

The Fire Line

Department of Natural Resources -
Forest Protection
Issue 2

"To Protect the property and woodland of Nova Scotia by providing leadership and support in Wildfire Management."

Climbing the Ladder Less Traveled

Working in a fire tower or lookout in the middle of the wilderness takes a hardy and special type of person, one who can work with no supervision, and is able to survive without any other human interaction. It requires not being scared of heights, good eye sight, intelligence, and a contentment with his/her job great enough to overcome the loneliness of the life.

Often times our tower operators have to park their vehicles and hike in to their place of work. The only days off pre-union were rainy days for 6 months of the year, sometimes working for 20 days straight. Looking out for smokes and spending countless hours in the unwavering heat of the day in a small six by six foot bubble. On windy days you wished you had taken some Gravel and when quick passing thunder cells came through all of a sudden you'd wish you had more to hide under than a map table. The loneliness, the silence, the sound of the wind, watching the birds fly by, trying to stay awake, reading the Safe Work Practices binder and yearly start-up package your boss gave you over and over again because you forgot to bring a book or newspaper.

There daily routine often starts at 11:00 am, getting to the tower, donning your safety harness, bundling and tying a package of stuff to hoist to the top when ready. Then there is checking in as you ascend, get to the top, descend and get to the bottom. Climbing the 80-100 foot tower to work requires strong legs and set of lungs. Hourly check in is the norm just to let staff know you are alright and everything is quiet.

When tower operators spot a smoke they must call the local office using the map/alidade, providing a coordinate, (this device sits on a platform mounted on an ingenious sliding device, to get around the blind spots in the tower). With experience, a tower operator can give smoke color (which determines what is burning) and a rough location to the district staff, whether or not it is getting larger or smaller. The operator can also contact another tower in the area for a "cross bearing" that provides a more accurate location for crews on the ground.

Yes, its a reduction of a glorious and romantic era for the "sentinels of the forest". They will always hold a place in the hearts of many "rangers" as Owen Barr used to say. Some are gone but not forgotten. Therefore, a title I thought fitting for this article also the title of a novel written by author Joe Bill. Fire towers these days seem to be a topic among many in the province, the more I research the topic I realize we are not alone. Fire towers all across North America are under review, many have been decommissioned (as far back as 1960 in Ontario), some have been turned into tourist attractions in the US and some are just torn down. The changes in life and technology are both getting in the way of a system that was once the cream of the crop and in some instances still is. In Nova Scotia a group of 33 fire towers has been reduced to 13. Clusters of towers have been retained in remote areas to keep watch of unpopulated landscapes.

INSIDE

- Fire Season Start-up
- Pump Refueling
- Campfire Guidelines
- Wildland Firefighter Fitness
- Wildland Urban Interface & Firefighter safety
- Wilcox Award Winner
- According to Jim
- Fire & Insects - Shaping Our Forests
- Training Update
- Fire Control Corner/Contacts



Book of Interest:

Fire Season - Field notes from a Wilderness Lookout by Phillip Connors

Johnson Hill Fire Tower
Graham Murphy Tower
Operator

Fire Behaviour Facts...

Duff Moisture Code greater than 20 - Possibility of hold over lightning fires.
Fine Fuel Moisture Code greater than 90 - High possibility of spot fire development

Traveling the Ladder less Climbed continued...

Many of the towers are 40 plus years in age now, some are in such need of repair or replacing that the cost of doing so far outweighs their effectiveness.

In 2012, only 6% of wildfires were reported by tower operators. public reported 292 fires out of 353. With the increase in risk analysis and fire science/weather capabilities, we are better equipped to be able to predict when, where and how to look for fires and to know when detection services are needed.

Statistics show that most of our season is spent with a fire hazard of less than a 6 for a fire weather index (for those who don't know a Low, to

Low/Moderate hazard). At less than 6, towers need not be staffed, because there isn't any hazard issue. In an average year this would mean Nova Scotia's towers would not need to be staffed 67% of the time.

With staff shortages, increased safety standards, the deterioration of current structures and the rising cost of daily operating budgets a look towards a more economical approach to detection was taken. Hence the introduction to aerial detection along with the fire towers that are remaining. We now have a contract with Greenwood for two fixed winged aircraft to fly set routes when hazard warrants. These planes can see a great distance when flying..



It's almost camping season!

I encourage staff in the districts to visit your local private and provincial campgrounds and check to see what kind of campfire devices are being used out there and if they are safe in both design and distance from vegetation and campers. Feel free to send photos and information into Kara at Fire Control. Also on the next page are some guidelines for campfires, feel free to use and alter, they are not set in stone! Email me for an electronic copy!

FIRE SEASON START-UP REMINDERS

- Go over your Fire Inventory
 - Inspect fire trucks and fill with equipment (check trucks for safety inspections, registrations, air, oil, and gas and don't forget the water)
 - Check what fire hose needs it's 2 year inspection and try to get as much done when the humidity is low - it dries faster.
 - Personal protective equipment - Is it complete, do you have gloves, eye/ear protection, boots that are not worn, coveralls or two piece intact, no holes or burn marks, packs packed with extra socks, sun screen, bug spray, snacks, notebook, radio, battery etc?
 - Fire tower harnesses - For those who have one - did you pick your up?
 - Check fire towers for maintenance needs and report any to fire control
 - Check weather stations - Tipping buckets, solar panels, wind meters and tower wires
 - Deliver fire gear to appropriate fire departments
 - Write down and do your training needs and wants.
- Most of all have a safe fire season this year!



Seriously...what was the start up age For firefighting then?

Without inspiration the best powers of the mind remain dormant. There is a fuel in us which needs to be ignited with sparks. - Johann Gottfried Von Herder

Photo of the Month!
Taken from the cab of the Muskeg at
Lightning fire in Lunenburg 2012, it was
a dry, breezy day lots of Ash flying
around. Remember to wear safety
glasses!
Taken by Rick Anthony



Pump Refueling Safety Warning

From the National Wildfire Coordinating Group - Lessons Learned Center

In 2009 an accident occurred in which a firefighter was burned while checking the fuel level in a jerry can attached to a portable pump. They sustained 2nd and 3rd degree burns over 20% of their body, but after weeks of hospitalization and often painful treatment they are expected to make a full recovery.

Everyone has used portable pumps. Please follow these mitigation s in order to avoid a similar accident in the future:

- When refueling a pump ALWAYS shut the pump down first.
- Take care to locate fuel cans at a safe distance from hot engine parts as possible, don't let the pump exhaust vent directly onto the fuel can
- Always wear appropriate Personal Protective Equipment when refueling any piece of equipment. Eye protection and gloves can prevent severe life changing injuries.
- Always open the air vent on top of the jerry can when running a pump. Ensure the can is secured if set up on uneven or sloping ground.
- Remember stop drop and roll if your clothing catches fire. Even Nomex clothing will burn if it is saturated with a flammable liquid like gasoline.
- Know first aid for burn treatment
- Do not operate a radio or any other electronic device such as a cell phone while engaged in fueling operations.
- Review accident report located at:
http://www.wildfirelessons.net/documents/Logging_Slash_Fire_Accident_Investigation_Report.pdf
- Be sure to discuss lessons learned with your crew and co-workers
- Always have an After Action Review for all fires - Post fire reviews bring out what was done right, what could have been done better and any safety issues that could come up on any fire!

Campfire Guidelines

Campfire guidelines in Provincial and Private Campgrounds

- Should be in a fixed non-moveable location within the campsite
- Surrounding vegetation is cut, scraped, gathered and removed within 3 meters in all directions of the campfire location.
- Fire should be in a non combustibile appliance (Ex: Rock, brick structure, washer tub, part of an old oil drum, chiminea, metal fire ring, purchased from local hardware stores or an old large tire rim.)
- Should be placed on bare mineral soil and have bare mineral soil around the campfire a minimum of one foot.

Campfires should not be made outside of campground pits.

Campfire Guidelines outside of Campgrounds

- Check with local authorities on open-air burning restrictions, and follow local burning regulations.
- Keep campfires small no more than 1 by 1 meter in size, never leave unattended.
- Never build a campfire on a windy day. Spark or embers from the fire could travel distances setting an unintentional fire.
- Watch wind direction and speeds around campers and structures or other flammable material when having a campfire. Extinguish if wind direction/speeds become questionable.
- Build campfires away from flammable vegetation, clear a spot at least 3 meters in all directions right (cut, scrap and gather/remove vegetation)
- Surround you campfire with large rocks or use approved appliances such as campgrounds provide or purchased from a hardware store.
- Clean to bare mineral soil under campfire and at least a foot in diameter around campfire.
- Never use accelerant, some can ignite fumes, or spilt fluids on your clothes. Only used approved lighting fluids.
- Use crumpled paper or natural fire starters to light the fire
- Secure all lighting appliances from small children
- Don't burn garbage Nova Scotia has an in depth recycling program there is no need - pack out what you pack in.
- Stack extra fuel wood away from campfire
- Fully extinguish fire, drown it to the point of being able to touch

For campfire guidelines, tips on fire starting methods, natural fire starters, burn barrels and interesting fire facts visit:

www.gov.ns.ca/natr/forestprotection/wildfire/prevention

Automated Weather Stations

<http://www.gov.ns.ca/natr/forestprotection/wildfire/fwi/24-hour-trends.asp>



What cloud type is this? It is a good indication of a thunder cell, a possibility in wind direction change, in wind speed change, a change in humidity and lightning potential dry or not. Not a great thing to see on a working forest fire unless it brings rain...good to know for fire behavior though. (Cloud type answer on last page)

For Sustained Action crew members and new recruits

please visit: <http://www.ciffc.ca/>

And read the WFX-FIT training package, it has great fitness ideas to get you in shape!

Wildland Firefighter Fitness

(A spin off from an article in Fire Rescue December Edition 2012)

It's hard to believe I've been fighting wildland fires for twenty years and I have come to accept the fact that I am no longer the 20 year old I once was beating around the block.

What I once was able to do in five minutes now takes me double the time. It used to be a matter of leaning against a charred spruce for a few minutes, pour some water over my head and take a sip and keep going, but now I have to sit down, collect my feet and drink the whole bottle of water. After most wildfires going home to soak my old bones in an Epsom bath and take muscle relaxers then in the end take a vacation day. What we need to realize is we can still perform these duties it just takes longer to recover. Being laid off all winter doesn't mean we have to sit around and watch TV.

Maintaining fitness is not about how much you can bench press or how you look, it's about our ability to do your job in life threatening situations. It's the capacity to perform difficult, complex, physically demanding motor skills over prolonged periods of time in harsh, high heat and threat environments. To all the older guys and gals reading this all is not lost. I believe I have a tremendous advantage because of my experience. After all, I have been trucking wildland fire gear for twenty years. I'm used to how it feels to carry it through rough terrain over wind falls, I know how it affects my balance and center of gravity. I do not have to work as hard as a less experienced user to maintain my footing over rocks and trees, and if I'm expending less energy to do something like this, then I have that amount of energy to expend somewhere else. We only have so much fuel to conserve in our tanks, experience equals more efficiency.

Although in saying that, if you haven't carried a hose pack or a Wajax in months get off the couch! After you read this though. Stop neglecting your fitness!

Corporate Lessons

A turkey was chatting with a bull. "I would love to be able to get to the top of that tree," sighed the turkey, "but I haven't got the energy." "Well, why don't you nibble on some of my droppings?" replied the bull. "They're packed with nutrients." The turkey pecked at a lump of dung and found that it actually gave him enough strength to reach the first branch of the tree.

The next day, after eating some more dung, he reached the second branch. Finally after a fourth night, there he was proudly perched at the top of the tree. Soon he was promptly spotted by a farmer, who shot the turkey out of the tree.

Moral of the story: Bull dung might get you to the top, but it won't keep you there.

Frequency – Before you most likely spent 5 days a week working out and one day off (or you just had a superb metabolism and could eat five burgers and still look the same), now it's most likely going to be three days a week of working out. And all you do is look at the burger and gain weight. Decreasing your workout isn't going to make you any less efficient, you won't be grabbing the muscle relaxers and you will still be able to do as much as you did 15 years ago.

Intensity – Go hard when you feel good, go easy when you don't. It's going to happen don't go wild if you don't feel up to it, your body is trying to tell you something. Instead of lifting weights go for a walk. Younger people can withstand the insults of a hard workout. How many 40 year olds do you see running for a career in the military, fire or police? Pushing yourself will only result in injury.

Duration – Those who've been in it long enough often move up the corporate ladder which in turn results in more paperwork and office related duties and less physical work. Crew leaders, Forest Technicians, Fire science officers to prevention officers, you know what I'm talking about. Park further from work, walk 15 minutes twice a day, carry the equipment (properly) at work, go to the gym on the good days, mow grass, help the park staff, grab the weight vest and do routine tasks while wearing it...practice your job! (Remember more efficient equals less energy!) Small amount of workouts throughout the day will add up.

Last but not least... start eating more healthy choices than junk foods. I'm not saying don't enjoy life but the better you eat the better your ticker will work. We'd like you to stick around.

(Written by Dennis Reilly for structural fire fighting, altered by Kara McCurdy for Wildland firefighters)

Wild land Urban Interface and Focus on Wildland and Structural Firefighter Safety

With the ever growing population in Nova Scotia firefighters have to step up their game in Wildfires/structure protection with the increase in population, global warming and risk. Some actions and fire jargon used will be discussed.

Structure Triage Categories

Not Threatened – Is a structure which is either out of the path of the fire front or its characteristics are such that the structure is only minimally threatened. Be it vegetation clearance, building material, and hazards. Although they are not a high risk they should be monitored during fire operations.

Threatened Defensible – Is a structure that has an adequate safety zone or temporary refuge area nearby, but there's a high probability that the structure will be damaged or destroyed if suppression resources don't intervene. The structure may have some clearance of vegetation but may have combustible building materials and hazards or vice versa. These structures may include the

need of removing fuels, closing windows, covering vents and applying foam/sprinklers as an intervention tactic, residents are usually evacuated.

Threatened Non-Defensible – Does not have an adequate escape route to a safety zone nor does it have a temporary refuge area and based on current and forecasted fire behavior the structure cannot be safely defended. There is usually little to no clearance to fuels, and have limited if any fire safe construction features, it's located mid or upper slope, in a chimney or saddle. Remember though that fire is constantly changing and many factors can take risk out of a structure and its fate.

How to Triage Homes

• **Check and Go** – rapid check and categorizing the home, act fast to let command know the non defensible homes for evacuations.

• **Prep and Go** – When safe and resources exist, foam or sprinkler a home remember to post lookouts to ensure adequate time for withdraw.

• **Prep and Defend** – Structure is threatened but fire behavior forecasted and present allows for firefighters to stay on site and defend the structure, removing/reducing hazards if possible.

Fire Behaviour forecasts are crucial and important in tactics when planning on actions in the urban interface fires. Become familiar with the components of the fire forecasts when sent out and heed their warnings. Knowing the basics of fire behavior is vitally important. Have a good plan and re-evaluating your plan regularly will not only ensure firefighter safety but the safety of public and understanding terminology and tactics will improve the end result. (Some information taken from Fire Rescue Magazine article on Talk & Tactics by Jerry Burke & Kelley Gouette) (Fall Newsletter will focus more on tactics and safety at home)

Bruce Hamilton 2012 - Neil Wilcox Award

Recipient

Giving to individuals who have made an outstanding and/or long term contribution to fire management in Nova Scotia that has resulted in a lasting impression and improvement.

Congratulations Bruce - well deserved. For more information or nominations please inquire at Fire Control 758-7226

According to Jim

After a winter that seemed a little more normal than those we have been having lately spring is here. Who knows what kind of fire season it will turn out to be. I do know that whatever does happen we have some great people all around the province that can handle it.

We have been busy this winter getting ready and re-supplied. The whole first section of the Wildfire Management Manual has been reviewed and adjusted accordingly. We have met with many of our cooperators so when the time comes to work together we will be ready. There has been a lot good wildfire training offered in this province since the end of last fire

season. I had the opportunity myself to take the NS-200 and Intermediate Fire Behaviour courses offered this winter. Both courses were very well instructed by Wildfire Management and Regional Services staff and I thoroughly enjoyed both of them. We have purchased new fire hose, more two piece nomex and some more FTS weather stations. These stations will replace the sites that were not FTS in 2012. The entire province will now have automated stations that will be recording and producing some incredible fire weather and behaviour products for all of you to see and use. We also worked with Fleet Management this winter to restore

the first fire truck for the department. It was a fun job that we squeezed in around all the other work. It will be available for special events around the province. Contact me if you would like to see it in your neck of the woods.

Again, whatever happens I know we will all be ready and well prepared and the people on the ground can handle it. If you have any ideas on what we can do better or any concerns you think should be addressed call me any time. Be safe.

Jim Rudderham

Supervisor of Forest Protection





The average campfire can get as hot as 500 degrees celcius in as little as 3 hours!



Fire and Insects: Both Have a Role to Play in Shaping our Forests

Forest disturbances have been molding Nova Scotia forests since the last ice age. These disturbances play an integral part in maintaining ecosystem bio-diversity and functionality, as well as, initiate different plant and associated animal communities to successively occupy and replace one another over time within the ecosystem (i.e. succession). There are many types of forest disturbances, both natural and human caused: fire, insects, diseases, wind, floods, ice storms, animal browse, forest harvesting, and conversion to non-forest land (e.g. agriculture)

Both fire and insect disturbances are important components of ecological succession. Fire has the ability to convert the original forest into a "pioneer" forest by opening up the forest floor for tree species in the seed bed to germinate. These early succession tree species are typically short lived, shade intolerant and will be replaced by the longer-lived, shade tolerant tree species. Insects also contribute to forest succession by causing openings in the

forest canopy, allowing the shade tolerant trees underneath to be released.

The associated insect, animal and bird communities also change with natural disturbances such as fires and insect outbreaks. Insect outbreaks create conditions that provide food for wildlife and forest fires create conditions that can promote wildlife habitat (e.g. snags). For example, a white-throated sparrow prefers edge habitat and is typically seen in a stand that has recently burned or been defoliated by insects, whereas, a pileated woodpecker prefers forests that are much older with dead or stressed trees. By forest decomposition, fire and insect outbreaks, also release stored nutrients back into the forest floor and they both create conditions that can promote new forest growth.

Ecosystem-based management and forest certification recognize natural disturbances as an integral part of the ecosystem. Forest Protection, Natural Resources, is comprised

of both Wildfire Management and Forest Health Sections who both have interests in maintaining the health of Nova Scotia's forests. The protection of Nova Scotia's valuable resource depends on early detection and assessment for fire and insects so that actions can be taken quickly and effectively. The risk of a fire is closely monitored by collection of pertinent information from the weather stations across the province to determine the fire weather index (FWI) and fire behavior prediction (FBP) system. In Forest Health, the forest pests that threaten our forests are closely monitored annually to watch trends and forecast damage. In the case of an incident, fire or insect outbreak, the Incident Command System (ICS) could be applied to managing for either insect or fire disturbances. Although different, fire and insects are interconnected, ecologically and for managing, and are equally important in their role of shaping Nova Scotia's forests.

*By Tanya Borgal
Acting Provincial Entomologist*

WILDFIRE TRAINING NEWS

There has been a lot of training activity since the first issue of The Fire Line. I'd like to keep you up to date with what has taken place since then, and give a taste of what has been planned for the future.

Two "Northeast Compact" courses were held in Bible Hill during November, 2012. The S - 346 (Situation Unit Leader) and the S - 349 (Resource Unit Leader) were held with 16 participants attending from Natural Resources. Both courses provided training for the Planning section of the Incident Command System.

Three NS - 200 (Initial Attack, Incident Commander) courses were held across the province during the winter, with 65 participants attending. This is a new course that had never been delivered in N.S. before. It gave first time or less experienced IC's a process to follow during their Fire Duty shift, and while they performed initial attack one of our many single day operational period.

An Intermediate Fire Behaviour course was held in Bible Hill, this winter with 24 people in attendance. Another is planned this fall for fire crew members.

Five instructors attended the M - 410 (Facilitative Instructor) course in Portland ME last November. The purpose of the course is to improve training quality by presenting instructional methods with an emphasis on student-oriented adult training techniques.

Basic wildfire training was recently delivered to students of NSCC (Strait Area Campus).

James Bruce (GIS specialist, Shubenacadie) recently attended the S - 341 (GIS specialist for Incident Management) in Albany NY. The course was delivered by very experienced instructors from the states. They were able to provide a lot of practical skills and knowledge required of a GIS specialist working

in the Planning section. This knowledge will be used to better prepare the section when the time arrives.

Future training plans are already underway with a number of courses scheduled for the current fiscal year. Dates will become available after I contact the Regional Services, Technical Training Coordinator.

Plans are to deliver both the NS - 133 (Look up, down, around) and the NS - 211 (Portable Pumps and Water Use) to Western and Eastern regions this spring/summer.

A very unique training experience is shaping up for techs during the week of September 23-27, 2013.

Once again the Northeast Compact will be putting on a series of 400 level courses that are meant for command and general staff positions. All training will take place in Portland ME. and will be held during the week of November 18 - 22, 2013. Following this training, there will be an S - 420 (Command and General Staff) which will be held in the same location during February, 2014.

This is not all inclusive, however does provide some of the highlights for the 2013\2014 training year.

Dan MacKinnon



A reminder that we have specialized equipment at Fire Control like the Incident Command Trailer and Muskegs that can be used on forest fires!! Or the 1957 Powerwagon for events. Call 758-7230



Fire Cryptoquote

One letter stands for another. Single letters, apostrophes, the length and formation of the words are all hints. Each newsletter the code letters are different. Answer will be published in fall edition.

WAJTDSOIL OZ LIS SGW YOXXOLN IY D MDOX, EJS SGW XONGSOLN IY D YOUW.

KOXXODV EJSXWU BWDSZ

Answer to Fall Newsletter Cryptoquote: Success is not the result of spontaneous combustion you must first set yourself on fire.

Fred Shero

Fire Control Corner



Fire Control has all new monitors for displaying Fire Weather maps, Aerial Detection Flights, helicopter locations, Environment Canada weather information, statistics, fire locations, air craft alerts and more! Every Tuesday at 1:00 pm there is a Duty Officer meeting in Fire Control on what happened the previous week, pending fire conditions, and who's on for the following week, district staff are welcome to attend if in the area, meeting is usually 20 minutes - we're hoping to have it by Lync or webinar online in the future so you can tune in wherever you are located-stay tuned!!



New for 2013

- Completely Automated Weather for 1:00 pm and forecasts - no downloading needed - YAY!
- Aircraft Alerts Online
- Lightning Maps Online
- Fire Control Schedule Online

Keep checking website for new changes/look at Forest Protection



Please let Fire Control know if someone has an significant Industrial burn going (one that will produce calls because of size/smoke) and anyone who has a special permit to have a campfire during "No Burn" days.

- Forest Protection (Fire Control 758-7230)**
- Walter Fanning (Director) 758-7236
 - Jim Rudderham (Supervisor) 758-7070
 - John Ross (Manager Risk Services) 758-7216
 - Wanda Dahr (Clerk) 758-7226
 - Suzette Thibodeau (Financial Services Officer) 758-7237
 - Dan MacKinnon (Training Officer) 758-7234
 - Kara McCurdy (Fire Prevention Officer) 758-5099
 - Bruce Hamilton (Maintenance Supervisor -Equipment) 758-7217
 - Andrew Young (Equipment) 758-7218
 - Dustin Oikle (Fire Science Officer) 758-7215
 - James Bruce (GIS) 758-7238
 - Morgan Oikle (Junior Forest Analyst) 758-7069
 - Rick Anthony/Gerry Conley (Welding) 758-7220
 - Ryan Osborne (Pump Mechanic) 758-7220
 - Training Centre 758-7227
 - Radio Room 758-7222
 - Air Services 758-3438