Incorporating cultural knowledge to manage fire prone ecosystems

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Boreal

- Most intact terrestrial biome
- Dominant disturbance process = fire
  - Fire-adapted species, oral accounts, fire scars, charcoal and pollen, maps, reports, aerial imagery
  - Lightning + anthropogenic = fire prone ecosystem

Humans have been lighting fire for a long time

- Re-growth and removal of vegetation
- Hunting and survival
- Berry production
- Ceremony
- Light
- Communication
- Warmth and cooking
- Aesthetics

Harvesting berries in older fire (S.E.R. Leverkus 2014)

Why burn? Why not burn?!

- Dr. Henry Lewis cites more than 70 reasons for FN fire
- Improves forage production, quantity and palatability
- Modifies fuel loads and reduce wildfire
- Used to manage plant diseases, internal and external animal parasites ie. ticks (fire modifies their habitat)
Fire creates *mosaics* across the landscape on varying scales.
Mosaics result = differences in vertical structure ➔ Heterogeneity
Varying scales $\rightarrow$ veg*fire = pyrogenic and adaptation/evolution
Fire + grazing = natural processes supported by decades/centuries of human + Lx igs

Elk grazing in Stone Mountain Safaris’ Rx fire 2010
Collaborating to mobilize traditional knowledge with science

- Dr. Henry Lewis “Fires of Spring” (video) and “A time for burning”
- SMC + FNFN Indigenous ecological restoration of habitat (bison) and cultural practice (Dene and Cree fire)
  - Documentation of oral history/traditional knowledge
  - Community engagement and empowerment
Tools used to contain and move fire

- Pails, buckets, gunnysacks
- Hoses, wet towels, shovels and a sheet of plywood
- Smouldering diamond willow fungus with grass wrapped around and hot coals in a bucket
General themes from interviews

- Fire is a necessity
- The art of tending fire should be taught at a young age
- Fire is a serious and respected art to the Dene and Cree people

“The Dene and Cree have a traditional and cultural interaction with fire. Fire is a vital practice that must be continued and passed down to the next generations.”
Wood bison RSF

- 2009: collared 10 cows in 2 locations
  Frequency: 1 location/hour year round
- 2010: 4 new collars for 2012 retrieval
Re-ignited interest for community members to use fire again
Interest from the CBC – The National - to document our work
Imagine the Fire – The National, CBC

Fort Nelson First Nation:
Interaction With Fire and Wood Bison

Education and training
2015 Fire School
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2015 Fire School

Always in collaboration with BCWS et al.
Collaboration and sharing knowledge with the BC Forest Practices Board
Education and training
2015 Fire School
Northern Fire WoRx - NFWRx
Putting fire out on the land since 2016 – we light ‘em – we fight ‘em.
The only Type 2 Suppression Crew north of Prince George
Collaboration and partnership with BCWS and landowners
Mobilizing science + traditional/cultural/historical knowledge
Continuing the practice of Rx fire – bringing the flame forward
Human*fire continues to this day through Rx fire: Outfitters, Ranchers, Gov
Rx fire
= application of fire using Rx outlining treatment, goals and objectives

Prescribed fire using Premo Plastic Sphere Dispenser (PSD)
Nordquist Lake 2015
Our relationship with the land over time... the land which is part of each of our lives.
Long-time residents of an area have intricate and critical knowledge and ability to continue the flame burning.
Additional fire practices and collaboration

- Home Ignition Zone Assessments
- P-L Strategic Rx Fire Program
- West Coast Rx Fire Program
- Fire Schools 2018 – PIB, Grande Prairie, NEBC
- Understanding fire*multiple values provincially, nationally, globally and sharing knowledge
Messages to take with you - we know that ...

- humans used to and still do light fire → humans are part of the landscape/ecosystem!
- the fire season is extending front/back – Flannigan et al.
- varying spatio-temporal distribution of fire is important
- fire can AND SHOULD be included in strategic plans for forward planning (prostoration!)
- fire can be implemented during prescribed conditions

“The future promises more flame – not less” – S. Pyne