

Clearcuts and Seedlings

EXPERIMENTS PROVE YOUNG TREES THRIVE IN PARTIAL SHELTER

BIOLOGIST RICK ZAMMUTO SAYS HIS SEEDLINGS HAVE HAD A WHOLE SUMMER TO GROW UNDER THE SHELTER OF PARTIAL FOREST CANOPY SINCE THIS ARTICLE WAS WRITTEN LAST JULY: "THEY'RE UP OVER MY HEAD NOW, BUT THE CLEARCUT ONES ARE STILL JUST UP TO MY KNEES."

ZAMMUTO PREDICTS THAT THE FOREST INDUSTRY WILL BEGIN TO DO ENVIRONMENTALISTS' WORK FOR THEM, AS LOGGERS AND MILLS SEE A WAY TO MAKE MORE MONEY: "NO EXPENSES FOR SLASH BURNING, NO HEAVY EQUIPMENT COSTS, AND NO ONE CAN ARGUE WHEN THEY SEE TREES GROWING LIKE THIS. OUR LOCAL MILL CLEARED \$600,000 LAST YEAR, AND NOW THE BIG GUYS ARE COMING TO FIND OUT HOW."

MERV WILKINSON, WHOSE COASTAL OLD GROWTH FOREST, WILDWOOD, NEAR LADYSMITH HAS HAD A SIMILAR PROCESSION OF VISITORS TO SEE THE RESULTS OF SELECTION LOGGING AS ZAMMUTO'S INTERIOR GROVES, CONFIRMS THAT DOUGLAS FIR ALSO WILL THRIVE IN A PARTIAL CANOPY: "THAT'S THE SAME AS ON MY OWN PLACE. TREES DO BETTER UNDER A PARTIAL CANOPY. THEY GROW BETTER, STRONGER AND FASTER, STRETCHING UP FOR THE LIGHT. THEY MIGHT LOOK A BIT SPINDLY THE FIRST FEW YEARS, BUT AS THEY GET TALLER THEY PUT ON A FULL CANOPY OF NEEDLES. AND OTHER FORESTERS ESTIMATE THAT THESE TREES AT WILDWOOD HAVE 10% MORE VOLUME THAN THOSE IN THE OPEN."



Environmentalists have long argued that clearcuts and forest plantations are ecologically unsound.

Now biologist Rick Zammuto has turned his 130 acres near Crescent Spur in the interior of BC into a biology lab in an attempt to show such traditional forest management practices are not necessarily in the industry's best interest either.

The experiment starts right outside his front door in a field strewn with daisies and buttercups. Poking up from among the flowers are spruce trees, most of which have grown about level with Zammuto's knees. The largest among them don't quite make his waist.

Closer to the edge of the field, shaded from the hot afternoon sun by forest, the experimental spruce stretches as high as his chin.

UNIFORM PLANTING

"Every single one of these were planted the same day by the same person. They were just taken out of a bag, all with the same genetic strain," Zammuto emphasizes, repeating the point each time he shows visitors to another experimental plot that shows the same dramatic results.

"I thought I was going to be out here with a little ruler. I thought I was going to have to measure the difference between ten millimetres and eight

millimetres," he said. "But this is obvious."

In all, Zammuto planted 21,000 experimental spruce under varying degrees of old-growth cover. Between 30 and 70 per cent shading seems to be optimum, he says.

More than 70 per cent does not allow enough sunlight to reach the seedlings. At the other end of the scale, seedlings left exposed in the middle of a large clearcut get too much. "Not only is it too hot, but it is too dry."

FUNGI DIE TOO

The adverse impact is not limited to the seedlings. The hot, dry conditions can also kill the mycorrhiza fungi in the soil that act as a pipeline for nutrients, helping seedlings grow better roots and tops. Without them, a lot of seedlings die.

"The idea that everything is going to be a plantation is crazy. The world doesn't work like that."

He began his experiment three years ago with a \$40,000 grant from the federal-provincial Forest Resources Development Agreement.

He and wife Julie had come to the Crescent Spur area, 140 kilometres east of Prince George, three years before that. It was the end of a long trail that started in Massachusetts where Zammuto studied forestry at the

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Essex Agricultural and Technical Institute. During a stop at the University of Western Ontario, he picked up his doctorate in evolutionary ecology.

With a trace of New England still in his voice, he describes his first reaction to the clearcuts he saw in B.C.

"It was deplorable. It was like the Third World War. I come from an old school where I learned that any clearcut larger than 40 acres would kill a forest," he said. Some in B.C. were 25 times that size.

DOCUMENTATION

"I felt sort of helpless and I began this project to see, to document."

The sound of a pileated woodpecker stops him in midsentence.

"That's a sign of old growth. They have to have old growth to live," he says, eyes scanning the trees for a glimpse of the bird while he explains how it nests inside large, old trees.

"They're huge. They're like something prehistoric," says Julie, joining the search and finally finding it at the crown of a massive cedar tree.

The scene is repeated over and over again through the day. Each new species prompts a short discourse from Zammuto on its nesting habits. Several require

the snags, or topless trees, found in old growth forest for their homes.

A couple of times he mentions that a particular bird species is new to his property. In fact, his work with old growth has meant an increase in all types of wildlife.

Zammuto credits what he calls "biodiversity brushing." Instead of clearing all the small growth around the planted seedlings, he takes out only those not important to wildlife. The way certain food bushes, like willow, are pruned can also increase the food supply dramatically.

"We had no white-tailed deer here and now we have 10 to 15 large animals. It's like they grew out of the ground," he said.

Mule deer numbers have jumped from 10 to about 25 or 30. Where Zammuto used to see between two and five moose, they now see six to 10.

Later coming out of the forest into the hot blast of a 32 C day, Zammuto stops to wipe his brow.

"This is how hot it is out on the clearcuts right now. Imagine an animal walking across 200 acres of this."

BALANCE CONCERNS

His research has convinced him that it is not only possible to balance environmental and economic concerns; it is essential.

"What has been realized over the years in my particular field is that the environment is the economy.

"The information now tells us they are not two opposing concerns. Not everybody knows that by any means. But people are learning."

Zeidler Forest products, which logs in the Robson Valley,

announced earlier this year it is eliminating clearcuts from its plans for the next five years.

Instead, it will leave smaller trees to continue to grow and

"WE ARE FINDING THAT WORKING WITH THE NATURAL SYSTEMS, RATHER THAN AGAINST THEM, CAN POTENTIALLY BE MORE COST EFFECTIVE IN THE LONG TERM."

*ZEIDLER 1992
FIVE YEAR PLAN*

larger trees for shading and wildlife. The company cited university studies that show that spruce prefer 25 to 30 per cent shading, findings similar to Zammuto's, as one of the reasons for its decision.

Zammuto argues, and Zeidler confirmed, that this kind of approach is cheaper than cutting down everything, burning slash, replanting the entire area and using herbicides to keep down competing brush.

It also preserves the tourism potential of an area in a way that large clearcuts never can, says Zammuto. It doesn't always have to be a choice between logging and recreation, or between jobs and old-growth forest, he argues.

"If they'd log right they could have both."

By Diane Bailey

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For more information about silviculture and regeneration, or about the *Headwaters Unfragmented Biodiversity Ecosystem Coalition*, contact Rick Zammuto, General Delivery, Crescent Spur, BC V0J 3E0