



# Selecting Seasonal Feeding Areas

## Introduction

Livestock seasonal feeding areas must be selected with care to ensure the well-being of the herd and the health of production areas are maintained, and to minimize the risk of environmental impacts.

Special consideration is required when feeding livestock on or near riparian areas. Riparian areas are transitional zones between aquatic and surrounding terrestrial (upland) areas. Riparian zones (also sometimes referred to as riparian meadows) are seasonally wet through flooding or high water tables.



Riparian areas are among the most biologically diverse and productive zones in temperate ecosystems and are highly valued for both their economic and ecological resources. They provide important environmental services (e.g. filtering water of sediment and dissolved substances) and hydrologic functions (e.g. dissipating stream flow energy, building and stabilizing stream banks, recharging aquifers, and mitigating or preventing floods). In addition, they provide direct and transient habitat for a rich variety of biodiversity.

Concerns that arise from improper use of riparian meadows include degradation of water quality, altered water flows or storage, and impacts on biodiversity.

## Environmental Risks

Good stewardship of seasonal feeding areas starts with selecting a site with a lower risk of environmental impacts.

The risks associated with a seasonal feeding area are the combination of the likelihood that some type of adverse impact can occur and the consequence of these impacts to human or ecosystem health.

Some site conditions are outside the control of the land manager (e.g. snowfall accumulation). But understanding how these factors influence environmental risk

and how they can be mitigated are still important to planning the stewardship of your winter feeding site. Likewise, access, availability of water, animal shelter and security from predators may limit the choices of where winter feeding takes place. But for livestock operations that have greater flexibility to locate wintering sites, some factors that contribute to the environmental risk can be minimized or avoided through informed site selection.



*Avoid areas with strong slopes or high drainage potential where channels in the soil provide a runoff pathway.*

## Preliminary Considerations

Certain locations have a higher risk by virtue of their proximity to sensitive areas.

Avoid locating winter feeding sites immediately upstream from drinking water extraction points and in Community Watersheds. Additional management and infrastructure may be needed to divert and collect the run-off from these winter feeding sites to avoid contamination of water sources.

Water wells are a direct pathway for surface contamination to reach groundwater. New wells are required to meet the standards set out in the Ground Water Protection Regulation of the Water Act. Additionally, all wells must conform to the provisions of the Public Health Act requiring a minimum 30.5 m (100 ft) separation between well heads from any part of seasonal livestock feeding locations and other siting requirements.

Water wells near winter feeding sites should have a surface seal at least 2.5 cm thick, be fitted with a secure cap (free of leaks or breaks) and the well casing should extend a minimum of 30 cm above the soil surface. Moreover, the ground surface should be sloped for drainage away from the well head.

Areas adjacent to sensitive fish and wildlife habitat also need special considerations. Feeding sites that drain directly into water bodies with high fisheries values or areas that contain rare or endangered species' habitat should be avoided.

## Size

Ensure the size of the winter feeding area is appropriate to the number of livestock that will be penned. The winter feeding site should be large enough to maintain densities of below 10 animal units (AU)/ha in normal circumstances, and densities greater than 15 AU/ha should be avoided in all situations.

## Flood Frequency

Flooding is a natural part of the ecology of riparian systems, but it also greatly elevates the risk of transporting animal waste, wasted feed and contaminated water from winter feeding sites and watering points. Sites that never flood are better choices for locating winter feeding than those that flood occasionally. Sites that flood more than one time per year should be avoided.



*Avoid wintering livestock on areas subject to seasonal flooding.*

## Topography

Slope, aspect and landform influence the snow melt rate and the ease of drainage to water bodies. Aspect (site orientation relative to compass points) and slope influence the amount of sunlight received and, by that, how rapidly accumulated snow, containing waste, melts in the spring. Wintering locations with north or east aspects are better than south or west aspects to slow the rate of snow melt. Slope and landform also influence the potential for runoff to carry contaminated water off-site. Flat ground (< 2% slope) has the least potential for runoff and strongly-sloped sites (> 15%) should be avoided. Sites with low or no potential for drainage directly into water bodies are preferred over those with drainage pathways and washouts.

Surface water entering a wintering site from upslope positions also affects the risk of runoff carrying contaminants from the area. If possible, select sites with the least amount of upslope area and snow catchment. Avoid sites with very high potential for offsite runoff to enter the winter feeding grounds.

## Soil Type and Condition

Soil type and condition can also affect how much water drains from the area. Select areas with uncompacted, medium (loam) textured soils. Deep soils, high in organic matter, with a rich root network and high animal activity (e.g. from earthworms and rodents) can also contribute to greater infiltration of rainfall and snowmelt, with a lower risk of runoff leaving the wintering site.

## Vegetation

The type and condition of vegetation on the winter feeding area will influence the ability of the site to capture and hold surface runoff. Bare soil is not suitable on seasonal winter feeding sites. Greater than 95% of the site should be vegetated, and perennial vegetation is superior to annual vegetation cover. If the wintering site is used for hay production or grazing in the growing season, maintain at least 10 cm of plant stubble going into the winter season.

## Riparian Buffers

Riparian buffers and the health of the riparian zone are also important considerations in choosing a wintering site. Riparian meadows are natural filters and reservoirs for sediments and nutrients carried over these zones in the annual cycle of flooding and drying. Properly functioning riparian ecosystems can also degrade disease-causing microorganisms to levels below thresholds of concern.

Water quality can therefore be negatively impacted by wintering livestock when the impacts alter the structure and function of the riparian zone to a degree that it impairs the capture, transformation or degradation of sediments and nutrients.

Complete and follow a riparian management plan for any areas adjacent to your winter feeding site, and select areas with healthy riparian buffers.



*Healthy riparian buffers with deeply-rooted, soil binding plants will trap and filter run-off from adjacent upland areas.*

## More Information

### Managing Seasonal Feeding Areas

Winter Feeding Stewardship Factsheet 2.

Published in 2014 by the BC Ministry of Agriculture.

### Nutrient Management for Seasonal Feeding Areas

Winter Feeding Stewardship Factsheet 3.

Published in 2014 by the BC Ministry of Agriculture.

### Riparian Management Field Workbook

Published in 2005 by the BC Agriculture Council.

### Disclaimer

This document is intended to help assess the environmental risks and stewardship options associated with seasonal livestock feeding areas in British Columbia.

Landowners have a responsibility to follow federal and provincial statutes that have been enacted to protect the environment.

The guidance and information presented in this publication is not a substitute for the requirements set out under the Fisheries Act, Public Health Act, Environmental Management Act, Drinking Water Protection Act, the Species at Risk Act, or any other legislation.

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