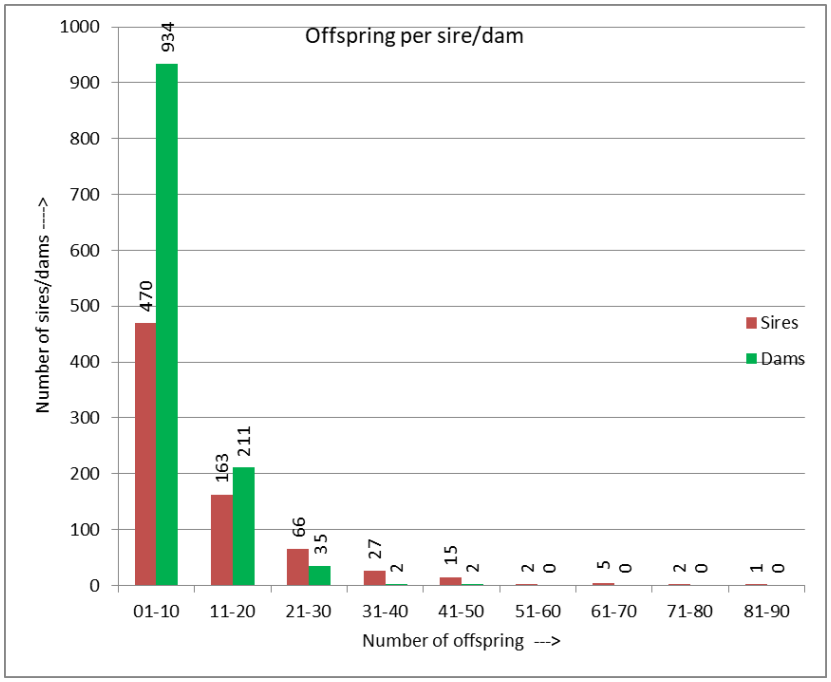
Offspring per sire/ dam

The table below shows the offspring per sire and dam in classes, 01-10, 11-20, etc.

E.g. - **470** sires and **934** dams have **1 to 10** offspring
- **1** Glen having **84** offspring!

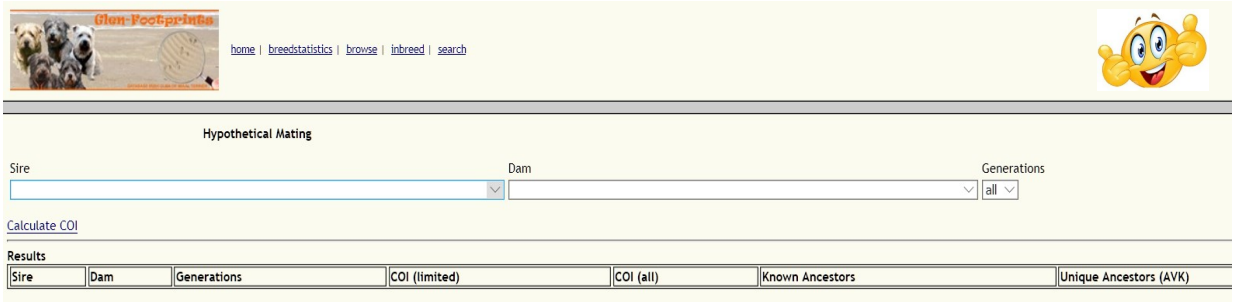
And… - **6756** Glens (**77.8%**) don't have any offspring.

Offspring	Sires	Dams
01-10	470	934
11-20	163	211
21-30	66	35
31-40	27	2
41-50	15	2
51-60	2	0
61-70	5	0
71-80	2	0
81-90	1	0
total	**751**	**1184**



Glen-Footprints inbreeding calculator

In August 2015 we successfully implemented an online inbreeding calculation tool for hypothetical matings. Since that time this calculator has been used approx. **13000** times! In average **1800** calculations per year! This undoubtedly has a positive effect on the overall Coefficient of Inbreeding of our small breed.



To finish

Our previous version of "Irish Glen of Imaal terriers, Facts & Figures" is already nearly 5 years behind us. During these years we made numerous additions and changes so we thought this is the right moment for an update. We hope you enjoyed reading.

Collecting data is taking more and more of our time so we would like more people to help us. Glen-Footprints is based on the principle of **sharing** information with free database access for anybody interested in our lovely breed. Sharing is 'give and take', a two-way information exchange. All we ask you is just to 'give' a little more. Based on the daily number of database visitors we think more help should be easily possible. The future is in your hands.

Thank you!

We would like to say a big thank you to everyone who has contributed, it is greatly appreciated and we hope we can count on you again in the future.
And ….. we hope many others will follow your example.

If you have any questions, don't hesitate to contact us.