

# Sustainable Forest Management

## 2013 Facts & Statistics

Fall 2014 ISBN 978-1-4601-1946-4 ISSN 2368-4860  
Environment and Sustainable Resource Development

### Area Harvested

The Alberta government is committed to the principles of sustainable forest management and responsible stewardship. This is demonstrated through legislation and policies for the protection, conservation and sustainable management of forests.

Alberta's comprehensive forest management planning process ensures timber harvesting activities also address a range of forest values.

Highly trained and skilled Regulated Forestry Professionals determine the best harvesting method using detailed information about the area and its specific conditions (*e.g.*, soils, terrain, tree species, wildlife habitat and reforestation requirements). Forest management planning objectives for the area following harvest (Figure 1) are also taken into consideration. Timber harvesting methods may include clearcutting, partial-cuts, shelterwood, seed tree, and commercial thinning.

Clearcutting is a silvicultural system that harvests most merchantable trees in a single operation. This harvesting method allows rapid reforestation (Figure 2) of a thrifty and healthy even-aged forest (all trees are about the same age). All of Alberta's trees grow best in conditions of full light. Clearcutting creates conditions where maximum sunlight can reach the small regenerating trees, helping them grow rapidly. Clearcutting is not deforestation. Deforestation is the permanent removal of trees in an area (*e.g.*, from forested land to agriculture land).

Several of Alberta's important tree species (*e.g.*, lodgepole pine and trembling aspen) have evolved under conditions of recurring wildfire events. They naturally regenerate well after fire and grow best in an open forest condition. Harvesting through clearcutting creates conditions similar to that following a wildfire disturbance, as most of the above ground forest vegetation is burned allowing the natural regeneration processes to reforest the disturbed areas. Clearcutting, therefore enhances the

Figure 1. Area recently harvested



regrowth of such fire-adapted species, over partial harvesting methods.

Partial-cuts are used to harvest a proportion of mature trees in a forest. Partial cutting methods create an uneven-aged forest (trees with varying ages). A common partial harvest method is shelterwood harvesting. This method removes mature trees with commercial value in a series of operations in order to "shelter" the new forest from climate (light, heat or cold) or competing vegetation (grasses and shrubs).

The seed tree harvesting method involves clearcutting, but leaves evenly-spaced mature

Figure 2. Area reforested after harvesting



trees as a source of seeds for natural regeneration. This method may be used to reforest white spruce stands.

Commercial thinning involves harvesting trees based on size, height and species in order to enhance the growing conditions for the remaining trees. This technique typically requires multiple harvest operations completed decades apart on the same forest area.

Once the harvesting method is selected, the forest manager determines the type of harvesting equipment, such as a feller buncher (Figure 3), to be used.

Figure 3. A feller buncher used for timber harvesting



## Statistics

As shown in Table 1 and Figures 4 and 5, the clearcutting method was used for most (97.96%) of the area harvested in Alberta from May 1, 2012 to April 30, 2013. The majority (81.84%) of area harvested by clearcutting was in the Upper Athabasca, Lower Peace and Upper Peace regions. Partial-cuts, shelterwood and seed tree harvesting methods were used for a small proportion (1.38%) of the total area harvested, mostly in the Lower Athabasca Region (51.52%).

The commercial thinning covered only 0.66 per cent of the total harvested area; the majority of the commercial thinning activities were in the South Saskatchewan Region (90.88%).

There were no reported harvests in the Red Deer Region as it is mainly comprised of non-forested private land.

Table 1. Area harvested on Alberta public land by Land-use Framework Planning Region, 2012/13<sup>1</sup>

Land-use Framework Planning Region (LUF)	Clearcutting (ha)	Partial-cuts, shelterwood and seed tree (ha)	Commercial thinning (ha)
Lower Athabasca	4,864	581	0
Lower Peace	20,383	546	0
North Saskatchewan	8,409	0	0
Red Deer	0	0	0
South Saskatchewan	1,210	0	487
Upper Athabasca	22,079	0	49
Upper Peace	22,832	0	0
<b>Provincial Total</b>	<b>79,777</b>	<b>1,127</b>	<b>536</b>

<sup>1</sup>The areas are preliminary and have been rounded to the next nearest hectare.

Statistics cont'd

Figure 4. Percentage of area harvested on Alberta public land by method, 2012/13

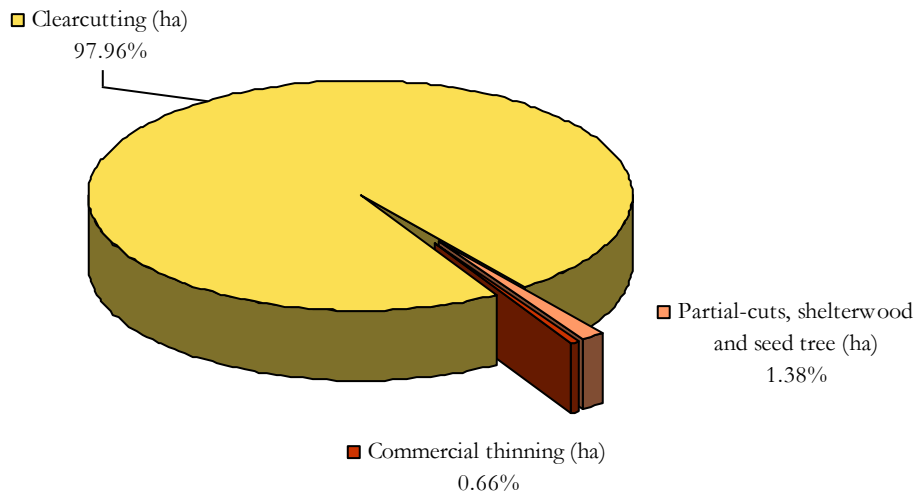
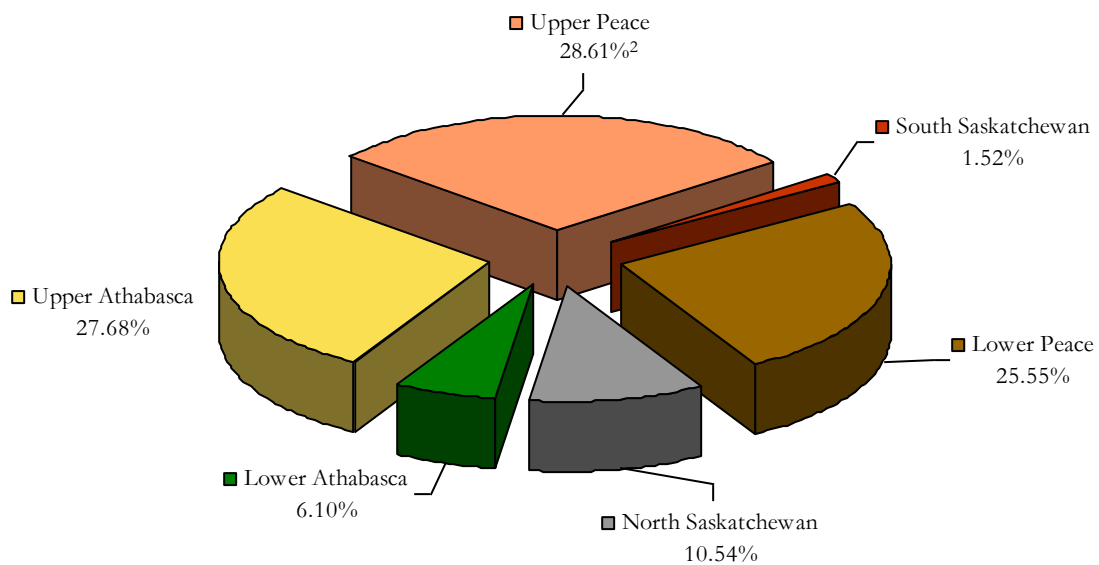


Figure 5. Percentage of area harvested by clearcutting on Alberta public land by Land-use Framework Planning Region, 2012/13<sup>1</sup>



<sup>1</sup> Excludes Land-use Framework Planning Regions with no area harvested by clearcutting. <sup>2</sup> Rounded to add up to 100%.

## Historical Trends

Table 2 and Figure 6 show the area harvested on Alberta public land from 2006 to 2013. The total area harvested over this time period has remained relatively consistent.

As shown in Table 2, clearcutting is the most common timber harvesting method in Alberta. In much of Alberta’s forests, clearcutting is the most ecologically-appropriate harvesting method, especially for lodgepole pine and aspen forest types. Clearcutting is also a more efficient

and safer timber harvesting method for most areas in Alberta and results in young healthy stands.

The areas harvested by partial-cuts, shelterwood and seed tree harvesting methods are very low (Table 2). These harvesting methods are still practiced on certain sites and for certain tree species, such as mixed aspen and white spruce forests.

Table 2. Area harvested on Alberta public land by timber harvesting method, 2006-2013<sup>1</sup>

Year (May 1-April 30)	Clearcutting (ha)	Partial-cuts, shelterwood and seed tree (ha)	Commercial thinning (ha)	Total area harvested (ha)
2006/2007	73,183	1,448	18	74,649
2007/2008	67,014	580	170	67,764
2008/2009	63,874	880	282	65,036
2009/2010	68,713	552	362	69,627
2010/2011	75,280	541	82	75,903
2011/2012	76,309 <sup>r</sup>	590 <sup>r</sup>	0 <sup>r</sup>	76,899
2012/2013	79,777 <sup>p</sup>	1,127 <sup>p</sup>	536 <sup>p</sup>	81,440

<sup>1</sup>The areas have been rounded to the next nearest hectare.

<sup>r</sup>=Revised results; <sup>p</sup>=Preliminary results

Figure 6. Total area harvested on Alberta public land, 2006-2013

