

An Innovative Way to Control Deer Browse in New Cedar Plantations

by Joseph Murray, Consulting Forester

Planting western red cedar (cedar) and Sitka spruce (spruce) seedlings in the same hole is an effective method to reduce deer and elk browse increasing cedar seedling survival. This paper describes an original approach to mitigating wildlife predation of young western red cedar seedlings in plantations in Pacific Northwest and British Columbia. This method was developed through direct observation on the ground while managing forests on the Olympic Peninsula in Washington State and British Columbia over many years. In my experience, this method has proven to be cost effective and environmentally sound.

The silvicultural practice of planting double seedlings was developed along the banks of the South Fork of the Pysht River. I conceived the idea in the winter of 1996 after reviewing cedar seedling mortality caused by deer browse to trees which had been planted in the winter of 1995.

The cedar and spruce planting prescription was applied to a riparian forest restoration project. The goal was to harvest red alder and reforest the area with native conifer species including cedar. This project became known as the Pysht South Fork Riparian Forest Restoration.

In June of 1994, the Pysht South Fork Riparian Forest Restoration project was initiated. Five small alder stands were harvested along one side of the South Fork of the Pysht River. These stands were separated by a 1000-foot reach of stream where the alder forest was undisturbed. The average size of each harvested stand was less than two acres, with an average linear distance parallel to the stream of 600 feet. All alder trees were cut, leaving scattered conifer. A ten-foot tree buffer remained uncut along the stream to protect its bank integrity.

After the harvest, the site was prepared and the seedlings were planted the following winter. The mixture of seedlings planted included Douglas fir, western hemlock, Sitka spruce and western red cedar. Subsequent field reviews the following winter showed high mortality in the planted cedar due to deer browse. It was then that I conceived the idea of planting doubles of one spruce and one cedar in the same hole.

I knew that browsing deer left spruce alone because the very sharp pointed needles hurt their noses. With some trepidation, I fill-planted spruce and cedar seedlings together in the same hole (doubles) the following winter.



Cedar and spruce seedlings planted in the same hole.

Planting spruce and cedar doubles is similar to planting any forest seedling, with a few exceptions. The planting stock should be the same size, and large spruce seedlings should be planted with large cedar seedlings, whether you are planting bare root seedlings or plug seedlings. Each spruce and cedar double should occupy one planting microsite. For example, if 430 planting spots per acre are prescribed for a stand and doubles would inhabit all planting spots, then 860 trees per acre would be planted on the 430 planting spots with a spruce and cedar in each hole. If other species are prescribed, then the densities would be adjusted accordingly.

Site preparation, brush control, and other animal control methods are similar to those used in routine plantation development and cultivation for a specific forest habitat. These silvicultural activities should be designed to assist the plantation in achieving a free-to-grow status in a cost-effective manner.

This spruce-cedar double planting practice will not completely eliminate deer and elk browse. However, it will help young cedar forests survive and reach a free-to-grow condition in a time frame similar to other conifer species on the same site. As the trees grow together, the browse is limited to the margins of the double plant complex, and both trees increase in size and height each growing season.

Within seven to ten years, depending on site quality and wildlife populations, the cedar will have attained a height where browse will no longer affect the trees' survival. This is when foresters should consider cutting the spruce away from the cedar.

When the intention is to grow cedar for economic or habitat diversity, planting spruce-cedar doubles is a reasonable and cost-effective practice.



For more information, visit <https://jmurrayforestry.com/> or contact Joseph Murray at abies@olypen.com / 360-460-4928