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Improving fuels management treatments and effectiveness

National Fuels Management Reference Database

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Kelowna, British Columbia

Background

- The Canadian Wildland Fire Strategy (CWFS) proposed improved mitigation of wildland fire impacts through better fuels management and sharing of information and best practices on fuel treatments and methods.
- A national Fuels Management Task Team was formed in 2012 to address these issues with the support of the CCFM Wildland Fire Management Working Group and CIFFC's Mitigation and Prevention Committee.

Issue

- Sharing of information and best practices is hampered by a lack of available/accessible information.
- Lack of consistency and standards across Canada in the collection of data on fuels management effectiveness and best practices.
- Lack efficient ways to find reference data.



Objective

Develop a national database that will allow agencies to maintain the following records.

- Fuels management activities – site conditions, treatment methods, prescriptions, post-treatment conditions

- Fire behaviour and impacts information from fires that interact with fuels treatments
 - Observed fire behaviour in treated and untreated fuels
 - Effectiveness of fuel treatment in mitigating fire impacts



Query Functions

Query records

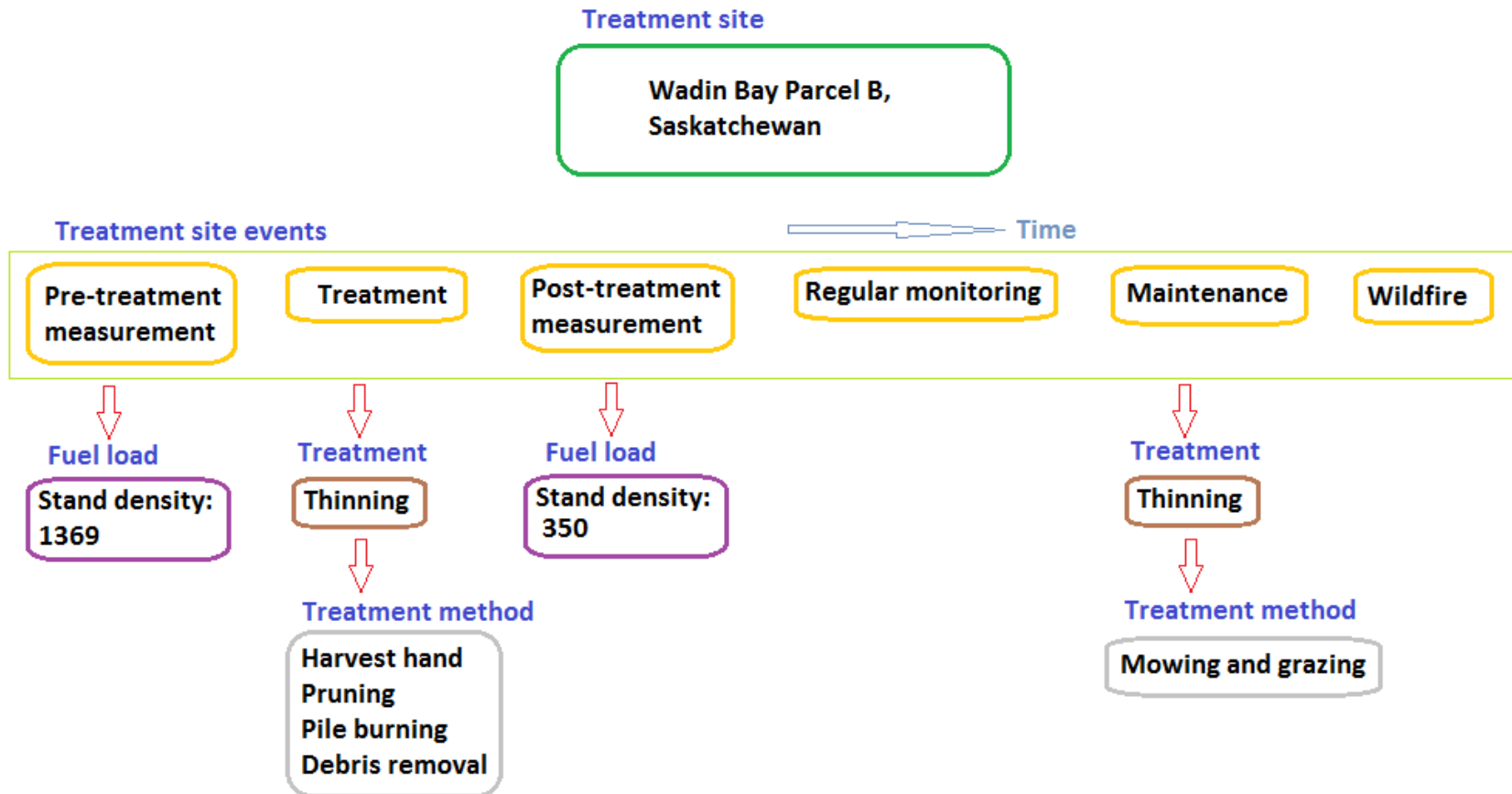
Query by location Query by fuel type Query by treatment type

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Data Example – Fuels Treatment



Data Example – Fuels Treatment



Data Example – Fuels Treatment

Treatment site

Treatment site

Wadin Bay Parcel D

New View / Edit / Delete

Treatment site event

	Site Event No	Event Date	Event
<input type="radio"/>	19	2015-01-09	Treatment
<input type="radio"/>	20	2015-07-04	Wildfire
<input type="radio"/>	21	2015-10-07	Pre-treatment measurement
<input type="radio"/>	22	2015-10-07	Post-treatment measurement
<input checked="" type="radio"/>	41	2016-07-27	Post-treatment measurement

New View / Edit / Delete

Fuel load

Fuel Load No	Stand Density	Average DBH
24	1400	0.51

New View / Edit / Delete

Treatment

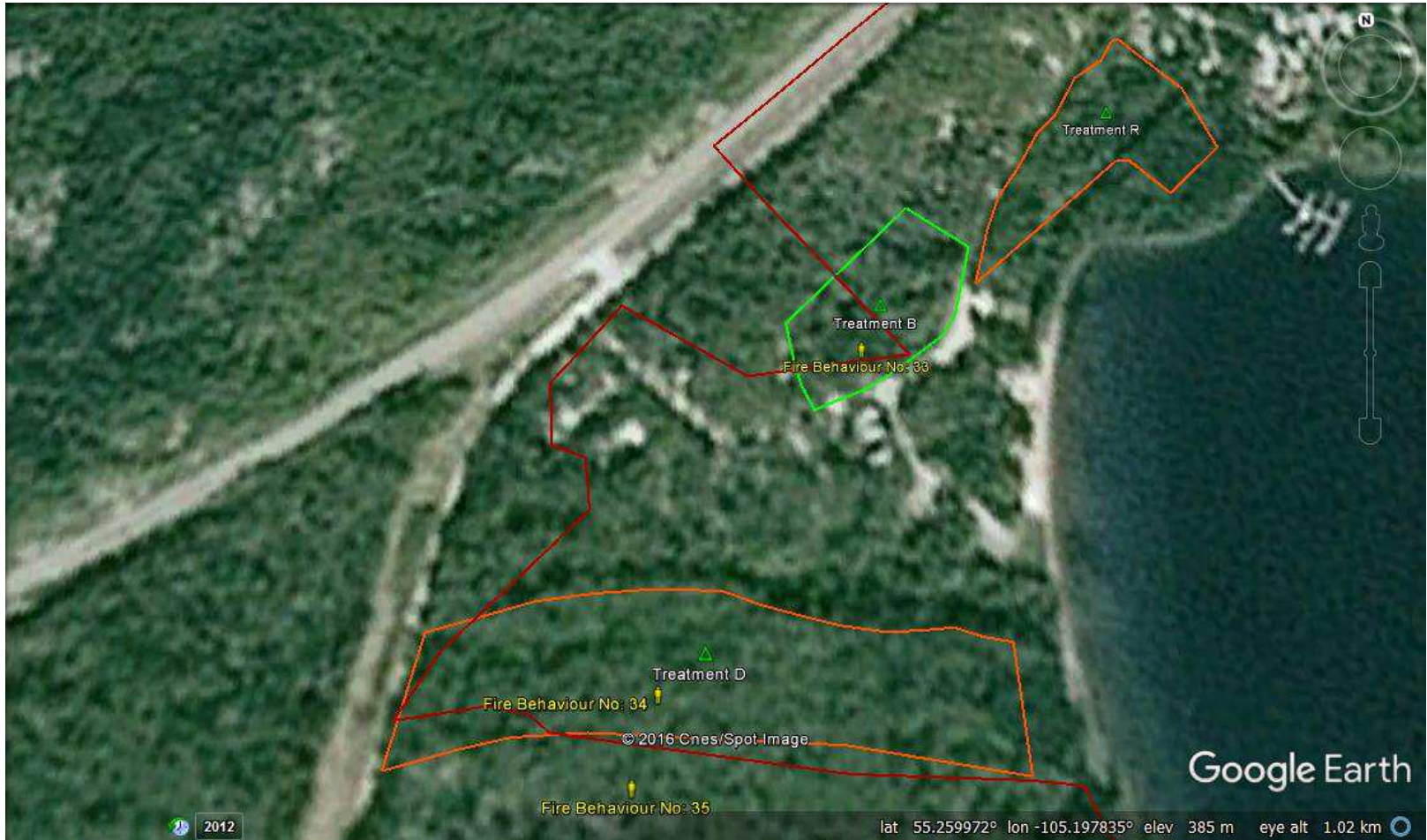
Treatment No	Treatment Objective	Treatment Type	Pre-treatment FBP Fuel Type
15	Wildland urban int	Thinning	M-2

New View / Edit / Delete

Treatment site files

	File No	File Title	File Name
<input type="radio"/>	6	stand density data sheet	Stand_density_Sask.xlsx
<input type="radio"/>	7	Wadin Bay Fuels management report	WadinBayFuelsManagement2014FinalReport.pdf
<input type="radio"/>	8	Map	Wadin Bay Overview.pdf

Data Example – Fire Behaviour



Data Example – Fire Behaviour

- Only 9 out of 50 data fields required
 - Fire behaviour change?
 - Treatment enhanced suppression?
- Most data can be collected through interview and post fire measurement
- Each record describes what happened in a specific location at a specific time
- Not description of an entire fire but can be part of a case study

Data Example – Fire Behaviour

Fire behaviour edit

Fire Behaviour No: 34

Agency *
Saskatchewan

Record type *
Observation

Fire Name *
15LA-Egg Fire (Wadin Bay Parcel D)

Location Type *
Within treatment

Latitude (decimal degree) *
55.25852 E.g., 53.7658

Longitude (decimal degree) *
-105.19869 E.g., -113.5000

Observation Date (yyyy-mm-dd 23:59) *
2015-07-04 02:00
E.g., 2016-10-04 E.g., 11:44

Observer Name

Fire Type *
Surface fire

Current Location FBP Fuel Type *
M-2

Pre-treatment FBP Fuel Type *
M-2

- Questionnaire
- Contact
- Measurements
- Fire weather

General fire behaviour comment
Fire breach the fuel treatment for 3 meters then just stopped. The rest of Parcel D was

Future of the Database

- Build more query options
- Help CIFFC member agencies to build internal fuels treatment data management capacity
- Be part of CIFFC on-line service portal
- Research Project: Rapid response data collection methods to document change in fire behaviour



More information

- Project page:
- <http://wildfire.fpinnovations.ca/Research/ProjectPage.aspx?ProjectNo=164>
- Rex Hsieh, FPInnovations
- Dave Schroeder, Alberta Agriculture and Forestry

Acknowledgements



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Questions?