

Patience ☿ Grows ☿ the Forest



Silviculture is an ancient and complex practice. Although it's evolved for as long as humans have planted trees, practitioners have never stopped trying to learn more, never stopped working to fine-tune their techniques.

On June 21st, two busloads of forest professionals, silviculturists, and planners arrived in Courtenay eager to expand their knowledge and develop their skills. They came for a two-day workshop organized by Malaspina university/college. There was no lecture, though.

The Comox Valley Region is bustling with biologist, working to unlock the secrets of how forests grow. So, The buses drove, almost in a panic, from plantation to plantation, research site to research site, where forest researchers briefed the groups on their projects and latest findings.

Don Pigott helped organize the event and gave a talk on his own research. As a gene conservationist, he's most familiar with the first step in planting forests: finding the seeds.

Gathering seeds is not as easy as simply finding the right species of tree. Trees within the same species can express their genes quite differently depending on their location. It's a phenomenon called genetic drift.

Imagine two siblings from the same parent cedar in the Comox Valley. Each begins its own branch in the family tree. Over hundreds of generations, one family line migrates to the Islands Northern tip, while the other migrates to the Southern tip. Natural selection slowly brings out the genes most appropriate to each climate. The family's genetic expressions 'drift' away from each other.

Sometimes, while one population mixes with hundreds of other family lines, the other becomes isolated in a small genetic island. This is called the bottleneck effect. The phenomenon refers to a shrinking of the gene pool. Small, isolated gene pools can lead to poor immune systems, health problems, and sometimes extinction.

Pigott has surveyed much of BC for strong genetic representations of our most sought after, rare, and endangered plants. He's currently working with the Sylvan Vale Nursery, just south of Black Creek, to grow a variety of genetically rich seedlings for the Garry Oak Ecosystem Recovery Team.

The buses made a stop at Sylvan Vale to hear Pigott speak, and get a tour of the Nursery's other operations.

"Seed growing is as much art as it is science," explained Iola Elder, owner of Sylvan Vale.

She led the group through green paneled machines and networks of conveyor belts. Engineered and built in BC, the equipment helps plant the eight million seedlings Sylvane Vale sends out to tree plantations every year. But that's the science part.

Iola held five bags filled with tiny, brown seeds. She explained that the color, size, texture, and place of origin are all considered before deciding how to prep – or whether even to use – each batch of seeds. The goal is to have the highest germination rate possible, but there's no straightforward way to achieve that goal.

"That's the artistic part," Iola told the workshop.

From the nursery, the two buses traveled south past Buckley Bay, than twenty minutes up the mountains to the Bowser Research Plantation.

Forests are slow to reveal their secrets. Sometimes, a simple question, such as how the growth of Firs compares in mixed or monoculture plantings, can take a century to fully answer. So, it was no surprise that University of Alberta forest biologist, Phil Comeau, spoke with the patience of a Bonsai Master.

He led the group through his 15-year plantation. They walked past Alders, Firs, Cedars, Broad Leaf Maples, over a stream, and stopped beneath a shady canopy. Comeau patiently gathered everyone's attention.

"What can we say about this site?" he asked.

Everyone looked up. The Alders had clearly taken over, forming a dense upper canopy thirty feet above. Below, spaced out Firs created a feeble secondary canopy. Six to seven foot cedars were sparsely spread across the forest floor.

"Researchers in the US," Comeau noted, "say that a planting with this many Alders means lights-out for conifers."

"Well, the Firs are definitely growing," observed someone from the workshop, "but with a canopy like that above them they'll suffer a lot of mechanical damage."

Comeau had everyone gather around one Fir and note the large knots that spiraled every foot or so up its trunk.

He led the workshop to another site. Neither the Firs nor the Alders dominated. With less Alders mixed into the planting, a delicate balance was found where deciduous and coniferous could share the skies. The Firs were healthier and much taller than

in the last site. Even the infamously slow growing Cedars had more of a presence.

"Alders are nitrogen fixers," Comeau explained, "they co-exist with a fungus that pulls nitrogen from the air and fixes it into the soil."

On the West Coast, nitrogen is often the one nutrient missing from our forest's diet. How to use Red Alders to supplement this nutrient in tree plantations is one of many questions Comeau hopes to answer with his Bowser research sites.

The workshop was eager to learn more, shouting out questions even as the organizers herded them onto the buses, trying to stay on schedule. Comeau calmly bid farewell, reminding the group that his research was far from over.

"Whenever anyone asks me how long this project is going to last, my answer is always the same – forever."

Silviculture starts with a handful of seeds; it's the art of turning that handful into a forest, and the science of predicting what that forest might look like.

Only a gathering of researchers and practitioners from every corner of Canada's West can begin to make that prediction. For a couple days in the Comox Valley, that's exactly what two busloads of forest professionals and a network of scientist tried to do.

Of course, every forest holds at least a few surprises, no matter how thoroughly it's planned. While Don Pigott can find the best seeds, and Iola Elder can make sure they germinate, and Don Comeau can plant them in an ecological community, only patience can grow the trees. 🌲