



**MUSH WITH P.R.I.D.E.
Sled Dog Care Guidelines**

3rd Edition, 2009

Introduction to the 3rd Edition

It has been just over a decade since the 2nd Edition of the Mush with P.R.I.D.E. Sled Dog Care Guidelines were published. During that time, scientists have made great strides in their understanding of dog physiology, psychology and behavior. Researchers have studied working sled dogs, with the support of their mushers, some of whom are also Mush with P.R.I.D.E. members. Many of these research projects have validated sled dog care methods that have been practiced for more than a century. Others have challenged traditional ideas that have persisted among mushers for many generations. This research, in addition to the experience of dog mushers from around the world, has contributed to a better understanding of sled dogs' needs, and will lead to an increased level of care not only for our sled dogs, but also for companion dogs everywhere.

In this edition of the Guidelines we are following the lead established by Mush with P.R.I.D.E.'s founders and describing sled dog care practices that are humane, practical, relevant and that reflect the best available current information.

Introduction to the 2nd Edition

This book is based on a consensus of dozens of the world's most experienced dog mushers. Here they describe what they consider to be responsible, humane, and practical sled dog care and training methods. Since it was first published in 1993, this book has become one of the world's most respected and widely distributed basic resources on good sled dog care.

What is Mush with P.R.I.D.E.?

P.R.I.D.E. stands for Providing Responsible Information on a Dog's Environment. The relationship between sled dogs and humans is one of the oldest bonds of its kind. Modern sled dog owners are proud of their dogs as canine athletes that are bred and trained to do what they love – run as part of a team. Mush with P.R.I.D.E. supports the responsible care and humane treatment of all dogs and is dedicated to enhancing the care and treatment of sled dogs in their traditional and modern uses.

Contents:

- Table of Contents..... 3
- The Dog Yard and Housing..... 4
- Feeding and Watering..... 13
- Training and Conditioning..... 16
- Basic Health Care 22
- Keeping Your Kennel the Right Size 25
- Whelping and Puppy Raising 29
- Geriatric Dogs and End of Life Issues 33
- Additional Dog Care Resources Recommended by Mush with P.R.I.D.E..... 36
- Appendix: Canine Body Condition Chart 38

The Dog Yard and Housing

BASIC CONSIDERATIONS:

Space and Location

Beginner mushers are sometimes surprised by the amount of space needed for a kennel. A dog yard for 10 dogs will require at least 1,000 square feet of pens, or 1,450 square feet for tethers. These figures do not include space needed for walkways, out buildings or other facilities. (Note 1)

A dry, well-drained area makes life pleasant for both dogs and musher. These conditions are also best for the dogs' feet and for disease control. A location both visible and audible from a house window allows you to enjoy the company of your animals and alerts you to problems or emergencies.

Locating the kennel on a slight slope or on a high spot will greatly improve springtime drainage. A low-lying flat area may seem perfectly dry in the summer or winter but a few weeks of standing water during spring thaw will make life miserable for both you and your dogs.

In summer, shade helps keep the dogs cool, and a breezy location helps keep bugs away. During winter, a sunny area that is protected from wind helps conserve the dogs' energy. It is best to lay out the dog yard so the ground is exposed to full sunlight for at least part of the day. Direct sun (ultraviolet light) is one of the best natural means of controlling disease organisms. However, you should try to provide at least one shady spot for each dog to retreat from the sun's heat. Ideally, your kennel should be located on a southern aspect adjacent to hardwood (deciduous) trees. The trees will provide summer shade, and after leaf fall the winter sun will improve the microclimate of the kennel.

Planning your dog yard in a way that allows you to do your chores efficiently also allows for more time to care for and interact with your dogs. If you are able to run dogs directly from the yard, it's well-worth planning a safe takeoff area for runs. Some kennels are set up to allow the musher to leave from the middle of the dog yard to facilitate harnessing. Other considerations include access by vehicles for loading up dogs and for maintenance.

Surface

The ideal dog yard surface depends upon its location and the method of confinement. Soil is fine in areas with good drainage. However, keep in mind that soil can harbor disease organisms and therefore requires more diligent feces pick-up. Soil is relatively easy to work with and is easily manipulated to meet your needs. Excessive silts and clays in the surface will produce a rock-hard surface when dry but will slow drainage and become slick and sticky when wet. Adding sand to soil improves its ability to absorb water and also reduces dust.

For wetter locations, sand, wood chips, coarse wood shavings, wooden platforms, or fine, smooth gravel less than $\frac{3}{4}$ inch in diameter are good surfacing alternatives. Excessive amounts of decaying bedding material increases water retention and can increase the amount of fungi, mites and other organisms that may be harmful to your dogs. Beware of large gravel and stones in the dog yard. If your dogs are rock-eaters, remove rocks larger than 1 inch from the soil. Although many dogs swallow rocks without incident, there have been cases of dogs that have died from rock ingestion.

Typical sled dogs love to dig in dirt. Because digging is an instinctive “species typical” behavior many mushers accept the extra work of filling in holes rather than trying to thwart the action. Other mushers prefer to prevent digging; there are several methods of doing so. One popular method to prevent digging is to cover the ground with sturdy fencing or concrete reinforcing mesh before adding the surface material. Another method is to house dogs on a concrete or plywood surface. This not only precludes digging, it also (and most importantly) prevents your dogs from eating rocks. Plywood floors work well in dry climates and are softer to stand on than concrete. They are also easy to clean and repair, but eventually breakdown and need replacement.

Pros and Cons of Plywood Surfaces

Pros:

Prevents digging and rock eating.

Easily cleaned with high-pressure water hose and disinfectants.

Less likely to cause chronic joint injuries than paved surfaces.

Cons:

Can harbor infectious bacteria and fungi within its pores.

Can be difficult to keep dry.

Deteriorates over time, and must be periodically replaced.

Pros and Cons of Concrete Surfaces

Precludes digging and prevents rock eating.

Easily cleaned with high pressure water hosing and disinfectants.

Cons

Can be difficult to keep dry

Can harbor infectious bacteria and fungi within its pores.

Hard surface can cause chronic injuries to dog's joints

Is abrasive and can cause excessive wear to dogs' feet and coats.

Is caustic and can cause excessive drying.

The Mush with P.R.I.D.E. Guidelines Committee firmly stresses that dogs should NOT be continuously housed on concrete surfaces. Dogs housed on concrete should be allowed to exercise on other surfaces several hours each day.

Kennel Upkeep

Cleaning up dog waste at least once every day makes the dogs' environment pleasant and helps control diseases such as parvovirus and intestinal parasites. Waste management or "scooping poop" is one of the daily chores all mushers must undertake.

Locate permanent waste disposal or temporary waste storage sites away from water drainages and from any location that may cause ground water contamination, such as wellheads and areas uphill from natural springs. Methods of disposing of dog feces include composting, burial, or removal to a landfill.

Landscaping around your kennel can be both attractive and practical. Begin by removing brush that is an attractant to moose, which have little fear and often have animosity toward dogs. Remove foxtails and other grasses with barbed or brush-shaped heads that are prone to getting lodged in the soft flesh of dogs' ears, eyes, throat and respiratory system. Identify other noxious plants found in your area and remove them from your dog yard.

CONFINEMENT SYSTEMS:

General Considerations:

Even mushers who primarily house their dogs in their own homes need some sort of outdoor confinement system. Mushers with larger teams usually confine some or all of their sled dogs in an outdoor "dog yard". Whether confining members of a two-dog skijoring team or a 100+ dog racing kennel, the general considerations and methods of confining the dogs remain the same.

The confinement system you choose must provide a reliable and safe means of preventing the dog from escaping. It must allow enough room for the dog to move around freely and engage in "species typical" behaviors such as running or jumping. Materials and hardware used in your confinement system should be durable, reliable and maintained in good condition. Chains or cables used in tethering systems should contain at least one swivel to prevent tangles that can potentially choke your dog.

It is recommended that kennels include a sturdy fence around the perimeter to contain any dogs that may get loose from their primary confinement and to keep unwanted people, wildlife and stray domestic animals away from your dogs. All dog yards should also include fenced pens or runs to confine females in heat, dogs that display dog-directed aggressiveness, sick dogs, or puppies too small to collar and tether. Many mushers incorporate a fenced "play yard" into their kennels where compatible dogs can run and play together.

When planning a dog yard, consider including one or two "extra" spaces that can be used to house dogs while making repairs or modifications to the dog's normal housing area.

Post and Swivel Tethering Systems:

Tethering is a common, traditional and economical means of confining multiple sled dogs. The only controlled scientific study comparing sled dogs confined by tethers to those confined in pens found no evidence that tethering is either unsafe or inhumane (Haupt K). The most common tethering systems used by mushers allow dogs to interact more directly with their surroundings, musher and handlers, and with teammates.

The tethering method preferred by most mushers involves attaching a chain to a rotation device at the top of a post or pipe, thus allowing the chain to travel in a full circle around the post. One simple rotation device uses a piece of rebar with a 90-degree angle bend and an eye for the chain welded on the end. A hollow iron or steel pipe is driven into the ground to serve as the post. In use, the long arm of the rebar slips inside the pipe allowing the rebar to swing in a complete circle. With this system the post can be easily lengthened in deep snow by slipping a taller pipe of larger diameter over the shorter summer post. Another method to allow for rotation is to bolt the end ring of a chain to the top of a beveled solid wooden post.

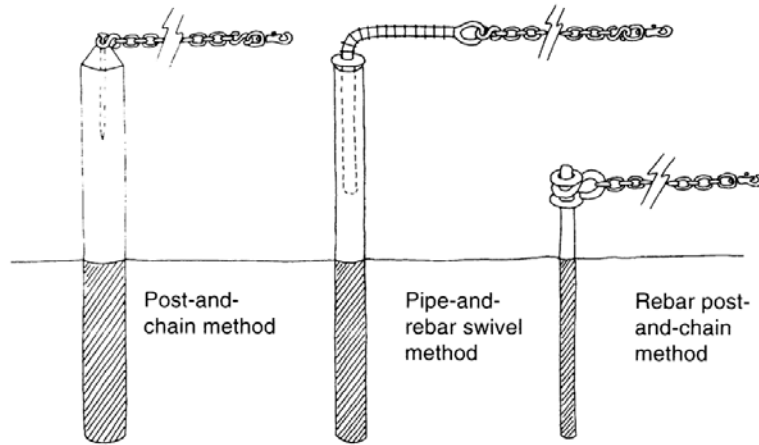
Using a top-mounted post and swivel chain system, each dog needs a strong chain of 5 to 7 ft (1.5 to 2 m) in length rotating on a post of about 3 to 4 ft (0.9 to 1.2 m) in height, with at least another 3 ft (1 m), preferably more, buried in the ground. A pole of this height will hold the chain above most snow accumulations. If snow is deeper, provide taller poles and longer chains. Never use cable to tether dogs to their posts. Cable is much too likely to tangle around legs (in an armpit or hock) and can cinch up like a snare. Cables also have a tendency to fray and break.

The optimal length of the chain is somewhat longer than the height of the pole or post. If the chain is too short the dog will not have enough space to lie down or move around comfortably. If the chain is too long it will drag on the ground too much, increasing the chances for a tangle and spreading and breaking up feces before they can be cleaned up. For soil-based kennels that use tethers, it is best to use elevated tethers to minimize the amount of time that the chain drags on the ground.

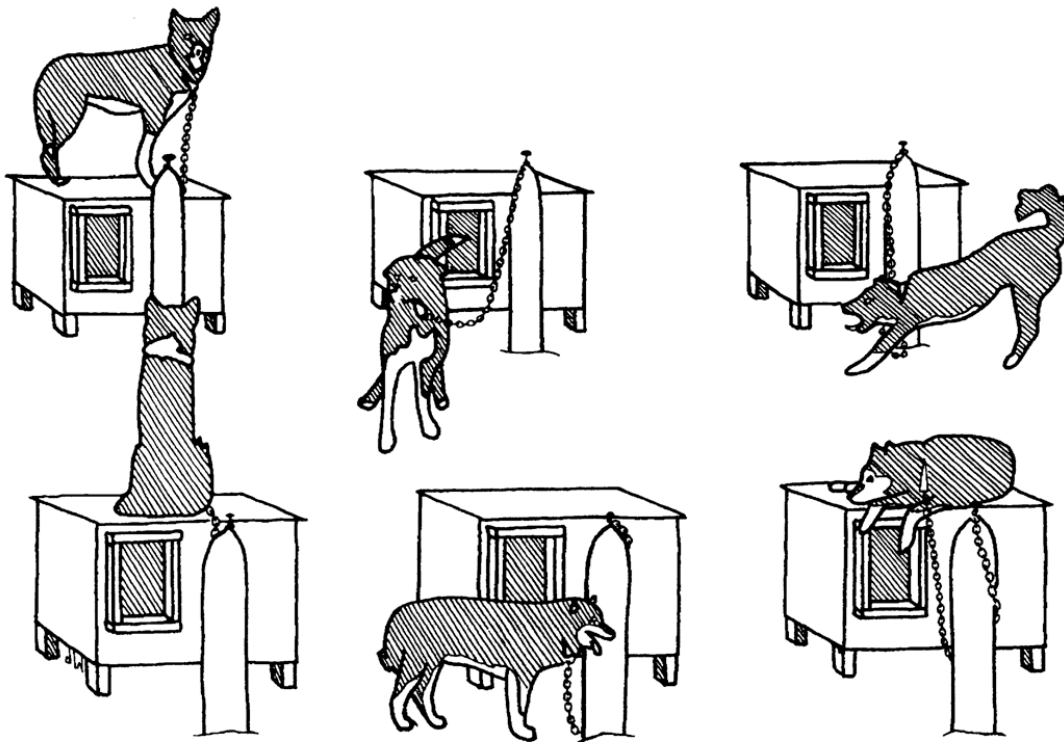
The simplest method of tethering sled dogs is the post and loop, or post and chain method. This involves looping a chain around a solidly buried post or pole. The chain should have a large loop, or preferably a large welded steel ring securely built into one end with an S-hook or quick link. The loop or ring should be at least twice the diameter of the post to minimize binding. The post may be either wood or steel, but it must be smooth to allow the chain to rotate freely. The post must also be tall enough so that the chain loop or ring cannot fly up and over the top, especially when the dog jumps up on top of its house. A 5 ft (1.5 m) post is generally adequate. Where posts cannot be reliably buried, a 100-lb (45.5 kg) concrete block with an eyebolt cast in the center and a swivel attached will adequately secure a 5 ft chain.

Although the post and chain method is easy to set up, it has a few major drawbacks. The chain drags entirely on the ground, stirring up a dust cloud, spreading feces around, and making cleanup much more difficult. Also, the chain often freezes to the ice and snow when the dog urinates on its post. The chain is also more prone to binding around the post than in other methods, so it must be checked several times each day.

Various dog yard tethering methods.



Whichever tethering method you use, space the posts so that adjacent chains can't overlap and so that dogs can't tangle or strangle each other. Strong hardware is also essential. Look for snaps that are durable, easy to open with a gloved hand yet difficult for dogs to activate. A bull snap is reliable because it requires the gate to be rotated outward. Snaps and chains do wear out, so replace them before they cause problems. We recommend using a snap with a swivel on each chain to avoid tangles and possible choking, as well as to save wear and tear on the chain and snap. It is preferable to use two swivels on each chain to provide a backup in case one fails (ices up, for example). A snap at both ends of the tether also gives you an instant "leash" when moving dogs from place to place. This is important in the unlikely event that you need to evacuate the dogs from your kennel. Having each dog with its own tie-out makes emergency kenneling in a safe location easier. The drawback is that snaps have a shorter life-span than solid links but the added convenience is well worth the extra cost.



Using either of the tethering systems described here with 5 ft chains gives each dog an area of slightly more than 78 square feet in which to exercise. With 6 ft chains, the dog's play area is increased to about 113 square feet, and 7 ft chains allow each dog a personal playground of nearly 155 square feet.

Fenced Runs or Pens:

Runs or pens must be large enough to allow dogs to perform most behaviors that are typical of their species. It is recommended that pens provide at least 100 square feet of space for each dog housed within them. Many certified behaviorists have observed that dogs spend more time exercising in rectangular pens rather than in square, so a pen measuring 10' X 20' would be very effective for two dogs housed together. (Rollet J)

Chain link or sturdy woven wire fencing with walls buried 6 to 12 inches (15 to 30 cm) into the ground provide a sturdy barrier that discourages digging. A fence height of 5 ft (1.5 m) or higher is recommended to discourage climbing. Place doghouses so the roof cannot be used as a platform from which a dog can climb or jump over a fence.

Runs and pens should be equipped with gates that are wide enough to permit easy entry and exit, but which can be closed quickly if necessary to prevent a dog from "rushing" the gate and escaping. Gates should be installed with thresholds that allow for snow to accumulate without interfering with the gate opening and closing. These thresholds should also be removable to allow for access with equipment like wheelbarrows and carts. Gates should be equipped with latching devices that are easy for the musher to manipulate while wearing gloves, but difficult for dogs to manipulate. During winter it is important to shovel snow well away from gates in order for them to swing fully open when necessary, especially if thresholds are not incorporated in the design. Thresholds of 1 ft high that are removable for maintenance will almost completely eliminate the need for snow shoveling.

Some mushers have used “hot wire” electrical fencing successfully to prevent burrowing under and climbing over fences. The goal of electric fencing is to modify the behavior of the dog and provide a visual cue to restrict the animal. “Invisible” underground fencing has seen only limited success in sled dog kennels where no other fence or physical barrier is used.

Heat Pens

The most reliable way of preventing unplanned litters is to spay or neuter all dogs you do not intend to breed. Regardless of the primary confinement system used, if your kennel includes any intact (unspayed) female you will need a heat pen to prevent unplanned litters. Plan enough space in the pen or pens to contain all of your intact females at the same time. Females in season (heat) tend to stimulate other intact females’ heat cycles. A secure gate and walls at least 5 ft high are minimum requirements. A fenced roof keeps climbers out and burying about 2 ft of fencing or lining the pen with boulders helps discourage digging. Chain and house the female dogs in the pen so they can’t jump over the fence and to prevent “through fence” breeding. If only one intact female is in season, she may be housed with another compatible female or neutered male to provide company and mental stimulation. If you decide to breed your dogs, it’s also nice to have a pen large enough to accommodate a pair of dogs. Note that heat pens can also serve as puppy pens later on, so be sure that the fencing material used is fine enough to prevent puppies’ heads and adult dogs’ feet and legs from getting trapped.

Social and Psychological Stimulation in the Dog Yard:

Recent research indicates that both social and psychological stimulation in the housing area may be even more important for maintaining physical and mental health in dogs than providing adequate space. (Hubrecht 1995, Hughes & Campbell 1998). This doesn’t mean that space is not important, but rather stresses the importance of providing a stimulating environment for your dogs. The quality of life of a sled dog is not based only on its environment and confinement method, but also on what the dog does outside of the tether and the dog yard. The following ideas may help to improve the dog’s quality of life while it is in the yard.

Dogs are very social creatures. They thrive in an environment in which they can interact with their teammates. Whenever feasible, dogs should be able to see, smell and safely play with each other. Isolating dogs from the company of their teammates has been associated with an increased incidence of behavioral abnormalities. (Hettis et al. 1992). Research has shown that dogs housed in a way that allows them to interact with at least one companion spend a similar amount of time interacting with each other as dogs kept in groups of 5-11 animals. (Hubrecht 1993). If you must isolate a dog from his or her teammates because of health issues, aggression or to isolate a bitch in season, try to keep the duration to a minimum. Isolated dogs should be given extra human interaction and housed within sight of other dogs. (Hubrecht 1993).

Generally, you should provide dogs with a stimulating, non-barren environment. Toys, chew bones and other safe objects with unique smells and placement can provide psychological stimulation. Offer a variety of appropriate items and rotate them frequently between dogs. Many mushers incorporate a “play area” in their kennels in which compatible dogs can interact under supervision.

Spend time interacting with each of your dogs while doing chores and include additional time to play with your dogs and train them to perform simple behaviors. Try to make all such interactions as positive and rewarding for the dogs as possible. Most importantly, take your dogs on frequent training and conditioning runs. Working with other team members, physical exercise and the unique sights and scents of the trail are the best possible form of stimulation for working dogs.

Dogs as Good Neighbors

If you live near other people, it is important to teach your dogs to be quiet. Respect for the rights of other people for peace and quiet makes for happy neighbors and promotes a positive image of the sport. Dogs bark for a reason; it could be to get your attention, to communicate to other dogs, or to announce a visitor (moose, fox, human, etc). A daily howl can express happy communication in the dog yard, but dogs can be trained to be quiet most of the time.

Once you discover the reason for the barking, it may be possible to train them to bark only at acceptable times. Some methods that work include (1) providing a positive experience when they are quiet. This takes a lot of work, but the success is most satisfying, both to dogs and to mushers, and/or (2) providing consistent training when they do bark—a dousing from a squirt gun in summer, hitting the top of a dog house, or a vocal reprimand. You must be consistent and correct them, even at 3 a.m., in order to be successful. If all efforts fail and you can't seem to get a dog to be quiet, discuss the issue with a professional trainer or your veterinarian.

On-the-Road Housing

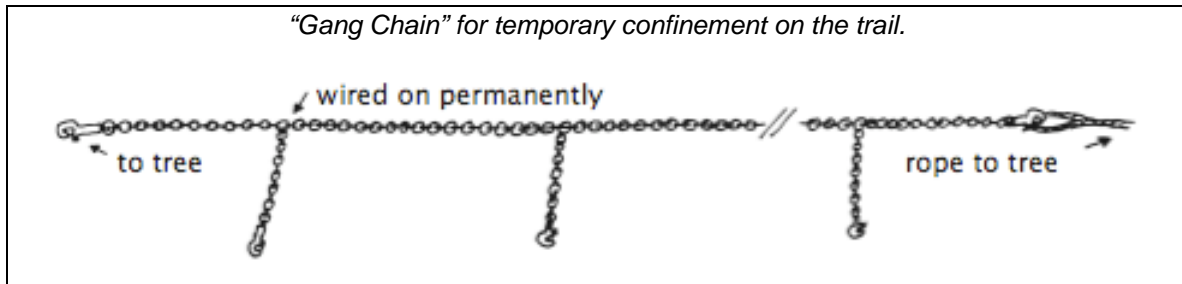
Dogs should travel in safety and comfort in dog boxes or airline crates. Dogs need to be restrained during travel to prevent injury to themselves and to other occupants of the vehicle. Dogs left in the back of pickup trucks and in the back seat in the cab are risks to themselves, the occupants of the vehicle and to other vehicles on the road.

Dog boxes or crates should be large enough for the animal to stretch and turn around in. They should have dry bedding and adequate ventilation. Dog boxes should be well-constructed, have user-friendly latches and locking devices and should be securely attached to the vehicle.

Boxes should not be open or vented in the back of the truck because the vacuum created behind the truck can suck in exhaust fumes. Many mushers modify the exhaust systems of their vehicles so they discharge above the dog box to reduce the exposure to toxic fumes. Mushers in regions noted for extremely hot or humid conditions may equip their dog trucks with ventilation systems for cooling. These ventilation systems should be designed so they draw clean air from the front of the box and exhaust air towards the back to prevent back-drafting of vehicle exhaust.

Some mushers believe that dogs are more comfortable when doubled-up in larger boxes. If you wish to do this, be sure to match compatible companions. When traveling, dogs should be taken out (“dropped”) several times a day. The dogs can be safely left for eight hours at night as long as the vehicle is not moving. Some dogs require their bedding to be changed every day; others, not until the straw has broken down. Drop chains should be kept short to avoid entanglement. Leaving the drop chains or plastic-coated cables in the boxes or on the dogs while traveling keeps the snaps thawed.

While on the road, as at home, keep water buckets clean. Avoid parking where other dogs have been in order to avoid exposure to diseases and parasites. It is best not to store smelly food and equipment in motel rooms, for the sake of your hosts. It is also important that mushers rake up straw and other waste from wherever they have dropped their dogs and dispose of it properly.



Notes:

- (1) The figure cited for pen housing is extrapolated from Table 1 appearing in Hubrecht R., "Comfortable Quarters for Laboratory Dogs"; UNIVERSITIES FEDERATION FOR ANIMAL WELFARE, 8 HAMILTON CLOSE, SOUTH MIMMS, POTTERS BAR, HERTFORDSHIRE, EN6 3QD, UNITED KINGDOM. This table lists 8.0m as the minimum floor space per dog for dogs weighing 35 or more lb., kept in research facilities. The Mush with P.R.I.D.E. Guidelines Committee chose to recommend the larger, 100 square feet per dog figure because sled dogs tend to be more active than dogs in research facilities (Haupt K).

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Feeding and Watering

Choosing Feeds:

Sled dog sports today include a wide variety of dog breeds and sizes doing different activities in almost every kind of climate. There is no single perfect diet that will meet the requirements of every sled dog under every condition. The ideal diet for a dog depends on the dog's genetic makeup, age, physical state, training regimen, environment and the food sources that are available.

Sled dog diets usually consist of commercial dry food, meat-based food, or a combination of the two. Dry foods are convenient to feed and store, requiring only a cool, clean, dry location. Fresh meat products require refrigeration or freezing. Feeds marked with an expiration date should be consumed prior to that date to provide maximal nutritional value.

Meat feeds are extremely palatable to dogs. They may help maintain hydration because they contain up to 75% water by weight. High-quality meat-based feeds are readily available in all but the most remote locations.

Commercial dry food provides vitamins, minerals and carbohydrates. Some mushers prefer to mix their own meat ration and add some commercial dry food to it as a source of vitamins, minerals, and carbohydrates. If you choose this route, be sure to enlist the help of an experienced musher or nutritionist, as it is not always easy to balance a ration this way. Recently a few commercial dry products designed to be fed as supplements with meat have become available. These products are enriched with vitamins and minerals and help take some--but not all--of the guesswork out of feeding a non-commercial meat-based diet.

When choosing a product or combination of products to feed your dogs, remember that a sled dog's nutrient requirements change significantly depending on age, environment, and physiological state. You may wish to choose different products that will meet your dogs' requirements for each of these situations, or you may choose a feed that will act as a base that can be supplemented as necessary. In either case, choose a product that is relatively high in fat (15% minimum), relatively high in protein (25% minimum), fresh, and of the highest quality available. Poor quality commercial pet foods do not provide adequate nutrition to meet the needs of working sled dogs.

Determining a Working Dog's Dietary Needs

The best way to monitor your dog's body condition status is to run your hands over him or her. Perform this examination at least every two or three days. (In extreme conditions, it is important to keep an even closer eye on a sled dog's weight.) The ribs, spine, and hip bones should not be buried under an inch of fat, nor should they protrude. Rather, they should be easy to feel. A well-conditioned sled dog should be lean and muscular—neither skinny nor obese. (See Appendix). If you are unsure of what the ideal appearance and feel of your individual dogs should be, solicit advice from an experienced musher or veterinarian. Take every opportunity to feel and look at dogs from other kennels that are doing well in your particular mushing discipline.

Formulas and tables on dog food labels will give you a place to start, but they should not be relied upon for long-term feeding guidelines. There is too much variation in metabolism among dogs, their working environments and their various levels of performance to rely on "average" requirement guidelines. Most mushers agree that it is crucial to monitor your dogs' weight and body condition with your hands.

Meeting the Changing Demands of Training

Maintaining a dog's optimal weight requires frequent adjustments to the amount of food he or she is given. When you begin training and each time you increase the workload, your dogs will require more food. During cold or wet weather they will need more food just to maintain their normal body temperature. One of the most difficult times of year to maintain a dog's body weight is during the fall when the weather is often cold and wet and training miles are increasing. During such periods, anticipate your dogs' increasing nutritional needs and begin feeding them more before they start to lose weight. During the most demanding times, a sprint dog may require two to three times more food than during the offseason; a long-distance racing dog may require three to six times its offseason requirement.

Feeding During the Off Season

Recent research indicates that dogs that continue to receive high-quality rations through the off-season are better prepared to resume training because their bodies are more able to mobilize and burn fat during exercise. It also takes several weeks for a dog's metabolism to adapt to a high fat diet. The drawback of feeding premium dog food year-round is that it can be easy for dogs to become overweight in the offseason; watch your dogs closely and adjust their portions as necessary.

Life Stages

Dogs also have different nutrient requirements during pregnancy, lactation, growth, and old age and their diet and food intake must be adjusted accordingly during these times.

Pregnancy and Lactation: A female should be maintained on a performance type ration throughout pregnancy and lactation. She can be fed at maintenance levels for the first four weeks; however, from the fifth to the ninth week, her intake should be increased by 10 percent each week so that when she whelps, she is getting about 1 1/2 times what she was eating in the maintenance state. As a rule of thumb, her food intake should be increased by 30 percent of maintenance for each puppy she is nursing. Thus, if she only has one puppy, she should be fed 130 percent of maintenance. These suggestions are just guidelines-; remember to run your hands over her regularly and adjust her food intake as needed. A lactating dog should be neither skinny nor obese.

Puppies: Puppies usually weigh between 10 and 14 ounces at birth and should gain weight every day after their third day of life. Weight gain is an excellent way to monitor the nutritional and overall health status of a litter of pups. Slow or negative puppy weight gain can be the first noticeable sign of a health problem with the mother or pups, and supplemental feedings may be required. Enlist the help of a veterinarian or an experienced musher the first time you attempt to raise orphan pups or even supplement nursing ones.

Puppies can begin to eat solid food at three weeks of age. Puppy food or a high-quality performance food with a small kibble size is recommended for at least the first four months of their lives. A flat pie pan with soaked dry food or a meat ration is a good way to entice them to start eating. As they walk through the food, they will get bits of food on their paws, lick them, and realize it is something good to eat. Over the next three to four weeks, they will consume more food, so they can usually be weaned between six and seven weeks of age. Before, during, and after weaning, be sure that less assertive pups are maintaining a normal rate of growth. Since there is no standard rate, compare the growth rate of the less assertive pups and their littermates.

After four months of age, pups should be fed a premium food at a rate that keeps them in optimal body condition but not so much that they become fat or grow too fast. (Maximum growth rate of 2 1/2 pounds per week for huskies, 3 to 3 1/2 pounds per week for larger Northern breeds).

Older dogs: The aged dog may have a slightly decreased ability to digest and absorb nutrients. It may also take an older dog longer to move a meal through its gastrointestinal tract. Most older dogs will do well on the same ration as younger dogs in the offseason. Occasionally, a dog will have trouble digesting all the fat in this ration or may become constipated. If so, try feeding a diet lower in fat or higher in fiber. When in doubt, ask your veterinarian about specific diet regimens and supplements for your geriatric dogs.

Water

Water is the most essential part of a feeding regime. While deficiencies in protein, fat, vitamins, or minerals will affect a dog's health, it may take days or months before such problems are noticeable. In contrast, dehydration affects an animal's health immediately and in extreme cases can even lead to death within hours if left untreated.

A dog gains water by drinking it directly, by eating foods that contain water, and by generating water through metabolism. Water is lost each day through urine, feces, and water vapor in the breath. Anything that increases a dog's daily water loss will increase its daily requirement. Dogs also lose a significant amount of water through panting when the weather is warm. Exercise leads to increased water loss not only through the breath, but also through the stool and urine. A dog's water requirement may double if it participates in open-class sprint racing and increase three to five-fold if it participates in long-distance racing. Medical problems such as diarrhea and vomiting also increase water loss.

It is difficult to know exactly how much water each dog requires. Understanding how environment, training, and illness may affect the dog's hydration needs allows you to anticipate these changes and offer your dogs more water when they need it. During warm weather it is best to have clean, fresh water available at all times. When the temperature drops below freezing, water consumption can be encouraged by offering warm, baited water. The bait can come from any source that will increase palatability such as dry food, meat or cooked fish. The bait should mix well in water and must not be spoiled or soured.

About 1 1/2 quarts of water should be offered two to three hours before training. Some dogs will not drink this amount all at once but will readily consume several smaller portions offered within a short period of time. Small amounts (about a pint) can be offered immediately after exercise to help cool the dogs down followed by more water (about a quart) after they have completely cooled down. Offering 1 to 1 1/2 quarts of baited water before feeding or mixed in with a dog's food can further encourage water intake.

These recommendations are a starting point and should be adjusted according to the needs of your dogs. Monitor your dogs' hydration status by observing their hunger for snow and by examining their skin and gums. In a well-hydrated dog, the tent made by lifting up the skin on the shoulder blades should disappear within one to two seconds and the white spot made by pressing on a pink area of the gums should disappear in one second or less. If either of these processes takes longer, the dog is probably dehydrated and in need of fluids.

Monitoring Your Dogs

These guidelines are intended to help you begin your feeding and watering programs. The best feedback on how well you're doing will come from the dogs themselves. Watch them carefully and learn as much as you can from experienced mushers who you respect. Proper dog nutrition is a blend of science and art. It's easy to get a brain-full of science by reading books and articles on the subject, but you can only develop the actual skills with hands-on practice. So keep your eyes and ears open, and go have fun with your dogs!

Training and Conditioning

Planning Your Dogs' Training and Conditioning Regimen

Many training principles are specific to the type of activity in which your dogs will be involved. Other variables include climate, terrain, age of the dog, breed of the dog, etc. All forms of mushing, with all the different variables, are wonderful ways of forming a close bond with your dogs.

In general, training can be separated into two categories: education and physical conditioning. When you are planning your training schedule, consider your goals and your dogs' abilities. Simply counting miles, for instance, can be deceptive. The type of conditions that the dogs encounter are important too, i.e. steep hills, trail breaking in heavy snow, extreme temperatures or wind. New mushers should consult books and experienced mushers for help, but also use common sense. Think about what your dogs have been trained to do and do not allow them to get carried away in their enthusiasm to run. Never ask your dogs to do more than you are reasonably certain they can accomplish.

Educating Your Sled Dogs

Anything you do repeatedly with a dog is educational. Be sure you want your dogs to learn what you are teaching. Think about the signals you are giving your dogs, and don't send mixed messages. For example, if you want your dogs to pass well, don't stop and chat with the neighbor every time you pass. Doing so trains your dogs to stop at every pass.

It is important that you never lose your temper with your dogs. Try to train them in a calm, consistent manner. If one method is not working, try another. For example, if a dog is not pulling well in a large team, reduce the size of the team and put that dog in wheel position for a week. If a dog continually plays with the dog next to it while running, run that dog alone for a few weeks. Remember that repetition is a great teacher. If your leader is not taking gees/haws well, go out with a very small team and work on commands. Always praise the dogs enthusiastically when they are doing what you want.

Recent research has proven that dogs learn much more readily with positive, reward-based methods than with methods that rely primarily on punishment. Positive methods also result in a closer bond between musher and team, and are much less likely to cause unwanted fearfulness or human-directed aggression in sled dogs.

A reward is anything that increases the likelihood that a behavior will be repeated. The value of a reward is determined by the dog, rather than the handler. Just because you think something should be rewarding doesn't necessarily mean your dog will agree. A food treat is only a reward if the dog is willing to repeat the behavior in order to earn another.

Most sled dogs place high value on tasty food treats and on running, but there are exceptions. If your dog doesn't respond to one type of reward, switch to something the dog is more willing to work for such as chance to play with a favorite toy. If your dog does not place a high value on running you may want to reconsider its suitability as a sled dog. You may both be happier if the dog becomes someone's pet.

In addition to the cues used while mushing, training classic 'obedience' cues is a great way to help socialize your dogs and provide psychological stimulation. Formal training classes expose your dog to new situations and introduce a positive image of sled dogs and mushers to the general public. The learning process will help your mushing training continue smoothly during the working season and the day-by-day, step-by-step progress will keep your dogs active during their

offseason. Different dogs will enjoy different activities, but each dog needs individual attention.

Physical conditioning.

Do not expect your dogs to do more than they are ready for. Watch each individual. Dogs work as a team but they have individual needs and abilities. Don't be afraid to be conservative and don't worry about how far other mushers are taking their dogs. Never push a dog to go any farther or faster than it is capable of going.

Have fun and build relationships with your dogs. Small teams are better for training. Depending on your preference and the size of your kennel, training teams might include only three dogs or as many as six to ten. Dogs can only run at their own pace and must never be pulled, whether by mechanical or other means.

Summer/Warm Season Training

Dogs need some form of physical exercise all year long. As long as your dogs are in good health, light training in the summer is fun and beneficial. Equipment options include a bicycle, cart, dog walker, ATV, or a leash. For some dogs and mushers, running a few dogs loose may be an option. It is important to always use proper harness sizes and gang line lengths. Always check each dog for foot problems or injuries after each run.

If you mush dogs in the summer, ensure they are well-hydrated before and after each run. Wetting them down beforehand with a hose or with creek or lake water can be effective. It is best to exercise sled dogs during the coolest time of the day, but even then you must watch carefully for signs of overheating. Signs of heat stress include heavy panting with an open trachea, gait change, wobbly legs and vomiting.

If you are concerned that a dog might have heat stress, remove the dog from the team and carry it in your sled or vehicle. If you need to cool a dog down during summer, wet it with cool water. During winter, pack its body in snow. During and after cooling, continue to monitor its temperature with a rectal thermometer. Dogs routinely have temperatures of 103 to 106 degrees F while running (normal is 101 to 102 degrees F). Recheck the temperature every fifteen to thirty minutes as the dog cools. If the dog's temperature is still not normal after you have attempted to cool the dog, call your veterinarian. This could indicate a serious problem.

Fall Training

Most mushers like to start on some kind of wheeled rig before the snow comes. Make sure the rig has good brakes to slow the dogs down and that there is some type of parking brake. ATVs are widely used because they give the musher complete control over the dogs' speed, and they steer more easily than a cart. They also have lights, which provide safety in darkness, especially along roads, and they make noise that warns wildlife of the team's approach. A speedometer is convenient on any type of training vehicle.

Start your fall training season with small, easily controlled teams and short runs, perhaps only ¼ to 3 miles in length. Early season runs may require frequent rest stops. Decrease the number of rest stops and gradually increase mileage in subsequent runs as the dogs get stronger and fitter. If you have run the same distance over repeated training sessions and the dogs are finishing strong and happy, it is time to move up to the next level. In early fall training, don't push the speed too much. The dogs' muscles are not well-toned yet and it is easy to injure them. The goal of early training is to build up the dog's muscle structure to prevent injury later in the season.

Any training schedule must include rest days to allow time to build muscle. You might run a dog every other day, or run two days followed by a day off. Water (or broth) your dogs when you return from a run, and check for worn pads, especially if they are running on gravel or pavement.

Winter Training

Once you are working on snow, continue to build slowly to the distance and speed of your choice. Always check each dog's feet and provide plenty of water or broth. It is not good enough to let them bite snow for their fluids.

Not all injuries are easy to detect. A dog does not always show a substantial limp, so watch carefully for subtle signs. If a dog seems weaker or slower one day than the previous week, it might be due to injury or illness. A back can be injured without causing a limp, or a dog can be so excited to run that it will not show any signs of injury while running. You may be able to detect problems by observing the dog at home.

Detecting injuries or illnesses early can keep your team healthy and working all season, and can save money on veterinarian fees. Check each dog over carefully at least once a week. Knowing each dog's "healthy" condition will make it easy to detect changes. Consult with your veterinarian or another expert if you suspect problems.

Booties should be used to prevent injuries on rough trails, including when snow crystals are abrasive in severely cold weather. If your dogs' feet develop any signs of worn pads or soreness, use booties on those feet until the problem is completely healed. You might consider not running the dog at all for a short while, depending on the severity of the problem. Be sure the booties fit well. A bootie that is too large flops around, picks up snowballs, and makes it difficult for the dog to run normally. A bootie that is too small can constrict the foot and be uncomfortable.

Be sure to check booties regularly. A bootie with a hole in it can cause more problems than no bootie at all. Also, pick off all snow and ice balls around the tops of the booties frequently, as these frozen clumps can cause severe chafing. If your dog has dewclaws, watch for signs of wear around them. Remember that booties are not a cure-all for every foot problem. Consult your veterinarian or an experienced musher for more advice.

In extremely cold or windy conditions, dogs can get frostbitten on some body parts. On a male, watch the sheath of the penis and the scrotum. On a female, watch the nipples, flanks, and vulva. Be extra careful with any female that whelped over the summer. Her nipples are usually somewhat enlarged throughout the winter, making them more susceptible to problems. Special dog jackets, belly pads, and fur sheath protectors are available and can help prevent cold-related injuries. Contact a mushing equipment company or other local mushers for ideas. Remember that males and females have very different problems, and the same equipment does not always suit all dogs.

Dog Fights

Minor spats and squabbles are relatively common among dogs, but serious dogfights are dangerous for both dogs and mushers. Dogs should be taught at a young age that fighting is unacceptable. It is essential to stop a dogfight before a dog is injured or killed. Fighting dogs must be separated and restrained, but be extremely cautious when handling highly aroused or aggressive dogs. In the heat of the battle, the dog may redirect its attack to you, inflicting serious wounds. Mushers have been severely bitten while breaking up fights and care should be taken when intervening.

Training and Conditioning Tips

Long-distance racing:

Before you consider running a long-distance race for the first time, evaluate your skills carefully. You must be good at winter camping with dogs, starting campfires at -50 degrees F with a strong wind blowing, applying first aid to dogs and yourself or another musher should you get caught between checkpoints, etc. You must have advanced skills in handling however many dogs you choose to start the race with. (In your first race, it is better to start with fewer dogs. A smaller team is easier to control and means fewer dogs to feed and care for.) You must also be an expert in feeding and foot care during high mileage situations. The time to learn these skills is during training, not out on the race trail.

In general, to run a thousand-mile sled dog race, you should have at least 1,500 miles of training on each dog. These miles should be accrued in no less than a six -month period. To run in a 200 to 500 mile race, you should have at least 750 miles of training on each dog. These miles should be put on in no less than a four month period. Much of the training should duplicate your proposed racing situation, with weight in the sled, some four to six hour runs, camping trips etc. It is inadvisable to run any dogs under 18 months old in a thousand mile race. The ability of each dog in the team should be fairly equal so that no one dog is being pushed too hard. Teach your dogs to eat, drink and sleep in harness before you race them. Feed them the same diet that they will race with, at least during the latter stages of training.

Sprint racing:

To create a quality team, sprint racers use the same training and conditioning techniques as those used for other types of mushing. Distance and speed should be built up slowly on a schedule determined by your dogs' progressive conditioning and willingness. It is better to err on the conservative side than to risk hurting a dog physically or mentally by demanding more than it is ready for.

While speed may be the primary objective in sprint racing, not every training run should be at "race pace." To prevent injuries in the fall, dogs should be physically conditioned with slower working runs before you allow them to run fast. Throughout the race season, vary your training speeds and your dogs will be more willing to go fast when asked.

Proper manners and well-behaved dogs are a must for a top-performing sprint team. Even the quickest stop for a tangle or problem dog is a major disadvantage in a race. Take the time required to teach your dogs the necessary behavioral skills. Some sprint mushers simply concentrate on maintaining enthusiasm in their team, but a well-behaved *and* enthusiastic team is possible and should be the ultimate goal.

Recreational mushing:

Training a recreational team can be extremely rewarding and satisfying. It can also be extremely expensive, both in time and money. Keep your priorities straight, share the work among family members, and have fun!

Before you begin, decide whether you want a dog team for your family to enjoy and consider everyone's goals for the team. If you have small children, you may want to select dogs that are small and gentle so the kids are comfortable with them. Some older, well-trained retired dogs from another team may be perfect for you, and they can help train younger dogs.

Make your dog time quality time for your family. Chart the accomplishments of each dog. In the summer, you might have a weekly dog show to demonstrate each dog's new tricks. Having a small number of dogs allows you to give each individual lots of attention. The dogs will learn that they have fun with you, and they will be eager to please. Seeing your dogs thrive on this special attention, watching your family share the responsibilities, experiencing the magic of bonding with animals and the satisfaction of a job well done are ample rewards.

In winter, plan methods of training and goals for your team with family members. Listen, talk, encourage, and reward. Have fun and don't be afraid to ask other mushers for help. Practice "whoa" and "come haw" repeatedly, until the dogs respond easily; this will give the less experienced members of your family a better sense of security. You may want to work with the dogs on a leash, rewarding them for correct behavior.

Take a family member with you on the sled. A less experienced passenger can help out and learn what you ask of the dogs. Make sure your passenger is comfortable. After the dogs have settled down, let your passenger drive the team on a safe stretch of trail. Always train with small, controllable teams. Gradually increase your distance over the winter. Explore new trails. This gives your dogs experience in different conditions: breaking trail, running into open water and on ice, and turning around. Take a picnic along. Stop along the trail and build a campfire.

Your family might enjoy working toward taking the team on an overnight trip, either camping out or staying in a remote cabin. This could be a spring celebration after a winter's training. Remember that you don't have to go a thousand miles. Plan according to the abilities and desires of your family and the endurance built up by your dogs.

Skijoring:

Skijoring is one of the simplest forms of dog driving, but common sense, patience, and general training principles still apply. Stay within your dog's capabilities for weight load, speed, and distance. Be aware that some dogs (including experienced sled dogs) can be quite frightened by the strangeness of the skis, and a dog may need extra time and lots of positive reinforcement before it will accept being followed by them. Avoid running into your dog with your skis or ski poles at all costs.

Proper equipment is important both for your own safety and for the comfort of your dog. Use a wide skijoring belt (at least 3 inches wide across the back) and a releasable skijoring line at least 7 ft long. Longer lines (up to about 15 or 20 ft) work well for recreational skijoring and hilly terrain. Shorter lines give better control and are favored for racing. Be sure the line is long enough to prevent the tips of your skis from hitting the dog. A line with a shock (bungee) cord incorporated into it will absorb the stress of sudden starts and stops, a benefit to both you and your dog. Use a properly fitted, standard X-back or H-back mushing harness. Weight pulling harnesses are not recommended.

A wide variety of dog breeds have been used successfully for skijoring. If you skijor with a non-Northern breed, watch carefully for foot problems. Some breeds of dogs, especially those with silky coats, are particularly prone to ice balls. Booties may be necessary in some cases. Also, a shorthaired dog may need a dog coat and/or a sleeping pad in very cold weather or when camping out.

Weight pulling:

A weight pull dog should be strong, sound, in good health and have a desire to please. Before a dog is entered in a weight pull competition, it should have at least basic training and be in good physical shape. A dog that is in poor condition might pull beyond its physical abilities simply because it wants to please or because of the excitement of the activity. Avoid heavy pulling until your dog is in top shape.

Conditioning can be accomplished in various ways: running in a team, running alongside a bicycle, skijoring, or pulling a tire. Perhaps the best method is for your dog to pull a tire with increasingly heavy loads. Be very careful to increase the loads gradually. This is important for mental as well as physical conditioning. A dog must know that when it is commanded to pull, the load will move. Many factors influence the ease with which a dog can pull: weight of the load, snow depth and conditions, and temperature. As you train, adjust the load downward if your dog has difficulty starting the load. It is important to condition the cardiovascular system as well as the building muscle. This is done by alternating days of pulling heavy and light loads.

You can't begin too early to train your dog to pull. Even a young puppy can have fun wearing a harness and pulling an empty box around. Use this time to teach some basic commands, such as those to pull, whoa, and perhaps gee and haw, as well as to sit, lie down, and stay. Be careful not to let the box bump into the dog or let the dragging noise frighten it. Gradually increase the weight the dog pulls and progress from a piece of firewood to a 12 inch tire, for instance. Give the command to pull, let the dog pull a short distance and lavish it with praise. Make it fun. Your dog will pull for sheer enjoyment and because it pleases you. Be sure to let your dog know that you appreciate its effort.

Dogs should not be entered into competition until they are at least a year old; large breeds should wait until a year and a half. This gives them time to reach skeletal maturity. When the time comes to enter a weight pull competition, your dog will know what is expected and will be ready to do it well.

Winter transportation:

Some mushers use their teams for traveling cross-country, doing fieldwork for their jobs, freighting supplies, running trap lines, and general winter transportation. Training these teams may focus on building endurance and strength and on mushing in severe weather conditions. It is critical that the dogs learn to whoa, wait in harness, and find old trails in drifts. They need to learn to follow along behind their musher when he or she is breaking trail on snowshoes, and they should learn to ignore animals caught in traps. These abilities come by working with small teams, day after day.

Mushers who depend on their dogs for winter transportation often have a very close relationship with their teams. The trust and appreciation that develops after many hours, many days, and many seasons together create a team that seems able to go anywhere and do anything. This is not magic. It is simply the result of clear communication, mutual respect and consistent, repetitive reinforcement.

Basic Health Care

Veterinary Care

Develop a good working relationship with your veterinarian. He or she will be a valuable source of information on current dog care practices as well as providing other services as needed. As the dog's owner, you can often perform routine procedures yourself but will also have to obtain professional care on occasion. The science of veterinary medicine is evolving; frequent contact with your veterinarian will help you stay informed about the latest changes in veterinary sciences. Many veterinarians also benefit from contact with mushers. Mushers bring a new dimension to animal health care professionals. Having regular contact with a vet also serves to present a positive image of dogsledding to the public.

Record Keeping

Record keeping is an essential part of any kennel operation and is a requirement for P.R.I.D.E. kennel certification. Often, your veterinary clinic keeps records of office visits and professional vaccinations, but most care and medical treatments are given by the musher. Keeping track of medications, vaccinations, illnesses and general health will allow you to identify health trends. Records can include breeding cycles, on and off season weight fluctuations and training and performance distances and times.

Adult Dogs

Daily care: Monitor each dog's appetite and water intake as well as its fecal and urine output. These changes, as well as changes in behavior, are frequently the first signs of a health problem. Running your hands over the dogs daily will allow you to recognize abnormal conditions.

Monthly care: Trim nails and groom each dog. If a dog is shedding, grooming keeps its skin and coat healthy. Administer heartworm preventives and external parasite control medications (for fleas, lice, ticks, etc) if needed.

Three to six month care: Work out a deworming program for your dogs with your veterinarian. The type of dewormer and frequency of administration will depend on the type and species of intestinal parasites in your area.

Yearly: Consult with your team's veterinarian to develop an appropriate vaccination schedule for your dogs based on the health problems common to your region and the demands of your race schedule or mushing goals. If you live in an area where professional veterinary care is not available, contact your state, provincial or national veterinary medical association for information to help you develop your own vaccination schedule. Also, consult the rules of races you may wish to run with your team. Many race-giving organizations (RGOs) specify vaccinations that dogs in their events must have received.

During the late summer of each year you should perform a thorough physical exam on each dog in the kennel. If you find any problems, you will have time to treat them before fall. (See Yearly and Pre-purchase Exam section below for guidelines.)

Consider having an annual veterinary house call to your kennel. This is one way of becoming a P.R.I.D.E. certified kennel. An annual kennel visit is a great way to have vaccinations administered and have all your dogs examined without transporting every dog in the kennel to the vet office. This is a great time to discuss each dog's specific needs with your vet, allowing every dog to reach his or her greatest potential.

Some veterinarians have backgrounds and training in large animal care but rarely get out in the field anymore. Your request for a kennel visit may become something they look forward to.

Basic Health Examination

The following guidelines are basic elements of a physical health examination for dogs. They can also be used when considering the acquisition of a new dog for your kennel or for a pre-season health assessment. Some of these elements should be performed daily or even both before and after running. (Elements marked with an asterisk (*) should be performed daily.)

General attitude*: A dog should be alert and interested in its surroundings.

Weight and coat*: A dog should be lean but not thin. It should have a healthy, shiny coat and skin that is a light pink with no raw areas or excessive flaking. Run your hand over the dog's whole body, checking for lumps, bumps and sores. A dog that is underweight/overweight or with an unhealthy coat may be showing signs of conditions such as hypothyroidism, parasitism (internal parasites such as worms or coccidia, or external parasites such as lice, fleas, or mange mites), malabsorption syndrome (an inability to absorb nutrients), or another ailment. However, keep in mind that all dogs do not always look their best. Even a beautiful coat looks rough during shedding, and a female will shed after she has pups.

Eyes*: The eyes should be clear, without excessive tearing, redness, or a gray or blue haziness on the cornea. The pupils should be symmetrical.

Ears*: The ears should be clean inside without a waxy or pussy discharge and without a foul odor.

Nose*: There should be no nasal discharge, raw areas, or dry, crusty buildup around the nostrils.

Mouth: The mouth and teeth should be clean without any strong odors or excessive tartar buildup. The gums should be pink without infection along the teeth gum border. Check for broken teeth or an uneven bite. Dental disorders may contribute to poor appetite, poor attitude, or chronic infection.

Respiration: A dog's normal heart rate is 100 to 130 beats per minute, and its respiratory rate should be about 22 breaths per minute. These may both be elevated in an excited dog, and both will be hard to evaluate in a panting dog. Listen for coughing, wheezing or other abnormal respiratory sounds.

Chest: The chest should expand and contract symmetrically. There should be no pain or tenderness when the dog's ribs are gently pressed. Use a stethoscope to listen over the lungs. Lung sounds should be equal from side to side with no abnormal noises. Because chest injuries can result in massive internal bleeding and respiratory system compromise, a veterinarian should evaluate any significant chest injury.

Abdomen: The abdomen should be symmetrical and not distended. The abdominal wall should be pliable when gently pressed toward the spine. A painful, tender, distended abdomen may be a sign of a potentially fatal problem that requires the intervention of a veterinarian.

Muscles and bones*: Check the dog for symmetry. Compare the muscles and joints of the two hind legs and of the two front legs. Swelling on the foot may be an indication of an old metacarpal fracture. Swollen wrists may be a sign of arthritis. Asymmetrical muscle masses may indicate lameness or an unequal use of limbs.

Feet*: Check the feet for signs of injury or excessive licking between the pads (mahogany, discolored hair). Examine the nails and dewclaws and trim when necessary.

Rectum: Check the rectum for open sores, growths or excessive swelling.

Veterinary considerations when acquiring a new dog.

Females to be used for breeding: Dogs intended for breeding deserve special consideration. Before purchasing a female, be sure to ask the following: Has she had regular heat cycles? Has she ever been on medications to delay or postpone heat cycles? Has she ever had a pregnancy terminated? Has she ever had pups? If so, what kind of mother is she? Examine the mammary glands for swelling; mammary tumors are not uncommon in older intact females. Examine her nipples for signs of frostbite. Severely frozen nipples are not functional. Examine the vulva for growths, swelling, or discharge.

Males to be used for breeding: Make sure that a male that might be used for breeding has two normal sized testicles. Check for excessive prepuce discharge. Ask if the dog has ever sired a litter. Has he ever had any medications? Anabolic steroids, for example, will reduce fertility. Low thyroid levels will decrease fertility in males as well as females. Brucellosis is a sexually transmitted disease that should be tested for if it is a problem in your area. (Some countries make a brucellosis test an entrance requirement.)

Other considerations: Before introducing a new dog into your yard, make sure that it is current on vaccinations and has recently been dewormed. Check the dog closely for lice, mange, and fleas. If you are buying a dog with parasites, isolate him/her from the others until the issue has been resolved.

KEEPING YOUR KENNEL THE RIGHT SIZE

Determining Your Needs

Any trainable dog can be a sled dog, depending on what you want to do with it. A musher must use appropriate care when asking any dog to work. A team of beagles can pull a sled, but they couldn't break trail in deep snow. A team of 30 lb border collies might pull well, but they should be outfitted with booties to protect their long-haired feet. A team of poodles can make good sled dogs but it isn't wise to ask them to camp out in severe weather.

Some dogs have a head start for some types of mushing. Northern breeds evolved specifically as sled dogs and they have physical adaptations that keep them comfortable in very cold weather. Thousands of years of selective breeding have given them a strong instinct to run and pull.

When deciding how many dogs you should own, consider how much money and time you can dedicate to your team, what your zoning laws and living situation will allow, and what it will take to do the type of mushing you want. There are different types of sled dogs and you will need fewer dogs if all of the dogs you own are suitable for what you want to do. If you keep fewer dogs, your costs will be lower, and you can give more attention and better care to the ones you have. Keep your kennel the size you can care for properly. Don't let numbers increase to the point that neither you nor the dogs are happy.



Preventing Breeding

The most effective method for preventing dogs from breeding is to spay or neuter all dogs you do not intend to breed. Spaying (ovariohysterectomy) or neutering (castration) are good options for dealing with heat cycles and for preventing unwanted litters. Sterilization can also make it easier to run females and males together, and can save money by reducing dogfights, health problems, and food requirements. Spaying and neutering can save a tremendous amount of frustration, energy and money in the long run. One unwanted litter or one serious dogfight is much more expensive than the cost of the surgery.

Some mushers are under the false impression that spaying or neutering will reduce the drive of the racing sled dog, but this is not the case. (Zink 2005) Many top long-distance and sprint mushers have successfully run neutered and spayed dogs in their racing teams with no decrease in performance. And, many races have been lost by having a bitch come into heat at an inopportune time. The only reason to not neuter or spay a dog is the desire to breed the dog.

Some veterinarians who specialize in canine athletes recommend spaying or neutering athletic dogs including working sled dogs any time after 14 months of age. Dogs sterilized prior to puberty seem to run a higher risk of injuries to bones and joints, to some types of cancers and to some behavioral problems, including fearfulness and aggression. (Zink)

If you own any female dogs that aren't spayed, you must have at least one heat pen. It should be capable of containing all dogs in season comfortably and securely at the same time. To be effective your heat pen should be either tall enough or roofed over so that dogs can't get in or out. Even if all of your male dogs are secured and under control, the heat pen is necessary to prevent breeding with stray dogs. (See *The Dog Yard and Housing* section for details on heat pen design.)

If you suspect a bitch has been accidentally bred, consult with your veterinarian as soon as possible. Your vet may be able to perform tests to determine whether or not she is actually pregnant. If she is pregnant you may abort the pregnancy and prevent future mishaps by having the vet spay the dog. If you strongly feel you want to breed her in the future, treatments are available to terminate pregnancy if given within a few days of breeding. Abortions can cause complications and aren't a substitute for prevention. Consult your veterinarian for details.

What to Do with Dogs You Don't Want to Keep

It is unfair to the dogs to own more than you can handle. Any musher only has so much time, space, and money, and those are divided by the number of dogs in the yard. Sled dogs are born to run and should not be kept on their chains all their lives. Don't keep them if you don't have the time to exercise them. Review your needs, honestly evaluate the dogs you already have and then decide the best course of action.

The most difficult part of owning dogs is figuring out what to do with the ones you can't keep. You might be able to sell your extra dogs, but don't assume so. The market is very limited except for sellers with top-notch kennel records or dogs from rare and highly desirable bloodlines. If you do sell dogs, be honest and try to make the right matches. Be sure that the new owner will care for the dog properly. Consider giving trial and return periods as a means to encourage adoption. Occasionally contacting and being available to assist new owners in the care of your old dog is a great way to maintain a positive relationship with the new owner and let you maintain a lifelong connection to the dog.

Another option is to give surplus dogs away to interested, reliable people. Consider recreational or junior mushers, skijorers, mushers competing in a different mushing discipline or less demanding classes, or pet owners looking for a companion. Be sure to fit the dog to the right person. Many sled dogs are challenging pets; some have an instinct to roam or kill livestock and are often more independent than some pet owners expect. Keep in mind that dogs that have been properly cared for and socialized have the best chances to be placed. Since a dog that is not good enough to keep is probably not good enough to breed, consider having the dog spayed or neutered before giving it away, or requiring that the person taking the dog have the operation performed.

If you are unable to find new homes for unwanted dogs you may be able to relinquish your surplus dogs to a sled dog rescue organization. Some sled dog rescue groups specialize in pure-bred dogs such as Siberian huskies or Alaskan malamutes, and others are willing to accept Alaskan huskies and other mixed breeds. A group that specializes in sled dogs will generally have a better chance of placing your working dogs in an appropriate home than a government operated animal shelter. Such shelters should only be considered for dire and/or emergency situations.

If you must relinquish your dogs to an animal control agency be aware that any dog not adopted within a limited time period will probably be euthanized no matter how friendly or well-socialized the dog is. Sled dogs are often misidentified as non-adoptable or overly aggressive by some shelters and can be euthanized immediately based on local ordinances or requirements. Your dog's chances of survival are much greater if you take responsibility for finding it a new home yourself.

Acquiring Dogs

It is important that you determine your mushing goals before acquiring even a single sled dog. Once your mushing goal is firmly established acquire only those dogs with physical and behavioral attributes that will help you achieve that goal. This will prevent you from acquiring unsuitable dogs that will need to be re-homed later.

Leasing or borrowing dogs may be an option if you aren't sure how committed you are or if you need extra dogs for only one race or one season. Shop carefully, as there are many options. Ensure your lease or loan agreement is clear about who is financially responsible for illnesses or injuries, and remember that borrowed dogs need the same responsible care as the ones you own. Another option is to volunteer to "foster" rescued sled dogs for a sled dog rescue organizations.

When you are ready to establish your own kennel, keep your mushing goal in mind. If your goal is to win sled dog races, it isn't enough to buy the best dogs you can afford. Instead, you must afford the best dogs you can buy. Today's sled dog races are extremely competitive. Only teams made up of exceptional dogs can win consistently.

Mushers with more modest goals have a much wider range of options. Experienced sled dogs suitable for a variety of mushing disciplines are frequently available through sled dog rescue organizations or from other mushers in your area who have surplus dogs that need to be re-homed. There are very good dogs available but you have to make sure the dogs you get are the right dogs for you. Don't make the assumption that a dog from a well-known kennel or bloodline will meet your needs. Evaluate the individual dog in relation to your goals. For help in evaluating the health of the dog you are considering acquiring, see the *Basic Health Care: Basic Health Examination* section.

Another option for building a team is raising puppies yourself if you have the time and energy for this process. Good dogs are easier and probably less expensive to buy than to raise. However, raising puppies is a fulfilling experience if you can afford to do it and have homes for each of the puppies. Breeding sled dogs should be viewed as a way to produce better dogs, not just more dogs.

If you do decide to breed dogs, remember that in less than six months you will have essentially full grown dogs, each needing a house and chain or a pen of its own. For Alaskan huskies, plan on more than six pups per litter. A litter can easily be as many as ten or as few as one. Two litters can therefore produce as many as twenty new dogs!

Before you breed dogs you must do two things: (1) Make a realistic plan for what you will do with every pup that is born. (2) Ensure that the dogs you breed have all the essential characteristics you want. If you don't have the right dogs, buy a good female, buy the service of a good stud, or offer to raise pups for a musher who has high quality dogs. Never breed dogs with any physical or behavioral defects. Undesirable attributes are as likely to be inherited by their offspring as the traits you wish to perpetuate.

Remember that good genes are responsible for only a portion of the final result. Raising excellent sled dogs requires excellent physical care, mental and physical conditioning, socialization and training. The more time you spend with your puppies the better sled dogs they will be.

Both male and female dogs become fertile at six to 12 months of age. The average interval between estrus cycles is about six months, but it varies widely. Some females come into heat every three to four months, others only once a year. Although a female may be bred in her first heat, many breeders prefer not to because it interrupts her growth and because young dogs can be poor mothers. It is also a good idea not to breed very young dogs so that you can be sure they have the traits you want. Older dogs can be bred, but fertility generally declines after about 10 years of age. Be cautious about breeding females over six years old that have not been bred for two or three years, as they more frequently have problems with whelping.

Be sure the female is adequately vaccinated and wormed before breeding. Be sure to disinfect the puppy pen, doghouse and whelping box before the pups arrive. Pups are usually born 60 to 65 days after the breeding. An experienced veterinarian can often tell if a dog is pregnant by palpating the abdomen 21 to 28 days after breeding. For more information, consult your veterinarian.

A pregnant female will need progressively more food starting the last three weeks of her pregnancy. The female should be in good condition and weight, Do not allow her to become obese, as this can cause trouble during whelping. See the *Feeding and Watering section* for more information.

References:

Zink,C.,“Early Spay-Neuter Considerations for the Canine Athlete One Veterinarian's Opinion”,Canine Sports Productions, <http://www.caninesports.com/SpayNeuter.html>, 2005



Whelping and Raising Puppies

Whelping and Puppy Pen

Give the female all the advantages possible so she can produce a healthy litter. She needs an extra large house in which she can easily stand up and turn around. She should have extra room all around her when she lies down so she won't lie on the pups or be restricted during whelping. The whelping house should be equipped with a hinged or removable roof to make it easier to access the mother and pups.

Most litters should be planned to arrive during the spring, summer, or fall so the outside temperature is not too cold at birth. If you decide to have a winter litter you may have to plan on having the female inside a building where it is at least above freezing. Whelping can take place outside at lower temperatures but extreme caution should be used, especially with a female whelping for the first time or under exceptionally harsh weather conditions.

Summer temperatures above 70 degrees F can also be dangerous for the puppies. During their first few weeks of life puppies cannot regulate body temperature. Mosquitoes can also be a very serious problem for pups born during summer. You may need to whelp and raise the puppies inside your home if you have a bad mosquito problem or high temperatures.

Keep the whelping pen clean and dry. Many pathogens that are lethal to puppies are soil borne. In areas where such pathogens are known to exist it is important to maintain a level of pathogen protection. Basic hand-washing before and after handling both mother and offspring will go a long way. Other practices such as shoe and boot pans placed outside of the whelping pen will also prevent various pathogens infecting the puppies. A boot brush and a solution made up of one part household bleach and 10 parts water will reduce the risk of introducing soil borne organisms into the puppy pen.

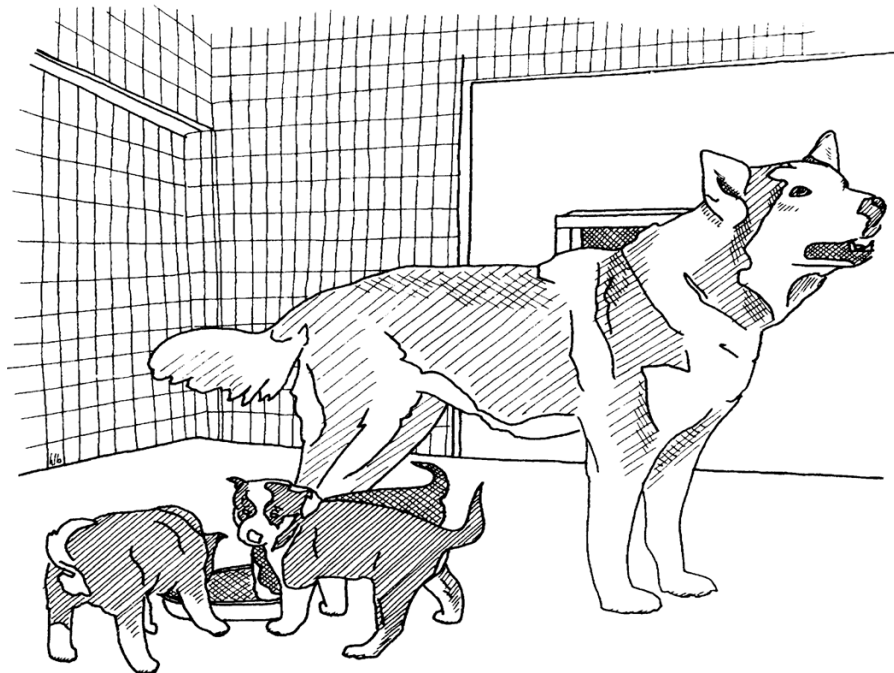
A whelping box provides a nest or den in which the female can whelp and begin raising her litter. It should be large enough to allow the female to stretch out without lying on or disturbing her puppies. It should be tall enough to contain the puppies but allow the mom to leave them when she desires.

The whelping box should be placed in a larger enclosure or pen either indoors or out as a primary containment for both the mom and puppies, but also isolate them from other dogs. Puppy pens should be a minimum of 100 square feet. If birds of prey might be a threat the pen should have a roof. Rawhide or hard rubber chews and balls are nice extras for the puppies' enjoyment. Ramps, tunnels and bridges provide mental stimulation. Be sure all additions are of sizes and made of materials that are safe for the puppies and mother.

The puppy pen needs to be cleaned at least once a day, or more often as needed. Whelping boxes need little bedding since the mother does most of the cleaning. If the puppies are reared in warmer months a smooth wooden floor will suffice.

Weaning and Feeding Puppies

Puppies should be offered gruel of ground and soaked kibble beginning at three weeks of age to supplement what they receive via nursing. Puppy food or a performance diet is recommended. Puppies under four months should be fed two to three times per day or free fed. Puppies should be fed enough to keep them fleshed out and to ensure they have enough energy to grow, but they should not be allowed to become obese. (See [Feeding and Watering section](#).)



Weaning

Mothers will usually wean puppies themselves when the pups are between four and a half and eight weeks old. If you wish to remove the mother from her pups at this time, you can. Ideally puppies should remain with the mother for the entire eight weeks. Emergency health situations may require early separation, but this should only be done under the direction of your veterinarian. If the pups are removed while the mother is still lactating the mother will need to be dried off. If the mammarys become firm, swollen, or red, consult your veterinarian.

Many mushers choose to leave the mother with the pups until the pups are individually tethered or penned. If the mother is still enjoying the pups and playing with them, this can be a good source of education for the puppies.

Reintroduce the mother to mushing slowly. She needs time to recover from nursing the pups. Short runs of 2 to 3 miles with the team are fine. Protect her enlarged nipples from cold weather for the whole season after whelping.

Puppies need to stay in the litter for at least eight weeks to ensure normal psychological development. During the fourth through sixth week, a puppy learns basic social behavior for dogs. If a puppy is removed from its family before six weeks it may have behavioral problems as an adult. When you rehome a pup, make sure you provide copies of all vaccination and deworming records to the new owner and caution him or her to change the pup's food slowly.

Puppy Health Care

Day 1: Examine each puppy for abnormalities. Check the mouth for cleft palate. Make sure that all puppies are nursing, as it is important for the puppies to receive the mother's colostrum, which flows for only a few days. If you have any questions or problems, call your veterinarian right away.

Day 2: Remove dewclaws, if there are any, from both the front and rear paws. This prevents trouble with booties later on and prevents the dewclaws from getting caught on something and damaged. Have your veterinarian perform this procedure, or have a veterinarian or an experienced musher show you how to do it yourself.

Three to four weeks: Deworm with the product recommended by your veterinarian. Continue deworming the puppies and mother on a schedule recommended by your veterinarian.

Eight weeks: Vaccinate with a combination vaccine that is recommended in your area. These may include distemper, parvovirus, and adenovirus. Work with your veterinarian to develop a vaccination program to meet the specific needs of your team.

Rearing

Just as children have formative years, puppies have formative months. Puppies need lots of human attention early. The more you put into your pups, the more you will get out of them as adults. Play with them at least a little every day so they don't become shy of people. Try to familiarize your puppies with as many different situations as possible by taking them on walks, bringing them inside, having children play with them, exposing them to crowds etc.

The most important time to develop a trusting, positive relationship with a pup is between its third to 16th weeks of life. Many people mistakenly believe that good genetics are all that are needed to produce a good sled dog. Without the proper care and training, a puppy with great potential can become a complete failure as a sled dog or pet. The following are some benchmarks in a puppy's development:

One to three weeks: During their first weeks of life, handle each puppy two or three times a day. Weigh them to ensure that no negative changes are occurring. Pet them and talk to them. Their relationships to humans can start from the day they are born.

Three to sixteen weeks: Introduce the puppies to as many unique experiences as possible. Between six and eight weeks is a particularly critical time for socialization with people. They can learn their names, learn to come when called, and develop a strong bond with humans during this stage of their development.

Four to six months: If tethering is the method of confinement this is the time to introduce them to this experience. Put a collar on each puppy and in the months following frequently check the collar's tightness and adjust it as the puppy grows. Place them on individual tethers.

Five to eight months: Harness training is most easily done during this stage of the puppies' development. Many methods are used: putting one or two pups in a small team with adults, or putting one adult leader with all the rest of the pups. Either way, the teams should be small (three to seven dogs), and the runs should be short (perhaps ½ to 3 miles). It is best not to have a steep down slope, icy trail or open water on the puppies' first few runs in harness. It is easy to scare a puppy. The most important thing is to let the pups have fun. Mushing will be an important part of their lives and it should always be a positive experience. Puppies should never be dragged along or pulled by a machine; they should always be going forward on their own accord and have the option to stop if they become frightened or tired.

Some puppies will have a natural instinct to pull the first time they are harnessed. Other puppies will be overwhelmed by being tugged by the neck while at the same time running next to another dog. To avoid this, you might want to connect a pup and a reliable lead dog with a neckline and let them run around for a few minutes. Be sure to do this away from the dog yard to avoid tangles. Repeat the experience a few days before running the pup in the team. This helps a puppy to learn to jump over the ropes and accustoms it to the neckline. Be careful to match compatible dogs, and be ready to jump high when they come toward you at full speed.

Eight to twelve months: It is important to get the pups out often in harness so that they learn all the basics of mushing while they are young: not getting tangled in the traces, pulling hard, urinating and defecating on the run, not chewing harnesses and gang lines, how to cross ice and water, how to pull on hills, forward and whoa commands, how to pass other teams, and most importantly, to have fun with their owner out on the trail. All of these are easiest and best learned when they are young.

Twelve months: At this point, a dog has attained its basic size, although depending on the breed and genetic background, many dogs continue to fill out until about two and a half years old. Also remember that although a dog is one year old and looks mature, it is not mentally mature yet and still needs much more time to develop before it can be expected to behave and perform like an adult.

Everything you would like to teach your dog (in addition to mushing) is also best done at an early age. At 4 to 12 months, their minds are open and responsive. For example, if they will spend a lot of time inside as adults or if they need to be obedience trained, put in the effort training them while they are young and make each experience positive and educational.

Geriatric Dogs and End of Life Issues

When planning your mushing kennel it is important to recognize that, like humans, sled dogs grow old and eventually die. It is important that the musher have a plan for dealing with the special issues presented by geriatric dogs. As a dog matures beyond his or her physical prime you must decide whether to keep the dog for the remainder of his or her life, or find an appropriate new 'retirement' home for the dog.

Most sled dogs start showing physical signs of aging at around seven years of age, though there are plenty of exceptions to this rule of thumb. The first sign that many racing mushers see is that the dog is no longer able to run as fast or as far as his or her younger teammates. Competitive sled dog racers who do not want to support older, slower dogs should consider finding the dog a new home while it is still in good physical condition.

Gifts of older dogs in good physical condition are often greatly appreciated by junior mushers, beginners and mushers competing in less demanding disciplines or classes. You may also consider placing a retired dog into a home as a pet. Be sure the dog and the new owner are a good fit. Many sled dogs can be challenging pets; some have an instinct to roam or kill livestock and are often more independent than expected. Keep in mind that dogs that have been properly cared for and socialized have the best chances to be placed. Since a dog that is not good enough to keep is probably not good enough to breed, consider having the dog spayed or neutered before giving it away, or requiring that the new owner have the operation performed.

Many mushers prefer to keep their geriatric dogs and care for them until the end of their natural lives. Older dogs are especially valuable for helping train puppies and young dogs.

Housing Considerations for Geriatric Sled Dogs:

Older dogs often do not cope well with sudden changes in their environment. If you plan to keep your older dogs as house pets or change your confinement method, make the transition gradually, bringing the dog into the new environment for short visits and gradually increasing the amount of time until the dog becomes comfortable in his or her new setting.

Older dogs are often less tolerant of weather extremes than younger dogs. They may require additional bedding or even an insulated doghouse to be comfortable during cold weather. During warm weather, ensure that older dogs have easy access to shade and fresh, clean water.

Like younger dogs, geriatric dogs require adequate space and mental stimulation. (See the Dog Yard and Housing section.)

Feeding Considerations for Geriatric Sled Dogs:

As your aging dog's metabolic rate and general activity levels decrease, he or she will require less food to maintain a healthy body. Most older dogs will do well on the same ration you feed your younger dogs during the offseason. Occasionally a dog will have trouble digesting all the fat in this ration or may become constipated on it. If this occurs, try feeding a diet lower in fat or higher in fiber, respectively. It is important that you not allow your geriatric dog to get too fat. Obesity is the most common cause of major health problems in dogs, including kidney and liver diseases, diabetes and arthritis.

Monitor older dogs' weight just as you do younger dogs, and adjust the volume of feed accordingly. Consult a veterinarian if you have concerns or questions.

Health and Husbandry Issues of Geriatric Sled Dogs:

Geriatric dogs lose muscle mass and tone, long bones such as those in their legs become brittle, and arthritis frequently sets in. Providing your geriatric sled dogs opportunities for frequent short, slower runs with other older dogs or with puppy teams can help the geriatric dogs maintain a higher degree of flexibility, mobility and fun as they age.

Geriatric dogs are more prone to infectious and chronic diseases than young dogs. Work with your veterinarian to determine an appropriate vaccination schedule for your older dogs and consult with him or her if you notice any changes in the dog's behavior, activity level or appearance. Be especially alert for any of the following signs of disease in geriatric sled dogs:

- Sustained significant increase in water consumption or urination
- Weight loss.
- Significant decrease in appetite or failure to eat for more than two consecutive days.
- Significant increase in appetite
- Repeated vomiting
- Diarrhea that persists more than two days.
- Lameness that lasts for more than three or four days.
- Lumps or masses in or under the skin,
- Open sores or multiple scabs in the skin, especially if they seem to be getting larger or worse.
- Hair loss, especially if accompanied by scratching.
- Persistent coughing or gagging
- Excessive panting
- Sudden collapse or weakness
- Inability to chew dry food
- Seizures, convulsions or sudden changes in behavior

Many of the diseases associated with aging can be easily diagnosed and treated, providing comfort in the dog's senior years.

End of Life Considerations for Sled Dogs:

Injuries and illnesses can threaten dogs quality of life. Whether your dog is injured during the prime of life or debilitated due to the diseases of old age you may have to decide whether or not to euthanize your dog.

Animal care experts agree that it is appropriate to humanely kill a dog rather than to prolong suffering. There are no hard and fast rules regarding when it is or is not appropriate to do so. Here are some considerations you can use to help make your own decision:

- Is professional veterinary care available in your community?
- Can you afford to pay for the necessary veterinary care?
- How likely is your dog to recover from the problem?
- Is your dog in pain? If so, can the pain be effectively controlled?
- Is your dog able to eat and digest enough food to remain properly nourished?
- Is your dog mobile enough to move around its housing area?
- Is your dog able to breathe without difficulty?
- Does your dog behave as though it still enjoys living?

Once you have considered the above, establish a euthanasia baseline condition. These are best established before the animal reaches the euthanasia threshold. It is much easier to establish these before human emotion becomes the deciding factor. It can be stated as simply as: When the dog is not longer able to..., then we will euthanize it. It is very easy to change this threshold as a dog approaches it. Experience has shown that as one "quality of life" measurement goes by, another threshold is established and so on. When this happens, it is only avoiding the inevitable.

Whenever possible, animal control shelters or veterinarians should be used to perform euthanasia as necessary. In isolated rural areas where such facilities are not available you must still make sure your dog is killed humanely, with no suffering. Consult a veterinarian or animal control officer for advice.

In some regions local or state/provincial laws or regulations regulate body disposal. Many veterinarians and animal control shelters can cremate the body for you at little or no cost. If the law permits and you wish to bury your dog's body at your home or kennel it is recommended you place the body in a heavy duty plastic bag encased in a secure receptacle such as a wooden or metal box. You should bury the body under at least 3 ft of earth to prevent other animals from digging at the gravesite.

Additional Dog Care Resources recommended by Mush with P.R.I.D.E.

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(For preschool through grade 3.)

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Additional recommended sources of information on sled dogs and mushing equipment include mushing workshops and seminars, sled dog symposiums and trade fairs, and listservs such as *Sled Dog Central* (<http://www.sleddogcentral.com>).

Appendix

Courtesy Nestlé Purina

Nestlé PURINA

BODY CONDITION SYSTEM

TOO THIN	1	Ribs, lumbar vertebrae, pelvic bones and all bony prominences evident from a distance. No discernible body fat. Obvious loss of muscle mass.	 <div style="text-align: right; font-size: 2em; font-weight: bold; color: red;">1</div>
	2	Ribs, lumbar vertebrae and pelvic bones easily visible. No palpable fat. Some evidence of other bony prominence. Minimal loss of muscle mass.	
	3	Ribs easily palpated and may be visible with no palpable fat. Tops of lumbar vertebrae visible. Pelvic bones becoming prominent. Obvious waist and abdominal tuck.	
IDEAL	4	Ribs easily palpable, with minimal fat covering. Waist easily noted, viewed from above. Abdominal tuck evident.	 <div style="text-align: right; font-size: 2em; font-weight: bold; color: green;">3</div>
	5	Ribs palpable without excess fat covering. Waist observed behind ribs when viewed from above. Abdomen tucked up when viewed from side.	
TOO HEAVY	6	Ribs palpable with slight excess fat covering. Waist is discernible viewed from above but is not prominent. Abdominal tuck apparent.	 <div style="text-align: right; font-size: 2em; font-weight: bold; color: orange;">5</div>
	7	Ribs palpable with difficulty; heavy fat cover. Noticeable fat deposits over lumbar area and base of tail. Waist absent or barely visible. Abdominal tuck may be present.	
	8	Ribs not palpable under very heavy fat cover, or palpable only with significant pressure. Heavy fat deposits over lumbar area and base of tail. Waist absent. No abdominal tuck. Obvious abdominal distention may be present.	
	9	Massive fat deposits over thorax, spine and base of tail. Waist and abdominal tuck absent. Fat deposits on neck and limbs. Obvious abdominal distention.	

The BODY CONDITION SYSTEM was developed at the Nestlé Purina Pet Care Center and has been validated as documented in the following publications:

Marby D, Barlges JW, Moyers T, et al. Comparison of body fat estimates by dual-energy x-ray absorptiometry and deuterium oxide dilution in client owned dogs. *Compendium* 2001; 23 (9A): 70

Lafamme DP. Development and Validation of a Body Condition Score System for Dogs. *Canine Practice* July/August 1997; 22:10-15

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Call 1-800-222-VET5 (8387), weekdays, 8:00 a.m. to 4:30 p.m. CT