SNOW HARVESTING WITH TREES

Shelterbelts for snow trapping

Trees can be effective physical barriers and filters for wind and snow. By trapping snow, trees play a role in water management. When planted as field shelterbelts, trees have the potential to trap blowing snow in the winter which can then recharge the surrounding soil moisture in the spring melt and help fill dugouts or swales. Dense shelterbelts trap snow closer with a deeper accumulation while less dense trees will trap snow more evenly over a larger area.

Designing for snow harvesting

Snow drifts will form on both the leeward (protected side) and windward sides of the shelterbelt, with the leeward side generally trapping more snow. To avoid snow drifts affecting property do not plant shelterbelts within 30 metres of buildings or roads, ideally planting 30 to 90 metres away. It should be noted that major snow accumulation occurs at a distance of double the height of the shelterbelt on the leeward side. To reduce excessive snow accumulation in the main shelterbelt an additional row of shrubs can be planted on the windward side 15 to 30 metres away.

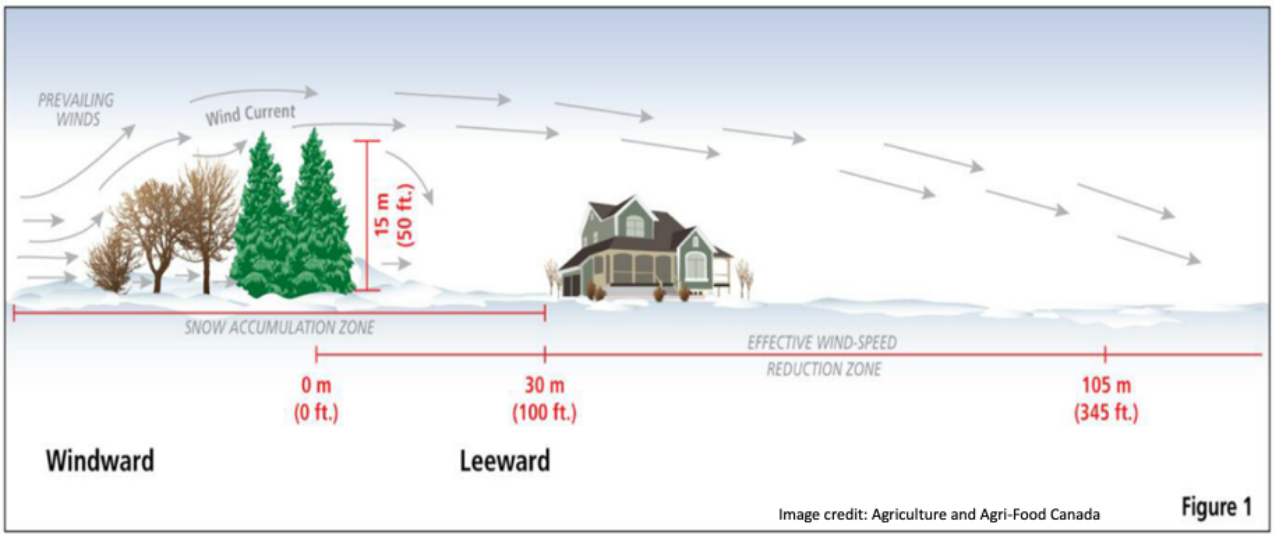
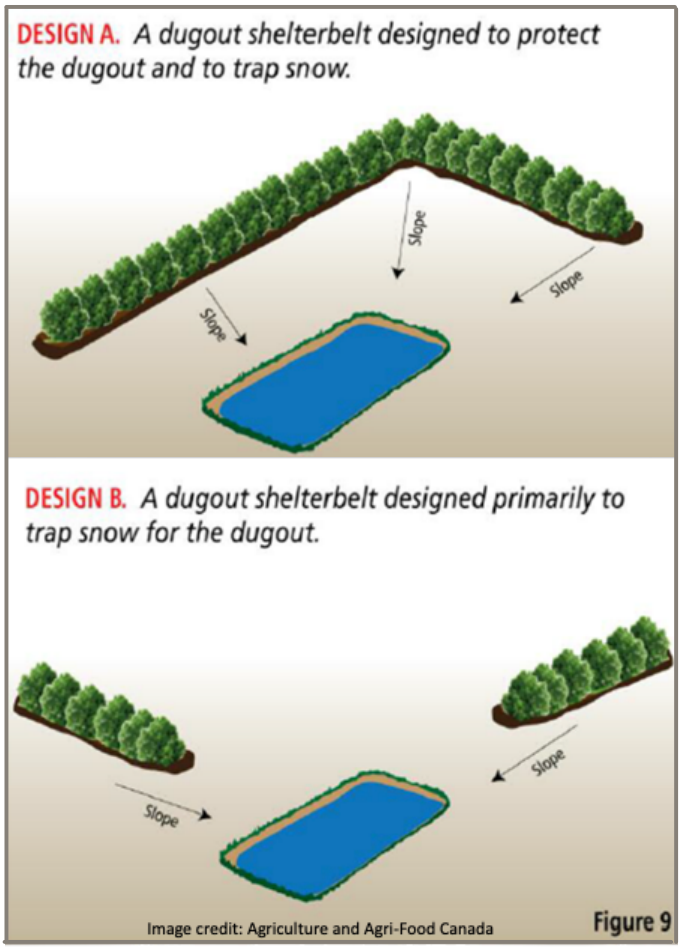


Image credit: Agriculture and Agri-Food Canada

Figure 1

Tips for designing shelterbelt that harvests snow



- Low-density rows provide even snow distribution across fields and avoids deep drifts.
- Multiple row shelterbelts result in snow trapped between rows.
- Shelterbelts should be perpendicular to prevailing winter winds for maximum snow trapping.
- For areas with low snowfall use denser shelterbelts to maximize snow trapping.
- Shelterbelts can be designed to provide snowmelt to dugouts. Shelterbelts on the north and west side of a dugout will trap snow which will melt in the spring and recharge the dugout.
- *Remember: More rows = more snow trapped.*

Useful Resources and References

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