

Fire in the Bog - An Ecological Tragedy?

Burns Bog, Delta - For days, the Lower Mainland has been at times clouded in a smoky haze, at others, rained on by ash from the Burns Bog fire. Sunday night before last, firefighters estimated that the fire covered only 20 hectares and considered it to be 80% under control. Since then, the fire has spread to 205 hectares, approaching the size of previous fires and promising to keep firefighters busy.

In recent days since the fire, the Burns Bog Conservation Society has received many calls from concerned citizens. This is our attempt to answer your questions regarding the potential ecological effects of the fire on the bog.

Most of our information has been provided to us via e-mail by our honorary chair, botanist, bog ecologist, English broadcaster and writer, David Bellamy.

Contrary to public belief, a bog fire is, ecologically speaking, not a tragic event. Fires are a natural part of an ecosystem's life cycle. After each fire comes a time of renewed growth and regeneration. Ecologically speaking, a fire is much less destructive than drainage or of course, development that sees bogland permanently converted into landfill, urban areas or housing lots. After a fire, the bog will be re-colonated by various stages and types of plants that will over time, result in the development of a renewed bog.

The fire which has consumed many trees is in actual fact slowing down the gradual progression from bogland to forest. Bogs are by nature acidic, wet, and poor in nutrients. These conditions, especially the low nutrients, create harsh living conditions for trees resulting in stunted, unhealthy trees. As the Society often says, "Healthy bog have unhealthy trees and unhealthy bogs have healthy trees."

Natural succession would in time see the bog slowly become a forest, starting at the edge of the bog. Drainage of any sort that lowers the natural water table will speed this process, leading to more rapid encroachment of the pine trees that are moving in from the edge. The area where the fire is currently burning is in fact already treed and the removal of them will in the long run, extend the life of the bog.

Bellamy also explains that the fire may burn without causing irreversible damage to the living peat layer as long as the water table is restored. As quoted by Bellamy, "Say your prayers for a good drip of rain." Water, if you will have it, is to the bog what blood is to us. When a bog is affected to the point where its water table dries up, a bog is no more. It may become forest which interestingly, only store an estimated 1/3 of the carbon (often coming from air pollution) that bogs store.

Either way, burned and singed peat can also be revitalized just so long as the water table can be restored. According to specialist David Bellamy, the removal of trees by the fire will actually slow down rate of "evapotranspiration", or the sweating of plants, in a bog. This will result in an improved water table balance, crucial to the life of a bog.

The overall importance of the water table has significant implications for the management of Burns Bog. It indicates that the very regenerative abilities of the bog depend seriously on the health (ie. level) of the water table. The bog currently still contains drainage pipes. The good news is that GVRD is planning to plug them up. The Scientific Advisory Panel to the GVRD-lead management plan also suggested perhaps flooding the land to raise the level of the water.

Please note by Bellamy: "As the bog is a dome of living peat, fed by the slightly acidic and nutrient poor rain water that falls on its surface, the only flooding that should be contemplated is (one where) the water table around the margins of the bog is raised ever so slightly. (This would increase the wetness of the) already wet "lagg" (edge of the bog) area that is dominated by a mixed conifer and broad leaf woodland. This is how the bog used to grow in its natural state, (by choking out nearby trees and non-bog plants). *Parenthesis added by the Society.*

(For more information on the GVRD-lead Management Plan and the purchase of 5025 acres of the bog, please visit <http://www.gvrd.bc.ca/burnsbog/meetings.htm>)

And according to Bellamy, the ashes of the fire will not upset the acidic pH of the bog, once again, if the water level of the bog is restored. And although the water level could be raised by the dumping of saltwater to quench the flames, Bellamy states that the salt will adversely affect the acidic pH of the bog, making it less acidic. The Society is also currently looking into the possible environmental and health effects of the use of fire retardant on the bog. Bellamy Note: Be very careful (with the fire retardant.) However I advise the best practice is to keep the bog as wet as possible. FUTURE MANAGEMENT MAY REQUIRE CONTROLLED BURNING AND HAND REMOVAL OF PIONEER TREES. (It may) EVEN (require) THE EXCAVATION OF A BOGLAND RESEVOIR, BRIM FULL OF NUTRIENT POOR ACIDIC BOG WATER READY FOR USE IN (future) FIRE FIGHTING.

As for how the fire will affect wildlife, Bellamy believes it reasonable to expect that most mammals will have escaped the fire thereby preventing a massive and tragic mortality. Smaller mammals, reptiles and amphibians that migrate underground may also have been spared if the fire was not too intense. If this is the case, they may survive in pools of water in the bog that would have remained cool enough.

On the bright side of things, according to Scottish bog ecologist and rehabilitation specialist Marcus Collier, the fire will also allow scientists to research the effects of fire on a bog and would allow scientists to track a bog's recovery process. Comparison studies of the stages of regeneration could also be possible by contrasting the area currently affected with the area that was burned in 1996.

After the fire is extinguished, Bellamy suggests that the rehabilitation of the bog could be accelerated by the "spreading (of) chopped aquatic sphagna (moss as) even tiny pieces can regenerate."

The recovery process will no doubt be an interesting one to watch for scientists and members of the community alike. Until then, we still some time to wait until the fire under and above ground are completely out. The Burns Bog Conservation Society is extending a hearty thanks to all the firefighters working hard on the ground and in the air to put out the flames in the bog. We extend our greatest thanks to all firefighters, working tirelessly to literally SAVE OUR BOG!

Personal Message by David Bellamy: PLEASE REMEMBER JUST HOW IMPORTANT BURNS BOG IS ON A WORLD SCALE. (It is) A GIANT DOME OF LIVING PEAT IN AN ESTUARINE SITUATION, IN A RICH FIRST WORLD COUNTRY. (It is also) MOTHER NATURE'S OWN SOLAR POWERED COASTAL DEFENCE. IT IS NOW IN YOUR HANDS FOR ALL OUR FUTURES.