

By Michelle Mentore

Forestry Team in Action

Reclamation of the First Oil Sands Tailings Pond

On September 23, 2010, Suncor Energy Inc. officially celebrated the closure of the first tailings pond in the Athabasca Oil Sands region of Alberta. Construction of Pond 1 began in 1966 and the pond received tailings (a mixture of sand, silt, clay, water and residual bitumen) from the oil sands extraction process until 2007, when it was released for reclamation activities. These activities consisted of:

- removing the tailings from the pond for use in current tailings technology;
- infilling the pond (220 ha, built to 100m above the original elevation) with clean tailings sand;
- contouring the sand to incorporate hills, drainage ditches and a wetland;
- placing forest and peat-mineral soils over the sand to a depth of 50cm;
- adding wildlife enhancement features such as standing dead wildlife trees, coarse woody debris and rock piles;
- establishment of a nurse crop of oats and seven native grass species; and
- revegetation of native forest species.

Forestry professionals supervised the planting of 625,000 native trees (six species), shrubs (13 species) and aquatic plants (seven species) in June and August 2010. The seeds used to grow the planting stock were

collected from the local area, and the seedlings were produced by a contract nursery in northern Alberta. The tree planting project was carried out by Fort McKay Environment, a local aboriginal contracting company. The development of the forest on Pond 1 (renamed Wapisiw Lookout,



after the first aboriginal person to bring a sample of bitumen to the Hudson's Bay Company) will be monitored for many years to come.

Project Team

Lelaynia Cox, RPF (BC, AB); Mike Howe, RPF (AB); and a team of up to 25 engineers, biologists, hydrologists and agronomists.

Project Funding

Selkirk Power Company Ltd.

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North Coast Forest Professionals and Conifer Oils

RPFs working with First Nations, using waste salvage to create value-added products in a depressed northern economy: what could be a timelier project? The north coast of BC is well-known for its old growth timber, but a new initiative shows that all that glitters is not old – the value of fine woody debris may hold its own weight in gold. The distillation of essential oils from conifer needles is not a new business globally, but a group of northern BC forest professionals and First Nations experts are taking an old and sophisticated market to novel places.

Since 2005, RPFs Lana Wilhelm and Whitney Lukuku have worked with the Heiltsuk in Bella Bella, the Haisla in Kitamaat Village and the Haida on Haida Gwaii, through the Great Bear Initiative Non-timber Forest Products Working Group, to assess the operational feasibility and test yields of distilling essential oils from conifers. Beginning in 2009 and continuing in 2010, five coastal species in all age-classes have been tested for their various active chemical properties through small and large-scale steam distillation units. The learning curve is large, and the results from bough collection, distillation and market analyses, have been extremely promising. From the food industry, to

cleaning products, natural pesticides, aromatherapy, cosmetics and more, the potential for successful business spinoffs is very strong. Stay tuned for North Coast Oil products that have nothing to do with tankers!



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Project Funding

Coast Opportunities Fund, Rainforest Solutions Project, Tides Canada

Forestry Group Study Exchange Trip to Australia

In February 2009, Dave Brown, RPF, and Jill Werk, RPF, travelled to Australia to participate in a five-week forestry Group Study Exchange (GSE) through Rotary International. Dave and Jill joined two other teammates (Koshare Eagle; a forester from Washington State and Ben Curtis; a BC undergraduate forestry student) and were led by Rotarian Kim Sleno.

The tour's aim was to promote understanding of the forest industry and culture in Australia. The team traveled to approximately 15 towns learning about forest management and exchanging information by delivering presentations about forestry in BC and Washington. They toured various timber production and processing facilities including seed orchards, nurseries, plantations, active harvest sites and wildfire operations.

Discoveries included the higher productivity of Australian forests and the implications of shorter rotations and managing for specific markets. Most of Australia's forest land is privately owned which differs from the Crown-owned forests in BC. The team learned how Australia is managing its forests in the face of a decade-long drought. A home grown surprise found while touring was a small (3-5 person) window frame construction facility where the owner was working with a shipment of red cedar wood from Vancouver Island.



Aside from touring forest operations, the team also gained insight to other industries by touring wind farms, water management areas, and agricultural, historical, mining and aboriginal sites.

Project Team

Dave Brown, RPF; Ben Curtis; Koshare Eagle (USA); Kim Sleno; Jill Werk, RPF

Sponsor

Rotary International

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Stream Restoration in Haida Gwaii

Teal Cedar Products recently completed a stream restoration project on Two Torrent Creek. This area in the Haida Gwaii Forest District was identified by Fisheries and Oceans Canada as the preferred site to compensate for impacts to eelgrass habitat associated with the reactivation of a log dump site.

The Two Torrent Creek watershed has been extensively logged, and as the name suggests, has experienced at least two separate debris flow events in the past 50 years. The stream channel was lacking in large woody debris (LWD), consequently there was very little habitat complexity and much of the smaller substrate (small cobble, gravel and sand) had been scoured away. Two Torrent Creek supports runs of coho and chum salmon, Dolly Varden char and sculpins.

The addition of functional LWD to the channel was accomplished by falling selected trees from the riparian area. Trees were selected based on suitability for the structure, and safety and logistical considerations. Once the trees were felled, they were winched into their final positions by a crew using a Tir-for Jack and conventional rigging methods.

A comprehensive pre-work assessment of the stream habitat characteristics was completed and it is anticipated that over a period of three to five years, the restoration work will increase the overall channel complexity and stability and increase the amount of stream

channel that contains high quality habitat features (deep pools, functional LWD, stable spawning gravel and stable channel banks) by 25% to 30%. The area of stream channel over which restoration work was done totaled 3,240 m². A 25% to 30% increase in the amount of good quality fish habitat means that, if successful, this project will meet or exceed the desired objective of 800 m² of habitat compensation.



Project Team

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An Adaptation Strategy for Red Alder

The red alder adaptation strategy is a collaborative project with researchers at the University of British Columbia, the University of Victoria, the University of Alberta, Oregon State University and the BC Ministry of Forests and Range. The overall objective of the project is to blend new and existing knowledge about red alder to create a strategy to reduce environmental, social and economic risks of climate change in coastal BC. Following a multi-disciplinary and collaborative approach, this study addresses the following questions:

- 1) What are the effects of climate, age, soil and latitude on growth of red alder, and how does climate affect the competitive and facilitative relationships between alder and Douglas-fir?
- 2) What is the range of genetic adaptation vs. physiological acclimation in alder's response to variation in climate?
- 3) Where can alder be planted today that minimizes risk from climate change and maximizes benefits to forest-dependent communities including First Nations?
- 4) What traditional knowledge can First Nation elders provide that will help us to learn about the potential for future cooperative management of alder?
- 5) What steps need to be taken to develop an integrated hardwood forest sector value chain industry on the coast?



Red alder has been shown over the past two decades to have excellent value for solid wood products, with log prices approaching or exceeding parity with Douglas-fir. Increasing management of this species, previously considered a weed, is expected to contribute to improved ecosystem resilience and market diversity. This project is funded through the Future Forest Ecosystems Scientific Council of BC.

Project Team

Phil Comeau, PhD, PAg; Francesco Cortini, FIT; Louise de Montigny, PhD, RPF; Craig Farnden, PhD, RPF; Peter Fielder; George Harper, RPF, PAg; Barbara Hawkins, PhD, RPF; David Hibbs, PhD; Rob Kozak, PhD, FIWSc; Marty Kranabetter, PhD, PAg; Bruce Larson, PhD, ABCFP Honorary Member; Dan Nadir, FIT; Rod Negrave, PhD, RPF, PAg; Brendan Porter; Ron Trosper, PhD; and Tongli Wang, PhD

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Ripple Rock Trail Project: Making the Most of the Job Opportunity Program

The Ripple Rock trail upgrade project was completed by Forsite Consultants Ltd. under the Job Opportunity Program between September 2009 and May 2010. The trail, located 20 km north of Campbell River is popular with both residents and visitors. The trail takes hikers along the ocean up to rock bluffs overlooking Seymour Narrows and the site of the world's largest non-nuclear explosion.

A crew of four to six displaced forestry workers labored intensely for six months during the dark, wet winter months grubbing out new trail sections, removing jagged loose rock from the path, brushing out the extensive overgrowth of vegetation, resurfacing where needed, constructing railings, footbridges, boardwalks and stairs.

One of the trail's greatest concerns was a 13 m rock face at the end of the trail that restricted many from reaching the top of the bluffs and the breathtaking views. Additional funding was sought and obtained through the Island Coastal Economic Trust to have a set of fabricated aluminum stairs designed, constructed and installed.

The value and appreciation of the upgrades were emphasized during a post project assessment, which coincided with a group of elderly women hikers from the Comox Valley. This group commented on how the new stairs and improvements had inspired many who had previously thought the trail too challenging, to give it another try.



Project Team

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