The AVA-ANKC Australian Canine Eye Scheme

ANNUAL BREED SUMMARY REPORT

July 2016 to June 2017

This Report covers the annual ACES returns on almost 100 breeds on the ANKC Register, summarising those findings in detail. Attention is also drawn to a further 90 breeds where NO dogs have been presented for ACES Certification in the preceding year, although many of these may be subject to hereditary eye diseases.

Single or double asterisk marks against the names of fifteen breeds in this report recognise those instances where highly committed owners around Australia are working together actively in the interests of improved health – in ways that *either* have achieved impressive sampling levels amongst current breeding stock *or* have already demonstrated significant gains in expected long-term selection outcomes.

Other breeds may show a superscript notation, explained as follows:

(1) For any well-established breed with potentially significant eye comfort or vision threatening defects, breeders need to be vigilant over the longer term; while Breed Clubs can help to promote policies that will ensure normal eye health and function.

(2) For a promising but as yet un-proven breed to be able to cope with any future rise in public popularity, thorough eye screening should be undertaken across the active breeding population – early in the breed's development rather than too late!

(3) In those breeds where skull shape, exaggerated eyelid dimensions and globe prominence may predispose to discomfort, 'dry eye' and / or the risk of ulceration, routine ACES screening would provide a basis on which to encourage moderation in the desired phenotype, as well as changing the emphasis applied in breed judging.

(*) This breed is being well monitored on the whole. The Breed Clubs are encouraged to continue with effective screening polices, and to monitor future progress State by State.

(**) This breed is being very closely monitored in general terms, but not necessarily to the same degree in every State. To be more meaningful, breeders in States where the bulk of ACES reports are generated should encourage their interstate colleagues to ask for eye exams to be conducted under AVA-ANKC Australian Canine Eye Scheme Rules.

Amanda Stuart
ACES Administrator, AVA ACT

Dr Bruce Robertson FANZCVS
AVA-ANKC ACES Chief Panellist

ACES Report Year: July 2016- June 2017			Group 1: Toys					Current report date 30th June 2017
Breed	**Total to date**	**Unaffected**	**Schedule (Congenital)**	**Schedule (Later Onset)**	**Non Schedule (Congenital)**	**Non Schedule (Later Onset)**	**Breed Notes**	**Litter Screening summarised**
Affenpinscher	0 (1)	0 (1)						
Australian Silky Terrier	1 (0)	1 (0)						
Bichon Frise	11 (9)	11 (9)					9 adults is only 1.9% annual registrations. As for any breed with long hair coat across the face, oversized lid openings (OPF) may predispose to hair irritation and ulceration	
Cavalier King Charles Spaniel *	181 (145)	159 (113)	**Multifocal Retinal Dysplasia - 6** (4 - Geographic, 2 - Multifocal or showing distinct immature folds. **Hereditary Catatact - 2** new cases reported to Jun 2017 but no more instances of lenticonus / cortical cataract/ microphthalmia.			Distichiasis - 9 Corneal lipidosis (unilateral) - 3 Corneal dystrophy (bilateral) - 2 **Palpebral fissure abnormalities (PFA) +/- Globe prominence - numerous cases.** PFA = poor lid fit +/- excessive eyelid openings - usually assoc. with surface exposure, lid margin trichiasis and secondary pigment deposition. Where KCS (dry eye) is also a factor these generally advance to a dense **pigmentary keratitis** extending across one or both corneas. This often goes undetected by the owner until vision becomes very limited. **Two** such cases were reported, all showing evidence of marginal 'dry eye' syndromes.	The number of adults submitted is well up on last year, at **7.42% of breed registrations** (5.5% in 2015 and 5.7% in 2014). This breed is popular in all States (& not just in major centres) so in view of the variety of **known vision-threatening defects**, it would be good to see this number continue to rise, ideally up to **10 - 12% of registrations** and for that to include MOST current breeding stock. Efforts by CKCS Breed Clubs to conduct one-day **Eye and Heart Clinics** are a great way to encourage participation, and regional Eye Clinics staged once or twice yearly also help owners in more remote locations to ensure that **at least** retained breeding stock has been ACES screened. On the whole it does appear that breeders Ausralia wide are monitoring eye health very carefully.	**8 Litters, 28 pups.** My appeal seems to have been heeded, with mostly complete litters now beeing presented, at 6-8 weeks of age. It is important to present **full litters** where possible for the screening results to be meaningful. Of the 28 pups presented, 22 were reported unaffected but SIX new cases showed early evidence of the breed-specific eye defect **lenticonus / cataract with microphthalmia.** This is an unusual developmental anomaly so far unique to this breed. It is not known to what extent vision is likely to be affected as these puppies grow on, so it would be worthwhile to ensure that any Lenticonus-affected pups diagnosed in a Litter Screen are re-examined by a vet ophthalmologist after 12 -18 months of age.
Chihuahua (Long Coat)	0 (1)	0 (1)						
Chihuahua (Smooth Coat)	0 (1)	0 (1)						
Chinese Crested Dog	1 (0)	1 (0)						
English Toy Terrier								
Griffon Bruxellois [2]	4 (18)	3 (16)	**Hereditary cataract - 1** One middle-aged male showed dense nuclear cataracts OU with some cortical changes as well, but no judgment could be made on its inheritance significance.				Four adults is 2.4% of annual registrations. Adult No's screened eacxh year need to be in the 15-20 range, to provide a 10% sample size, on average. No **Gonioscopy** tests were requested this year, cf. 15 last year (?)..	
Havanese [2]	12 (26)	11 (24)				One record of bilat. iris atrophy with chronic low-grade iris inflammation (LIU) - probably acquired	12 adults is 3.2% of annual registrations. This breed has no scheduled conditions yet owners are deliberately screening for a range of threatening eye conditions - as a very commendable **early warning strategy.**	
Italian Greyhound	0	0						
Japanese Chin	0	0						
King Charles Spaniel	0 (3)	0 (2)						
Lowchen [2]	10 (18)	9 (18)					10 adults is 16.9% of annual registrations. GPRA is the only scheduled condition, yet owners are deliberately screening for a range of other eye conditions - as a very commendable **early warning strategy.**	

ACES Report Year: July 2016- June 2017			Group 1: Toys					Current report date 30th June 2017
Breed	**Total to date**	**Unaffected**	**Schedule (Congenital)**	**Schedule (Later Onset)**	**Non Schedule (Congenital)**	**Non Schedule (Later Onset)**	**Breed Notes**	**Litter Screening summarised**
Maltese [1]	0	0						
Miniature Pinscher	0	0						
Papillon	0 (0)	0 (0)						
Pekingese [3]	0	0						
Pomeranian	0	0						
Pug [1]	3 (0)	1 (0)				A unilateral strabismus (inward deviation of the visual axis) was noted in one young dog - a not- uncommon variation in this breed but of no known inheritance significance. **Corneal melanosis** was reported as extensive in one eye of one adult - in conjunction with lower lid margin in-rolling (see explanatory note in next column). Vet eye specialists see this vision-restricting condition much more often than dogs' owners are aware!	Three adults out of 1428 registered in the 2015 year is a very small sample. While serious eye diseasae is rarely reported in Pugs, the typical conformation with thin lids trying to protect unusually prominent globes, makes them prone to in-rolling of lower eyelid margins especially medially, with the result that nasal skin fold hairs constantly rub on the cornea. This causes fine vessels and **melanin pigment** to spread WITHIN the cornea itself, leading to vision compromise that oiften goes unnoticed. **Adult Pugs** should be checked for chronic pigment deposition, anually up **to 5-6 years**	It is not common practice for Pug babies to present for Litter screening prior to sale, but in such a popular breed it would be a worthwhile exercise if it helped to identify features of **skull shape** or **globe prominence** at that age, that can be shown to predispose to exaggeration in later life. As for any brachycephalic breed, moderation is the key and the breed would be no less appealing if the emphasis was shifted to a 'neat fitting' relationship between the lid margins and the corneal surface.
Tibetan Spaniel	0	0						
Yorkshire Terrier	0	0						
Toy Group Totals	**223** (219)	**196** (183)						

ACES Report Year: July 2016- June 2017			Group 2: Terriers					Current report date 30th June 2017
Breed	**Total to date**	**Unaffected**	**Schedule (Congenital)**	**Schedule (Later Onset)**	**Non Schedule (Congenital)**	**Non Schedule (Later Onset)**	**Breed Notes**	**Litter Screening summarised**
Airedale Terrier	0	0						
American Staffordshire Terrier [2]	3 (1)	1 (1)				Distichiasis - 2	ANKC breed registrations (2015) : 2194 Given levels of breeding activity both within and outside the ANKC Register, the rise in numbers of this breed cannot be ignored. Owners should monitor the eyes of all registered breeding stock, and also make sure that any **new imports** are pre-certified in the country of origin.	
Australian Terrier	8 (0)	8 (0)						
Bedlington Terrier	0	0						
Border Terrier	0 (3)	0 (2)						
Bull Terrier [1]	0	0					Breeders have been DNA testing for PLL but this should not be relied upon to the exclusion of routine ACES testing - adults should be screened to 7-8 years	
Bull Terrier Minature [1]	0	0					Breeders have been DNA testing for PLL but this should not be relied upon to the exclusion of routine ACES testing - adults should be screenedd to 7-8 years	
Cairn Terrier	0	0						
Cesky Terrier	0	0						
Dandie Dinmont Terrier	0 (0)	0 (0)						
Fox Terrier (Smooth)	0	0						
Fox Terrier (Wire)	0 (3)	0 (3)						
Irish Terrier	0 (1)	0 (1)						
Jack Russell Terrier [2]	1(3)	0 (3)				Cortical cataract OU at 5 years old - probably Acq.	**Breeders** have been DNA testing for PLL but this should not be relied upon to the exclusion of routine ACES testing - adults should be tested up to 7-8 years	
Kerry Blue Terrier	1 (0)	0 (0)						
Lakeland Terrier	0	0						
Manchester Terrier	0	0						
Norfolk Terrier	0	0						
Norwich Terrier	0	0						
Parson Russell Terrier	0 (1)	0 (1)						
Scottish Terrier	0	0						
Sealyham Terrier	0	0						
Skye Terrier	1 (0)	1 (0)						

ACES Report Year: July 2016- June 2017				Group 2: Terriers				Current report date 30th June 2017
Breed	**Total to date**	**Unaffected**	**Schedule (Congenital)**	**Schedule (Later Onset)**	**Non Schedule (Congenital)**	**Non Schedule (Later Onset)**	**Breed Notes**	**Litter Screening summarised**
Soft Coated Wheaten Terrier [2]	6 (4)	6 (4)						**3 Litters, 16 pups -** two litters (4 pups ea.) were all normal but in one litter of 8, four pups showed multiple immature retinal folds.
Staffordshire Bull Terrier [1]	31 (38)	26 (28)			**Palpebral fissure abmormality - 0 (1)** Not uncommonly In juvenile dogs, the tendency for deep-set orbits with a small globe size results in unsupported lid margins, seen as lower lid entropion	Distichiasis - 4 Corneal dystrophy - 1	31 adults is a very small 0.63% of annual registrations (4869 in 2015). Breeders using the scheme as a source of useful incidence data are to be commended. Routine **Litter Screening** is worthwhile.	**24 Litters, 101 pups -** of these, 18 litters showed no defects at all. Distichiasis (multi) 6P , PPM 2P Small MRD lesion 1P Retinal folds (transient?) 4P
Tenterfield Terrier	0	0						
Welsh Terrier	0	0						
West Highland White Terrier	0	0						
Terrier Group Totals	**51 (53)**	**32 (43)**						

ACES Report Year: July 2016- June 2017			Group 3: Gundogs					Current report date 30th June 2017
Breed	**Total to date**	**Unaffected**	**Schedule (Congenital)**	**Schedule (Later Onset)**	**Non Schedule (Congenital)**	**Non Schedule (Later Onset)**	**Breed Notes**	**Litter Screening summarised**
Bracco Italiano	0	0						
Brittany [2]	9 (7)	9 (6)					Brittany Spaniels are not listed with any Scheduled conditions. The breed club(s) need to advise ACES C-P of any concerns.	
Chesapeake Bay Retriever	0	0						
Clumber Spaniel [3]	0 (1)	0 (1)						
Cocker Spaniel (Eng.) [1]	0 (1)	0 (1)						
Cocker Spaniel (American) [3]	36 (37) gonioscopy done on 4	29 (28) unaffected on gonioscopy - 4	Multifocal retinal dysplasia - 1 Gonioscopy done on 4 - all of which reported as **ICA Normal**. Goniodysgenesis is Scheduled, therefore all breeding stock should have this test, at least once after 18-20 months of age.	Hereditary cataract - 1		Distichiasis - 5 (multiple lashes) Corneal lipidosis (unilateral) - 3 Unilateral KCS (dry eye, Acq?)) - 1 (with melanin pigment invasion)	35 adults is 37.5% of annual registrations (93 in 2015); this shows that breeders are aware of this breed's vision-threatening scheduled conditions. While gonioscopy is considered a once-only test, we could be more confident about the results if we could be sure that ALL breeding animals had at least one gonioscopy test. **Distichiasis** (often with multiple lashes) is still a recurring issue!	**1 litter, 2 pups** both with multiple, scattered small retinal folds - of the type that usually resolves with maturity, with many disappearing entirely by 12 months.
Curly Coated Retriver	0 (2)	0 (2)						
English Setter	0	0						
English Springer Spaniel [1]	20 (40) gonioscopy done on 5	17 (35)	Multifocal Retinal Dysplasia - 1		Gonioscopy testing done on 5 Normal ICA angle dimensions - 4 Moderate gondysgenesis - 1	Corneal lipid dystrophy (OU) - 1	20 adults is down by half on last year (4.17% of annual registrations (479 in 2015), as total registrations continue to fall away. Breeders can be proud of the very low **MRD incidence** amongst **locally bred stock** - clearly a subject that is crying out for a research study, aiming to find out why MRD lesions in our southern latitudes are much less severe than in many Northern Hemisphere countries. In this breed **goniodysgenesis** is not Scheduled but evidence is incomplete. Breed clubs need to **develop a policy** as to whether gonioscopy testing is to be encouraged, or not.	**1 Litter , 4 Pups - all Normal** (No early MRD signs or retinal folds)
Field Spaniel	2 (10)	2 (10)						
Flat Coat Retriever **	10 (12) gonioscopy done on 10	8 (9)	Gonioscopy done on 10 dogs; 8 reporting as Normal. 2 showed some angle narrowing with pectinate ligament dysplasia.				9 adults is 11% of registrations (82 in 2015). Most breeders are aware of the breed's issues and appear to be ACES testing most current breeding stock **and** are requesting **gonioscopy tests** as well. One test is better than none, and positive selection has been shown to reduce risk for canine glaucoma.	
German Shorthaired Pointer	4 (1)	3 (1)						
German WH Pointer	3 (0)	3 (0)						
Golden Retriever **	438 (403) gonioscopy done on 20	386 (346) without a gonioscopy test; 402 when gonioscopy was included	Multifocal retinal dysplasia - 2	Hereditary cataract (PPSC type) - 7 Confirmed as bilaterally similar posterior polar subcapsular cataracts (mainly small). No PRA cases were reported	**Summary of gonioscopy findings:** Gonioscopy on 20 dogs; **all Normal.** **OPF + Lower lid Entropion - 1** This occurs due to differing growth rates of the eyeball, orbit and lid margins - see the note under PFA's in Labrador Retrievers.	Distichiasis (2-3 lashes only) - 4 Corneal dystrophy (OU) - 5 Corneal lipidosis - 1 Iris cysts - 1 Punctal atresia / tear overflow - 4	**438 adults is 15.44% of annual registrations** (2836 in 2015) which is a very high proportion especially in a breed that has **the highest annual submission rate** across all breeds. The tendency to elongated lid margins plus secondary spastic entropion is NOT new - it is a subtle variation to be watched, in a breed with few lid apposition or growth rate issues.	**4 Litters (low?) - 14P** **Three** of these litters presented only 1 - 4 pups even though **litter size** was shown as 8 or 9. The whole purpose of Litter Screening is to report on **early onset** abnormalities, whether inherited or not. To make that meaningful **all pups** in a litter need to be presented, wherever possible.
Gordon Setter	2 (1)	2 (1)						
Hungarian Viszla	2 (0)	2 (0)						

ACES Report Year: July 2016- June 2017			Group 3: Gundogs					Current report date 30th June 2017
Breed	**Total to date**	**Unaffected**	**Schedule (Congenital)**	**Schedule (Later Onset)**	**Non Schedule (Congenital)**	**Non Schedule (Later Onset)**	**Breed Notes**	**Litter Screening summarised**
Hungarian WH Vizsla	0	0						
Irish Red&White Setter	0	0						
Irish Setter	0	0						
Irish Water Spaniel								
Italian Spinone	0	0						
Labrador Retriever [1], **	129 (140)	122 (126)		Hereditary cataract (PPSC) - 6 Confirmed as bilaterally symmetrical posterior polar subcapsular cataracts	Palpebral fissure abnormalities (OPF) - 2 Demonstrated as involution of the outer third of the lower eyelid, with secondary spasm causing constant surface irritation + spastic entropion. One of these showed esotropia (deviated gaze) as well.	Distichiasis - 3 Iris cysts - 3	129 adults (down again on last year) is only 2.5% of ANKC registrations (5116 in 2015) but we do have to allow for the many 'pet litters' that are raised. On the whole there are no real surprises in these figures; the Scheduled conditions are all manageable, over time. Guide Dogs South Australiia presents all of its breeding adults with consistently good results, as a positve example to other States.	**Two litters, 7 pups** - all unaffected
Lagotto Romagnolo	4 (3)	4 (3)						**3 Litters, 18 pups:** all Normal
Large Munsterlander	0	0						
Nova Scotia Duck Tolling Retriever [2]	5 (13)	5 (13)						**3 Litters, 17 pups:** all Normal
Pointer	0	0						
Sussex Spaniel	0	0						
Weimaraner	1 (0)	1 (0) also N on gonioscopy						
Weimaraner (Longhair)	0 (0)	0 (0)						
Welsh Springer Spaniel [2]	9 (14) gonioscopy done on 7	6 (8) incl. 6 N on gonioscopy	Gonioscopy done on 7 Normal on gonioscopy - 6 Moderate goniodysgenesis - 1			Distichiasis - 1 One dog showed a unilateral anterior subcapsular cataract - likely to be a post-trauma injury	9 adults is 9.67% of annual registrations. Gonioscopy was requested on all but two adults presented (not counting any tests done previously) and these results appear fairly consistent. It remains unclear as to what is the main predisposing factor (narrow filtration angle or gonodysgenesis + sheets), however we have enough information for Breed Clubs to apply registration restrictions based on gonioscopy findings, at age 2 years.	
Gundog Group Totals	**672 (687)**	**619 (592)**						

ACES Report Year: July 2016- June 2017			Group 4: Hounds					Current report date 30th June 2017
Breed	**Total to date**	**Unaffected**	**Schedule (Congenital)**	**Schedule (Later Onset)**	**Non Schedule (Congenital)**	**Non Schedule (Later Onset)**	**Breed Notes**	**Litter Screening summarised**
Afghan Hound [1]	4 (0)	4 (0)					No-one this year elected to follow the one leading kennel in 2015, screening its entire current breeding stock - serving as an example of the value of baseline information even when the risks are perceived to be low.	
Australian Dingo	0	0						
Basenji *	16 (6)	16 (5)			PPM (iris to iris) - 3 reported but not cons. clinically significant. No iris coloboma cases reported		16 adults is more meaningful at 13.7% of annual registrations (117 in 2015). PPMs are scheduled (I-C, I-L), yet the number of dogs presenting with vision-limiting opacities is now quite small.	**2 Litters, 11 pups -** no pups reported with I-C or I-L strands, A few reported as 'mildly affected' for PPM confirmed later as having **Iris - Iris** strands only.
Basset Fauve de Bretagne [2]	0 (0)	0 (0)					The fauve (fawn) Basset is a balanced mid-sized breed that has potential as a popular house pet. As for any novel breed, new imports plus all breeding stock should be systematically ACES tested until a wider gene pool of healthy-eyed animals is established.	
Bassett Hound [3]	0 (12)	0 (7)	??				This was a disappointing showing after 12 adults were assessed last year, incl. **gonioscopy readings**. This breed should be monitored during growth for loose-fitting lid margins -- **Neat fitting, functional eyelids** should always be viewed as part of **normal eye health.**	One litter of six pups was seen as a Litter Screening at 8 weeks of age. All pups were reported Normal; Gonioscopy findings ranging from 60-95% open angle. NB. the predictability value from gonioscopy carried out at this age has yet to be established.
Beagle	1 (0)	1 (0)				Distichiasis - 1 (1-2 extra lashes)	ANKC registrations average around 600 yearly. Beagle breeders seem little concerned about routine eye screening, hence they have no base-line figures on which to base future selection policy.	
Bloodhound	0	0						
Bluetick Coonhound	0	0						
Borzol	0	0						
Dachshund Standard Long Haired	0	0						
Dachshund Standard Smooth Haired	0	0						
Dachshund Standard Wire Haired	0	0						
Dachshund Miniature Long Haired	3 (0)	3 (0)					Breeders have access to a DNA test for PRA, but are not gathering data on other eye conditions.	
Dachshund Minaiture Smooth Haired	1 (0)	1 (0)					Breeders have access to a DNA test for PRA, but are not gathering data on other eye conditions.	

ACES Report Year: July 2016- June 2017				Group 4: Hounds				Current report date 30th June 2017
Breed	**Total to date**	**Unaffected**	**Schedule (Congenital)**	**Schedule (Later Onset)**	**Non Schedule (Congenital)**	**Non Schedule (Later Onset)**	**Breed Notes**	**Litter Screening summarised**
Dachshund Miniature Wire Haired	0	0					Breeders have access to a DNA test for PRA, but are not gathering data on other eye conditions.	
Deerhound	0	0						
Finnish Spitz	1 (0)	1 (0)						
Foxhound	0	0						
Grand Basset Griffon Vendeen	0	0						
Greyhound	0	0						
Hamiltonstovare	0	0						
Harrier	0	0						
Ibizan Hound	0	0						
Irish Wolfhound	4 (0)	4 (0)						
Norwegian Elkhound	0 (0)	0 (0)						
Otterhound	0	0						
Petit Basset Griffon Vendeen [2]	0 (0)	0 (0)					This versatile and highly active breed has a lot going for it, but the local gene pool remains restricted. As breed popularity grows, evidence suggests PBGV's should be **Gonioscopy screened.**	
Pharaoh Hound	0 (1)	0 (1)						
Portuguese Podengo	0	0						
Rhodesian Ridgeback [1]	1 (0)	1 (0)					ANKC registrations average around 650-700 yearly. Breeders seem little concerned about routine screening, thus they have no incidence figures on which to develop any future Policy.	
Saluki	2 (0)	2 (0)						
Sloughi	0	0						
Whippet [1]	0 (0)	0 (0)					With annual registrations over 700, this breed has a reputation for clear eyes and long-lasting vision. It would be good to gather data on lens and fundus abnormalities, at least as a base line.	**1 Litter - 5P (all Normal)**
Hound Group Totals	**33 (19)**	**33 (13)**						

ACES Report Year: July 2016- June 2017			Group 5: Working Dogs					Current report date 30th June 2017
Breed	**2**	**Unaffected**	**Schedule (Congenital)**	**Schedule (Later Onset)**	**Non Schedule (Congenital)**	**Non Schedule (Later Onset)**	**Breed Notes**	**Litter Screening summarised**
Australian Cattle Dog [1]	1 (0)	1 (0)						
Australian Kelpie	3 (0)	2 (0)				Multiple iris to iris PPMs - 1		
Australian Shepherd **	88 (66)	82 (62)	No adult CEA-CH cases but see Litter Summary (1P)	Hereditary cataract (PPSC) - 1	Iris coloboma (bilateral) - 1	Distichiasis - 2 Corneal lipid dystrophy (bilat) - 2	88 adults is 9.43% of annual registrations (933 in 2015 and rising). This breed is enjoying increased acceptance in rural communiuties and CEA appears no longer a big threat. Lid margin **distichiasis** should be watched, along with **corneal lipid deposition**. Iris coloboma is a known occurrence, one more seen this year. Also the single case of a PPSC-type cataract was quite unexpected.	**46 Litters, 285 pups in total** (very good!) **Only 1 pup had suspect choroidal hypoplasia (?)** and 41 Litters reported entirely lesion-free. **Retinal folds** in 2 Litters (7P) - considered by the Panellists as most likely to resolve. Distichiasis in 3 Litters (6P) **Micropapilla** of the **optic nerve head** (ONH) (2P) but not involving any ONH Colobomas. **Iris Coloboma** (1P) was reported once again
Australian Stumpy Tail Cattle Dog	2 (2)	2 (2)						
Bearded Collie	0 (0)	0 (0)						
Belgian Shepherd Dog (Groenendael) *	11 (9)	11 (8)		There were NO lens cataracts of the PPSC type reported in the current year, but the number of breeding age adults submitted is far too low to be meaningful.	Iris to Iris PPM's (? significance) - 2		Allowing for small numbers seen in the Malinois and Lakenois, results for Belgian Shepherds generally look quite encouraging, but some caution is needed before we offer that as a general observation. Numbers have risen in Tervueren and Groenendael varieties with only one PPSC cataract case reported this year, but this may not be a reliable indicator *if it were to be shown that* dogs **already known** to have **PPSC type cataracts** are simply not being submitted for routine ACES screening. The Breed Clubs should be encouraging a **voluntary commitment** to regular ACES screening of all breeding age adults (across all four varieties) **until around 5-6 years of age.**	
Belgian Shepherd Dog (Laekenois)	0	0						
Belgian Shepherd Dog (Malinois)	1 (2)	1 (2)						
Belgian Shepherd Dog (Tervueren) *	23 (16)	18 (15)		Hereditary cataract (PPSC type) - 1	Iris to Iris PPM's (? significance) - 3 (crossing the pupil, very fine)			
Border Collie [1], *	50 (61) gonioscopy done on 40	43 (53) incl. gonio 34 excl. gonio 9	CEA - CH sign - 1 (Go Normal)	(No PLL cases reported)	**Summary of gonioscopy findings:** Gonioscopy done on **40 dogs** - 75-100% ICA Open (Normal) - 34 Mild to moderate dysgenesis - 6 (with no reduction in angle width)		**50 adults is good** - but still less than 2.0% of total registrations as many are bred in rural areas where ACES screening is not readily available. With just one 'Go Normal' CEA-CH case reported, this looks good for the breed as a whole. The 34 Normal on gonioscopy is also encouraging, with a clear separation shown year by year, between 'normal' and 'at risk' **iridocorneal angle parameters**. The National Border Collie Council could now consider setting a **threshhold gonioscopy result** to be met by both parents of any registered litter, as a basis for requesting an ANKC Ltd. Breed Survey on members'attitudes to **possible restrictions on ANKC Litter Registration.**	**6 Litters, 22 pups** - all unaffected
Bouvier Des Flandres	1 (0)	1 (0)						
Briard	0	0						

ACES Report Year: July 2016- June 2017			Group 5: Working Dogs					Current report date 30th June 2017
Breed	**2**	**Unaffected**	**Schedule (Congenital)**	**Schedule (Later Onset)**	**Non Schedule (Congenital)**	**Non Schedule (Later Onset)**	**Breed Notes**	**Litter Screening summarised**
Collie - Rough [1]	11 (7)	2 (1)	**Collie Eye Anomaly CH - 8** Chorodal hypoplasia only - 4 CH plus ONH coloboma - 4 Both coloboma cases were reported as significant, and two of these were **bilateral** - which will have an effect on normal stereoscopic vision.			Corneal lipid dystrophy (bilteral) - 3	**Only 11 adults**?? This is far from an adequate sample, able to give information on average vision in the adult population (340 registered in 2015).. The detailed summary of **Litter Screening results** shoud be carefully studied by every breeder because sadly, blind puppies (due to CEA-induced haemorrhage or retinal detachment) are still appearing year by year. Is this at all surprising, given the reluctance among breeders in most States to apply any **nationally-coordinated selection pressure** against the now well-entrenched CEA-CH gene?	**42 Litters, 207 pups in total** Only 6 Litters (30P): whole litter unaffected 27 Litters, 133P : one or more with CH only 8 Litters, 39 P multiple with CH + coloboma **One litter** (5P) - one or more showing **retinal detachment** and/or **subretinal haemorrhage.** It should be clearly understood that any pup with bilateral detachments or signs of continuing haemorrhage in one or both eyes, sadly has to be regarded as being **permanently blind** and this situation must be declared to any intending purchaser.
Collie - Smooth [1]	0 (0)	0 (0)						**3 Litters, 20 pups (MIXED Rough / Smooth)** All 20 pups - **choroidal hypoplasia** affected
Finnish Lapphund [2], **	48 (41)	47 (39) (incl. 4 N. on gonioscopy)			MRD - multiple folds OU (Sig?) - 1		48 adults was **> 50% of all registrations** in the 2015 year, but that number was atypically low. For a newly introduced breed, owners are doing all the right things - and starting early!	**7 Litters, 39 pups** All reported as phenotypically normal, with one litter also screened (N) by gonioscopy.
German Shepherd Dog (SC: normal coat)	0 (1)	0 (1)					ANKC registrations average 4,000 yearly. For what is arguably our most self-regulated breed, German Shepherd owners seem little concerned about routine eye screening, hence they have NO base-line incidence figures from which to develop future Policy.	
German Shepherd Dog (LSC: long coat)	0 (1)	0 (1)						
Komondor	0	0						
Kuvasz	0	0						
Maremma Sheepdog	0 (2)	0 (2)						
Norwegian Buhund	0	0						
Old English Sheepdog	4 (5)	4 (5)						**1 Litter, 8 pups** - presumptively 'Normal' but assessed on dazzle reflexes only.
Polish Lowland Sheepdog	0	0						
Puli [2]	2 (0)	2 (0)						**1 Litter, 7 pups** - all Normal
Shetland Sheepdog [1], *	9 (14)	4 (10)	**Collie Eye Anomaly - CH - 4** Choroidal hypoplasia only - 3 CEA - CH plus coloboma - 1			Distichiasis - 1	9 adults is **only 1.4% of annual registrations** (649 in 2015). Too many owners are neglecting to follow up on an **adult dog's eye status** after it was reported 'CEA-CH unaffected' as a puppy. It is important to examine ALL breeding-age adults at least once after 18 months of age in order to confirm the early Litter Screening result and to pick up **any other eye defects.**. Good progress is being made in reducing the numbers of CEA-CH affected animals, but more could be achieved if the DNA test was used NOT as an alternative, but more as a **worthwhile adjunct to regular ACES testing.**	**68 Liitters, 235 pups** 51 Litters (172 P) - all unaffected 11 Litters (42 P) - 1 or > with mild CH signs 5 Litters (20 P) - CH + colobomas 1 or 2 eyes 1 pup - Retinal detachment OD plus ext CH + coloboma OS - reported as **clinically BLIND.** While the number of Litters submitted is maintaing well and the proportion of good results is also improving (75-80% of pups being unaffected), the periodic reports of severe signs (incl. blindness) shows that pressure needs to be applied to **reduce the CEA-CH gene frequency** with each generation
Swedish Lapphund	0	0						
Swedish Vallhund	1 (0)	1 (0)				PPMs reported - 1 (extent not noted)		
Welsh Corgi (Cardigan) [1]	0	0						

ACES Report Year: July 2016- June 2017			Group 5: Working Dogs					Current report date 30th June 2017
Breed	**2**	**Unaffected**	**Schedule (Congenital)**	**Schedule (Later Onset)**	**Non Schedule (Congenital)**	**Non Schedule (Later Onset)**	**Breed Notes**	**Litter Screening summarised**
Welsh Corgi (Pembroke) [1]	2 (0)	2 (0)					While serious eye conditions are rare in this breed, all breeding age adults should have at least one ACES exam after 18 months to pick up lens cataracts or other hidden eye defects	**1 Litter, 6 P** - all Normal
White Swiss Shepherd Dog [1]	10 (11)	8 (9)			Optic Nerve Head hypoplasia - 1 (reported as unilateral only, with no obvious effect on this dog's vision	Corneal lipid dystrophy (bilat) - 1	!0 adults submitted is just on 11.0% of total registrations in 2015, the year most of these adults were born in. If ONH continues to be detected in Litters and a few adult dogs, this needs to be followed up in an organised way, **to elimnate any other congenital threat to vidsion.**	4 litters, 23 pups 3 Litters (16 P) unaffected, but one litter revealed three pups with degrees of Optic Nerve hypoplasia (ONH) in one or both eyes (One pup was clinically blind OS)
Working Group Totals	**267** (240)	**229** (212)						

ACES Report Year: July 2016- June 2017			Group 6: Utility					Current report date 30th June 2017
Breed	**Total to date**	**Unaffected**	**Schedule (Congenital)**	**Schedule (Later Onset)**	**Non Schedule (Congenital)**	**Non Schedule (Later Onset)**	**Breed Notes**	**Litter Screening summarised**
Akita	5 (3)	4 (3)				Distichiasis - 1	Five adults is only 3.93% of annual registrations. Breeders need to notify ACES Panel of any particular concerns	**2 Litters, 7 pups in total.** Only one pup in one of these litters was reported as Normal - the rest (across two litters bred a month apart in two States) showed **microphthalmia** (a small eyeball within a normal size bony orbit) with degrees of lens cataract formation affecting all but one pup. This is an odd set of circumstances that should have been investigated as to underlying cause.
Akita (Japanese)	0 (1)	0 (1)						
Alaskan Malamute	4 (15)	4 (5)					Four adults is 1.78% annual registrations Gonioscopy requested in one : Normal	
Anatolian Shepherd Dog	0	0						
Bernese Mtn. Dog	10 (3)	10 (3)						3 Litters, 18 pups - all reported normal
Boxer	0 (1)	0 (0)						
Bullmastiff [3]	0	0						
Dobermann	0	0						
Dogue de Bordeaux [3]	0	0						
German Pinscher	1 (3)	1 (2)					This breed has nothing scheduled. Breeders need to notify ACES Panel of any particular concerns	
Leonberger **	3 (17)	3 (11)					This breed has a growing following - as far as possible breeding stock should be screened to report Scheduled conditions	
Mastiff [3]	0	0						**1 litter, 3 pups** 3 pups showed residual PPM strands (iris to cornea); 1 pup - MRD lesion OD
Neapolitan Mastiff [3]	0 (1)	0 (1)						
Newfoundland	0	0						
Portuguese Water Dog	0 (8)	0 (8)						1 Litter, 10 pups: all Normal
Pyrenean Mtn. Dog	3 (0)	3 (0)						
Rottweiler [1]	1 (0)	1 (0)					NB: No dog unregistered with ANKC (ie. an unregistered adult or a litter from ungregistered parents) can be issued with a valid AVA-ANKC ACES Certificate.	
Russian Black Terrier	0	0						
Samoyed **	63 (27) gonioscpy done on 56	40 (24) incl 37 N on gonioscopy			**Goniodysgenesis summary:** Iridocorneal angle 80 -100% open - 37 By any measure, these dogs are Normal iridocorneal angle 60-75% open - 12 Iridocorneal angle 30-50% open - 2 Extreme angle reduction with marked gondysgenesis and few flow holes - 5	Typical PPSC type bilateral cataracts - 1 This is the third such report in 3 years. Distichiasis - 4, Retinal dysplasia - 4 (?)	Adult numbers seen Australia-wide are up considerably on last year. The latest gonioscopy breakdown shows a marked distinction between 'clearly wide open' and 'severely compromised' filtration angle parameters, with the vast majority of mature adults surveyed coming in with clear indicators for **normal outflow capacity**. The National Samoyed Council has enough information now to consider introducing a registration restrictions policy, with help from ANKC's **Canine Health and Wellbeing Committee** to conduct a nationwide **Breed Survey**.	**15 Litters, 84 pups** 77 pups reported as unaffected, excluding any gonioscopy findings - gonioscopy done on 38 but predictability value at this age is yet to be established). Distichiasis (few lashes) - 2 Optic Nerve hypoplasia/? coloboma - 4 **One pup - multiple ocular anomalies**
Schnauzer - Giant	4 (1)	4 (0)				1 - hyaloid remnant scars, not significant		

ACES Report Year: July 2016- June 2017			Group 6: Utility					Current report date 30th June 2017
Breed	**Total to date**	**Unaffected**	**Schedule (Congenital)**	**Schedule (Later Onset)**	**Non Schedule (Congenital)**	**Non Schedule (Later Onset)**	**Breed Notes**	**Litter Screening summarised**
Schnauzer - Standard	2 (0)	2 (0)						
Schnauzer -Miniature **	128 (178)	120 (172)	Congenital HC - 1 (NB. early onset)	(No PRA Cases reported)		Distichiasis - 7 Corneal lipidosis / degen. (unilat.) - 1 (as distinct from post-Tx Xtalline scars) - 1	128 adults is 8.48% annual registrations (1509 in 2015). Clearly the majority of breeders see benefits in monitoring both adults and litters, evident in the reduction in **inherited cataract** cases. These are very commendable results!	**24 Litters, 107 pups** **All pups** were reported as unaffected
Shiba inu	1 (0)	1 (0)						
Siberian Husky **	49 (42) gonioscopy done on 37	41 (36)	Gonioscopy testing was carried out on 37 adults, 31 of these were Normal	Hereditary cataract - 1 (PPSC type)	**Goniodysgenesis summary:** More than three quarters of dogs tested were reported as 'Goniooscopy Normal' or were given a Panellist's estimate of ÏCA outflow caacity, at "80-100% Open". **Six dogs** showed narrowing of the filtration angle as *the only* structural variation - and most of these were heterochromes.	Distichiasis - 1	**Angle narrowing** in heterochromic (blue) eyes is a common finding in this breed. An **organised study** would show whether blue-eyed dogs are in fact 'outflow compromised' or whether the 'blue eye' iris plane across the cleft entrance just *presents differently* in a gonioscopy test. In the absece of a National Siberian Husky Breed Council, the **breed clubs** should be thinking about what action if any, they want to take so that members can better understand the many issues around gonioscopy and glaucoma risk.	
Saint Bernard	0	0						
Tibetan Mastiff	0	0						
Utility Group Totals	**274 (289)**	**234 (267)**						

ACES Report Year: July 2016- June 2017			Group 7: Non Sporting					Current report date 30th June 2017
Breed	**Total to date**	**Unaffected**	**Schedule (Congenital)**	**Schedule (Later Onset)**	**Non Schedule (Congenital)**	**Non Schedule (Later Onset)**	**Breed Notes**	**Litter Screening summarised**
Boston Terrier [1]	4 (2)	**3 (2)**		HC - 1 (nterior corrtical				
British Bulldog [1]	0	0						
Canaan Dog	0	0						
Chow Chow [1]	0	0						
Dalmatian	0	0						
Eurasier	0	0						
French Bulldog [2,3]	2 (0)	2 (0)					This breed is seeing a continued surge in popularity. Few eye problems are reported but large, bulbous eyes **must predispose** to tear film break-up and a higher risk of corneal ulcers or injury. **Moderation is the key** and extremes should be avoided. Why not consider screening all breeding age adults for obvous **lid margin** or **apposition defects**?	**1 Litter, with only 1 pup presented** (normal on examination)
German Spitz: Klein	0	0						
German Spitz: Mittel	11 (10)	11 (10)					New owners - setting a great example!	
Great Dane	5 (10) gonioscopy not done	**5** (10)				Oversized palpebral fissure (OPF) or elongated lid margins - 1 adult, but this is not uncommon in fast-growing juveniles of this breed.	Numbers being bred remain static in this magnificent breed but this makes it all the more important to aim for structural soundness and a healthy conformation. This also applies to **normal eye function** and so any tendency to long or ill-fitting lid margins is somethng to be watched.	
Japanese Spitz	1 (0)	1 (0)						
Keeshond	0	0						
Lhasa Apso [3]	1 (0)	1 (0)						
Poodle - Standard [1]	3 (3) gonioscopy done on 0	3 (3)					The recent surge in gonioscopy requests has not continued. While three is a small sample, we do not expect to see major issues in Standard Poodles.	
Poodle - Miniature [1]	3 (0)	3 (0)						
Poodle - Toy [1]	9 (6)	6 (5)	No new reports of Optic Nerve Head hypoplasia			Distichiasis (2-3 fine lashes) - 3		**1 Litter, 3 pups** - all Normal
Schipperke	0	0						
Shar Pei [3]	0	0					Litter registrations have dropped off (175 in 2015) but a zero uptake is very disappointing! Given the number of pups requiring 'tacking'and affected juveniles that present for facial skin & lid surgery later (to be able *to see,* free of constant pain), one would expect to see breeders & Breed Clubs insisting on only moderate degrees of wrinkling!	

ACES Report Year: July 2016- June 2017	Group 7: Non Sporting							Current report date 30th June 2017
Breed	**Total to date**	**Unaffected**	**Schedule (Congenital)**	**Schedule (Later Onset)**	**Non Schedule (Congenital)**	**Non Schedule (Later Onset)**	**Breed Notes**	**Litter Screening summarised**
Shih Tzu [3]	0	0						
Tibetan Terrier [2]	4 (9)	4 (8)					A breed with potential as a compact and intelligent family pet - with very few eye problems seen so far. **PLL and PRA** have been reported overseas and both can be screened genetically, but in this heavily coated breed it is important to be alert to a number of other possible threats to healthy eyes and vision.	
Non Sporting Group Totals	**43** (40)	**39** (37)						
All Breeds Totals	**1563 (1547)**	**1382 (1347)**			**Please Note : the bracketed figures in red alongside each breed's annual totals is the figure for the same period LAST YEAR.**			