Redboine WATERSHED DISTRICT

SHELTERBELT CARE 101

WHAT IS A SHELTERBELT?

Shelterbelts are a linear planting of trees/shrubs used as a wind barrier. This type of tree planting technique benefits livestock, crops, soil, water quality, and biodiversity. Shelterbelts reduce windspeed, erosion, and snow drifting.

TYPES OF SHELTERBELTS

- Farmstead - protects yards, reduces snow buildup, improves microclimate and property value.
- Field - reduces erosion, traps snow for moisture, improves crop yields and biodiversity.
- Eco-buffers/Wildlife - layered native appearance, excellent wildlife habitat, lower maintenance once established.
- Riparian Buffers - stabilize riverbanks and absorb nitrogen/phosphorous.
- Roadside - properly placed to reduce drifting snow on roads.
- Livestock - provides shade and winter shelter, lowers feed costs.
- Dugouts - improves water quality and reduces evaporation.

PLANNING & DESIGN

Check buildings, utilities, roads, valves, and underground lines before planting. Plant perpedicular to prevailing wind direction. Use multiple layers/rows for better wind protection. Plan for future yard expansions. Progressive yearly planting can make projects easier.

TREE AND SHRUB SELECTION

Choose species based on height, spacing, soil, climate, and goals. Diverse species increases resiliance. Halotolerant species may be needed for saline soils. Poplars grow quickly and are useful for temporary shelterbelts. Shrubs can provide berries, wildlife habitat, and nitrogren fixation.

SUCCESS TIPS

- Reduce weed competition
- Use mulch and proper irrigation
- Prevent wildlife grazing damage
- Diversify the tree species
- Assess and prepare the site carefully

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SITE PREPARATION

Pre-planting and post-planting weed control within your shelterbelt planting should be one of your first considerations in the overall planning of your shelterbelt.

Ideally, weed control for your shelterbelt planting should start the year prior to planting by chemically or culturally controlling existing vegetation on the planting site as well as ensuring the soil is adequately worked to a depth of 6" to 8".

Soil preparation techniques aim to improve soil structure, fertility, and water retention capacity, creating an optimal growing environment for tree seedlings. Common soil preparation techniques include:

1. Mechanical tillage involves using equipment till soil and to break up compacted soil, incorporate organic matter, and promote root penetration. Depending on site conditions, tillage depth and intensity may vary to achieve desired soil loosening and aeration.

2. Soil compaction is one of the key factors for tree mortality as it can restrict root growth and water infiltration, impeding tree establishment and growth. Soil decompaction techniques such as subsoiling, deep ripping, or aerating break up compacted layers, improve soil structure, and promote root development.

3. Poor drainage can lead to waterlogging, root suffocation, and tree mortality. Drainage improvement measures can help redirect excess water away from planting sites, preventing waterlogged conditions, and promoting healthy root growth.

4. Reduce or eliminate weed competition is one main goal of site preparation. Weeds can inhibit tree growth and establishment by competing for water, nutrients, and light. Weed control methods such as herbicide application, mechanical removal, mulching, or cover cropping help suppress weed growth, reduce competition, and create favorable conditions for tree seedlings.

5. Adding organic matter maybe required in certain soil to improve soil fertility, enhances water retention, and promotes microbial activity. Organic matter increases soil organic carbon content, provides essential nutrients for tree growth, and enhances soil structure, porosity, and aggregation.

To avoid high tree planting mortality, site preparation is a fundamental aspect of successful tree planting. By addressing site-specific factors such as soil conditions, drainage, weed competition, and species selection, site preparation techniques create favorable conditions for young tree establishment, growth, and thriving.

MAINTENANCE AND WATERING

The first 3-5 years after planting are the most important for survival and growth. Control weeds regularly, and keep livestock away from young trees. Fertilizer is usually unnecessary unless the soil is deficient. After initial watering, aim for ~1 inch of rain/month. Sheep fescue is a thick perennial grass that is great for weed control, as well as low maintenance as it rarely requires mowing.

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ECO-BUFFERS: EXPLAINED

Eco-Buffer shelterbelts are densely planted, diverse groupings of native trees and shrubs designed to mimic the structure and function of a natural forest. By combining fast-growing and long-lived trees with a variety of tall and short shrubs, Eco-Buffers create a layered habitat that supports biodiversity and wildlife while providing protection for soil, crops, water, and livestock.

Their diverse plant composition also allows them to become more self-sustaining over time, reducing the need for ongoing maintenance once established. Eco-Buffers are typically planted in three- or five-row designs and provide a range of benefits to the landowner and environment.

RBWD FUNDING

- $3 per tree (excludes elm & ash)
- Incentives up to $200/acre for 10 years of shelterbelt maintenance

incentives not applicable to yard shelterbelts, field shelterbelts only

On top of funding support, we also offer advice or direction from an Arborist, as well as assistance planting (upon support staff availability).

WEED CONTROL OPTIONS

- Plastic mulch rolls
- CocoDiscs - all natural, biodegradable coconut husk disc

BOTH OPTIONS COVERED AT 50% COST BY RBWD

A SPECIAL THANK YOU TO BLAIR ENGLISH WITH APEX ARBORICULTURE FOR HELPING PREPARE THIS INFORMATION, AND ASSISTING OUR SHELTERBELT APPLICANTS!

Find our applications on our website... send us one today!

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grow@redboine.com
www.redboine.ca
(204) 526-2578