

April 23, 2026

Dear Members of the LRC Board of Directors:

On behalf of the Dilute Committee, we respectfully submit the enclosed report for your review and consideration.

This report represents the Committee's effort to examine the issue of dilute-colored dogs registered as Labrador Retrievers in a comprehensive and structured manner. In developing this document, we have sought to integrate current genetic understanding, historical documentation, and administrative considerations, while carefully distinguishing between established evidence, supported inference, and areas where uncertainty remains.

The Committee has approached this assignment with the goal of providing a clear and balanced framework to support thoughtful deliberation. We recognize that this is a complex issue with long-standing implications for the breed, and we have therefore focused on presenting information in a manner that is both objective and constructive.

In addition to outlining the relevant background, the report includes a series of recommendations for the Board's consideration. These recommendations reflect the Committee's assessment of potential pathways that may contribute to improved clarity, consistency, and long-term stewardship of the Labrador Retriever. They are offered with the understanding that implementation, if any, will require careful evaluation of feasibility, timing, and broader impact.

Once approved, the Committee believes the report will serve as a useful reference for other breeds addressing similar questions. We anticipate that the American Kennel Club and those with an interest in dilute coloration may likewise find the report informative. Publication in an appropriate journal, such as the AKC Gazette, could provide an effective means of sharing this information with a broader audience.

We appreciate the opportunity to contribute to this important discussion and remain available to provide additional information or clarification the Board may find helpful.

Respectfully submitted,

Margaret Wilson, Chair
On behalf of the Dilute Committee
Labrador Retriever Club, Inc.

Dilute Committee Report

Genetics, Historical Context, and Considerations for the Labrador Retriever

Prepared for the Board of Directors

Labrador Retriever Club, Inc.

April 2026

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Executive Summary

This report examines dilute-colored Labrador Retrievers through three complementary lenses: genetics, breed history, and registry administration. The Committee's purpose is not to revisit long-settled emotions around the issue, but to provide the Board with a more disciplined framework for evaluating what is known, what is reasonably inferred, and what remains uncertain. In a subject that has generated decades of disagreement, that distinction is essential. Without it, scientific findings, historical impressions, and policy preferences can become conflated, making constructive decision-making more difficult.

The genetic mechanism that produces dilute coloration is well established. Dilution is associated with the recessive *d* allele at the melanophilin (MLPH) locus, and expression of the phenotype requires inheritance of the recessive allele from both parents. In practical terms, the phenotypes identified as silver, charcoal, or pale dilute yellow is not a vague color impression but the product of a specific and testable genotype. Modern DNA testing therefore allows the trait to be identified in a way that was not possible when the issue first arose in the late twentieth century.

The historical record, however, does not support the conclusion that dilute coloration formed part of the Labrador Retriever during its development and early recognition. Foundational texts, early breeding records, and standard descriptions consistently identify black, yellow, and chocolate as the breed's recognized colors. Temporary anomalies in puppy coats and mismarks have been recorded historically, but these do not constitute evidence of a stable, heritable dilute phenotype. The later emergence of dilute-colored Labradors in the United States is therefore best understood as a subsequent development within the breed population rather than a historically documented trait carried forward from the breed's foundation.

For that reason, the Committee concludes that the current issue is not merely one of color terminology. It is a question of how a modern registry and parent club should respond when a genetically distinct breeding objective develops within an established breed population. Without grounding in scientific and historical evidence, policy preferences risk becoming conflated, resulting in less constructive and less durable decision-making. The report therefore recommends two principal areas of action for the Board's consideration: first, expanded use of genetic testing and registration transparency; and second, serious consideration of a separate breed pathway, here described as the North American Silver Retriever, for the dilute population so that dogs intentionally bred for the dilute phenotype are no longer registered as Labradors. These recommendations are offered as part of a broader, evidence-based strategy intended to preserve clarity, reduce conflict, and support long-term breed stewardship.

I. Purpose and Scope of the Report

The emergence and propagation of dilute-colored Labradors has raised questions that are simultaneously scientific, historical, and administrative. Scientifically, the issue concerns the inheritance and expression of the dilute allele. Historically, it concerns whether the trait can be substantiated as part of the Labrador Retriever's original development. Administratively, it concerns how the American Kennel Club and the Labrador Retriever Club, Inc. should classify and manage a phenotype that falls outside the accepted standard yet continues to be produced, marketed, and registered. The Committee's task has therefore required a broader review than a simple color discussion would suggest.

This report is intended as a working foundation for Board consideration. It does not attempt to resolve every dispute surrounding dilute Labradors, nor does it rest on anecdote alone. Instead, it draws together several forms of evidence: basic canine genetics, population genetics, historical breed literature, registry practice, and comparative breed precedent. The Committee's view is that durable policy can only be made when those domains are considered together. A recommendation built on science but not history, or on history but not practical governance, would remain incomplete.

The report proceeds in four steps. First, it explains the genetic basis of dilution and why the phenotype is biologically meaningful rather than merely descriptive. Second, it reviews the historical record and the absence of documented adult dilution in foundational Labrador development. Third, it examines the implications of sustained selection for a recessive trait and the resulting divergence in breeding objectives. Finally, it outlines practical recommendations, including mandatory or strongly encouraged genetic transparency measures and a separate breed pathway for the dilute population. The Committee believes this structure best serves the Board's need for both thoroughness and clarity.

II. Genetic Basis of Dilution

Dilute coat color in dogs is associated with mutation at the MLPH locus, which affects the intracellular transport of melanosomes. Melanosomes are the pigment-containing structures within melanocytes, and their distribution within the hair shaft influences visible coat color. In dogs that are homozygous recessive at this locus (dd), eumelanin pigment is distributed differently, producing a visibly lighter or "diluted" appearance. Because the trait is recessive, it can be carried silently in heterozygous form (Dd) and only becomes visibly expressed when two recessive alleles are inherited together.

When present in Labrador Retrievers, the dilute gene lightens eumelanin-based colors. Chocolate-based eumelanin becomes the phenotype commonly referred to as silver; black-based eumelanin becomes charcoal; and yellow dogs may exhibit a very pale diluted presentation with corresponding pigment effects. This is important because it underscores that dilution is not a

subjective naming preference. It is a genotype-driven change in pigment expression, and modern testing can identify whether a dog is non-dilute (DD), a carrier (Dd), or dilute (dd).

The biological significance of the mutation should also be stated plainly. In several breeds, dilution has been associated with Color Dilution Alopecia (CDA), a hair and skin disorder linked to structural abnormalities in pigment handling and hair shaft integrity. Not every dilute dog develops CDA, and expression varies by breed background, but the association is sufficiently established to show that dilution is not purely cosmetic. For purposes of breed stewardship, this matters. The Committee does not contend that all dilute Labradors are diseased, but it does conclude that deliberate propagation of the dilute genotype is not biologically neutral in the way routine shade variation within accepted colors might be. Because dilution reflects a functional alteration in pigment transport, it is appropriate to consider whether this genetic mechanism has associated biological or clinical implications.

III. Health and Disease Considerations Associated with Dilution

The Committee reviewed the available veterinary and genetic literature concerning health implications associated with dilute coat color in dogs. This review is important in distinguishing between well-supported findings and broader claims that are not currently substantiated by controlled study, particularly as health considerations are often cited in discussions surrounding dilute Labrador Retrievers.

Established Dermatologic Association: Color Dilution Alopecia

The most consistently documented health condition associated with dilute coat color in dogs is Color Dilution Alopecia (CDA). CDA is a hereditary follicular disorder observed in multiple dilute-coated breeds, including Doberman Pinschers, Dachshunds, and others. It is characterized by structural abnormalities of the hair shaft, including fragility, breakage, and progressive alopecia, often accompanied by comedones and recurrent secondary bacterial infections.

Histopathologic studies describe abnormal clumping of melanin granules within hair shafts and follicular epithelium. These pigment aggregates are believed to disrupt normal hair structure and growth cycles, leading to the clinical manifestations observed. The condition typically presents within the first few years of life, though severity varies, and not all dilute dogs are affected.

Genetic Basis and Biological Mechanism

Dilution in dogs is associated with variants affecting the MLPH gene (melanophilin) pathway, which plays a critical role in the intracellular transport of melanosomes. Disruption of this pathway results in uneven pigment distribution, producing the characteristic diluted coat color.

Importantly, the same biological mechanism responsible for dilution also underlies the structural abnormalities observed in CDA. This connection supports the conclusion that dilution is not merely a cosmetic trait, but reflects a functional alteration in pigment biology with potential clinical consequences in the integumentary system.

Limitations of Breed-Specific Evidence

While the association between dilution and CDA is well documented across multiple breeds, there is currently limited peer-reviewed, breed-specific data quantifying the prevalence or severity of CDA in Labrador Retrievers. Most available evidence is extrapolated from studies in other dilute-coated breeds or from general dermatologic literature.

Accordingly, while it is scientifically reasonable to consider dilute Labradors at risk for the same class of dermatologic conditions, the Committee notes that the extent of that risk within the Labrador population has not been rigorously quantified in the published literature.

Distinction from Broader Systemic Disorders

The Committee also reviewed literature describing more severe syndromes associated with pigment transport defects, including conditions in humans such as Griscelli syndrome and related disorders involving genes such as MYO5A and RAB27A. These syndromes may involve neurologic, immunologic, or hematologic abnormalities.

However, the available evidence does not support a direct equivalence between these conditions and the common canine dilute phenotype associated with MLPH variants. At present, there is no strong, peer-reviewed evidence demonstrating that dilute Labrador Retrievers are predisposed to systemic disease (e.g., gastrointestinal, neurologic, or immunologic disorders) solely as a function of the dilute genotype.

For this reason, the Committee considers the most scientifically supportable health concern associated with dilution to be dermatologic, rather than systemic.

Ocular Considerations

Pigmentation plays an important role in normal ocular structure and function, particularly within the retinal pigment epithelium and uveal tract. As a result, conditions that alter melanin distribution may, in some contexts, influence visual performance or light sensitivity.

The dilute phenotype in dogs is associated with altered pigment transport rather than absence of pigment-producing cells. While this distinction is biologically meaningful, it has led to questions regarding whether dilution may have subtle ocular effects. Limited veterinary observations have noted lighter iris pigmentation and, in some cases, anecdotal reports of increased light sensitivity in dilute dogs.

However, the Committee found no strong, consistent peer-reviewed evidence linking the dilute genotype (MLPH) to primary inherited ocular disease in dogs. Common hereditary eye conditions in Labrador Retrievers, including progressive retinal atrophy, cataracts, and retinal dysplasia, are associated with separate genetic mechanisms and have not been shown to correlate with coat color dilution.

Accordingly, while the biological role of pigmentation in the eye supports continued scientific interest, the current literature does not support a conclusion that dilution in Labrador Retrievers is associated with a defined or increased risk of ocular disease.

Implications for Interpretation

Taken together, the literature supports three conclusions:

1. Dilution in dogs is associated with a well-characterized genetic mechanism affecting pigment transport.
2. This mechanism is linked, in multiple breeds, to a recognized dermatologic disorder (CDA).
3. The extent to which this risk manifests specifically within Labrador Retrievers has not been fully quantified in controlled studies.

Accordingly, health considerations related to dilution should be framed with precision: the primary evidence supports a risk of coat and skin disorders, rather than generalized systemic disease.

Considerations for Future Research on Health Implications

Given the limitations of current breed-specific data, the Committee recognizes the value of well-designed, peer-reviewed studies to better characterize the health implications of dilution within Labrador Retrievers.

A rigorous study suitable for publication in the veterinary literature would typically include:

- Clearly defined study populations, including dilute (dd), carrier (Dd), and non-dilute (DD) Labradors
- Adequate sample size to ensure statistical power
- Confirmed genotyping using validated DNA testing methods
- Standardized clinical evaluation, particularly dermatologic examination and diagnostic criteria for CDA
- Longitudinal follow-up, as some conditions develop over time
- Control for confounding variables, including breeding practices, inbreeding coefficients, and environmental factors
- Blinded assessment where possible to reduce observer bias
- Peer-reviewed publication, ensuring independent evaluation of methodology and conclusions

Such studies would allow for more precise estimation of disease prevalence, clarify the degree of risk associated with the dilute genotype in Labradors, and strengthen the evidence base available for future policy considerations. See **Addendum A** for an example of what a Request for Proposals could include.

IV. Population Genetics Considerations

Population genetics provides an important framework for evaluating how likely it is that a recessive allele formed part of the original Labrador gene pool. The Labrador Retriever developed from a comparatively small founding population. In breeds formed under such conditions, founder effects and bottlenecks strongly influence which alleles become established, which appear in observable form, and which disappear over time. A recessive allele present at meaningful frequency in a founding population is generally expected either to manifest phenotypically at some point in the breed's early history or to remain traceable through related color expressions and breeding outcomes.

That principle is relevant here because the historical record contains no evidence of a stable dilute population in the early breed. If the dilute allele had been broadly present from the outset, one would expect not only occasional silver-like descriptions tied to chocolate, but also historical evidence of charcoal dilution emerging from black lines, especially given the long dominance of black Labradors within the breed. The absence of such evidence is not absolute proof of absence, but it is highly relevant in a population-genetic context. It weakens the claim that dilution was silently present as an original and persistent element of the Labrador breed.

At the same time, population genetics explains how the situation could change once the dilute allele became established in a subset of the population. Once breeders intentionally select for a recessive trait, gene frequency can rise rapidly within that subset. The resulting population follows a different breeding trajectory because mate selection, pedigree emphasis, and phenotype prioritization all shift toward maintenance of the recessive expression. In that sense, the current dilute population is not simply a color variant drifting randomly inside the Labrador breed. It reflects sustained selection for a specific genotype and, therefore, a distinct breeding objective.

V. Historical Context and Breed Literature

The historical literature on the Labrador Retriever is strikingly consistent in its treatment of color. Early authorities and foundational breed texts describe black, yellow, and later chocolate as the breed's accepted colors. Standard descriptions, historical records, and kennel documentation do not identify dilute as part of the established Labrador phenotype during the breed's formative and early recognized years. This includes the principal breed literature commonly cited in discussions of Labrador history, as well as the broader body of recollection from preservation breeders and historians.

This absence is especially significant because early writers did not ignore color. On the contrary, they commented on mismarks, shade variation, and unusual coat observations when they

encountered them. If a stable adult dilute phenotype had existed in the historical Labrador population, particularly one that reproduced across generations, it is reasonable to expect that it would have been noted in the same way that other coat peculiarities were documented. Instead, dilute-colored adult Labradors do not appear in the early literature as a recognized or even recurring phenomenon. Notably, discussions of coat anomalies such as mismarks and white markings have remained consistent across decades of breed literature, with no corresponding documentation of stable dilute phenotypes.

The first documented dilute-colored Labradors appear in the United States in the late twentieth century. Later appearances elsewhere have generally been associated with importation from American dilute lines rather than independent historical continuity. This pattern is materially different from the persistence of a foundational color. It suggests not ancient continuity but modern propagation. For a preservation body concerned with the historical Labrador Retriever, that distinction is central.

VI. Absence of Historical Substantiation for Dilute as a Native Labrador Color

One of the more persistent arguments advanced by dilute supporters is that “silver has always been in the breed,” often based on references to unusual puppy coats or vague historical mentions of grayish color. The Committee does not find this argument persuasive when examined carefully. Historical descriptions of temporary silvering, salt-and-pepper coats, or odd puppy shading are not the same as evidence of a stable dilute genotype. Puppy coats can vary for developmental reasons and then resolve into standard adult coloration. Such transient observations cannot be treated as proof that mature, heritable adult dilution existed in the original Labrador population.

This distinction matters because true genetic dilution is not an ephemeral developmental stage. It is a stable recessive trait that should reproduce predictably when present in breeding stock. Had the dilute allele existed historically in a meaningful way, one would expect sustained evidence of mature dilute dogs and, importantly, evidence across the colors affected by eumelanin dilution. The historical absence of charcoal-type adults is particularly relevant here. Since black Labradors long predominated in the breed, charcoal dilution should have been noticed if the allele had been quietly present over many generations. The lack of such documentation substantially weakens the “native color” claim.

The Committee therefore concludes that the historical record does not substantiate dilute coloration as an original Labrador color. That conclusion does not depend on proving a specific origin event. It rests on the combined force of absence in breed literature, absence in early records, and inconsistency between the expected expression of a recessive dilute allele and what is actually documented in historical sources.

VII. Registry and Administrative Context

The current administrative situation originated in registration decisions made before the availability of modern color testing. At that time, classification depended heavily on phenotype and breeder-provided information, and the question presented to the registry was handled as an immediate practical problem rather than as a fully informed genetic determination. Once a registration path had been established, later generations continued to move through the same framework, even as dilute breeders themselves described their dogs using terminology distinct from the standard Labrador colors.

Modern genetics now permits far greater precision. A dog can be tested for the dilute locus, and its status as DD, Dd, or dd can be determined objectively. Yet improved science alone does not answer how the registry should classify those dogs. Classification involves policy, governance, and the relationship between the parent club's authority to define breed type and the registry's authority to administer records. The result is that the dilute issue persists partly because science has advanced more quickly than the administrative framework built around older decisions.

For the Board, this means that the problem cannot be solved by rhetoric alone and also cannot be solved by science alone. Genetic testing can clarify facts, but governance must decide what to do with them. That is why the Committee believes registration transparency and organizational clarity must both form part of any serious response.

VIII. Comparative Breed Precedent

When distinct breeding populations emerge within or alongside an established breed, canine history shows that resolution most often comes through organization rather than argument. The Boykin Spaniel is a useful example not because it is directly analogous in every respect, but because it demonstrates the sequence by which a regional or developing population becomes a recognized breed. A population first becomes organized through a club structure, a standard, record-keeping, and sustained breeder participation. Only after stability is demonstrated does formal recognition follow.

This pattern is relevant to the dilute issue because it suggests that a separate breed pathway is not merely theoretical. If there is already a substantial and growing population of breeders intentionally selecting for dilute coloration, then the first practical question is not whether those dogs can be argued into or out of Labrador history. The more practical question is whether that population can be organized as a distinct breeding community with its own records, standards, and long-term aims. Historical precedent suggests that such development is how conflict is most effectively reduced.

The Committee therefore views separate organization not as punishment or exclusion, but as a historically grounded administrative response when divergent breeding goals have already become established. It allows each population to pursue coherent objectives under clearer definitions, rather than forcing incompatible aims to coexist indefinitely under one breed designation.

IX. Recommendations and Considerations

The Committee recommends that the Board consider a comprehensive and structured approach to the dilute issue rather than treating it as a single-policy problem. Because the issue involves genetics, registry clarity, public communication, and long-term breed stewardship, no one measure will fully resolve it. A successful response will likely require parallel efforts that increase transparency in the near term while building greater structural clarity over time.

First, the Committee considers genetic testing for the dilute locus to be essential. Reliable DNA testing can now identify dogs that are non-dilute (DD), carriers (Dd), or dilute (dd). Broader use of such testing would materially improve pedigree accuracy, reduce uncertainty in breeding stock, and provide breeders with clear information for decision-making. The Committee does not view testing as optional housekeeping, but as a foundational tool for bringing clarity to a matter that has historically relied on phenotype and assertion.

The Committee further recommends that the Board give consideration to the role of DNA testing in the registration of litters. Requiring or strongly encouraging submission of DNA profiles for both sire and dam, together with dilute locus (D-locus) status, at the time of litter registration would materially improve the accuracy and transparency of pedigree records. Such an approach would shift genetic testing from an optional, retrospective tool to a prospective component of responsible breeding practice. By linking testing directly to registration, the registry system itself becomes a mechanism for documenting genetic status, reducing uncertainty over time, and providing breeders and owners with clear, verifiable information.

Second, the Committee recommends that the Board explicitly acknowledge that the dilute population reflects divergent breeding objectives. There is now a substantial and growing population of breeders intentionally selecting for dilute coloration. Those breeding goals differ in kind from preservation-focused Labrador breeding, which aims to maintain the breed as historically defined under the accepted standard. Continued registration of dilute dogs as Labradors obscures that divergence and contributes to confusion among breeders, buyers, judges, and the general public. Clarity begins with recognizing that the disagreement is not merely semantic; it reflects different breeding trajectories.

Third, and most importantly, the Committee recommends serious consideration of a separate breed pathway for dilute-colored retrievers so that they are no longer registered as Labradors. The Committee believes this can be articulated positively as the development of a North American Silver Retriever, grounded in the reality that an existing population of dogs and breeders already provides a practical starting point. This approach would align with historical precedent for breed development, reduce continuing conflict within the Labrador community, and permit breeders selecting for dilute coloration to define their own standards and goals transparently rather than operating through the Labrador designation.

The Committee recognizes that a separate breed cannot be created instantaneously and cannot be sustained by declaration alone. It would require organization, participation, record-keeping, and long-term commitment from the breeders involved. However, the existence of a meaningful dilute breeder population makes the pathway realistic in a way that it might not have been decades ago.

In the Committee’s judgment, continued reliance on classification ambiguity is less sustainable than beginning to articulate an orderly transition toward separate identity.

In evaluating potential approaches, the Committee further recommends that the Board consider the behavioral and market dynamics that influence breeding practices. Recognition of a phenotype within a registry system—even in a limited or non-standard capacity—may have effects beyond its intended administrative purpose. Such recognition may be interpreted by the broader public as an indication of legitimacy or acceptance, regardless of formal restrictions within the breed standard. This perception can influence demand, which in turn may lead to an increase in breeding activity focused on that phenotype.

The Committee notes that, in prior instances, changes in classification or terminology have been interpreted by some stakeholders as incremental progress toward broader recognition. As a result, measures intended to improve clarity—such as identification or designation—may, if not carefully considered, produce unintended consequences by reinforcing demand or altering public perception of the breed. For this reason, any approach involving identification or classification of dilute phenotypes should be evaluated not only for its administrative utility, but also for its potential downstream effects on breeding practices and market behavior.

In this context, genetic testing assumes additional importance. Beyond its role in improving pedigree accuracy, it may serve as a practical mechanism for increasing transparency and accountability within breeding programs. By introducing a higher standard of documentation and verification, genetic testing may help discourage opportunistic breeding practices and support more deliberate and informed decision-making.

The Committee further notes the importance of alignment between this report and the work of the Standard Revision Committee. The Labrador Retriever breed standard serves not only as a guide for evaluation in the show ring, but also as the Parent Club’s formal statement of the breed’s defining characteristics and identity.

As described by the American Kennel Club, the breed standard is “an in-depth, written description of how the ideal dogs in a breed should look, move, and act,” and reflects the characteristics that define the breed and enable it to perform its intended function. In this context, clear articulation of recognized coat colors serves not only a competitive function, but also an informational and educational role for breeders, owners, and the general public.

The Committee therefore encourages continued consideration of how the standard may be used to communicate clearly and consistently that the Labrador Retriever is defined by its traditional three colors. Strengthening clarity in the standard may complement other measures discussed in this report, including genetic testing and long-term structural solutions, by reinforcing a consistent understanding of the breed across both formal and informal contexts.

Finally, the Committee recommends that the Board support continued communication and education regarding coat color genetics, breed history, and the practical implications of selective breeding. Clear alignment between breed standard language, registry practices, and public educational efforts will be essential to preserving a consistent understanding of the Labrador breed

over time. Accurate and consistent educational materials will be important in reducing misinformation and supporting informed decision-making.

The Committee further recognizes that, in practice, distinctions may arise between breed standard definitions and registry implementation. As registration systems evolve, including the use of expanded color descriptors or selection options, there is potential for inconsistency between what is formally defined by the standard and what is reflected in registration records. Such divergence, even when unintended, may create confusion among breeders and the public regarding what constitutes a Labrador Retriever.

For this reason, the Committee emphasizes the importance of continued dialogue and alignment between the Parent Club and the American Kennel Club to ensure that breed definitions, registration practices, and public-facing materials remain consistent and mutually reinforcing.

Finally, the Committee recommends continued communication and education regarding coat color genetics, breed history, and the implications of selective breeding. Accurate and consistent educational materials will be important in reducing misinformation and supporting informed decision-making. Education alone will not resolve the issue, but it remains an essential complement to testing, policy clarity, and long-term planning.

X. Conclusion

The presence of dilute coloration within the Labrador population is not in dispute. What is in dispute is how that phenotype should be understood and managed in light of the breed's history, the science of inheritance, and the responsibilities of parent club stewardship. The Committee's review leads to three core conclusions: dilution is genetically real and testable; it is not substantiated as part of the historically established Labrador population; and its current prevalence reflects sustained selective breeding within a distinct subset of dogs.

For those reasons, the Committee believes that meaningful progress requires both transparency and structure. Genetic testing is essential because it provides the objective information necessary to move beyond uncertainty. At the same time, genetic clarity alone is insufficient unless it is paired with administrative clarity. Recognition that the dilute population represents a divergent breeding objective makes possible a more durable solution than continued coexistence under a single label.

The Committee therefore concludes that the most practical path forward is one that combines broader genetic testing and registration transparency with serious exploration of a separate breed framework for the dilute population, such as a North American Silver Retriever. Such an approach does not erase the current reality of dilute breeders and owners; rather, it responds to that reality with a historically grounded and orderly solution. In the Committee's judgment, this offers the clearest opportunity to preserve the integrity of the Labrador Retriever while allowing the dilute population to develop under its own transparent identity.

XI. Report Citation

Dilute Committee, Labrador Retriever Club, Inc. (2026). Dilute Committee Report: Genetics, Historical Context, and Considerations for the Labrador Retriever. Prepared for the Board of Directors, LRC, Inc.

XII. Selected References

American Kennel Club. *Constitution and Bylaws*.

Eley, C. C. (1926). *The History of Retrievers*.

Getty, R. (Iowa State University). Letter exchanges with H. Warwick.

Little, C. C. (1957; reprint 1979). *The Inheritance of Coat Color in Dogs*.

McCarthy, S. B. (1985, March). Article in *Popular Dogs*.

Roslin-Williams, M. (1977, March/April). Article in *The Labrador Retriever Magazine*.

Roslin-Williams, M. (1987, May 29). Article in *Dog World*.

Roslin-Williams, M. (2000). *Advanced Labrador Breeding*. Doral Publishing, Inc.

Schmutz, S. M., & Berryere, T. G. (2007). Genes affecting coat colour and pattern in domestic dogs. *Animal Genetics*.

Sprake, L. (1933). *The Labrador Retriever*.

Templeton, J. W., & Stewart, A. P. (1977). Inheritance of coat colors in the Labrador Retriever. *Journal of Heredity*, 68, 134–136.

Warwick, H. (1986). *The New Complete Labrador Retriever*. Howell Book House.

Willis, M. B. (1989). *Genetics of the Dog*.

Addendum A: Conceptual Framework for a Request for Proposals (RFP)

Purpose

The Committee recommends that the Board consider commissioning an independent, evidence-based assessment of the dilute (d) gene in Labrador Retrievers. A structured Request for Proposals (RFP) process would allow the Club to obtain objective, scientifically grounded information to inform future policy decisions.

This approach recognizes that questions surrounding dilution involve not only historical and breed-standard considerations, but also well-defined genetic mechanisms and documented health associations. Independent analysis may assist the Board in evaluating these issues within a broader scientific and population-level context.

Scope of Work

Proposals should address one or more of the following areas:

1. Genetic Characterization of the Dilute Locus

- Analysis of the D locus corresponding to the melanophilin (MLPH) gene
- Identification and characterization of known dilute variants (e.g., d¹, d², d³)
- Confirmation of inheritance patterns (autosomal recessive, dd expression)
- Evaluation of interaction between the dilute locus and established Labrador color loci (e.g., MC1R, TYRP1)

As established in the veterinary genetics literature, dilute expression results from disruption of normal melanosome transport, leading to reduced pigment intensity and altered coat coloration .

2. Population Genetics and Prevalence

- Estimation of the frequency of DD, Dd, and dd genotypes within the Labrador population
- Analysis of pedigree patterns and potential founder effects
- Evaluation of whether dilute alleles represent recent introduction or amplification of rare variants
- Modeling of long-term population impact under varying breeding scenarios

Available evidence suggests that dilute variants were not historically documented within the foundational Labrador gene pool and may reflect either introduction from outside the traditional population or selective amplification of a rare variant .

3. Health and Dermatologic Implications

- Comprehensive review of veterinary literature on **Color Dilution Alopecia (CDA)**
- Assessment of the relationship between dilute genotype and hair shaft abnormalities, follicular damage, and dermatologic disease
- Evaluation of variability in clinical expression across breeds and within Labrador Retrievers
- Consideration of population-level health implications associated with increasing prevalence of the dilute genotype

The literature consistently associates dilution with structural abnormalities of the hair shaft and an increased risk of dermatologic disease, although expression may vary and is influenced by additional genetic and environmental factors .

4. Registry, Identification, and Traceability

- Evaluation of current and potential methods for identifying dilute and carrier status through DNA testing
- Assessment of feasibility and implications of incorporating genetic testing into litter registration processes
- Consideration of data integrity, traceability, and long-term record accuracy

Modern DNA testing can reliably distinguish DD, Dd, and dd genotypes, providing a foundation for improved transparency and informed breeding decisions .

5. Comparative Breed Analysis

- Review of breeds in which dilution is historically recognized (e.g., Weimaraner, Doberman Pinscher)
- Assessment of how long-standing presence of dilution within a breed population may influence health outcomes
- Evaluation of differences between established dilute breeds and breeds in which dilution is more recently observed

Comparative analysis may provide insight into how population history and selective breeding influence both phenotype and disease expression.

Deliverables

Proposals should include:

- A written report summarizing findings and conclusions

- Description of methodology and data sources
- Analysis of limitations and areas requiring further study
- Where appropriate, recommendations for practical application or further investigation

Qualifications of Respondents

Respondents should demonstrate expertise in one or more of the following areas:

- Veterinary genetics
- Population genetics
- Canine dermatology
- Animal breeding and registry systems

Affiliation with recognized academic institutions, veterinary schools, or established research organizations is preferred.

Evaluation Criteria

Proposals may be evaluated based on:

- Scientific rigor and methodology
- Relevant experience and qualifications
- Feasibility and clarity of proposed work
- Ability to produce objective, well-supported findings

Intent and Use

This RFP framework is intended to assist the Board in obtaining independent, scientifically grounded information regarding the dilute genotype in Labrador Retrievers. It does not presuppose any specific policy outcome, but rather supports informed decision-making through objective analysis.

The Committee views this as a complementary step that may enhance understanding of the genetic, health, and population-level implications discussed throughout this report.