

CHINOOK BREED CONSERVATION PROGRAM

PROGRAM GOAL:

The Chinook Breed Conservation Program (CBCP) is a program developed by the Chinook Owners Association (COA) in partnership with the United Kennel Club, Inc. (UKC) to maintain a healthy, genetically sustainable Chinook population, with the breed's historical temperament, working ability, structure, and appearance.

PROGRAM OBJECTIVES:

1. Develop and manage a sustainable gene pool for the Chinook
2. Improve the health and longevity of Chinooks by reducing inbreeding
3. Decrease average, entire pedigree (defined as 30 generations) Coefficient Of Inbreeding (COI) of litters born from 37.4% to below 15% by 2030
4. Decrease average five generation pedigree COIs to 3% by 2030
5. Increase effective population size as measured through the Chinook Pedigree Project (CPP) database from ~12 to 50 by 2030
6. Identify other breeds/ breed types who can improve the temperament, working ability, structure or appearance of Chinooks to better model the historical ideal
7. Educate Breeders and owners on population genetics (where/how their dogs fit)
8. Provide tools to Breeders to support better decision making in planning breedings both for the individual dogs and for the breed

OVERVIEW:

The CBCP will expand the Chinook gene pool by introducing New Founders to the breed. These New Founders will be bred to excellent examples of a purebred Chinook. Offspring may be bred to purebred Chinooks and/or the offspring of other New Founders in the Program. The COA Health and Genetics Committee ("Committee") has the sole discretion to both determine the need for and number of New Founders, and solicit and approve New Founder applications from COA Member Breeders.

The CBCP is configured to best leverage both the expertise of the Committee

and external expertise to provide transparency on the state of the Chinook breed, the background and impact of New Founders, and to be efficient and simple for Breeders. The COA will continue the relationship with the UKC that provides the ability for non-purebred New Founder descendants to participate in UKC performance events through Limited Privilege (LP) registration, without requiring the dogs be spayed/neutered. It will also ensure an accurate, public, multi-generational pedigree is kept by the COA Registrar (“Registrar”) including required DNA and health tests as dogs move forward in the Program.

Breeders have the sole discretion of determining which dogs should move forward in their breeding program. It is strongly recommended that Breeders leverage the COA Litter Badging Program and ensure that all litters of dogs in the CBCP qualify for at least two badges.

Descendants of New Founders with estimated 80+% purebred Chinook ancestry (i.e., third generation if one New Founder is in the pedigree once), DNA-VIP, and that meet the Chinook standard will be automatically registered as UKC Purebreds via an annual process.

Annually, the CBCP will publish information on the purebred and conservation program populations. This will include an analysis of how many (if any) New Founders should be added to the Chinook population via the CBCP in the next 18 months. The New Founder Target will be included in the annual population information, and may be anywhere from zero to 25% of a year’s anticipated matings. The target should be based on population information and balance the infusion of New Founders with existing offspring and purebred Chinooks.

In addition, annually the Committee will publish CBCP guidelines for Breeders on leveraging maximum diversity in the Crossbred population. This includes recommendations for how many dogs from an F1 litter Breeders should try to move forward, whether line breeding on a New Founder or breeding Crossbred dogs across New Founders would be beneficial, etc. All breeding decisions remain with the Breeders.

The requirements set forth below are intended to be read within the context of the goals and objectives of the program. If there are individual sections that might have differing interpretations if read alone, rather than in the overall context of the general requirements and goals of the Program, the Committee shall interpret the section consistently with the overall goals and objectives of the Program

ARTICLE 1: DEFINITION OF NEW FOUNDERS

Adding New Founders to the Chinook breed is a very serious undertaking. It impacts the future of the entire breed, not just the immediate descendants of the non-Chinook, and should be the result of extensive study and preparation. There are several key processes that relate to adding a New Founder to the breed:

1. Management of Chinook Breed Conservation Program

The Committee administers the CBCP, and should always keep the overall Program goals and the health and welfare of the Chinook population in mind. While Breeders ultimately are accountable for breeding decisions and must take responsibility for all offspring, the Committee must monitor the population and provide clear recommendations for Breeders.

In addition, the CBCP should annually publish revised New Founder Guidelines, including recommended breeds/mixes that could be considered, key abilities and health traits that are desirable to be added to the Chinook population, and document any additional requirements (e.g., new genetic health tests) that Breeders should consider while evaluating possible New Founders. The number of potential New Founders targeted each year AND the recommended breeds/mixes MAY CHANGE based on the prior year's information – for example if two large litters of Siberian Husky x Chinook F1 puppies are born in one year, the next year might remove Siberian Husky as a recommended New Founder breed, encouraging Breeders to look to other breeds to balance the genetic diversity being added to the Chinook population.

2. Selection of New Founders

New Founders should be selected very carefully by the Breeder proposing to start a new line. Temperament of the New Founder, and that ideal for its breed / mix, should be a primary consideration. Prior experience with the CrossBreeding Program noted that temperament was the one area in which Crosses fared less well in studies than their purebred Chinook counterparts. In addition, New Founders should be evaluated for their ability to produce puppies with a structure consistent with a working sled dog, as well as add working ability and genetic diversity to the Chinook.

Input from population geneticists recommends that New Founders either be selected from breeds not closely related to the Chinook to maximize the diversity of their input, OR from dogs with very similar phenotype to minimize

selection against offspring in subsequent generations for cosmetic issues (such as undesirable coat/color).

Recent genetic analysis of the Chinook breed indicates a significant Shepherd ancestry, and two of the known four New Founders from the 80s descended from German Shepherds. Therefore, preference will be given to New Founders from other breed groups or purpose-bred mixes, in the interests of gaining additional diversity. For Breeders looking to research potential New Founders, a list of recommended breeds/mixes to be considered is included in Appendix A.

Key Considerations:

- Temperament
- Health
- Working ability
- Structure relevant for a companion sled dog
- Ancestor Pedigree Health
- Genetic Diversity of the individual dog, and
- Diversity of the Proposed New Founder with the Chinook Gene Pool

A Priori Exclusions In Program:

The Program will exclude dogs with merle coloration as New Founders because of the health implications of breeding two dogs that carry the merle allele together, and the complications that arise with phenotypic identification of merle with sable dogs (the predominant Chinook tawny color). Proposed New Founders that are sable or recessive red (ee – “yellow”, “cream”, etc.) dogs in breeds with merle coloring must be color genotyped to prove they do not host the merle mutation.

Due to the frequency of the MDR1 allele in the Chinook breed (currently estimated at ~18% of the population), and the potential links to some types of Chinook seizures, New Founders that are affected or carriers of MDR1 are also excluded from the Program. A proposed New Founder from a breed known to have the mutation must be tested and clear of MDR1. There are various online resources noting affected breeds, which are all herding breeds or breeds with herding ancestry (e.g., Silken Windhound).

3. Identification of Proposed New Founder

An individual Breeder should leverage the information provided by the CBCP and determine if they are able and willing to initiate a New Founder for the Chinook breed. It is vital that any Breeder making a proposal for a New Founder be prepared to take full responsibility for all offspring, as they may be more difficult to place than a purebred Chinook puppy. Interested Breeders should review the CBCP New Founder Guidelines and identify a New Founder (ideally from a recommended breed/mix) that they feel is an ideal candidate.

Specifics to be considered in a New Founder Application include:

- Breed/Mix
- Pedigree
- Health information (genetic & phenotypic)
- Performance/ Working ability
- Offspring health & working ability
- Longevity
- Individual's Genetic Diversity
- Diversity of the breed/mix from the Chinook
- Proposed purebred Chinook Mate

4. Requirements for New Founder

Proposed New Founders must have passing phenotypic health tests critical for the Chinook, currently defined as hips and eyes, as well as those relevant for their breed/mix (e.g., elbow dysplasia in Labradors). In addition, New Founders must be non-affected for all relevant genetic tests for Chinooks and the New Founder breed/mix.

Non-affected status is currently defined as Clear of a dominant or co-dominant disease mutation, or a Carrier of a recessive disease. In the cases of recognized breeds, "relevant" health tests will be defined as those noted by a national breed parent club (UKC if it exists) or national health association.

New Founders are required to be DNA Profiled by the UKC to enable DNA Parent-Identification of puppies. In the event a Breeder wishes to propose a New Founder that does not meet these criteria, the Breeder may apply under Article 5: Exceptions.

5. Proposal for New Founder Breeding

Breeders wishing to conduct a breeding to a New Founder should complete Form 1-A New Founder Application. It details all aspects of the proposed New Founder and the purebred Chinook intended to be used in the breeding, and should be submitted along with relevant health tests and genetic information. All purebred Chinooks used in the Program must meet the requirements from Section 4 with a sole exception: Chinooks that carry the MDR1 mutation are eligible, as that condition is already present in the population. If Breeders wish to propose a breeding with a Chinook that does not meet the requirements in Section 4, they may apply under Article 5: Exceptions.

6. Evaluation of New Founder Applications

The Committee will review the application from the Breeder within 60 days of receipt. This is a subjective evaluation, comparing the information provided on the proposed New Founder and the goals of the CBCP. Any questions for the Breeder must be identified within the first 30 days, leaving 15 days for a response and a final 15 for review.

While the evaluation is subjective, the burden of proof should be on the Committee to detail why a New Founder Application should not be approved, giving the Breeder the benefit of the doubt in their research, selection of the individual, and willingness to take responsibility for offspring. Only in cases where the Committee cannot reconcile the Breeder's proposal with the Objectives of the CBCP, or when an individual New Founder grossly diverges from the program criteria should an application be denied.

Examples for denial of an application could be (but are not limited to) an application for the same breed/mix for which a different application has just been approved, a New Founder dog that exhibits a dominant deleterious health condition with impact on quality of life not found in the Chinook, a purebred Chinook mate closely related to other New Founder purebred Chinook partners, etc.

The Committee should always be guided by the overall impact of a New Founder on the breed, and projected temperament, health, structure, working ability, and quality of life in offspring. As part of the evaluation process, the Committee will compare the proposed New Founder breeding (NF x Purebred Chinook) to the Litter Badging Program. It is strongly recommended that proposed New Founder breedings meet the criteria for at least two badges.

7. Approval of Application

Qualifying New Founder Applications will be approved and the Breeder notified no more than 90 days from the submission of the proposal. The COA Registrar will record the approval of the New Founder and purebred Chinook mate. If a bitch comes into season unexpectedly, the Breeder may request an expedited review and the Committee will do its best to accommodate it.

8. Breeding of F1 Litter

Once applications are approved, Breeders may breed when they are ready. It is anticipated that some breedings may be via artificial insemination (AI). Due to the genetic testing requirements noted below, no additional steps are required.

9. Genetic Testing of F1 Litter

All puppies resulting from the litter must be DNA parent-verified (VIP) with the UKC. This requires *both* parents to have UKC DNA records. The Program also requires all puppies to be genotyped for diversity using a commercial genetic panel screening such as MyDogDNA/Optimal Selection, Embark, or ICB. The Committee will seek to obtain an annual discount for litters for at least one commercial genetic panel test, and is prepared to work with the COA to subsidize some of the cost of such testing.

10. Litter Registration for F1 Puppies

The Registrar will register the offspring of approved New Founders and any descendants. Once all puppies' DNA-VIP and genetic panel screening certificates have been received, the Breeder should contact the COA Registrar with the following information for each puppy:

- Owner
- Owner contact info (address, email and phone number)
- Dog name
- Date of Birth
- Sex
- Pictures from the side and front with the dog standing

and the litter will be registered with the COA. ALL puppies from the litter must be included in the information submitted to the Registrar. Registered crossbred offspring are eligible for the COA Working Dog Program and the

New Founder conformation classes at the COA National Specialty.

ARTICLE 2: BREEDING IN SUBSEQUENT GENERATIONS

Once a New Founder has been approved and added, Breeders have control of all breeding decisions and which dogs should move forward at each generation. All offspring in the Program must continue to be registered with the COA. The Committee will again provide recommendations, and monitor the entire Chinook purebred and Crossbred population to appropriately adjust New Founder guidelines in the future. As an extensive conservation program like this has not yet been established in any breed, it is expected that population geneticists will continue to be involved over time as the Chinook demographics change to identify necessary adjustments. There are three key processes that relate to breeding Crossbred Chinooks in subsequent generations to enable descendants to be registered as purebred:

1. Health Tests for New Founder Descendants

All dogs intended to be bred within the Program must meet the requirements as described for New Founders outlined in Article 1, Section 4. In addition, they must also be genotyped via one of the genetic panel screenings noted in Article 1, Section 9 above.

Dogs that inherited the MDR1 mutation from a purebred Chinook parent may continue in the Program, but must be bred to dogs that have tested Clear.

If a Breeder wishes to breed offspring that do not meet the requirements in Article 1, Section 4, they may apply under Section 5: Exceptions.

2. Conducting Breedings in Subsequent Generations

Breeders will make their breeding decisions with New Founder descendants that comply with the criteria noted in Article 2, Section 1. They are strongly encouraged to leverage the COA Litter Badging Program and ensure litters meet the criteria for at least two badges.

F1 Generation

Breeders are required to notify the COA Registrar of litters from by sending a copy of 2-A: CBCP Proposed Breeding Registration to the Registrar. This is to enable the Committee to monitor the Chinook population and is not an

“approval” of a breeding.

F2 Generation

Second generation offspring of a new founder that are bred should meet the Chinook standard. They may have faults (e.g., long coat, non-preferred color). Breeders are required to notify the COA Registrar of a planned F2 breeding by sending a copy of form 2-A: CBCP Proposed Breeding Registration and a side and front standing photo of the F2 dog to the COA Registrar. The Committee will review the form, and if the group agrees the F2 meets the Chinook standard, the breeding will be eligible for the standard F3 Cross to Pure process outlined in Article 3.

If the Committee believes the F2 does not meet the Chinook standard, the Breeder will be notified and has the option to proceed with the breeding, acknowledging offspring must go an additional generation (to F4) before being eligible for the Cross to Pure process, OR the Breeder may seek to have a UKC judge evaluate the dog. If the judge agrees the dog meets the Chinook standard, standard Cross to Pure processes will apply. The judge must be in good standing with the UKC and mutually agreed by the Breeder and Committee.

3. Monitoring of Chinook Population

Using the Registrar’s summary information, the Committee will monitor the Crossbred population dynamics (e.g., which New Founder lines are flourishing and which are struggling) and use information to adjust New Founder Guidelines in the future. In addition, the Committee will monitor new trends in health and diversity gained through periodic surveys.

ARTICLE 3: CROSS TO PURE

Annual Promotion to Purebred

When offspring of a New Founder reach greater than 80% purebred Chinook genetics (third generation assuming a single New Founder in a pedigree and F2 ancestor meets the Chinook Standard), they become eligible for UKC Purebred registration. Annually, the Registrar will review the Crossbred population for dogs that meet this criteria, and contact Breeders /owners to determine if they wish to seek purebred status for each dog.

Chinooks applying for the cross to pure process must meet the UKC standard as reviewed by the Committee or UKC judge (the same process as noted in Article 2, Section 2).

Breeders/owners desiring purebred status must complete UKC Single Dog Registration paperwork and submit it and a side and front standing photo of the dog to the Registrar, who will pursue purebred registration with the UKC.

ARTICLE 4: OTHER

1. Updates by Health and Genetics Committee

The Committee anticipates the need to review and revise the Program periodically. Formal annual review should occur as part of monitoring the Chinook population. Revisions to criteria may be undertaken at any time with a majority vote of the Committee (e.g., addition of new health test to requirements). Broader revisions to the Program require majority approval by the COA Board. Such revisions must always include 'grandfathering' of lines in progress to achieve purebred status under the criteria/timing at their inception.

2. Webinar for Annual Updates

The Committee will conduct an annual webinar with interested Breeders and members to review the population information and any changes to the Program.

3. Processes for Exceptions

In the event a Breeder wishes to propose a New Founder of Pure/Cross Chinook without phenotypic and genetic tests to be used in the Program, or one with abnormal results, they must complete the relevant form and document to the Committee why this particular individual is a spectacular addition to the Chinook gene pool and how it will aid in the goals of the CBCP.

It is less common for a competitive working dog (sledding, herding, Livestock Guardian, etc.) to have phenotypic health evaluations like hip and eye exams, or genetic tests. It would be likely, though that the dog's Breeder has extensive observed information on the individual's health, as well as close relatives.

For dogs with abnormal test results, an assessment of the cause (e.g, injury) and potential impact on quality of life for offspring should be included.

ARTICLE 5: EXCEPTIONS

Process for Breeding Dogs that do not meet Criteria

If a Breeder wishes to propose a breeding with a New Founder or Chinook that does not meet the requirements outlined above, he or she may submit a written proposal to the Committee asking for an exception. The Committee understands that unforeseen circumstances may make some of the testing requirements difficult (e.g., geographic location) or inconclusive (e.g., significant prior injury). The Breeder should focus on why this particular dog is an exceptional addition to the CBCP and how the proposed breeding partner can mitigate potential issues in offspring relating to the reason for an exception request, if relevant.

The Committee is committed to the integrity of the Program and the achievement of the CBCP goals for the breed. Any exception request will be thoroughly reviewed, the Breeder may be asked for additional information. The Committee has the discretion to propose remedies such as the addition of an extra generation to obtain purebred status, to accept an exception request at face value, or to reject exception request that it feels are not in the best interests of the breed.

APPENDIX A

Potential breeds /mixes for exploration as New Chinook Founders:

Siberian Husky
Alaskan Husky
Tamaskan Dog
Hedlund Husky
Samoyed
Leonberger
Great Pyrenees
Seppala Siberian Sled dog
Labrador Retriever
Any working Sled Dog

It should be noted that New Founder applications need **not** be limited to the above breed/mixes. A breed/mix with complementary temperament, good health, and either significant genetic diversity or significant phenotypic match compared to the Chinook would also be a good candidate.

For Breeders that would like more information or support, please contact the Committee at Health@Chinook.org.