The Story of Replanting Logged Off Area in National Forest

(Editor's Note: Following is a story about the planting and seeding of a clear cut, or logged off area, in the Prospect Ranger District. The area described, called Jim Top, is at the headwaters of Jim Creek, which starts at the Elk Creek Divide, high above the Woodruff Meadow area, then empties into the Rogue River near the meadows.)

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It was a cool, overcast, not unusual winter morning last December. A light skiff of snow covered the ground and flocked the tops of the pines, cedar, and Douglas fir on the flat.

A thousand feet higher, near the divide, the snow was a pure, white, heavy blanket; bending the hemlock and noble fir with its weight.

A light drizzle was falling in the middle of the hill, a drizzle too cold to be rain and not quite cold enough to be snow. It was a time of silence for the mountain forest, a peaceful scene: the hills and trees, the stream, the ever-pressing sky, the solitary, lonely, winding logging road—and the clearcut.

STORAGE SHED—Dave Richey, foreman of the Prospect planting crew, stands in the Prospect Ranger District's tree storage shed. The young trees are packaged in plastic impregnated paper bags which aid in controlling humidity during storage. The shed is fully insulated.

Clearcut Is Newcomer

The clearcut was a newcomer. A steep, bare, 40-acre piece of land, it had not been there two years ago. Two springs ago this opening in the forest was the scene of daily activity. First came the fallers and buckers to down the trees and cut them into lengths suitable for processing, then a huge, stationary logging engine with a cable system attached to it winched log after log up the steep slopes to a flat spot near the road called a landing. There they were piled to form a "deck." When a sufficient number of logs were in the deck they were loaded onto trucks, which shuttled back and forth along the road to and from the sawmill.

The clearcut was called Jim Top 2 and was the second logging unit in a timber sale which opened this mountain forest country for the use and enjoyment of people. Timber from this clearcut would soon find use for a variety of purposes from wooden toys for children to studs, joists, and beams in building construction.

But now, logging had long since been completed, the slash and debris had been windrowed, and the ground was bare. The area seemed deserted except for faint, almost inaudible sounds coming up from the bottom of the clearing.

Trays With Trees

Then, coming on into view, trudged a line of six men carrying planting hoes and metal trays filled with small trees. Up the hill they went, about eight feet apart, pausing every few paces to scalp the ground clear of snow and debris, lift their hoe, bite deep into the earth, put a tree in the opening and tamp down around it to compact the soil.

The men were part of Prospect Ranger District's project work crew, doing a portion of their annual planting and seeding of trees to replenish the timber that was cut in order to keep the forest growing and keep its values intact.

At this time of year when the forest was resting, when plants were dormant, and the activities of most men and wildlife had ceased in this locale, it was time to plant tree seedlings. For the seedlings were also dormant, and the disturbance of being lifted from the nursery and planted on the clearcut would do a minimum amount of root damage at this time.

Just as there is a story behind the creation of the forest, so also is there a story behind man's use of the forest—a story behind our particular clearcut, Jim Top 2, and the tree planters trudging up its slope with their planting trays and hoes.

The clearcut actually had its origin in 1958 when it was included as part of the Prospect Ranger District's annual "Five-Year Action Plan"—a plan of proposed timber sales to be laid out each year during the subsequent five-year period. The plan guides the district in a systematic and orderly development of the timber resources to better serve the public interests.

A few months before work was started in laying the sale out on the ground, a rough estimate was made of the amount, kind, and age of seedlings that would probably be needed to adequately restock the area following logging.

FORWARDED TO NURSERY

This estimate was placed on a sowing schedule and forwarded to a forest nursery to allow them enough time to grow the seedlings. Usually, seedlings are not used until they are at least two years old.

After groundwork was done on the proposed sale (marking of clearcut unit boundaries, locating main and spur roads, and determining the amount and quality of timber), an appraisal was made of various costs and profits of logging. The appraisal included a "Sale Area Betterment" plan which assured that an adequate amount of money would be set aside from the stumpage value of the timber to provide reforesting the area cut over.

The summer following logging of the Jim Top sale, as happens every summer, inventory lists were sent from the various nurseries to the national forests of the region. Prospect Ranger District received a copy of this list from the Rogue River National Forest supervisor's office in Medford. The list described the trees that were on hand at the nurseries.

Tree Are Ordered

From this list, along with trees needed for other sales, trees were ordered that would have the necessary characteristics to survive and grow on Jim Top 2. A few weeks later, a letter was received from the nurseries allocating to Prospect the trees sought. This meant that Prospect district was assured of a certain supply of seedlings and that later on, during the planting season, the trees could be picked up at the nursery as they were needed.

Starting in early October, the district's project work crew began spot seeding in the high country with tree seed. Later, as more soil moisture was present following light rain and snow, planting began. One day, early in December, tree seedlings were picked up at the nursery for use on Jim Top 2.

Even the process of placing trees in the ground is not necessarily a simple job. The roots of each layer of seedlings in the planters' tree-carrying trays were covered with moistened vermiculite, a silicate made from mica. Across the top layer of roots was a double thickness of wet burlap. These precautions had been taken to prevent drying out of the fine root hairs.

BRUSH CLEARING—Part of the site preparation work done prior to tree planting is depicted in this photo. Personnel of the Prospect Ranger District cleared the brush before planting seedlings on Peavine Burn, a 1,200 acre brushfield in the district.

Spot Is Selected

Typically, a planter selected a spot which provided some shade, such as a rock or a cull log, cleared the area of debris, and plunged the head of the planting hoe into the soil. By lifting the handle up and then moving it downwards, a hole was made which was large enough to insert a tree. The rocking action on the hoe, however, also made a hole beneath the seedling root level, so that the top and bottom of the hole formed an hourglass shape, making an air gap at the bottom that could dry out and kill the roots.

The planter carefully pulled a seedling from the tray in a manner to prevent the roots from meshing, tangling, and breaking against the remaining seedlings. The seedling was placed in the hole, and the hoe was gently removed, allowing the seedlings to slide into place. The tree was held high enough so the root collar, a slight swelling at the juncture of the stem and roots, was at ground level. Then the planter pushed the loose soil back into the hole, and, with a hard kick, angled toward the tree about a foot away from the stem, compacted the soil around the tree roots, closing the air gap at the base of the hourglass.

Procedure Is Repeated

This procedure was repeated as the panters worked their way up the hill. Each tree seedling and each planting spot presented a slightly different problem, a slightly different manner in which to do an effective planting job. At times, a piece of bark was used for shade. Sometimes a spot proved too rocky and the planter would move ahead to the next potential site.

Taking all things into consideration — the length of the seedling roots, soil moisture and rockiness, available shade, the amount of competition to be expected from nearby brush or grass sprouts, and the spacing needed to fully utilize the potential of the area for growing trees, the job of the planter had its complexities and required careful consideration of the work.

At some earlier date, consideration had been shown in selecting healthy tree seed from the proper elevation level, sowing seed in the nursery, lifting the developed seedlings from the nursery beds, storing them in warehouses in which the humidity and temperature were controlled, and in transporting them to Prospect Ranger District headquarters and ultimately to the planting site.

Plant 706 Acres

Last year Prospect's crews planted 706 acres and seeded 770 acres. The planting areas included 245 acres on recent clearcuts, 254 acres on clearcuts that had been planted previously and needed supplemental stocking, and 207 acres on Peavine Burn, a large brushfield dating back before the turn of the century, that has been cleared.

The seeding areas included 227 acres on recent clearcuts and 543 acres on Peavine Burn that had been planted previously and needed additional stocking.

Units planted varied in elevation from 5,500 feet near the Rogue-Umpqua divide to 2,800 feet on Prospect flat. Steepness of slopes ranged from almost flat to over 45 degrees on units such as Round Top 1 on the Elk Creek divide.

Almost 400,000 trees and 73 pounds of seed, averaging 23,500 seeds per pound, were used in this forestation effort, which required upwards to 10,000 man-hours of work and 6,000 miles of travel.

On 346 acres of land windrowing of logging slash and debris and brush was done to prepare planting sites, and 147 acres of dense brush was killed by herbicides to give coniferous trees beneath the brush additional moisture and sunlight necessary for survival and growth.

According to Forest Service regional standards for Oregon and Washington, an area is considered successfully planted when there are 250 well established, evenly distributed, vigorously growing saplings per acre tall enough to prevent serious browse damage from deer or elk.

In order to attain this minimum standard, 680 trees per acre are usually planted initially. A variety of occurrences determines the amount of survival that will be realized. Natural factors such as temperature, moisture, and light influence plant survival and growth.

Ground temperatures, for instance, often reach as high as 150 degrees Fahrenheit on south facing slopes in the middle of summer. This is often hot enough to kill food and fluid carrying cambial cells which lie between the wood and thin bark on a seedling.

The expansion of water into ice crystals in the upper soil layers on cold winter days sometimes pushes small seedlings part way out of the ground, exposing the roots. Brush may sprout from already developed root systems following logging and planting and may overtop nearby seedlings cutting out the necessary light.

There are, of course, varying weather conditions from year to year. Last spring, for instance, was quite cool and moist and conditions for seeding survival were generally beneficial.

On an average, however, taking the bad years with the good ones, it has been determined that planting 680 trees per acre will usually insure survival of 250 sapling size trees at four or five years after planting.

Sometime between the first and second growing seasons following planting stocking surveys are made to determine seedling survival on each planting area. If survival is poor an analysis is made of the reason for failure, and the unit is replanted as soon as possible.

If survival is adequate an additional survey is made between the fifth and sixth growing seasons. If the plantation is still in good condition at the second survey it has an excellent chance of surviving and becoming a mature stand of timber.

By advance planning, logging, planting, and follow-up record keeping as a basis for future plans, true conservation of forest resources is practiced by harvesting and utilizing the products of the forest and subsequently by managing the land to perpetuate its value and beauty.