



NATIONAL FARM ANIMAL CARE COUNCIL
CONSEIL NATIONAL POUR LES SOINS AUX ANIMAUX D'ÉLEVAGE

CODE OF PRACTICE

FOR THE CARE AND HANDLING OF

FARMED MINK



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Preface

The National Farm Animal Care Council (NFACC) Code development process was followed in the development of this Code of Practice. This Code of Practice for the Care and Handling of Farmed Mink replaces its predecessor developed in 1988 and published by Agriculture Canada.

The NFACC Code development process aims to:

- link Codes with science
- ensure transparency in the process
- include broad representation from stakeholders
- contribute to improvements in farm animal care
- identify research priorities and encourage work in these priority areas
- write clearly to ensure ease of reading, understanding and implementation
- provide a document that is useful for all stakeholders.

The Codes of Practice are nationally developed guidelines for the care and handling of farm animals. They serve as our national understanding of animal care requirements and recommended practices. Codes promote sound management and welfare practices for housing, care, transportation and other animal husbandry practices.

Codes of Practice have been developed for virtually all farmed animal species in Canada. NFACC's website provides access to all currently available Codes (www.nfacc.ca).

The Codes of Practice are the result of a rigorous Code development process, taking into account the best science available for each species, compiled through an independent peer-reviewed process, along with stakeholder input. The Code development process also takes into account the practical requirements for each species necessary to promote consistent application across Canada and ensure uptake by stakeholders resulting in beneficial animal outcomes. Given their broad use by numerous parties in Canada today, it is important for all to understand how they are intended to be interpreted.

Requirements - These refer to either a regulatory requirement, or an industry imposed expectation outlining acceptable and unacceptable practices and are fundamental obligations relating to the care of animals. Requirements represent a consensus position that these measures, at minimum, are to be implemented by all persons responsible for farm animal care. When included as part of an assessment program, those who fail to implement Requirements may be compelled by industry associations to undertake corrective measures, or risk a loss of market options. Requirements also may be enforceable under federal and provincial regulation.

Recommended Practices - Code Recommended Practices may complement a Code's Requirements, promote producer education and can encourage adoption of practices for continuous improvement in animal welfare outcomes. Recommended Practices are those which are generally expected to enhance animal welfare outcomes, but failure to implement them does not imply that acceptable standards of animal care are not met.

Broad representation and expertise on each Code Development Committee ensures collaborative Code development. Stakeholder commitment is key to ensure quality animal care standards are established and implemented.



Preface (continued)

This Code represents a consensus amongst diverse stakeholder groups. Consensus results in a decision that everyone agrees advances animal welfare but does not imply unanimous endorsement of every aspect of the Code. Codes play a central role in Canada's farm animal welfare system as part of a process of continuous improvement. As a result, they need to be reviewed and updated regularly. Codes should be reviewed at least every five years following publication and updated at least every ten years.

A key feature of NFACC's Code development process is the Scientific Committee. It is widely accepted that animal welfare codes, guidelines, standards or legislation should take advantage of the best available research.

A Scientific Committee review of priority animal welfare issues for the species being addressed provided valuable information to the Code Development Committee in developing this Code of Practice. The Scientific Committee report is peer reviewed and publicly available, enhancing the transparency and credibility of the Code.

The 'Code of Practice for the Care and Handling of Mink: Review of scientific research on priority issues' developed by the Mink Code of Practice Scientific Committee is available on NFACC's website (www.nfacc.ca).



Introduction

Appropriate husbandry, handling, and management, are essential for the health and well-being of mink. The Farmed Mink Code of Practice (Code) provides guidance to owners and employees about the welfare of the mink in their care. Owners and attendants must collectively possess the ability, knowledge, and competence necessary to maintain the health and welfare of the mink in accordance with this Code. Key knowledge required would include an understanding of the basic needs and behaviour of mink, along with farm protocols and processes. All people working with mink must be familiar with the contents of this Code.

Husbandry systems impose some restrictions on the freedoms of mink. However, mink production must promote good welfare and should not cause unnecessary discomfort or distress. Producers should consider the following:

- shelter to provide protection from the elements
- feed and water to maintain health and vigour
- biosecurity
- herd health management system that includes veterinary care; disease prevention and control strategies; and timely individual care
- pen size and design
- enrichments for the mink
- handling and conditions to avoid fear and stress
- separation strategies and housing combinations
- breeder selection for temperament
- euthanasia
- emergency preparedness for fire, extreme weather events, mechanical failure, feed supply/access issues.

Whenever technology is introduced on the farm, consideration should be given to its effect on animal welfare¹. Automations to control feed and water supply are being used increasingly.

All herds require adequate human resources to ensure observation, care and the welfare of individual mink. There must be adequate staff and time to inspect, service, and maintain all necessary equipment for routine care of the mink. Time spent maintaining currency with new research and information relative to mink welfare (e.g. information relating to new types of environmental enrichment) as it becomes available can help promote positive mink welfare on farm.

Resources and facilities must be available to ensure consistent access to feed and water, appropriate shelter for the mink, and disease prevention or treatment. Sick, injured, or distressed animals must receive prompt and appropriate attention, treatment, nursing care, or be euthanized immediately.

This Code reflects current scientific information and traditional knowledge of accepted mink management practices. It identifies welfare hazards, opportunities, and methods to promote well-being. The animal welfare outcomes identified in this document can be achieved under a variety of management systems.

In this Code the word mink refers to mink of all ages. Where special provisions for young animals (up to weaning) apply, the word kit has been used. Juvenile (or growing mink) refers to mink between weaning and pelting. This Code applies to all mink on farms in Canada.

¹ The National Farm Animal Care Council supports the following definition of animal welfare: Animal welfare means how an animal is coping physically, physiologically and psychologically with the conditions in which it lives. Physically includes pain and injury; physiologically includes environmental or disease stressors; and psychologically includes stressors that affect the senses, especially those that result in fear, fighting, distress or stereotypic behaviors due to either frustration or boredom. Animal welfare refers to the state of the animal; the treatment that an animal receives is covered by other terms such as animal care, animal husbandry, and humane treatment.



Glossary

Aleutian Disease (AD) – is caused by a number of different strains of a parvovirus that have variable pathogenicity. The infection in mink may be subclinical and of variable duration without adversely impacting animal health/welfare or a chronic, progressive, non-treatable disease that results in death.

Biosecurity – measures to reduce the risk of transmission of infectious diseases and parasites.

Breeder – term for a mature mink used for breeding purposes.

Circadian rhythm – being, having, characterized by, or occurring in approximately 24-hour periods or cycles (i.e. biological activity or function).

Confidence – measures the minks' degree of comfort with humans; a confident mink will respond more positively to humans.

Controlled Access Point (CAP) – a single point/designated entrance, which enables traffic control and ensures that equipment and procedures are available to implement biosecurity measures (e.g. wheel sprays, etc.).

Controlled Access Zone (CAZ) – a zone around the mink production area that restricts access to visitors, vehicles equipment, and other animals (including wild). A CAZ should be easily identifiable; perimeter fencing of the CAZ improves control. A CAZ may include sheds/housing areas, kitchen areas, supply storage and waste storage.

Enrichment – efforts aimed at improving the mink's physical and psychological health by including novel objects such as golf balls, plastic chains, plastic tube, hammocks or shelves, or making other pen-related alterations that may increase the complexity of the pen.

False bottom (false floor) – a solid insert (a board or piece of plastic) that is put in a pen at whelping until kits are big enough to move around the pen safely and prevent small kits from falling through the wire.

Juvenile – term for a mink from weaning to pelting.

Kit – term for a mink from birth to weaning.

Minimum floor space – the area of a mink pen which can be used by the mink; it includes shelf/platform/hammock, but does not include the area of nest box (regardless of type of nest box).

Minimum living area – the minimum living area mink have access to, which includes both the pen's minimum floor space and nest box area.

Non-littermates – juvenile mink from different females (mothers).

Quarantine – an area or facility separated from the housing area on a farm that is used to house incoming stock for a period of time to help reduce the risk of introducing new pathogens; may also be used to isolate or segregate animals on farm that are known or suspected to be infected with a transmissible disease.

Restricted Area Zone (RAZ) – an area inside the CAZ that controls access to the mink sheds or areas where mink are housed and where personnel and equipment access is more restricted than it is for the CAZ. The RAZ, an inner biosecurity zone, is sometimes referred to as the production area or restricted area (RA).



Glossary (continued)

Stereotypic behaviour – repetitive actions that are invariable in form and serve no obvious function.

Stockpeople – all people looking after mink on a farm.

Unconsumed feed – feed that remains on the wire after feeding and is not spoiled.

Veterinarian-client-patient relationship (VCPR) – A VCPR exists when all of the following conditions have been met:

- The veterinarian has assumed the responsibility for making clinical judgments regarding the health of the animal(s) and the need for medical treatment, and the client has agreed to follow the veterinarian's instructions.
- The veterinarian has sufficient knowledge of the animal(s) to initiate at least a general or preliminary diagnosis of the medical condition of the animal(s). This means that the veterinarian has recently seen and is personally acquainted with the keeping and care of the animal(s) by virtue of an examination of the animal(s) or by medically appropriate and timely visits to the premises where the animal(s) are kept.
- The veterinarian is readily available for follow-up evaluation, or has arranged for emergency coverage, in the event of adverse reactions or failure of the treatment regimen. Source: Canadian Veterinary Medical Association.

Waste feed – uneaten feed on wire that has spoiled and must be collected and disposed of.

Whelping – the process of giving birth in mink.

1

Accommodations and Housing

1.1 Site Selection

Farm location can impact mink welfare both due to issues relating to neighbouring and surrounding activities and due to the topographical and drainage characteristics of the land itself (1).

1.1.1 Location/Surrounding Area

Mink can be sensitive to adverse stimuli such as excessive light, loud noises, and vibrations. When siting a mink farm, it is important to consider aspects such as: proximity to neighbouring activity or high traffic volumes. The land base must be of sufficient size to meet all of the requirements outlined in this Code. There should be consideration for future expansion and adequate buffer zones to protect mink from stressful situations. Ideally, the farm should be built on well-drained land to prevent the accumulation of water (2).

REQUIREMENTS

Mink farms must meet all applicable federal, provincial, and municipal land use regulations.

Sites must have a sufficient supply of good quality drinking water to meet both the physiological needs of the mink and the on-site needs for cleaning and other farm activities.

RECOMMENDED PRACTICES

- a. select sites to minimize adverse impact of neighbouring activities (e.g. excessive light, noise)
- b. consider future expansion and adequate buffer zones to protect mink from stressful situations when selecting a farm site.

1.2 Housing

Mink are typically housed in pens inside sheds. Shed and pen design will vary from farm to farm and will depend on the type and number of mink to be housed. Housing offers the mink protection from the elements and can help to minimize biosecurity risks. Housing must provide sufficient space for the mink to eat, drink, rest, stand, turn around, fully extend their limbs, and access a nest box and enrichment.

Mink are susceptible to heat stress. Design features and construction materials for housing systems that help to minimize the effect of extreme temperatures inside the shed can help to reduce the potential for stress on the mink. Mink are seasonal breeders so exposure to adequate light and changing day length is important for natural reproductive and furring cycles.

1.2.1 Sheds

Sheds protect mink from the elements. Shed design can impact the ability of stockpeople to work with, and provide for the mink. It is important that aisles are wide enough to allow for adequate workspace and equipment movement.

Biosecurity impacts shed design (refer to Section 2 - Biosecurity). Enclosed sheds offer a barrier between the mink and other animals (e.g. pets, pests, wildlife), which helps to maintain the health and welfare of the herd. Sheds should be designed to support sound waste management practices to mitigate the health and welfare risks associated with waste.

REQUIREMENTS

Sheds must provide mink with protection from extreme weather conditions.

Sheds must be designed to allow adequate space, light, and access for stockpeople to observe and care for the mink.

RECOMMENDED PRACTICES

- a. construct shed roofs of materials that reflect sunlight to reduce heat build up
- b. design sheds to prevent exposure of manure to precipitation.

1.2.2 Pens

Farmed mink are housed in wire pens with nest boxes that are elevated off the ground. Mink welfare may be affected by pen size, design, stocking density, and pen complexity.

Research on the impact of pen size on mink welfare is quite limited. In most cases, research is performed only on one or a few farms using just one colour type. This may mean that scientific conclusions cannot be attained in some cases. A large majority of the research is performed in countries outside North America (particularly Scandinavian countries where mink tend to be larger than North American mink) and in some cases may not be transferable to North American climate and practices. Existing research does show that increasing the pen size alone without enriching the living area does not significantly improve the welfare of the mink, at least for pens with floor areas from 1.08 square feet to 11.30 square feet (0.1 square metres to 1.05 square metres) (3). (For more information on enrichment refer to Section 1.2.5 - Environmental Enrichment).

Pen height can affect the mink's access to feed. Mink are fed on the wire on the top of the pen and stretch up on their hind legs to eat. Welfare may be negatively impacted if pens are too high for the size of the mink since it can make accessing feed more difficult. The physical size of mink varies considerably with age, colour type, and gender.

Providing a hammock, platform, or shelf in pens housing multiple mink can provide an area for a female (nursing mother) to temporarily get away from the kits or for one mink to separate itself from a pen mate (3).

REQUIREMENTS

All pens with multiple mink must be enriched with a hammock/shelf/platform by June 30, 2014; if a jump up/penthouse or drop in nest box is used, a shelf is not required as an enrichment.

All pens must include a minimum of one manipulative enrichment by December 31, 2013.

New Pens:

Table 1 – All new pens built or purchased must meet the following minimum requirements.

Pen Density	Minimum Height	Minimum Width	Minimum Floor Space*
Single adult female	15in (38cm)	8in (20cm)	225in ² (1,451cm ²)
Single adult male	15in (38cm)	10in (25cm)	345in ² (2,225cm ²)
Single female with litter or with one juvenile	15in (38cm)	10in (25cm)	345in ² (2,225cm ²)
Single juvenile female	15in (38cm)	8in (20cm)	225in ² (1,451cm ²)
Single juvenile male	15in (38cm)	8in (20cm)	225in ² (1,451cm ²)
2 juvenile mink	15in (38cm)	10in (25cm)	345in ² (2,225cm ²)
More than 2 juvenile mink per pen	15in (38cm)	12in (30cm)	345in ² (2,225cm ²); Plus an additional 75in ² (483cm ²) per female, or 100in ² (645cm ²) per male for each mink above

cm = centimetres; in = inches; cm² = square centimetres; in² = square inches

* Minimum floor space – the area of a mink pen which can be used by the mink; it includes shelf/platform/hammock, but does not include the area of nest box (regardless of type of nest box).

All new pens must also meet the following requirements:

- If lowering the feed strip, the lowered portion of the pen must have a minimum height of 12in (30cm), and extend a maximum of 10in (25cm) into the pen.
- By August 1st of each year, all non-littermates must be housed in accordance with the density and pen size requirements for juveniles stated above.
- By September 1st of each year, all littermates must be housed in accordance with the density and pen size requirements for juveniles stated above (Table 1).

Transitioning from Existing Pens:

Table 2 – All existing pens that meet the following requirements may be used for the lifetime of the pen. Replacement pens must meet the pen size requirements in Table 1.

Pen Density	Minimum Height	Minimum Width	Minimum Floor Space*
Single adult female	14in (35cm)	8in (20cm)	202in ² (1,303cm ²)
Single adult male	14in (35cm)	8in (20cm)	311in ² (2,006cm ²)
Single female with litter or with one juvenile	14in (35cm)	10in (25cm)	311in ² (2,006cm ²)
Single juvenile female	14in (35cm)	8in (20cm)	202in ² (1,303cm ²)
Single juvenile male	14in (35cm)	8in (20cm)	202in ² (1,303cm ²)
2 juvenile mink	14in (35cm)	10in (25cm)	311in ² (2,006cm ²)
More than 2 juvenile mink per pen	14in (35cm)	10in (25cm)	311in ² (2,006cm ²); Plus an additional 75in ² (483cm ²) per female, or 100in ² (645cm ²) per male for each mink above 2

cm = centimetres; in = inches; cm² = square centimetres; in² = square inches

* Minimum floor space – the area of a mink pen which can be used by the mink; it includes shelf/platform/hammock, but does not include the area of nest box (regardless of type of nest box).

Table 3 – All existing non-conforming pens (i.e. not meeting requirements in Table 2) must meet the following requirements by May 1, 2014 to be permitted for use, and may be used up to December 31, 2023, or until the code is revised based on new scientific knowledge.

Pen Density	Minimum Living Area*
Single adult female	186in ² (1,200cm ²)
Single adult male	325in ² (2,096cm ²)
Single female with litter or with one juvenile	325in ² (2,096cm ²)
Single juvenile female	186in ² (1,200cm ²)
Single juvenile male	186in ² (1,200cm ²)
2 juvenile mink	325in ² (2,096cm ²)
More than 2 juvenile mink per pen	325in ² (2,096cm ²); Plus an additional 75in ² (483cm ²) per female, or 100in ² (645cm ²) per male for each mink above 2

cm² = square centimetres; in² = square inches

* Minimum living area – the minimum living area mink have access to, which includes both the pen's minimum floor space and nest box area.

As of December 31, 2023 all pens must meet the new pen size requirements (Table 1), or those which comply for the lifetime of the pen provisions (Table 2).

1.2.3 Nest Boxes

Nest boxes provide a comfortable, safe, and secluded place for resting or escaping from unfamiliar noises or disturbances. Nest boxes are especially critical for females during whelping and while they raise their litters.

The absence of a nest box decreases the welfare and possibly the growth rate of mink (3). Kit mortality is increased and growth rates are reduced in situations where females and their litters were not provided nest boxes compared to those with nest box access. Studies have shown that mink raised with nest box access tend to display fewer stereotypies, at least during certain periods of the year, than those raised without nest box access. Research has shown that mink without nest box access have higher energy requirements, which has been attributed to increased thermoregulation needs, and, in part, due to the increase in stereotypies performed. In some studies, mink raised without nest boxes showed evidence of being subject to both chronic and acute stress more than those with nest boxes (3).

Nest boxes need to be of sufficient size to accommodate all animals in the pen comfortably at the same time. Young kits have a very limited ability to thermoregulate; therefore, an over-sized nest box can be detrimental to kit welfare. A properly sized nest that keeps the kits in close contact with each other and the female will help minimize kit chilling and mortality (3).

Over-sized nest boxes can also present thermal regulatory concerns for adult mink.

REQUIREMENTS

Nest boxes must be designed to hold adequate bedding and allow for good nesting behaviour to provide a comfortable, safe, and secluded place.

Nest boxes must be an appropriate size to accommodate all animals in the pen comfortably at the same time.

During whelping, lactation, furring, and winter months, mink must have access to a nest box with adequate bedding.

If feeding on nest box lid, kits must be able to easily access the feed.

1.2.4 Bedding

Bedding enhances the resting environment, comfort, and welfare of mink. Bedding is particularly important for all mink during whelping, lactation, furring, and during winter months. A variety of bedding materials may be used, including shavings, hay, straw, and sawdust. During whelping, shavings and/or sawdust derived from trees that contain resins (e.g. pine or cedar) can irritate kit skin and cause kit mortality.

When supplemental bedding material is provided there appears to be an improvement in maternal responsiveness, which results in increased kit survival (3). Bedding helps with thermoregulation in kits and helps to reduce the incidence of kit loss due to hypothermia. Litters raised with bedding tend to have higher growth rates than those without bedding access (3).

REQUIREMENTS

Bedding must be clean and dry.

During whelping, lactation, furring, and winter months, mink must have access to a nest box with adequate quantities of a suitable bedding material (e.g. shavings, chopped straw, hay).

During whelping, shavings and/or sawdust with resins (e.g. pine, cedar) that can irritate the kits' skin must not be used.

RECOMMENDED PRACTICES

- a. pack nest box corners with bedding during the whelping period to minimize kits getting “lost”; use a bedding material that promotes a “bowl” shaped nest to maintain a better nursing environment and to assist with thermoregulation.

1.2.5 Environmental Enrichment

Mink are receptive to environmental enrichment. Enrichments can help to reduce the development of stereotypies in mink, but may not decrease or eliminate stereotypies once they have been developed. For this reason, enrichments should be introduced early in life (to juveniles) as a preventative measure against the development of stereotypies (3).

Enrichments that can be manipulated tend to be preferred by mink over fixed objects. Some enrichments can have a novel effect; once the novelty wears off, the effectiveness of that enrichment is reduced. Wire or plastic tubes, table tennis balls, or ropes in pens all reduced tail chewing and stereotypies in pair-housed juvenile mink, compared to mink housed in pens with no enrichments (3).

Hammocks, shelves, platforms, and drop-in nest boxes are considered enrichments because they add to the complexity of the pen's environment.

Research has concluded that swimming, while a natural activity, does not appear to be an innate need (3). The provision of swimming water under Canadian conditions is impractical and poses health concerns.

REQUIREMENTS

All pens with multiple mink must be enriched with a hammock/shelf/platform/drop-in or jump up nest boxes by June 30, 2014.

An enrichment that can be manipulated by the mink or different novel objects (to avoid habituation) must be provided in each pen by December 31, 2013; once an environmental enrichment like this has been provided, access to such enrichments must be maintained for the rest of the life of that mink as removal may cause frustration.

RECOMMENDED PRACTICES

- a. loose enrichments (e.g. golf balls) are not recommended during times when false bottoms are in place because they can impede nursing and cause increased sanitation concerns during this time.

1.3 Environmental Management

1.3.1 Light

Mink are sensitive to lighting conditions. Sexual development and fur growth are dependent on exposure to an appropriate photoperiod (4). Sufficient lighting is important for mink to perform normal functions and to allow for appropriate observation by farm workers.

Many shed designs allow natural light to be used. To avoid excessive heat, translucent roof panels (rather than transparent ones) should be used for enhancing natural light.

Artificial lighting may be used, but extreme care should be taken that it is installed and utilized so that it does not negatively impact the mink's reproductive and furring cycles. Lights should be positioned to provide even lighting throughout the shed.

REQUIREMENTS

Mink must be exposed to at least the minimum number of continuous hours of daylight provided by a natural photoperiod.

If using artificial lighting, caution must be taken not to negatively impact the normal circadian rhythm.

Light intensity and quality must be sufficient to allow mink to express natural behaviours and to allow for proper observation of the mink.

RECOMMENDED PRACTICES

- a. provide roof panels to enhance natural lighting if needed; ensure panels are translucent (rather than transparent) to avoid excessive heat build up.

1.3.2 Air Quality

Adequate ventilation is important for the health and welfare of mink. Ventilation helps maintain air quality and control temperatures so that animals can live comfortably (5). Good airflow within the shed will help control wet and damp conditions, help minimize odours and ammonia, and reduce pest insect outbreaks (6). Ventilation needs increase during hot weather. Sheds are often built with open sides that are enclosed with solid material for the winter period to help offer protection from winter conditions. Closing sheds in the winter will reduce airflow and may predispose herds to respiratory disease (1). While there are no guidelines related to acceptable levels of ammonia exposure for mink, the National Institute for Occupational Safety and Health recommends a short-term exposure limit of 35ppm for humans and time-weighted average concentration (for up to a 10-hour work day during a 40-hour work week) of 25ppm for humans (7). Measures should be taken to keep ammonia levels within acceptable human health guidelines. If natural ventilation is not sufficient, a mechanical ventilation system is required.

REQUIREMENTS

All sheds and buildings must consistent and adequate airflow to ensure mink health and comfort; if natural ventilation is not sufficient, a mechanical system is required.

RECOMMENDED PRACTICES

- a. maintain adequate air quality and ventilation to keep ammonia levels < 25ppm.

1.3.3 Temperature

Shed and nest box design, construction materials, and ventilation all influence ambient temperatures. It is important to maintain a comfortable environment for mink, especially during times of extreme heat or cold, and during the whelping and lactation periods. Maintaining a comfortable environment may involve minimizing drafts and increasing bedding during cold periods. Conversely, during periods of high temperatures, it may be necessary to increase ventilation, provide additional water, or employ other cooling mechanisms such as misting systems.

Hypothermia is considered one of the major causes of early mortality in mink kits due to their inability to thermoregulate. The nest box is important for providing a comfortable area for females to whelp and raise their litters (8). The nest box helps with kits' thermoregulation. Providing bedding is essential and will improve the nest climate, reduce the incidence of hypothermia, and promote health.

REQUIREMENTS

Adequate dry bedding material must be available in the nest box during whelping, lactation, furring and winter months to help reduce the risk of hypothermia (refer to Section 1.2.4 - Bedding).

Stockpeople must be trained to recognize signs and symptoms of heat and cold stress and to respond appropriately.

Actions must be taken to help mink maintain appropriate body temperatures during extreme ambient temperatures.

2

Biosecurity

Pathogens, pests, and visitors all pose risks to the health and welfare of the mink. Biosecurity measures are imperative for maintaining the health and welfare of mink on the farm. Biosecurity programs need to consider: access management, animal management, and operational management.

2.1 Access Management

Controlling access to the premises and the areas where mink are housed is an important biosecurity principle. Controlling who and what enters and leaves the farm reduces the risk of spreading disease and protects animals from the stress of unfamiliar activities. The escape and/or release of farmed mink poses a significant welfare and disease risk to both domestic animals and wildlife. Security fencing or enclosed sheds mitigate the risk of mink escaping and prevent other domestic animals, people, and wildlife from coming into contact with the mink.

Biosecure zones allow the separation and protection of farm areas from people, animals, materials, products, and equipment that may pose a risk to animal health and welfare.

Creating outer and inner zones ensures that multiple protective measures must be breached before a disease gains access to the most critical area of a site where the mink are housed. It also prevents spreading disease from animal housing and mortality/manure storage areas to the rest of the site and off the farm.

A Restricted Access Zone (RAZ) controls access to the mink sheds or areas where mink are housed. A single RAZ can be used to control access to a group of sheds in a similar location.

A Controlled Access Zone (CAZ) around the perimeter of the mink production area restricts access to visitors, vehicles, equipment, and animals. The CAZ may include housing area, kitchen areas, supply storage, and waste storage. Security fencing of the CAZ is preferable to fencing only the RAZ because it allows for greater control over all areas, which can impact mink health and welfare.

A Controlled Access Point (CAP) serves as a designated entrance to the farm and enables traffic to be controlled. A CAP makes it possible to establish equipment and biosecurity procedures that all vehicles, equipment, and people entering must follow to gain access in order to help maintain the health and welfare of the animals. A CAP can be a single door, gate, or barrier that can be locked/secured to prevent access.

Zones within a premises are only effective at minimizing disease transmission if measures are taken when moving between and within them.

A national mink on-farm biosecurity standard is currently in the final stages of development, and will be available online at the Canadian Food Inspection Agency (CFIA) website www.inspection.gc.ca when finalized. Development of this standard was led by the CFIA in partnership with industry. For more detailed information on biosecurity for mink farms, please refer to the national mink on-farm biosecurity standard.

REQUIREMENTS

Producers must control and minimize all non-essential access to the farm.

Mink must be housed in a biosecure area (i.e. wildlife should not be able to contact farmed mink and farmed mink should not be able to leave the biosecure area).

Biosecure zones and “Controlled Access Points” must be easily identified with signage.

Producers must ensure staff and visitors understand, respect, and comply with the site’s biosecure zones and procedures for movement.

Staff and visitors must wear dedicated clothing, or cover-ups over street clothes and footwear, and must sanitize their hands when entering the CAZ or RAZ.

“Controlled Access Points” must have the necessary equipment and materials to implement biosecurity procedures.

RECOMMENDED PRACTICES

- a. ensure hand sanitizers are available and used at the entrance of shed
- b. install a self-closing and lockable gate for the CAP entrance
- c. install and maintain an effective security fence (i.e. bottom buried in the ground) which has a single CAP
- d. maintain facilities for staff to clean and disinfect boots when moving between the RAZ and CAZ
- e. establish visitor parking outside the CAZ.

2.2 Animal Management

The purchase of infected and sub-clinically infected mink carrying pathogenic agents is a significant method of disease introduction. Therefore, it is critical to have isolation areas available for newly purchased mink to be kept until they have passed health screening/quarantine periods. Having a herd health program (as outlined in Section 4.3 - Veterinary Care/Health Management) can help minimize the risk of disease being brought onto, taken off, or spread around the farm.

Some infectious diseases are very contagious; when there is the suspicion of a very contagious disease, producers should lockdown the site until a diagnosis is obtained to prevent the transmission of pathogens to neighbouring mink farms/livestock and/or wild mink/animals. Following a diagnosis, measures can be adjusted to manage the situation according to the risk of disease transmission within and off of the premises.

Downtime is a period of time that begins when a herd/housing area is emptied of mink and ends with the placement of new mink. Downtime allows for the natural reduction in numbers of disease-causing microorganisms (pathogens) within the herd/housing area. Downtime also allows time for appropriate cleaning and disinfection. Removing organic material from the housing area and thorough cleaning and disinfection processes help to significantly reduce the pathogen load. Areas that are in downtime should be clearly separated from areas with animals present to avoid cross- or re-contamination. Sheds where mink have been removed should be cleaned, disinfected, and left empty for a period of time.

Establish procedures for pelting to help reduce the risk of spreading any pathogens that may be present.

REQUIREMENTS

Producers must be knowledgeable of the health status of mink being purchased.

Strict biosecurity measures must be taken when catching, handling, and moving mink (e.g. treatment, breeding, pelting).

RECOMMENDED PRACTICES

- a. obtain breeding stock from reputable breeders with healthy herds that are free of genetic and infectious diseases. (Note: where producers have decided to manage Aleutian disease in their herd through the use of scientific tools [e.g. genetic selection], new breeding stock may be sourced from herds of similar health status)
- b. limit the frequency of new animal introductions and movements
- c. establish isolation areas away from the main herd to accommodate all new arrivals in accordance with the herd health plan
- d. implement isolation procedures for all new mink
- e. plan breeding, pelting and new animal introductions to allow certain parts of the facility to be empty of animals
- f. maximize downtime between animal groups on the premises and in housing areas; a two-week minimum is preferred
- g. establish a disease response plan that includes seeking a diagnosis and potentially farm lockdown, if required.

2.3 Operational Management

Management practices related to mortalities, manure, garbage, bedding, and pest management can all impact the health and welfare of mink on the farm.

Most pathogens survive for considerable amounts of time in carcasses. Bacterial and fungal agents will replicate and increase in numbers in carcasses. Rodents, flies, and other scavengers with access to carcasses can carry these agents over considerable distances across the farm and to neighbouring farms. All dead mink should be assumed to be contaminated, and handled to ensure that any potential disease causing agents are not spread to other mink on the premise or to other farms.

Prompt collection and containment of dead stock is imperative to minimize the health risk to other animals. Containment or temporary storage structures should be pest-proof and prevent environmental contamination of the premises with pathogens.

Manure may be a source of pathogens and must be handled to minimize contamination. Removing manure from mink sheds at frequent intervals (e.g. at the end of a production cycle, following an illness in the herd) can help minimize the risk of disease transmission. Manure should be handled, transported, and stored to prevent potential contamination of the area with pathogens and minimize pest and scavenger access. Manure storage should be located away from the mink housing area. Shed and site run-off should be controlled to minimize the spread of pathogens.

Soiled bedding can support the growth of some pathogens and pests, and result in exposing kits to high levels of pathogens. Bedding must be clean and dry to reduce the risk of compromising mink health.

Pests can carry pathogens onto a farm. Pests include insects, rodents, and wildlife. Integrated pest management programs can help to control pests on the farm. Pets can be a vector for carrying and spreading pathogens; therefore, pet access to the farm should be limited.

Sanitation plays an important role in the health and welfare of mink. Cleaning sheds, pens, and nest boxes on a regular schedule, at the end of the production cycle, and after illness, reduces the risk of spreading pathogens on the farm. Maintaining clean and tidy buildings reduces the likelihood of attracting pests. Vehicles should be maintained in a clean state. If vehicles are exposed to environments where the risk of vehicle contamination is high (e.g. where pathogens are likely to occur like other live mink, manure), the vehicles should be cleaned and disinfected before returning to the farm.

REQUIREMENTS

Farms must implement procedures for managing manure, mortalities, carcasses, and other waste to ensure all waste is collected, stored, and disposed of in a biosecure manner and in accordance with all applicable regulatory requirements. Please refer to Section 4.3 - Veterinary Care/Health Management and Section 4.4 - Sick or Injured Animals for additional information on mortality and carcass management.

Bedding must be obtained and stored to minimize the risk of contamination with pathogens.

Farms must have an integrated pest management program in place.

Sanitation protocols for premises, buildings, equipment, staff hygiene and vehicles must be implemented.

RECOMMENDED PRACTICES

- a. minimize pet access to the mink housing area and ensure pets allowed on the premise are vaccinated and in good health
- b. design new buildings and equipment to allow appropriate cleaning and disinfection.

3 Feed and Water

3.1 Nutrition

Mink are carnivores and have a higher demand for protein and fat than most other livestock. Mink production is seasonal, so nutrient requirements vary considerably throughout the year. Temperature can affect the nutritional needs of mink. During periods of extreme cold, mink will need to consume more feed to maintain their body condition. Conversely, during periods of heat, feed intakes may decrease, sometimes requiring higher density diets to be fed to meet the needs of the mink. The time of year can affect what ingredients are appropriate. It is important that people raising mink understand the nutrient requirements of the mink and the seasonal availability and acceptability of ingredients in order to establish a nutritionally-balanced feeding program that meets the minks' needs. Nutritionists, feed consultants, or veterinarians can serve as a valuable resource to help producers.

Welfare and productivity are highest in breeders when they are managed to maintain an ideal body condition throughout the year (3) (refer to Appendix A - Body Condition Scoring for Mink). Proper nutritional and body condition management helps to prevent or manage metabolic diseases. Feeding programs should focus on minimizing fluctuations in body condition. In order to optimize the condition of the mink, feed or caloric intake may have to be adjusted.

REQUIREMENTS

All mink must have access to sufficient quantities of nutritional feed which meet their physiological needs.

Farms must monitor body condition score regularly to ensure appropriate feeding levels (refer to Appendix A - Body Condition Scoring for Mink).

Pens of mink that are over- or under-conditioned must be marked so the mink may be monitored more closely and fed accordingly.

RECOMMENDED PRACTICES

- a. consult a nutritionist, feed consultant, or your herd veterinarian to develop a nutritionally-balanced feeding program
- b. establish consistency among individuals doing body condition scoring.

3.1.1 Breeding Mink

Breeding animals have the highest welfare and productivity when they are maintained at an ideal body condition score (3).

Females that have previously whelped should be kept on a maintenance diet outside of the period from pre-breeding through lactation to minimize fluctuations in body condition and related health and welfare challenges (3).

Feeding strategies for achieving maintenance levels can either require a decrease in the nutrient density of the diet or require a reduced daily allotment (restrictive feeding). Using a conditioning diet which is lower in protein and fat, higher in carbohydrates, and contains digestible fibre to increase gut fill can reduce the risk of over-conditioning the mink, and can be offered in sufficient intake to avoid challenges associated with hunger and stereotypic behaviour. This is an ideal option where possible; however, mixing and feeding two different diets is often not practical on-farm, so in many cases, daily allotments for breeders must be reduced to avoid over-conditioning.

As discussed in the section on growing mink (3.1.4), new breeders are fed like pelters until breeders are selected. It is; therefore, best if breeders can be selected as early as possible and fed to achieve ideal body condition.

Dietary changes during breeding or gestation can affect mink health and reduce reproductive success. Nutritionists and veterinarians are valuable resources for producers to consult regarding nutritional changes/concerns.

Breeding males should be fed to remain in ideal body condition throughout the year. During the pre-breeding/breeding season the males have higher energy demands and body condition should be monitored closely and feed adjusted if changes in condition are observed.

REQUIREMENTS

Feeding programs must aim to condition breeders appropriately while avoiding the need for significant dietary adjustment.

All males must be monitored very closely during the breeding season for loss of condition.

3.1.2 Gestation

Pregnant females require adequate nutrients to support fetal growth (9).

For optimal reproductive results and to avoid welfare issues associated with under/over-conditioned mink and metabolic disease concerns, the breeding herd should be in ideal body condition score at breeding (10) (see Appendix A - Body Condition Scoring of Mink). Body condition scoring is a very useful management tool, but, it is important for producers to remember that it is a subjective measure. For best results and the ability to compare year over year, the same people should assess body condition each year at the same time of the year.

To ensure good productivity and welfare of the females, they should be fed to maintain an ideal body condition score during gestation.

Feeding and nutritional management during breeding and pregnancy are important to reproductive success and therefore, the health and welfare of both the female and the litter. Feeding high quality feed during this time will help to reduce the challenge to the female's immune system and the incidence of health problems (e.g. salmonella, campylobacter and metritis) (9).

REQUIREMENTS

Females must be fed to maintain an ideal body condition score throughout gestation.

Only highest quality ingredients must be used during gestation.

RECOMMENDED PRACTICES

- a. unconsumed feed should not be redistributed to other mink during gestation.

3.1.3 Lactation

Kits are entirely dependent on milk to meet their nutrient requirements until about four weeks of age. This places high demands on the female to be able to meet her nutrient needs while nursing the litter. After four weeks, the kits need solid feed in addition to their mother's milk to meet their needs. By about the fourth week of lactation females will be at maximum feed intake, and, therefore, begin to use body reserves to sustain milk supply. To maintain the welfare of the female, it is important to feed a high-energy diet according to the feeding program throughout lactation.

Females will lose condition during lactation. To minimize potential negative impacts on the female, it is important to try to minimize this loss as much as possible. Females who lose more than 30% of their body weight during lactation are more prone to nursing sickness (9).

Encouraging kits to consume solid feed will help reduce the demands on the female and will help kits adapt to solid feed before weaning. This will minimize the risk of health and welfare challenges to the mother and to the litter post-weaning. The kits' digestive tract is not fully developed until about ten weeks of age; therefore, the kits are not capable of digesting some ingredients before that age. Diets fed during the latter third of lactation (when the kits have started consuming solid feed) must contain highly digestible ingredients to encourage kits to eat.

High temperatures will limit the female's feed intake, which can cause increased demands on her body reserves to meet the milk production needs. Feeding high-energy diets will maximize the feed energy available for milk production and help reduce the need to rely on body reserves to meet lactation demands.

REQUIREMENTS

Feeding programs must focus on maintaining body condition of females and promote lactation.

Lactation diets must be high energy and use the highest quality ingredients.

Feed must be placed so the female and the kits have access to it (e.g. on the nest box lid).

All lactating females and litters must be observed daily during lactation for behaviour and feed intake; take prompt steps to address poor consumption.

Feed intakes must be monitored at least daily and the feeding program adjusted to compensate for intake lowering factors (e.g. high temperatures).

RECOMMENDED PRACTICES

- a. feed multiple times a day (2 – 4) to maximize feed freshness and encourage feed intake
- b. use highly digestible ingredients for diets in the latter part of lactation.

3.1.4 Growing Mink

Nutritional or metabolic problems during growth and furring can reduce growth rates and kit well-being, or cause kit mortality (9).

Weaning is a time of high stress and great change. The post-weaning period is also a time of very rapid growth, which lasts for approximately 10 – 11 weeks. It is imperative that the growing mink have access to adequate quantities of a diet formulated to meet their nutritional needs. Feeding multiple times a day can help keep feed fresh and encourage appetite. During this stage mink are also very sensitive to diet changes, which can lead to upset digestion and feed refusal. This period coincides with summer months and so feed hygiene is of the utmost importance to ensure the well-being of the mink and avoid health problems like diarrhea (see Section 3.2 - Feed Management for more detail).

Melatonin use has been shown to alter the weight gain and feed intake patterns. Providing implanted mink with increased feed allowances during late summer and early fall will help support the altered growth pattern (3).

During the latter part of the growth and furring phase (late August – pelting) body growth will slow and the mink will begin to deposit fat. This period is critical for fur growth and development, so it is important to closely monitor body condition to help prevent the welfare challenges caused by over-conditioning leading into the breeding season.

Breeders are often not selected until near pelting time. This means that feeding programs during this period are at cross-purposes:

- pelters are generally fed to appetite
- breeders should be fed to maintain ideal body condition.

Selecting breeders as early as possible and identifying them so their feed intake can be managed to body condition will help reduce the need to correct for over-conditioning during the pre-breeding period.

REQUIREMENTS

Feed management strategies must be adjusted to meet intake needs for altered growth patterns associated with melatonin use.

Breeders must be selected as early as possible to better manage feeding strategy for individual breeders.

Changes to diet composition must be managed to ensure continued feed intake.

RECOMMENDED PRACTICES

- a. feed multiple times a day post-weaning to encourage intake and maximize freshness
- b. weigh a sample of kits at weaning and at the end of August to assess feeding program effectiveness.

3.2 Feed Management

Feed management practices on the farm affect the feed's quality and palatability; and therefore, influence mink health and welfare. The nutritional needs of mink can be met with wet feed or commercial pelleted feed. Wet diets are commonly mixed in on-farm feed kitchens or purchased fresh from central feed kitchens.

REQUIREMENTS

Mink must receive a diet appropriate for maintaining health and vigour at all stages of their production cycle.

3.2.1 Feed Quality (Ingredients)

Mink feed is comprised largely of animal products, animal by-products, cereal, and a mineral/vitamin premix. Producers should develop working relationships with suppliers to ensure incoming products meet the farm's standards for quality. Ingredients should be tested for nutritional value (e.g. protein, fat content) and the results used to formulate diets that meet the nutritional requirements of the mink.

Animal products and by-products are especially susceptible to contamination and spoilage; these products must be handled and stored appropriately to preserve their quality. In order to ensure quality, feed ingredients must be periodically tested for bacterial counts. Only ingredients meeting quality and bacterial specifications should be used for making mink feed.

Procedures for receiving, testing, preserving, and storing ingredients on farm must be developed and implemented to ensure that the quality of the ingredients is maintained. Veterinarians or technical representatives from nutrition companies can serve as valuable resources in helping to establish these protocols.

REQUIREMENTS

Feed preparation facilities must have procedures in place to ensure feed quality.

Feed preparation and storage areas must have a pest control program in place.

Feed ingredients must be tested for nutritional value and bacterial counts.

Complete mixed feed must be tested for nutritional value and bacterial counts (see Appendix B - Feed Testing Laboratory Contacts).

RECOMMENDED PRACTICES

- a. retention samples should be taken for every batch and retained (frozen) until the feed is consumed and satisfaction with animal performance on that feed has been determined
- b. develop and maintain a working relationship with ingredient/feed suppliers.

3.2.2 Feed Storage and Preparation

Feed storage, preparation, and handling procedures are critical to ensuring feeds are uniform and consistent, and quality is maintained until the mink consume the final diet (11). Feeding feed that is of compromised nutritive value can adversely affect mink health and welfare.

Ingredients requiring cold storage (refrigeration or freezing) should be moved into the mixing area only as needed to minimize the opportunity for microbial growth and spoilage. Grinding ingredients that are still partially frozen reduces the risk of spoilage. Feed should be mixed as soon as possible after grinding.

Under proper conditions, fresh mixed feed (whether purchased from a central feed kitchen or mixed on farm) can be safely stored only for limited periods of time. If extended mixing intervals are used (e.g. three mixes a week), feed must be preserved. The age of all mixed feed should be monitored. Commercial pelleted feed has an identified expiry date for every batch. The pelleted feed should maintain its nutritional quality until that expiry date if stored as outlined by the manufacturer.

REQUIREMENTS

Farms must have sufficient and appropriate feed storage to ensure feed quality.

Standard operating procedures relating to hygiene in feed preparation areas must be in place.

Feed consistency must be appropriate to ensure mink have ready access to feed.

Feed preparation equipment and area must be cleaned after each use and sanitized regularly.

Individuals involved with feed preparation must receive appropriate training.

RECOMMENDED PRACTICES

- a. establish a preventative maintenance program for feed mixing and delivery equipment.

3.2.3 Feed Distribution

Practices related to feed distribution could have an impact on animal welfare.

Vehicles used to deliver or pick up feed from central feed kitchens or commercial mills can be vectors for spreading pathogens among farms. When vehicles, including feed and ingredient delivery vehicles, enter or leave the farm, biosecurity protocols must be followed.

To ensure mink receive sufficient feed to maintain health and vigour, it is important they receive feed at least daily. Feed delivery systems must be in place to ensure timely distribution of high quality feed to all mink on the farm. Wet feed delivery carts must be washed and sanitized regularly.

Feed must be placed such that the animals can access it easily. Removing unconsumed wet feed prior to feeding fresh feed is recommended to minimize health risks due to spoilage. Feed hoppers for dry feed must be positioned for ease of access by the mink.

To minimize spoilage and waste feed accumulation, it is important that feeding allotments are adjusted to meet intake.

REQUIREMENTS

Mink must have access to sufficient feed at least daily.

Feed consumption must be monitored to ensure mink are consuming adequate quantities to meet targeted body condition.

Biosecurity practices relating to entry procedure (as outlined in Section 2 - Biosecurity) must be applied to all feed related deliveries coming on farm.

Feed carts used to deliver wet feed must be washed and sanitized regularly.

Hoppers for dry feed must be maintained to ensure feed quality and accessibility.

3.2.4 Unconsumed Feed

Unconsumed wet feed must be monitored each day for spoilage since the consumption of spoiled feed can cause health problems in mink (12).

REQUIREMENTS

Wet feed must be monitored each day for spoilage and spoiled feed must be removed from the wire before providing fresh feed.

Waste feed must be disposed of frequently in accordance with the waste management plan.

RECOMMENDED PRACTICES

- a. spreading unconsumed feed from pen to pen is not recommended because it increases the risk of pathogen transfer
- b. consult and follow all applicable regulations for disposal of feed products.

3.3 Water Management

Providing sufficient good quality drinking water is essential for the welfare of farmed animals (13). Mink require access to good quality drinking water to meet their physiological needs.

3.3.1 Water Quality

Good quality water is essential for normal metabolism (14). The quality of the water delivered to the animals is dependent on the quality of the source water, and the design and condition of the watering system. Water supply can be a source of pathogen contamination. Surface water (i.e. lakes, rivers, ponds and brooks) has a high risk of contamination and should not be used unless treated. Water quality should be assessed with samples taken at source and near the end of the delivery system (15).

In extreme temperature conditions water must be supplied more frequently to meet their needs.

REQUIREMENTS

Mink must have sufficient access to good quality water to meet their physiological needs.

Water must be tested for nutrient and bacterial quality at least annually, or as conditions require, both at the source and at a point near the end of the delivery system.

Where surface water is used as a source, it must be treated and tested frequently after treatment.

RECOMMENDED PRACTICES

- a. have an automated watering system that functions in all weather conditions
- b. use water from tested wells or municipal sources.

3.3.2 Watering Systems

Wet feed provides only a portion of a mink's water needs. Producers must provide drinking water to the mink to ensure their water needs are met.

Factors like environmental temperature, feed intake, feed composition, animal size, stage of production, and activity level can all affect water intake. Increasing water availability during periods of extreme heat is necessary to ensure the health and welfare of the mink.

Some water-borne pathogens can cause disease in mink (15). Watering systems can be a source of pathogens or bacterial contamination; therefore, cleaning and sanitation (1) and routine maintenance is necessary.

REQUIREMENTS

Watering systems must be checked daily to ensure they are functioning.

Watering systems must be maintained in hygienic conditions.

Farms must have an alternative watering system/plan in place as back up if the primary system fails to meet water requirements during periods of high demand, or if water quality issues arise.

4

Health and Welfare Management

4.1 Relationship of Animal Health to Animal Welfare

Animal health is one of the important measures for assessing animal welfare (16). Animal health and welfare are very complex, and are affected by many factors (17). Animal health can be impacted by nutrition, ventilation, housing, and management practices. Prevention and treatment of disease and injury, and the prevention and mitigation of pain, distress, and other negative states are recognized as good welfare practices (18). Careful daily observation of all animals is key to effective welfare management. All farm staff must be trained to recognize animal welfare issues and know what actions to take to address them. On-farm record keeping relating to health and mortality is essential. Detailed and accurate record keeping helps producers identify health issues early, and serves as an indicator of overall herd health status.

Prevention of health problems is always preferable to treatment. Adopting biosecurity protocols on-farm and implementing herd health management programs can help prevent pathogens from being introduced onto a farm and help mitigate the impact of diseases that are on the farm.

REQUIREMENTS

Mink must be observed daily for signs of health or welfare concerns.

A herd health program must be developed and implemented.

Producers must implement an on-farm biosecurity program that addresses the requirements outlined in Section 2 - Biosecurity of this Code.

RECOMMENDED PRACTICES

- a. encourage all farm staff to participate in continuing education activities related to animal health and welfare.

4.2 Stockmanship Skills Related to Animal Health and Welfare

On-farm management practices significantly affect animal health, animal welfare, and production. Best management practices are only effective tools for managing animal health, maintaining good animal welfare, and achieving high production if they are well implemented.

Stockpeople working with mink should have a suitable temperament, be respectful of the mink, and be competent in the care and handling of mink. Farms should have work instructions or routines for all animal attendants to follow (19).

REQUIREMENTS

Daily routines must be structured so that mink have the opportunity to have regular visual contact with humans.

Best management practices relating to the health and welfare of mink must be in place.

Stockpeople working with mink must be trained in and apply best management practices.

Documentation relating to training and competence of stockpeople must be maintained.

Stockpeople must be trained to:

- **properly handle and care for mink**
- **recognize signs of illness, injury or pain**
- **understand mink behaviour and recognize the significance of changes in behaviour**
- **appreciate the suitability of the total environment for mink health and welfare**
- **promote positive interaction between mink and humans.**

RECOMMENDED PRACTICES

- a. select quiet, confident mink as breeders.

4.3 Veterinary Care/Health Management

Animal health is a reflection of animal welfare. Animal health can be impacted by many factors including nutrition, housing, and biosecurity practices. Disease prevention, early detection, and rapid treatment of disease, illness or injury are critical to maintaining the health of the mink. Veterinarians are an important resource for helping producers establish and implement effective herd health programs. There are few veterinarians who have training or experience working with mink; however, there are resources available:

- diagnostic laboratories (see Appendix C - Provincial Veterinary Diagnostic Laboratories)
- veterinary colleges
- veterinary clinics
- consultants.

The herd veterinarian should be consulted in the development of on-farm biosecurity and herd health programs, provide information and access to medications as required, and provide advice and direction on diagnosis and treatment of ill or injured animals. Herd health programs must be tailored to meet the needs of each individual farm and must consider the overall health status of the herd as well as the health needs of individual mink.

REQUIREMENTS

All producers must establish a valid veterinarian-client-patient relationship (VCPR).

All farms must have a herd health management plan, which includes:

- **daily observation of all mink**
- **a mink identification system**
- **a record keeping system for documenting health related information**
- **vaccination protocols for all mink on the farm**
- **a protocol for tracking trends in mortalities**
- **a requirement to contact the veterinarian if mortalities increase and cannot be explained**
- **a biosecurity program (see Section 2 - Biosecurity for more detailed biosecurity program requirements and recommended practices).**

4.4 Sick or Injured Animals

Providing sick or injured mink with comfort, appropriate care, and/or euthanasia are priorities for good animal welfare. An effective health management program will help with early identification of individual mink that are in pain, sick, or injured and will have established procedures for treating or euthanizing those animals. An effective herd health program will also monitor herd health and performance to help with early identification/diagnosis of any herd health issues or disease outbreaks.

Most federally reportable diseases do not affect mink. Veterinarians and laboratories must immediately report the suspicion of a reportable disease in an animal to a CFIA veterinary inspector.

REQUIREMENTS

Accurate and detailed individual animal and herd health and treatment records must be maintained.

Stockpeople working with mink must be trained to recognize when mink are sick, injured, or in pain.

Mink that are exhibiting clinical signs of illness, injury, pain, or suffering must be provided with immediate medical care or be immediately euthanized when treatment is not appropriate.

If it is determined that mink exhibiting clinical signs of illness, injury, pain, or suffering are not responding to treatment, the mink must be euthanized immediately.

Individuals administering care to or euthanizing mink must be trained and competent.

Appropriate authorities must be advised of any suspected or confirmed cases of a reportable disease.

RECOMMENDED PRACTICES

- a. consult with a herd veterinarian regarding treatment
- b. monitor sick, injured, or recovering animals at least twice daily
- c. ensure sick animals are segregated, or pens with sick animals are marked for observation.

5 Husbandry

5.1 Animal Handling

All mink should be handled in a calm and gentle manner to minimize agitation or other forms of stress (20). All stockpeople handling animals must be trained in mink behaviour and proper handling techniques. Maintaining a calm, quiet atmosphere and being organized when handling mink will help to minimize stress.

Released or escaped mink are a risk to the health and welfare of the entire herd, neighbouring herds, and wild-life. Measures to prevent escapes, such as closing doors (if in an otherwise enclosed shed), can help to minimize the risk of mink escaping. Using small carrying crates if mink need to be transported any distance on the farm (e.g. between sheds) will reduce the chance of injury and accidental escape.

Mink are very aware of activity around them and have a tendency to be fearful of unfamiliar activities/noises. Following routines and schedules for completing daily tasks helps to habituate the mink to the activities and stockpeople, and reduces the fearfulness of the mink.

REQUIREMENTS

Stockpeople handling mink must be trained in mink behaviour and proper handling techniques.

Mink must be handled in a manner that minimizes stress.

Mink must be supported by the body when being carried.

Pressure on the abdomen must be avoided when handling mink, especially in pregnant females.

Handling females during the first 30 days following breeding must be avoided; utmost care must be used if handling is required in later gestation.

Where box/cage traps are used to catch escapees on farm, they must be checked at least twice daily.

RECOMMENDED PRACTICES

- a. maintain consistent work routines and schedules to help create familiarity for the mink
- b. use a carrying crate if mink need to be transported even short distance on the farm.

5.2 Breeding Period

In addition to fur quality and production traits, breeder selection should concentrate on health and temperament (21) to improve overall herd welfare. Accurate records, which include information relating to health, welfare, and production traits, can help meet breeding program objectives.

Pairs placed together for mating must be observed carefully so the mink can be separated if necessary to reduce the chance of injury from aggressive behaviour.

If a locked pair needs to be separated, it is important to use proper techniques to avoid causing injury to the mink (22).

Stockpeople must be trained in mink behaviour, handling, and reproduction. Observing each mating for success and keeping accurate records of all matings will help with meeting breeder selection program objectives.

REQUIREMENTS

All mating pairs must be carefully observed and promptly separated if overly aggressive behaviour occurs.

Proper technique must be used if it is necessary to separate mating pairs. The proper technique is to place a hand on the back of the male and wait for him to release the female.

Traits related to health, welfare, and temperament must be considered as part of breeder selection programs.

The feed allowance must be increased for mink that are overly aggressive during this period.

5.3 Whelping and Lactation Period

Females have a very strong nesting instinct and will build nests starting in the latter part of gestation. Providing a nest box that is warm, dry, and draft-free, with suitable bedding material, will help to minimize stress on the female, kit loss, and skin irritations (see Section 1.2.3 - Nest Boxes and Section 1.2.4 - Bedding for more detail). Bedding derived from trees that contain harmful resins (e.g. pine or cedar) can irritate kit skin and cause kit mortality.

Whelping is a sensitive time for female mink. Any unusual disturbances or stress for the females can have detrimental effects on the female and/or litter welfare, including parturition effects (e.g. prolonging the whelping process) and increased kit mortality. Consistent routines and familiar stockpeople will help to reduce these potential negative impacts. Leaving nests and litters undisturbed as much as possible is optimal. Disorganized nests should be fixed or reorganized as soon as possible (e.g. cleaning out any soiling, adding/replacing bedding, fixing any damage). Soiled nest boxes can lead to infections in the mammary glands, which negatively impacts female health and kit welfare.

The majority of kit losses occur in the first three days post-whelp. Malnutrition/dehydration and hypothermia are major causes of kit loss in mink (23).

Litters that are not thriving and growing well require further investigation. In such cases, the female should be examined to determine the number of and condition of nipples, and the level of milk production. Fostering kits is sometimes necessary to promote health and welfare for both females and kits.

Females can lose significant body condition during lactation; adjusting the energy content and quantity of feed can help reduce the loss (for more information on feeding practices see Section 3.1 - Nutrition). Transitioning the kits to feed and water as early as possible can help to reduce the demands on the female (9).

Overcrowding, poor environment, stress and poor nutrition can lead to cannibalism (22).

Records relating to whelping date, number of kits born, kits born alive and subsequent litter size at specified dates during lactation are important for breeder selection. Farms should have procedures outlining data that needs to be collected to help improve stock health, welfare and breeder selection.

REQUIREMENTS

Nest boxes must be maintained clean, dry and draft free.

Nest boxes must have adequate amounts of suitable bedding material for females and their litters throughout the whelping/lactation period.

During whelping and lactation, mink must have access to a nest box with adequate quantities of a suitable bedding material (e.g. shavings, chopped straw, hay).

During whelping, shavings and/or sawdust with resins (e.g. pine, cedar) that can irritate the kits' skin must not be used.

False bottoms/floors must be provided prior to whelping and during early lactation to prevent kits from falling through the pen bottom.

False bottoms/floors must be removed as soon as kits are large enough to move around the pen without injury or discomfort.

A good record keeping system for tracking reproductive performance and behaviour-related performance must be in place.

All females and litters must be monitored and prompt action taken if there appear to be any health or welfare concerns.

A procedure for kit fostering must be developed and implemented.

Chilled kits must be warmed with an external heat source.

Kits from females that consistently leave them in the cold or out of the nest box must be fostered.

Water and feed must be made accessible to the kits as appropriate for their stage of development.

RECOMMENDED PRACTICES

- a. pack nest box corners with bedding during the whelping period to minimize kits getting “lost”; use a bedding material that promotes a “bowl” shaped nest to maintain a better nursing environment and to assist with thermoregulation
- b. consider the importance of colostrum intake when fostering newborn kits (e.g. by fostering to a female that has whelped in recent hours if available).

5.4 Weaning

Weaning is a time of great change for both the female and the kits. These changes create social and physical stress for the mink. Weaning should be done at a time that is most beneficial for the welfare of the female and the litter (20). The kits need to be able to consume solid feed and drink water to be ready for weaning. Weaning time will depend on litter size, the individual litter, and female performance, but generally occurs between 6 - 10 weeks of age.

The weaning strategy should accommodate kits being initially housed in pairs or multiples (with littermates, where possible) as this has been demonstrated to promote welfare.

REQUIREMENTS

Farms must have weaning and separation strategies in place that consider the health and welfare implications of the time of weaning, geographic location, climatic conditions and housing.

6

Euthanasia

6.1 Methods

Euthanasia means a rapid and irreversible loss of consciousness with minimal discomfort to the animal (3).

The American Veterinary Medical Association (AVMA) recognizes carbon monoxide (CO) as an approved method of euthanasia for mink. CO of at least 4% concentration causes rapid loss of consciousness followed by death and is the preferred method of euthanasia for mink (3). CO must be supplied in a precisely regulated and purified form without contaminants or adulterants, typically from a commercially supplied cylinder or tank. The direct application of products of combustion or sublimation is not acceptable due to unreliable or undesirable composition and/or displacement rate. As gas displacement rate is critical to the humane application of CO, an appropriate pressure-reducing regulator and flow meter combination or equivalent equipment with demonstrated capability for generating the recommended displacement rate for the size container being utilized is absolutely necessary (24). For these reasons CO from a compressed cylinder must be used on all Canadian farms

REQUIREMENTS

Establish written euthanasia protocols for the farm that include euthanasia chamber-charging levels and times; input and removal process for the optimum number of mink; length of time to be in the euthanasia chamber; and confirmation of death.

All personnel involved in euthanizing mink must be properly trained and competent.

All applicable health and safety regulations and requirements must be followed when using CO.

Euthanasia must induce rapid loss of consciousness followed immediately by death and cause minimal distress and pain.

Effective December 31, 2013, CO from a compressed cylinder must be used for euthanizing mink on farm.

Equipment and regulators must be checked to ensure gas is being delivered to the euthanasia chamber to achieve and maintain at least a 4% concentration.

Euthanasia chambers must be tightly sealed.

Mink must remain in the euthanasia chamber until death.

RECOMMENDED PRACTICES

- a. consider the periodic use of testing devices to monitor CO gas concentration and temperature inside the euthanasia chamber.

6.2 Evidence to Confirm Death

Death is defined as “the irreversible loss of brain activity demonstrated by the loss of brain stem reflexes” (25). The death of each mink must be confirmed immediately following euthanasia; generally this is done through the absence of vital signs.

The absence of vital signs that indicate irreversible loss of brain activity must be defined so that this can be properly determined by farm personnel. These include:

- absence of all movement for at least five minutes
- absence of a heartbeat and pulse for at least five minutes
- lack of breathing for at least five minutes
- fixed, dilated pupil
- absence of all reflexes including the corneal reflex (i.e., no blinking when the eyeball is touched).

REQUIREMENTS

Each mink must be confirmed dead immediately following euthanasia.

Death must be confirmed by determining the:

- ***absence of all movement for at least five minutes***
- ***absence of a heartbeat and pulse for at least five minutes***
- ***lack of breathing for at least five minutes***
- ***fixed, dilated pupil***
- ***absence of all reflexes including the corneal reflex (i.e., no blinking when the eyeball is touched).***

7

Transport

NOTE: The compulsory federal requirements for animal transport are covered under the Health of Animals Regulations (Part XII) as enabled by the Health of Animals Act. The Canadian Food Inspection Agency (CFIA) enforces the regulation with the assistance of other federal, provincial, and territorial authorities. Some provinces and territories also have additional regulations applicable to animal transport. The International Air Transport Association (IATA) Live Animal Regulations govern air transport.

The Transportation Code of Practice is intended as a reference document for the actual transport process for all livestock beyond the farm gate. The Transportation Code and the Mink Code of Practice are meant to complement each other. The Mink Code's primary focus is on the planning and preparation of transport for the entire process yet the physical processes would end at the farm gate. The Transportation Code and regulations cover transportation from the farm gate to the destination.

The existing Transportation Code (2001 release) references the Mink Code for information regarding mink transport. The Transportation Code will be revised to include more species-specific information for mink. It is important that the Mink Code and the Transport Code are used in concert to ensure all aspects of mink welfare are addressed throughout the transportation process.

Each person responsible for transporting animals in Canada, or arranging for their transport, must ensure that the entire transportation process (including loading, transit, and unloading) does not cause injury or suffering to the animals.

7.1 Pre-Transport Decision Making

Under the federal *Health of Animals Regulations, Part XII*, the party responsible for causing the animals to be loaded/transported (e.g. the producer) and the party that is loading/transporting the animals (the transporter) each bear a responsibility for ensuring the welfare of those animals during the transportation process.

If the producer is arranging for the animals to be transported by a second party (the transporter), the producer is responsible for ensuring the transporter is aware of the welfare requirements of the animals and that the transporter will take the necessary measures to administer to the animals' needs (e.g. feed, water and ventilation) during the transportation process.

Therefore, the responsibility for ensuring that animals are fit for transport lies with the party that is having the animals transported and the transporter of the animals.

To assess fitness for transport those responsible for arranging transport need to be aware of how long the animals may be in transit. If uncertain on the length of the trip, always assume the longest travel which might occur. Transit time includes intermediate stops (e.g. rest stops, border crossings, or airport handling times). The transporter needs to be informed when and what additional services (e.g. feed, water) need to be provided during transport.

7.1.1 Fitness for Transport

Producers have the primary responsibility for determining if an animal is fit for transport. Transporters have the right and responsibility to refuse to load an animal that they recognize as unfit.

There are two categories for defining animal fitness for transport: fit and compromised. Compromised animals may be further divided into those that may be transported with special provisions and those that are unfit for transport:

- a. Fit
- b. Compromised
 - I. Compromised with Special Provisions
 - II. Unfit

A fit animal is one that is deemed to be able to withstand the stress of the intended journey.

A compromised animal is an animal with reduced capacity to withstand the stress of transportation, due to injury, fatigue, infirmity, poor health, distress, very young or old age, impending birth, or any other cause.

Compromised with special provisions: some compromised animals can be transported under certain conditions (special provisions) without being exposed to additional suffering. These animals must only be transported locally and directly to the nearest suitable place where they can receive care and attention or be euthanized.

Unfit animals: a compromised animal that cannot be transported without undue suffering. This includes any condition associated with pain that will be aggravated by transport even with special provisions. On the advice of a veterinarian, an unfit animal may be transported for veterinary treatment or for diagnosis.

For unfit animals that cannot be transported in their current state, the transport must be delayed until the animal is fit for the trip and the animals must be provided with appropriate health interventions or be euthanized (26). (Refer to Section 6 - Euthanasia).

Some examples of conditions rendering animals:

- I. Unfit for transport (except for transport for veterinary treatment or for diagnosis)
 - a. an animal that is unable to walk
 - b. an animal with a fractured limb
 - c. an animal that is in shock or dying
 - d. an animal that is dehydrated
 - e. an animal that is exhausted
 - f. an animal that is emaciated
 - g. an animal with a fever.
- II. Transport only with Special Provisions (must be transported locally and directly to the nearest suitable place where they can receive care and attention, or be humanely slaughtered or euthanized)
 - a. an animal with an open wound
 - b. an animal that is lame
 - c. an animal that has a vaginal or rectal prolapse.

Additional information on animal transport can be obtained at: www.inspection.gc.ca.

REQUIREMENTS

Every animal must be assessed for travel fitness before being transported.

Unfit mink cannot be transported except for veterinary treatment or for diagnosis.

Compromised mink which can be transported with special provisions must only be transported locally and directly to the nearest suitable place where they can receive care and attention or be euthanized.

7.1.2 Planning and Preparing for Transport including Loading and Unloading Considerations

To minimize shipping stress, it is imperative that all aspects of a shipment are planned ahead to try to avoid any unnecessary delays in arriving at the final destination.

Transporting mink during extreme weather conditions should be avoided. Consideration must be given to ensuring adequate airflow and comfort for the mink relative to anticipated weather conditions and duration of transport.

The greatest risk to mink during transport is heat stroke, which can lead to rapid dehydration, shock and death. Both crate design and load configuration can impact mink welfare because they affect airflow, temperature, mink comfort, exposure of mink to the elements and waste management.

REQUIREMENTS

All applicable regulations and requirements must be adhered to.

Producers must ensure all necessary documentation is prepared and that required stops are pre-arranged to avoid unnecessary delays. This is especially important for international transport, which can add complexities such as: health certifications, additional documentation, border inspections and special provisions (e.g. water, air conditioning).

The producer must select a reputable transporter and must plan the trip details, making allowances for unexpected delays and planning for contingencies.

If kits are to be transferred between farms sites with more than one kit per compartment, the transfer must:

- ***occur prior to August 1st***
- ***be three hours or less in duration and***
- ***meet the applicable principles outlined below.***

Mink must be individually housed during transport except in the case of kits, as noted above. All transport crates must be designed:

- ***to ensure adequate airflow for mink in each compartment within the crate***
- ***to ensure structural soundness and securely confine mink without risk of injury***
- ***to allow for provision of feed and water***
- ***to ensure sufficient space for the mink to lie comfortably, turn around without restriction, and stand on all four legs***
- ***so they are not oversized, as larger crates may increase risk of injury***
- ***to allow for waste management***
- ***to prevent accidental opening or escape but still allow easy access when needed (e.g. in an emergency situation)***
- ***to prevent contact between the mink.***

Transport crates for ground transport must, at a minimum, meet the following size requirements:

Female Length x width x height	Male Length x width x height
15in x 7in x 7in (38cm x 17cm x 17cm)	15in x 8in x 8in (38cm x 20cm x 20cm)

Transport vehicles must:

- *allow for adequate ventilation*
- *provide appropriate protection from the elements*
- *allow for adequately securing crates containing mink*
- *allow for waste management*
- *facilitate crate placement to prevent direct contact between the mink*
- *facilitate access to each mink for feeding, watering and inspection, etc.*

Mink must be placed into transport crates just prior to loading but allowing enough time to acclimate prior to shipping.

Mink must be adequately hydrated prior to transport particularly when transported during warm weather and when transport is of longer duration.

Mink must have access to water or a moisture pack if the duration of transport is expected to be longer than 24 hours.

Mink must have access to feed if the duration of the transport is expected to be longer than 36 hours.

Written feeding and watering instructions and contingency plans must be included with shipping documents and attached to crates in a manner such that the mink cannot access them.

Producers must ensure that mink will be monitored during transport.

Bred females must not be transported during early stages of gestation (until approximately day 35 after mating).

For air transport, the IATA regulations must be adhered to.

RECOMMENDED PRACTICES

- a. using brokers will greatly help to facilitate international shipping
- b. avoid transporting mink during hot weather
- c. avoid transporting unweaned kits.



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Body Condition Scoring for Mink

Body condition scoring is a subjective assessment of the amount of fat (condition) a mink has and if done properly it can be a useful tool for managing the feeding program. However, it requires skill and experience, and is most useful when done on a regular basis. When developing and implementing a body condition scoring system for your ranch, you should keep the following points in mind:

- There are various ways of assessing body condition, including visual appraisal and the use of fingertip or hand pressure to assess how difficult it is to feel the ribs, backbone, etc. Visual appraisal is the quickest and most convenient method, since it requires little or no handling of the mink. Using non-visual criteria can help improve your assessment of the mink's body condition, but will take more time and requires handling of the mink.
- Body condition scoring is very subjective and should be done using the same system, and if possible by the same person, each year. This helps provide some consistency among graders and across years.
- Some animals that appear to be fat may in fact be well muscled and in quite good condition. Individual body condition scores will also be affected by the amount of fur that the animal is carrying, and particularly by the amount of underfur. As you become experienced with a particular system you will be better able to account for the effects of muscling and fur density. Using the non-visual criteria in Table 1 can also help improve your assessments over a range of body types and fur densities.
- The visual evaluation of body condition should be an integral part of daily feeding chores so that problems can be quickly identified. However, detailed information on body condition should be collected for the entire herd at least once before the winter breeding period begins. Because body condition fluctuates naturally throughout the year this should be done at the same time or times each year.
- Approximately ninety percent of the herd should be in "ideal" body condition (Table 1) at breeding. As the breeding season approaches you will need to rely on a visual appraisal for the females, since handling at this time can disturb breeding performance. The males can be scored during the testicle check in January - February, to ensure they are in good condition for the breeding season.
- If you select and separate possible breeders in late August or early September this is the best time to condition score the keepers. Approximately 90% of the mink's frame growth will be completed at this point so the feeding regime can be adjusted before the animals start accumulating body fat.
- Body condition scoring can also be done during live grading (mid- to late November). At this time the animals will have already accumulated winter fat so the scores will be higher than if they are scored in August-September. The feeding regime will need to be adjusted so the mink are in the desired condition prior to the start of the breeding season.
- The body condition for each mink should be recorded so that problem animals or groups of animals can be identified and monitored. (The cages of animals targeted for increased or decreased feeding levels can be identified using coloured clothes pins or plastic tape). Individual mink that are consistently either over- or underconditioned and that have reduced breeding or lactation success should be culled from the herd.
- Having a written summary of individual scores can also give you an idea of the variation within your herd. If there is a lot of variation within the herd, you should avoid using blanket adjustments targeted to the herd average. Identify problem animals or groups of animals and make appropriate adjustments for these animals or groups. If variation in body condition continues to be a problem you will need to consult a veterinarian or fur specialist.



Body Condition Scoring for Mink (continued)

Table 1. Body condition scoring of mink using a five-point scale¹.

Body Condition Score ²	Description
Score 1 Very thin	<ul style="list-style-type: none"> • The mink has an emaciated appearance with decreased muscle mass. • The animal has a thin neck and a clearly V-shaped body. • There is no body fat and the stomach is sunk in. • Shoulder and hip bones can be seen and the ribs are easily felt.
Score 2 Thin	<ul style="list-style-type: none"> • The mink has a thin neck and a V-shaped waistline. • There is no subcutaneous body fat layer. • The shoulder and hip bones and the ribs can be easily felt.
Score 3 Ideal	<ul style="list-style-type: none"> • The mink has a slender neck and a straight body shape. • There is a slight amount of subcutaneous body fat. • The shoulder and hip bones and the ribs can be easily felt.
Score 4 Heavy	<ul style="list-style-type: none"> • The mink has a thicker neck and a pear shaped body. • The ribs are difficult to feel. • The shoulder and hip bones are covered by a moderate fat layer. • An abdominal fat pad is present.
Score 5 Obese	<ul style="list-style-type: none"> • The mink has a thick neck with a slight brisket and a full body shape. • The ribs are very difficult to feel. • The shoulder and hip bones are covered by a moderate to thick fat layer. • A fat pad is present in the abdomen and the tail. • Fat deposits can be seen in the limbs and the face.

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Appendix A: Body Condition Scoring of Mink, extracted from Mink Feeds and Feeding, Applied Feeding Guide and Mink Feed Ingredient Database, reprinted with permission from Kirsti Rouvinen-Watt (lead author)

¹ From Rouvinen-Watt and Armstrong (2002).

² The desired body condition score will fluctuate with the time of year and stage of production of the mink.



Feed Testing Laboratory Contacts

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Guelph, ON N1H 6T9
Phone: 800-265-7175 (toll-free)
Phone: 519-837-1600

Agriculture and Food Laboratory

Laboratory Services Division
University of Guelph
Guelph, ON
Phone: 519-823-1268 ext. 57243

Integrated Explorations Inc.

67 Watson Road South, Unit #1
Guelph, ON N1L 1E3
Phone: 519-822-2608

Maxxam Analytics

6740 Campobello Rd
Mississauga, ON L5N 2L8
Phone: 905-817-5754

Nova Scotia Department of Agriculture

Quality Evaluation Division
Laboratory Services - Analytical Laboratory
PO Box 550
Truro, NS B2N 5E3
Phone: 902-893-6565

Nova West Laboratory Ltd.

Laboratoire Nova Ouest Ltée.
40 Schoolhouse Rd., Grosses Coques, NS
PO Box 39, Saulnierville, NS B0W 2Z0
Phone: 902-837-5143

PEI Analytical Laboratories

23 Innovation Way BioCommons Park
Charlottetown, PE C1E 0B7
Phone: 902-620-3300

Stratford Agri Analysis

1131 Erie St. PO Box 760
Stratford, ON N5A 6W1
Phone: 800-323-9089 (toll-free)



Provincial Veterinary Diagnostic Laboratories

Newfoundland

Government of Newfoundland and Labrador
Animal Health Laboratory
Department of Natural Resources
308 Brookfield Road
St. John's, NL
709-729-6879
709-729-0323 (Vet Pathologist/Laboratory
Manager)

Nova Scotia

Nova Scotia Veterinary Pathology Laboratory
Nova Scotia Department of Agriculture &
Fisheries
Hancock Veterinary Building
65 River Road
Truro, NS
902-893-6540

New Brunswick

Veterinary Diagnostic Laboratory
Department of Agriculture, Aquaculture, and
Fisheries
850 Lincoln Road
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506-453-2666

Prince Edward Island

Diagnostic Services
Atlantic Veterinary College
University of Prince Edward Island
550 University Avenue
Charlottetown, PE C1A 4P3
902-566-0863

Quebec

Laboratory of Animal Epidemiological Quebec
3220 rue Sicotte
St-Hyacinthe, QC
450-778-6542

Ontario

Animal Health Laboratory
Laboratory Services Division
University of Guelph
Building 89, NW Corner Gordon/McGillvray
Guelph, ON
519-824-4120 ext. 54530

Manitoba

Veterinary Diagnostic Services
Agricultural Services Complex
545 University Avenue
Winnipeg, MB
204-945-8220

Saskatchewan

Prairie Diagnostic Services
Saskatchewan Agriculture and Food
52 Campus Drive
Saskatoon, SK
306-966-7316

British Columbia

British Columbia Animal Health Centre
Animal Health Monitoring Laboratory
1767 Angus Campbell Road
Abbotsford, BC
604-556-3003



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Producer	Kirk Rankin (Chair)	Canada Mink Breeders Association
Producer	Catherine Moores	Canada Mink Breeders Association
Producer	Richard Scheves	Canada Mink Breeders Association
Producer	Daniel Mullen	Canada Mink Breeders Association
Producer	Jonathan Mullen	Fur Farmers of Canada Marketing Association
Animal Welfare	Don Mitton	Canadian Federation of Humane Societies
Animal Welfare	Jim Bandow	Canadian Association for Humane Trapping
Animal Welfare Enforcement	Leo Muise	Nova Scotia Department of Fisheries and Aquaculture
Industry Expert	Rob Cahill	Fur Institute of Canada
Industry Expert	Herman Jansen	
Canadian Food Inspection Agency	Daniel Schwartz DVM	
Agriculture Agri-Food Canada	Brian Goldsworthy	
Canadian Veterinary Medical Association & Mink Scientists' Committee	Gord Finley DVM DDP	
Technical Expertise	Brian Tapscott	Ministry of Agriculture and Food and the Ministry of Rural Affairs
Canadian Veterinary Medical Association	Bruce Hunter DVM (Nov 2010 – Oct 2011)	

Dr. Bruce Hunter was a strong supporter of the Codes of Practice and the importance of animal welfare in animal production systems. He believed that animal welfare was fundamental and an important collective responsibility; researchers, veterinarians, producers and even the public had important roles to play. Dr. Hunter was a member of this committee and contributed significantly up until his untimely passing in October 2011.

Farmed Mink Scientists Committee Members

Organization	Representative
Canadian Veterinary Medical Association	Gord Finley DVM DDP (Chair)
Canadian Society of Animal Science	Kirsti Rouvinen-Watt PhD (Vice-Chair)
International Society of Applied Ethology	Georgia Mason PhD Ed Pajor PhD
Research Writer	Brooke Aitken

The contribution of all participants is greatly appreciated!



Summary of Code Requirements

The following is a list of all the requirements within the Farmed Mink Code of Practice. Refer to the cited Code section for further context about the requirements.

SECTION 1 Accommodations and Housing

1.1.1 Location/Surrounding Area

- Mink farms must meet all applicable federal, provincial, and municipal land use regulations.
- Sites must have a sufficient supply of good quality drinking water to meet both the physiological needs of the mink and the on-site needs for cleaning and other farm activities.

1.2.1 Sheds

- Sheds must provide mink with protection from extreme weather conditions.
- Sheds must be designed to allow adequate space, light, and access for stockpeople to observe and care for the mink.

1.2.2 Pens

- All pens with multiple mink must be enriched with a hammock/shelf/platform by June 30, 2014; if a jump up/penthouse or drop in nest box is used, a shelf is not required as an enrichment.
- All pens must include a minimum of one manipulative enrichment by December 31, 2013.
- New Pens:

Table 1 – All new pens built or purchased must meet the following minimum requirements

Pen Density	Minimum Height	Minimum Width	Minimum Floor Space*
Single adult female	15in (38cm)	8in (20cm)	225in ² (1,451cm ²)
Single adult male	15in (38cm)	10in (25cm)	345in ² (2,225cm ²)
Single female with litter or with one juvenile	15in (38cm)	10in (25cm)	345in ² (2,225cm ²)
Single juvenile female	15in (38cm)	8in (20cm)	225in ² (1,451cm ²)
Single juvenile male	15in (38cm)	8in (20cm)	225in ² (1,451cm ²)
2 juvenile mink	15in (38cm)	10in (25cm)	345in ² (2,225cm ²)
More than 2 juvenile mink per pen	15in (38cm)	12in (30cm)	345in ² (2,225cm ²); Plus an additional 75in ² (483cm ²) per female, or 100in ² (645cm ²) per male for each mink above

cm = centimetres; in = inches; cm² = square centimetres; in² = square inches

* Minimum floor space – the area of a mink pen which can be used by the mink; it includes shelf/platform/hammock, but does not include the area of nest box (regardless of type of nest box).

- All new pens must also meet the following requirements:
 - If lowering the feed strip, the lowered portion of the pen must have a minimum height of 12in (30cm), and extend a maximum of 10in (25cm) into the pen.
 - By August 1st of each year, all non-littermates must be housed in accordance with the density and pen size requirements for juveniles stated above.
 - By September 1st of each year, all littermates must be housed in accordance with the density and pen size requirements for juveniles stated above (Table 1).



Summary of Code Requirements (continued)

- Transitioning from Existing Pens:

Table 2 – All existing pens that meet the following requirements may be used for the lifetime of the pen. Replacement pens must meet the pen size requirements in Table 1.

Pen Density	Minimum Height	Minimum Width	Minimum Floor Space*
Single adult female	14in (35cm)	8in (20cm)	202in ² (1,303cm ²)
Single adult male	14in (35cm)	8in (20cm)	311in ² (2,006cm ²)
Single female with litter or with one juvenile	14in (35cm)	10in (25cm)	311in ² (2,006cm ²)
Single juvenile female	14in (35cm)	8in (20cm)	202in ² (1,303cm ²)
Single juvenile male	14in (35cm)	8in (20cm)	202in ² (1,303cm ²)
2 juvenile mink	14in (35cm)	10in (25cm)	311in ² (2,006cm ²)
More than 2 juvenile mink per pen	14in (35cm)	10in (25cm)	311in ² (2,006cm ²); Plus an additional 75in ² (483cm ²) per female, or 100in ² (645cm ²) per male for each mink above 2

cm = centimetres; in = inches; cm² = square centimetres; in² = square inches

* Minimum floor space – the area of a mink pen which can be used by the mink; it includes shelf/platform/hammock, but does not include the area of nest box (regardless of type of nest box).

- Table 3** – All existing non-conforming pens (i.e. not meeting requirements in Table 2) must meet the following requirements by May 1, 2014 to be permitted for use, and may be used up to December 31, 2023, or until the code is revised based on new scientific knowledge.

Pen Density	Minimum Living Area*
Single adult female	186in ² (1,200cm ²)
Single adult male	325in ² (2,096cm ²)
Single female with litter or with one juvenile	325in ² (2,096cm ²)
Single juvenile female	186in ² (1,200cm ²)
Single juvenile male	186in ² (1,200cm ²)
2 juvenile mink	325in ² (2,096cm ²)
More than 2 juvenile mink per pen	325in ² (2,096cm ²); Plus an additional 75in ² (483cm ²) per female, or 100in ² (645cm ²) per male for each mink above 2

cm² = square centimetres; in² = square inches

* Minimum living area – the minimum living area mink have access to, which includes both the pen's minimum floor space and nest box area.

- As of December 31, 2023 all pens must meet the new pen size requirements (Table 1), or those which comply for the lifetime of the pen provisions (Table 2).



Summary of Code Requirements (continued)

1.2.3 Nest Boxes

- Nest boxes must be designed to hold adequate bedding and allow for good nesting behaviour to provide a comfortable, safe, and secluded place.
- Nest boxes must be an appropriate size to accommodate all animals in the pen comfortably at the same time.
- During whelping, lactation, furring, and winter months, mink must have access to a nest box with adequate bedding.
- If feeding on nest box lid, kits must be able to easily access the feed.

1.2.4 Bedding

- Bedding must be clean and dry.
- During whelping, lactation, furring, and winter months, mink must have access to a nest box with adequate quantities of a suitable bedding material (e.g. shavings, chopped straw, hay).
- During whelping, shavings and/or sawdust with resins (e.g. pine, cedar) that can irritate the kits' skin must not be used.

1.2.5 Environmental Enrichment

- All pens with multiple mink must be enriched with a hammock/shelf/platform/drop-in or jump up nest boxes by June 30, 2014.
- An enrichment that can be manipulated by the mink or different novel objects (to avoid habituation) must be provided in each pen by December 31, 2013; once an environmental enrichment like this has been provided, access to such enrichments must be maintained for the rest of the life of that mink as removal may cause frustration.

1.3.1 Light

- Mink must be exposed to at least the minimum number of continuous hours of daylight provided by a natural photoperiod.
- If using artificial lighting, caution must be taken not to negatively impact the normal circadian rhythm.
- Light intensity and quality must be sufficient to allow mink to express natural behaviours and to allow for proper observation of the mink.

1.3.2 Air Quality

- All sheds and buildings must consistent and adequate airflow to ensure mink health and comfort; if natural ventilation is not sufficient, a mechanical system is required.

1.3.3 Temperature

- Adequate dry bedding material must be available in the nest box during whelping, lactation, furring and winter months to help reduce the risk of hypothermia (refer to Section 1.2.4 -Bedding).
- Stockpeople must be trained to recognize signs and symptoms of heat and cold stress and to respond appropriately.
- Actions must be taken to help mink maintain appropriate body temperatures during extreme ambient temperatures.



Summary of Code Requirements (continued)

Section 2 Biosecurity

2.1 Access Management

- Producers must control and minimize all non-essential access to the farm.
- Mink must be housed in a biosecure area (i.e. wildlife should not be able to contact farmed mink and farmed mink should not be able to leave the biosecure area).
- Biosecure zones and “Controlled Access Points” must be easily identified with signage.
- Producers must ensure staff and visitors understand, respect, and comply with the site’s biosecure zones and procedures for movement.
- Staff and visitors must wear dedicated clothing, or cover-ups over street clothes and footwear, and must sanitize their hands when entering the CAZ or RAZ.
- “Controlled Access Points” must have the necessary equipment and materials to implement biosecurity procedures.

2.2 Animal Management

- Producers must be knowledgeable of the health status of mink being purchased.
- Strict biosecurity measures must be taken when catching, handling and moving mink (e.g. treatment, breeding, pelting).

2.3 Operational Management

- Farms must implement procedures for managing manure, mortalities, carcasses and other waste to ensure all waste is collected, stored, and disposed of in a biosecure manner and in accordance with all applicable regulatory requirements. Please refer to Section 4.3 - Veterinary Care/Health Management and Section 4.4 - Sick or Injured Animals for additional information on mortality and carcass management.
- Bedding must be obtained and stored to minimize the risk of contamination with pathogens.
- Farms must have an integrated pest management program in place.
- Sanitation protocols for premises, buildings, equipment, staff hygiene and vehicles must be implemented.

Section 3 Feed and Water

3.1 Nutrition

- All mink must have access to sufficient quantities of nutritional feed which meet their physiological needs.
- Farms must monitor body condition score regularly to ensure appropriate feeding levels (refer to Appendix A - Body Condition Scoring for Mink).
- Pens of mink that are over- or under-conditioned must be marked so the mink may be monitored more closely and fed accordingly.

3.1.1 Breeding Mink

- Feeding programs must aim to condition breeders appropriately while avoiding the need for significant dietary adjustment.
- All males must be monitored very closely during the breeding season for loss of condition.

3.1.2 Gestation

- Females must be fed to maintain an ideal body condition score throughout gestation.
- Only highest quality ingredients must be used during gestation.



Summary of Code Requirements (continued)

3.1.3 Lactation

- Feeding programs must focus on maintaining body condition of females and promote lactation.
- Lactation diets must be high energy and use the highest quality ingredients.
- Feed must be placed so the female and the kits have access to it (e.g. on the nest box lid).
- All lactating females and litters must be observed daily during lactation for behaviour and feed intake; take prompt steps to address poor consumption.
- Feed intakes must be monitored at least daily and the feeding program adjusted to compensate for intake lowering factors (e.g. high temperatures).

3.1.4 Growing Mink

- Feed management strategies must be adjusted to meet intake needs for altered growth patterns associated with melatonin use.
- Breeders must be selected as early as possible to better manage feeding strategy for individual breeders.
- Changes to diet composition must be managed to ensure continued feed intake.

3.2 Feed Management

- Mink must receive a diet appropriate for maintaining health and vigour at all stages of their production cycle.

3.2.1 Feed Quality (Ingredients)

- Feed preparation facilities must have procedures in place to ensure feed quality.
- Feed preparation and storage areas must have a pest control program in place.
- Feed ingredients must be tested for nutritional value and bacterial counts.
- Complete mixed feed must be tested for nutritional value and bacterial counts (see Appendix B - Feed Testing Laboratory Contacts).

3.2.2 Feed Storage and Preparation

- Farms must have sufficient and appropriate feed storage to ensure feed quality.
- Standard operating procedures relating to hygiene in feed preparation areas must be in place.
- Feed consistency must be appropriate to ensure mink have ready access to feed.
- Feed preparation equipment and area must be cleaned after each use and sanitized regularly.
- Individuals involved with feed preparation must receive appropriate training.

3.2.3 Feed Distribution

- Mink must have access to sufficient feed at least daily.
- Feed consumption must be monitored to ensure mink are consuming adequate quantities to meet targeted body condition.
- Biosecurity practices relating to entry procedure (as outlined in Section 2 - Biosecurity) must be applied to all feed related deliveries coming on farm.
- Feed carts used to deliver wet feed must be washed and sanitized regularly.
- Hoppers for dry feed must be maintained to ensure feed quality and accessibility.

3.2.4 Unconsumed Feed

- Wet feed must be monitored each day for spoilage and spoiled feed must be removed from the wire before providing fresh feed.
- Waste feed must be disposed of frequently in accordance with the waste management plan.



Summary of Code Requirements (continued)

3.3.1 Water Quality

- Mink must have sufficient access to good quality water to meet their physiological needs.
- Water must be tested for nutrient and bacterial quality at least annually, or as conditions require, both at the source and at a point near the end of the delivery system.
- Where surface water is used as a source, it must be treated and tested frequently after treatment.

3.3.2 Watering Systems

- Watering systems must be checked daily to ensure they are functioning.
- Watering systems must be maintained in hygienic conditions.
- Farms must have an alternative watering system/plan in place as back up if the primary system fails to meet water requirements during periods of high demand, or if water quality issues arise.

Section 4 Health and Welfare Management

4.1 Relationship of Animal Health to Animal Welfare

- Mink must be observed daily for signs of health or welfare concerns.
- A herd health program must be developed and implemented.
- Producers must implement an on-farm biosecurity program that addresses the requirements outlined in Section 2 - Biosecurity of this Code.

4.2 Stockmanship Skills Related to Animal Health and Welfare

- Daily routines must be structured so that mink have the opportunity to have regular visual contact with humans.
- Best management practices relating to the health and welfare of mink must be in place.
- Stockpeople working with mink must be trained in and apply best management practices.
- Documentation relating to training and competence of stockpeople must be maintained.
- Stockpeople must be trained to:
 - properly handle and care for mink
 - recognize signs of illness, injury or pain
 - understand mink behaviour and recognize the significance of changes in behaviour
 - appreciate the suitability of the total environment for mink health and welfare
 - promote positive interaction between mink and humans.

4.3 Veterinary Care/Health Management

- All producers must establish a valid veterinarian-client-patient relationship (VCPR).
- All farms must have a herd health management plan, which includes:
 - daily observation of all mink
 - a mink identification system
 - a record keeping system for documenting health related information
 - vaccination protocols for all mink on the farm
 - a protocol for tracking trends in mortalities
 - a requirement to contact the veterinarian if mortalities increase and cannot be explained
 - a biosecurity program (see Section 2 - Biosecurity for more detailed biosecurity program requirements and recommended practices).



Summary of Code Requirements (continued)

4.4 Sick or Injured Animals

- Accurate and detailed individual animal and herd health and treatment records must be maintained.
- Stockpeople working with mink must be trained to recognize when mink are sick, injured, or in pain.
- Mink that are exhibiting clinical signs of illness, injury, pain, or suffering must be provided with immediate medical care or be immediately euthanized when treatment is not appropriate.
- If it is determined that mink exhibiting clinical signs of illness, injury, pain, or suffering are not responding to treatment, the mink must be euthanized immediately.
- Individuals administering care to or euthanizing mink must be trained and competent.
- Appropriate authorities must be advised of any suspected or confirmed cases of a reportable disease.

Section 5 Husbandry

5.1 Animal Handling

- Stockpeople handling mink must be trained in mink behaviour and proper handling techniques.
- Mink must be handled in a manner that minimizes stress.
- Mink must be supported by the body when being carried.
- Pressure on the abdomen must be avoided when handling mink, especially in pregnant females.
- Handling females during the first 30 days following breeding must be avoided; utmost care must be used if handling is required in later gestation.
- Where box/cage traps are used to catch escapees on farm, they must be checked at least twice daily.

5.2 Breeding Period

- All mating pairs must be carefully observed and promptly separated if overly aggressive behaviour occurs.
- Proper technique must be used if it is necessary to separate mating pairs. The proper technique is to place a hand on the back of the male and wait for him to release the female.
- Traits related to health, welfare, and temperament must be considered as part of breeder selection programs.
- The feed allowance must be increased for mink that are overly aggressive during this period.

5.3 Whelping and Lactation Period

- Nest boxes must be maintained clean, dry, and draft free.
- Nest boxes must have adequate amounts of suitable bedding material for females and their litters throughout the whelping/lactation period.
- During whelping and lactation, mink must have access to a nest box with adequate quantities of a suitable bedding material (e.g. shavings, chopped straw, hay).
- During whelping, shavings and/or sawdust with resins (e.g. pine, cedar) that can irritate the kits' skin must not be used.
- False bottoms/floors must be provided prior to whelping and during early lactation to prevent kits from falling through the pen bottom.
- False bottoms/floors must be removed as soon as kits are large enough to move around the pen without injury or discomfort.
- A good record keeping system for tracking reproductive performance and behaviour-related performance must be in place.
- All females and litters must be monitored and prompt action taken if there appear to be any health or welfare concerns.
- A procedure for kit fostering must be developed and implemented.



Summary of Code Requirements (continued)

- Chilled kits must be warmed with an external heat source.
- Kits from females that consistently leave them in the cold or out of the nest box must be fostered.
- Water and feed must be made accessible to the kits as appropriate for their stage of development.

5.4 Weaning

- Farms must have weaning and separation strategies in place that consider the health and welfare implications of the time of weaning, geographic location, climatic conditions, and housing.

Section 6 Euthanasia

6.1 Methods

- Establish written euthanasia protocols for the farm that include euthanasia chamber-charging levels and times; input and removal process for the optimum number of mink; length of time to be in the euthanasia chamber; and confirmation of death.
- All personnel involved in euthanizing mink must be properly trained and competent.
- All applicable health and safety regulations and requirements must be followed when using CO.
- Euthanasia must induce rapid loss of consciousness followed immediately by death and cause minimal distress and pain.
- Effective December 31, 2013, CO from a compressed cylinder must be used for euthanizing mink on farm.
- Equipment and regulators must be checked to ensure gas is being delivered to the euthanasia chamber to achieve and maintain at least a 4% concentration.
- Euthanasia chambers must be tightly sealed.
- Mink must remain in the euthanasia chamber until death.

6.2 Evidence to Confirm Death

- Each mink must be confirmed dead immediately following euthanasia.
- Death must be confirmed by determining the:
 - absence of all movement for at least five minutes
 - absence of a heartbeat and pulse for at least five minutes
 - lack of breathing for at least five minutes
 - fixed, dilated pupil
 - absence of all reflexes including the corneal reflex (i.e., no blinking when the eyeball is touched).

Section 7 Transport

7.1.1 Fitness for Transport

- Every animal must be assessed for travel fitness before being transported.
- Unfit mink cannot be transported except for veterinary treatment or for diagnosis.
- Compromised mink which can be transported with special provisions must only be transported locally and directly to the nearest suitable place where they can receive care and attention or be euthanized.

7.1.2 Planning and Preparing for Transport including Loading and Unloading Considerations

- All applicable regulations and requirements must be adhered to.
- Producers must ensure all necessary documentation is prepared and that required stops are pre-arranged to avoid unnecessary delays. This is especially important for international transport, which can add complexities such as: health certifications, additional documentation, border inspections and special provisions (e.g. water, air conditioning).



Summary of Code Requirements (continued)

- The producer must select a reputable transporter and must plan the trip details, making allowances for unexpected delays and planning for contingencies.
- If kits are to be transferred between farms sites with more than one kit per compartment, the transfer must:
 - occur prior to August 1st
 - be three hours or less in duration and
 - meet the applicable principles outlined below.
- Mink must be individually housed during transport except in the case of kits, as noted above. All transport crates must be designed:
 - to ensure adequate airflow for mink in each compartment within the crate
 - to ensure structural soundness and securely confine mink without risk of injury
 - to allow for provision of feed and water
 - to ensure sufficient space for the mink to lie comfortably, turn around without restriction, and stand on all four legs
 - so they are not oversized, as larger crates may increase risk of injury
 - to allow for waste management
 - to prevent accidental opening or escape but still allow easy access when needed (e.g. in an emergency situation)
 - to prevent contact between the mink.
- Transport crates for ground transport must, at a minimum, meet the following size requirements:

Female Length*width*height	Male Length*width*height
15in x 7in x 7in (38cm x 17cm x 17cm)	15in x 8in x 8in (38cm x 20cm x 20cm)

- Transport vehicles must:
 - allow for adequate ventilation
 - provide appropriate protection from the elements
 - allow for adequately securing crates containing mink
 - allow for waste management
 - facilitate crate placement to prevent direct contact between the mink
 - facilitate access to each mink for feeding, watering and inspection, etc.
- Mink must be placed into transport crates just prior to loading but allowing enough time to acclimate prior to shipping.
- Mink must be adequately hydrated prior to transport particularly when transported during warm weather and when transport is of longer duration.
- Mink must have access to water or a moisture pack if the duration of transport is expected to be longer than 24 hours.
- Mink must have access to feed if the duration of the transport is expected to be longer than 36 hours.
- Written feeding and watering instructions, and contingency plans must be included with shipping documents and attached to crates in a manner such that the mink cannot access them.
- Producers must ensure that mink will be monitored during transport.
- Bred females must not be transported during early stages of gestation (until approximately day 35 after mating).
- For air transport, the IATA regulations must be adhered to.

