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of small, defective or otherwise unmerchantable trees is referred to as *precommercial thinning*).

- To enhance non-timber forest amenities including grazing, wildlife and recreation.
- To improve return on forest investment by selling trees that otherwise would be lost, paying up-front for stand improvement, decreasing risk of fire or pathogens, and improving future opportunities for natural regeneration versus expensive planting.

The type of thinning and spacing of residual trees is a complex decision that is beyond the scope of this article to cover completely. Knowledge, experience, and even intuition must modify the guidelines that I provide. This is particularly true in the Inland Northwest, where thinning has not been widely applied and experienced. It would take a textbook to cover the subject, and one that does this well is "*The Practice of Silviculture – Applied Forest Ecology*", 9th edition, published by John Wiley and Sons, 1997, available in some libraries and most bookstores (Library of Congress #ISBN 0-471-10941-X).

There are five distinct methods of thinning that describe which trees to cut and leave:

- 1) *Low* – Low thinning removes the shortest, most suppressed trees, and has the least effect on growth release.
- 2) *Crown* – Crown thinning works in the mid and upper crown levels and has a more dramatic effect on growth, composition and form.
- 3) *Selection* – Selection thinning is most effectively applied where rough, large-branched trees in a dominant crown position are removed to favor better-formed trees of favorable species. Selection methods also pose a risk of highgrading.
- 4) *Mechanical (row)* – Mechanical or row thinning removes trees in a geometric pattern, generally every other row, or every other tree in forest plantations.
- 5) *Free* – Free thinning is best thought of as a combination of the other methods, applied to highly variable stands, usually in a first entry into previously unmanaged forests.

There are many factors involved in making the choice of thinning method, usually requiring the skills of an educated forest manager. *One key factor* that many professe86208 pattenant c6t.b Tcing helyntroprofesse860.56 wvw educ1g, wildlife and reicelt 3.5 Tw[– Cro.71 -6rue ≠0.0vore)T

