Yukon Fire History MetaData

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Data Description/Disclaimers

This is a landscape level GIS coverage of large fires within the Yukon, spanning a period from 1946 to present. Original polygon size was limited to 200 hectares, when the first edition of this dataset was completed in 1997. Smaller fires are now being included, especially near communities. It is important to note that in most instances, fire perimeters only were mapped. This means that unburned areas within the perimeter are not accounted for, either in an ecological context or in annual area burned summaries. More recent fires mapped, with the aid of satellite technology do include large unburned patches.

Although the temporal scale of the coverage goes back to late 1940's, Yukon-wide fire detection capability was not fully developed until the 1960's. In addition to this, access to regular aerial mapping was not readily available until that same time period. As a result many fires in the 40's and 50's were simply not recorded or poorly mapped, particularly in the north. For that reason, care must be taken when drawing conclusions from these data as it relates to the early years.

These data are available as either an *ArcGIS Personal Geodatabase* or *ArcView 3.x Shapefile*.

Data Limitations

Government of Yukon, Community Services, Protective Services Branch, Wildland Fire Management (henceforth refered to as WFM) has created and compiled these data from various sources and formats to prepare the point and polygon data in this database. While every effort has been made to ensure the accuracy, precision and timeliness of data created, WFM assumes no responsibility for errors or omissions. Furthermore any person who relies on said information for any purpose whatsoever does so with recognition of the data limitations and solely at his or her own risk. WFM is not responsible for claims by a third party. The data are for use at landscape level scales and is dependant upon temporal and datasource attributes, generally data created from satellite imagery or GPS can be used at scales of 1:50000 or smaller whereas data created from sketch maps may be only suitable for use at scales of 1:250000 or smaller. The data may have a number of errors which may contain but are not limited to the following: >Spatial Errors >Registration Errors >Attribute Errors >Currency Errors >Completeness Errors >Projection Distortion.

Data Table Key PGDB Format

YT_Fire_Point (not all fields explained here)

ID	String	Unique identifier, constructed from year, management district code (see below) and fire number. YEAR + DIST + NUM XXXX XX XXX
FireYear	Number	Year in which fire occurred.
SubDistrictID	String	Two letter code, see below. (Usefull in creating custom labels along with *FireNumber.*)
FireNumber	Num	Natural numbering system given to a fire.
Latitude	Num	In Decimal Degrees
Longitude	Num	In Decimal Degrees
Geographic Location	String	Geographic descriptive field.
AttackZoneID	Num	Fire Management Zone in which the fire began. (Domain Populated field: See Below For Domain Definitions).
GeneralCauseID	Num	General cause of fire. (Domain Populated field: See Below For Domain Definitions).
InitalFire_datetime	Date	Date & Time of Initial Fire Report.

YT_Fire_Polygon

SHAPE_Area	Num	As Calculated by GIS
SHAPE_Length	Num	As Calculated by GIS
ID	String	Unique polygon identifier, constructed from year, management district code (see below) and fire number. YEAR + DIST + NUM XXXX XX XXX
FireYear	Number	Year in which fire occurred.
SubDistrictID	String	Two letter code, see below. (Usefull in creating custom labels along with *FireNumber.*)
FireNumber	Num	Natural numbering system given to a fire.
Decade	Num	Decade to which the fire belongs (Domain Populated field: See Below For Domain Definitions).
DataSource	Num	Primary source for data derivation i.e. Satellite imagery, GPS, Sketch Map. (Domain Populated field: See Below For Domain Definitions).
Notes	String	Non-Required descriptive field.
Method	Num	Data entry method. (Domain Populated field: See Below For Domain Definitions).

Management District Codes

Sub-District	String code (SubDistrictID)	Fire Management Zone (interest only for now)
Haines Junction	HJ	Kluane
Whitehorse	XY	Southern Lakes
Teslin	TE	Southern Lakes
Watson Lake	RR	Tintina
Ross River	WL	Tatchun St.-Cyr
Carmacks	CA	Tatchun St.-Cyr
Beaver Creek	BC	Kluane
Dawson	DA	Klondike
Old Crow	OC	Klondike
Mayo	MA	Northern Tutchone

Also included in the PGDB is a relationship class linking the polygon to point datasets.

Domain Definitions (As used in Fire.mdb):

Method (Polygon FC YT_Fire_Polygon)	
Numeric Value	Description
1	GPS: Ground Trace
2	GPS: Heliborne Trace
3	Digitize: Heads-up
4	Digitize: Tablet Analouge Source
5	Digitize: Tablet Digital Source

Attack Zone (Point FC YT_Fire_Point)	
Numeric Value	Description
1	Critical FMZ
2	Full FMZ
3	Stratigic FMZ
4	Transition FMZ
5	Wilderness FMZ

General Cause (Point FC YT_Fire_Point)	
Numeric Value	Description
1	Lightning
2	Campfire
3	Smoker
4	Fire Use
5	Equipment Use
6	Railroads
7	Juvenile Fire Setter
8	Incendiary
9	Miscellaneous

Decade (Polygon FC YT_Fire_Polygon)	
Numeric Value	Description
1	1940
2	1950
3	1960
4	1970
5	1980
6	1990
7	2000
8	2010
9	2020
10	2030

DataSource (Polygon FC YT_Fire_Polygon)	
Numeric Value	Description
1	30m LandSAT 5 Satellite Imagery
2	30m LandSAT 7 Satellite Imagery
3	30m LandSAT 7 Satellite Imagery SLC Off
4	GPS Trace
5	MODIS Satellite Imagery 250m Subset
6	MODIS Hotspot Buffer

Data Table Key Shapefile Format (note: Above Domain Definitions usefull in decoding attribute data in post 2003 shapefile conversions)

AREA	Num	As Calculated by GIS
PERIMETER	Num	As Calculated by GIS
HECTARES	Num	As Calculated by GIS
FIREID	Num	Unique polygon identifier, constructed from year, management district code (see below) and fire number. YEAR + DIST + NUM XXXX XX XXX
FIRENUMB	String	Departmental fire numbering system also using Year, District, and fire number, but not numeric.
LINKID	Num	Link code to a second data table with more detailed fire information – fire weather, response data, etc. (Incomplete)
YEAR	Num	Fire year
DECADE	String	Fire years grouped
DATASOURCE	String	Sketch map with scale, Satellite imagery or GPS technology. (Incomplete)
BOUNDARY	Num	A true-false field that identifies polygons that are inside the Yukon. (Polygons have been split over the border with portions within the Yukon assigned a value of 1) i.e. a value of 0 is inside Yukon, a value of 1 is outside.
METHOD	String	Digitizing/Data entry method

Management District Codes

DISTRICT	String code (FIRENUMB)	Numeric code (FIREID)	New Management DISTRICTS (interest only for now)
Haines Junction	HJ	01	Kluane
Whitehorse	XY	02	Southern Lakes
Teslin	TE	03	Southern Lakes
Watson Lake	RR	04	Tintina
Ross River	WL	05	Tatchun St.-Cyr
Carmacks	CA	06	Tatchun St.-Cyr
Beaver Creek	BC	07	Kluane
Dawson	DA	08	Klondike
Mayo	MA	09	Northern Tutchone
Old Crow	OC	10	Klondike

Additional Notes

The 2004 fire season was one of the most dramatic on record. As a result of a persistent high pressure system positioned over much of the territory for most of the fire season, the Yukon experienced record breaking high temperatures with little precipitation. Over twice the amount of lightning was generated over the course of the summer for the Yukon.

There were a total of 282 fires, which is double the average annual number of fires over the past 25 years. Eighty percent of the fires were caused by lightning. An estimated 1.7 million hectares of forest vegetation burned, far surpassing the long term annual average of 120,000 hectares.

A number of fires not previously mapped were detected from satellite scenes. Whether these are existing fires in our reports that did not get mapped or entirely new fires that escaped detection is difficult to determine. Till these are sorted out, the previously unrecorded fires are given a FIREID starting with 99, followed with an estimated decade, determined from the colour of the firescar in relation to known burn years.

At present we are going back through the old fire reports to correct locations and reclassify ignition data. As a result, a number of smaller fires were added from the 1948-1956 era from hardcopy maps found in these reports. These will be updated on an ongoing basis in chronological order, but will take some time. The end result will be additional fires in the 50 to 200 ha range that have not been included to this point.

FIREID prior to 1960 does not include the District Code as all fires to that date were numbered on a Yukon-wide basis.

Unburned polygons, where mapped have been extracted from the burned polygons and the table.

Credits

This product is the result of a joint effort between the *Government of Yukon* and *Canadian Forest Service, Northern Forestry Centre, Edmonton*. Most fire perimeters to 1997 were digitized by the *Canadian Forest Service, Great Lakes Forestry Centre, Sault Ste. Marie* from maps provided to them from the Federal Government (DIAND). Landsat 80m MSS transparencies were also instrumental in mapping large fires.

Perimeters since that time have been digitized in-house. Many older perimeters have been revised in-house as described in the above notes.

Contacts

Please feel free to contact us with questions. I would also appreciate feedback on any aspect of this work.

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