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# How the New Forestry Strategy Threatens Plant Species at Risk in NB

The steep coniferous slope, covered in old growth White Pine, Eastern Hemlock and Eastern White Cedar, was exceptionally dry because of a prolonged early summer drought. The hard-packed clay soil and overlying loose blanket of pine needles made the going precarious. Suddenly, a beam of sunlight illuminated a 70 cm tall ruby-red, fuzzy, stalk bearing

at least 50 off-white, drooping, bells reminiscent of blueberry blooms. Fortune shone upon us on this sunny day in mid-July. We found a new population of Pinedrops (*Pterospora andromedea*), an endangered species in New Brunswick, currently known only from 6 or 7 locations in the province. Intensive searching at this site that day, in the valley of a major New Brunswick river, revealed over 20 additional plants of this species, most in peak bloom. Pinedrops is a great rarity in the east, and the only extant locations in northeastern North America east of Bic, Quebec, are in New Brunswick.

How will Pinedrops and other plant species that are at risk and grow only in forested habitats, be affected by the forestry Strategy, made public on March 12, 2014? This strategy will generate an increased Crown softwood supply through activities such as "Better utilization on existing harvest sites (safely accessing some of the steep slopes and the currently available portions of some buffers)." Almost all of the known locations for Pinedrops in New Brunswick occur on sites that fit these criteria. What safeguards will be put in place to ensure that critical

habitat for Pinedrops is not destroyed as the new strategy is implemented?

Unfortunately, there is no mandatory scrutiny for species at risk on Crown lands that are accessible for forestry practices. Even if there were, Pinedrops does not bloom consistently every year at its known locations in the province, its numbers tend to fluctuate widely at a site from year to year, and individual plants seldom emerge at precisely the same location where plants were found in previous years. Cutting on steep forested clay slopes could not only harm populations of Pinedrops, but increases the risk of erosion, further threatening critical habitat for this species.

An essential requirement for the germination and growth of Pinedrops is its association with a particular species of mycorrhizal fungus. Molecular genetic studies have shown that the fungal associate of Pinedrops in eastern North America is an undescribed (yet-to-be-named) "false-truffle" in the genus *Rhizopogon*. *Rhizopogon* species fruit entirely underground and depend mainly on flying squirrels for their dispersal. What else remains unknown in this web of interactions? What is/are the pollinator(s) of Pinedrops, for example?

Can forests be "managed" for such uncertainties, other than by allowing sizeable portions of them to remain as little modified by human activity as possible?

While searching for rare orchids in Charlotte County one Canada Day, inspired by Austin Squires' book *A Naturalist in New Brunswick*, we came across a small block of Crown land that was surrounded by



Pinedrops (*Pterospora andromedea*)  
Photo by J. Goltz

clear-cuts bearing large diameter stumps of cedar. The residual patch of old growth mossy cedar woods remaining sported hundreds of Showy Lady's-slippers (*Cypripedium reginae*), standing thigh-high and bearing spectacular pink and white blooms, each about half the size of my fist. Further exploration of this stand revealed eight other species of wild orchids and a few plants of the very rare Swamp Moonwort (*Botrychium tenebrosus*). Fortunately, our discoveries prompted what remained of this site to be removed from harvest considerations and to be eventually designated as a protected natural area.

However, old growth wet cedar forests that are habitat for uncommon to very rare plants on Crown and private lands in New Brunswick continue to be lost every year. New Brunswick's new forestry Strategy will put similar sites at greater risk of being destroyed. Softwood will be harvested at higher levels than in the past, and "Some areas previously managed to provide [wildlife] habitat will be re-arranged and overall objective levels will be reduced." The implications of this for biodiversity in New Brunswick are disturbing. Old growth wet cedar forests support a unique biota of species that are often very rare in North America or very rare in Atlantic Canada. Such species, and others as yet undescribed, continue to be discovered in such habitats through field research in New Brunswick. Many of the plant species that have adapted to old growth cedar forest habitats cannot survive clear cutting, or selective cutting that disrupts the integrity of the stand. Calypso (*Calypso bulbosa*), a beautiful spring-blooming wild orchid of calcareous cedar habitats, is exquisitely susceptible to habitat disturbance, and has disappeared from many of the locations in the southern half of the province where it used to grow, as well as from much of eastern Canada and the eastern United

States. One of our rarest native orchids, White Adder's-mouth (*Malaxis monophylla*) is facing the same plight for similar reasons.

It's not just this new Strategy that puts species like these two native orchids at risk. Rare plant species are also threatened by policies that have been put in place to apparently limit potential restrictions on resource extraction industries. For example, old growth wet cedar forests are wetlands. However, because they are forested, they are not classified as wetlands in New Brunswick, and policies that apply to other wetlands do not apply to them or to many of the other forested wetlands in the province. When New Brunswick revised its Endangered Species Act and Regulations in 1996, it was strategically decided that only those species of plants that were nationally endangered would be listed as endangered in the province.

This was despite recommendations by the most knowledgeable scientists in New Brunswick that all of the very rare and rare species of plants that occur in threatened habitats should be listed as endangered for the province. Two regionally endangered animals were listed at that time, but regionally rare plants were to be protected with "spe-



Showy Lady's-slipper (*Cypripedium reginae*)  
Photo by J. Goltz



Calypso (*Calypso bulbosa*)  
Photo by J. Goltz



Van Brunt's Jacob's-ladder (*Polemonium van-bruntiae*)  
Photo by J. Goltz

cial management,” not legislation. New Brunswick’s 2012 Species at Risk Act replaced the earlier endangered species legislation and gives a new committee power to recommend that additional species be listed, but none have been designated yet.

Even before New Brunswick launched

its new forestry Strategy, proof of the potential deleterious impacts of forest harvesting on plant species at risk and rare plant species was already in evidence on both Crown and private lands. Clear-cutting has occurred at Black Spruce and Red Maple wetland sites that harbour Southern Twayblade (*Listera australis*), a nationally endangered species of wild orchid.

Southern Twayblade (*Listera australis*)  
Photo by J. Goltz



Calypso continues to disappear from sites where cedar forests are logged and populations of this rare species are diminishing. Van Brunt’s Jacob’s-ladder (*Polemonium van-bruntiae*) was once considered extirpated in New Brunswick, but was recently re-discovered. Immediately adjacent to one of the few sites where this species in now known to occur in New Brunswick, there is a sizeable recent clearcut. Jacob’s-ladder grows up to the edge of the clearcut, along a creek that flows through a cedar-alder wetland, but the cutting

that occurred nearby eliminated any buffer strip or suitable habitat beyond this point. It seems likely that clear-cutting at the site reduced the size of the population of this plant species here.

Permanent protected natural areas are a crucial tool in the protection of species at risk and rare species. The new Strategy makes a commitment to increase protected natural areas in New Brunswick. This is a significant step forward. However, few protected areas have been designated or planned to protect species at risk or rare species that occur in New Brunswick.

One of the new Strategy’s key outcomes is to diminish the amount of forest managed for conservation objectives. This is likely to have serious repercussions for rare plant species and species at risk. This is especially true since so many of these species occur in older growth forests, forested wetlands, and within buffer strips, sites that will be targeted and negatively impacted for biodiversity by the new forest Strategy.

The wild plants of New Brunswick are an important part of our natural heritage, cultural identity and uniqueness. They have intrinsic value and it is our duty to be responsible stewards, to ensure that they will continue to survive and thrive along with us. Policies and strategies that prohibit or diminish good stewards or exacerbate the risk to our endangered, rare and threatened plant species need to be carefully examined and reconsidered.