



CANADIAN INTERAGENCY FOREST FIRE CENTRE INC.
CENTRE INTERSERVICES DES FEUX DE FORÊT DU CANADA INC.

CANADA REPORT 2016

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Preamble

The 2016 Fire Season can be described as extremely challenging through the first part of the season in May and early June with a prolonged, relatively benign period through late June, July and August

The fall of 2015 and winter of 2015 - 2016 were drier and warmer than normal and were followed by an early, warm and dry spring in Western Canada all attributed to the El Niño cycle. By mid June the El Niño had waned and was replaced by a La Niña pattern and more seasonal weather. Prior to the weather pattern change significant wildland fire activity was experienced within Alberta, British Columbia, Manitoba and Ontario.

2016 will be characterized as the year that the Horse River Fire occurred. This incident would prove to be the most impactful wildland fire in recent Canadian history burning nearly 590,000 hectares, resulting in the loss of some 2,400 structures and the evacuation of over 85,000 residents from Fort McMurray and surrounding area. Resources from within Alberta, across Canada and internationally were brought to bear to help manage the fire stretching the capabilities of resource exchange support systems.

Fire Season

The first CIFFC Situation Report was issued on April 20 and noted the persistence of early spring conditions in much of Western Canada. British Columbia identified that the province was experiencing warmer than normal temperatures coupled with notable fire activity in the Northeastern corner of the province. Both Alberta and Saskatchewan were at Agency Preparedness Level (APL) 2. Fire activity was reported to be relatively low elsewhere across the country.

By the start of the first week of May fire activity and potential had increased significantly with British Columbia reporting one large Fire (4,000 ha+) and both Alberta and Saskatchewan at APL 3. AB noted a very high to extreme hazard with potential for large fires on the May 2 CIFFC Situation Report.

On May 3, CIFFC increased to National Preparedness Level (NPL) 2 and the first sustained action crews in support of the fire activity in Alberta were mobilized from Ontario.

By the end of the first week of May, fire activity across much of the country was increasing with British Columbia, Saskatchewan, and Manitoba all reporting APL 3, Alberta at APL 4 and CIFFC at NPL 3. AT NPL 3 CIFFC implemented both the Strategic Planning Unit and the Canadian Multi-Agency Coordinating Group. These initiatives, first implemented during the 2015 season, had been refined over the winter as a result of lessons learned the previous summer. The primary role of the Strategic Planning Unit is to forward plan with regards to current resource use, project needs and availability and provide options to member agencies for the acquisition of additional resources. The Strategic Planning Unit also maintains strong linkages with international partners as well as NRCan and other federal agencies. The Canadian Multi-Agency Coordinating Group provides strategic planning and decision making relative to resource availability, priority setting and resource allocation. In concert, these entities provided significant improvements to CIFFC's strategic planning role.

Resources were being mobilized to Alberta to support the situation while the other agencies experiencing escalated activity managed with their internal resources. By May 6 a total of 1244 fires had been reported across Canada for 148,469 hectares significantly above the 10 and 20 year averages.

Over the next week fire activity and hazards increased in Western Canada. On May 13, Alberta reported an APL of 4 with BC, SK and BC at APL 3, remaining agencies were at APL 2 or 1. During the first two weeks of May, personnel, equipment and airtanker resources requested by Alberta were mobilized from across Canada to help support the Horse River Fire and other campaign fires in the province.

Towards the end of the second week in May, Manitoba imported a skimmer tanker group from the Northwest Territories and a sustained action crew from Nova Scotia to help suppression efforts on a pair of stubborn fires along the Manitoba and Ontario border. Ontario imported United States landbased airtankers for an afternoon of quick strike missions on May 10 to provide support action on the southernmost of these border fires.

CIFFC increased to a NPL 5 on May 19 as a result of receiving a significant request for suppression resources from Alberta that exceeded domestic availability. CIFFC turned to our international partners to add to the steady stream of Canadian resources being mobilized to Alberta. By the first week of June firefighting staff from the United States, Mexico and South Africa had all joined colleagues from across Canada on the fire lines in Alberta.

After an active May long weekend Ontario escalated to APL 5 on May 25 and received personnel and airtanker assistance from their partners within CIFFC. Fortunately, the fire situation stabilized in Ontario by the end of May with out of province personnel returned home by June 5.

Although the Horse River Fire continued to be well resourced by Alberta personnel, the requirement for supplementary resources slowly diminished with all outside personnel resources that had been mobilized through CIFFC returned home by June 20. By this time the aforementioned international participants as well as resources from British Columbia, Yukon Territory, Northwest Territories, Saskatchewan, Manitoba, Ontario, Quebec, Newfoundland and Labrador, New Brunswick, Nova Scotia, Prince Edward Island, Parks Canada (and the Canadian Forest Service) had all contributed to supporting the province of Alberta.

In mid July the Northwest Territories ramped up to respond to fire activity with personnel and airtanker resources from Alberta and Yukon mobilized to assist. This exemplifies the CIFFC model demonstrating the true reciprocal nature of resource sharing. Although Alberta had been a net importer through May and June by the end of July the province was in a position to export personnel and aircraft.

Throughout the rest of July most of the fire management agencies were experiencing normal to below normal fire activity and as such British Columbia was able to provide a land based airtanker group to the United States on August 3.

By early August NS's prolonged drought was becoming more severe with both fire danger and fire activity increasing. Airtankers from Quebec and Newfoundland and Labrador were dispatched along with quick strike airtanker support from New Brunswick as a result of requests from Nova Scotia to help manage a fire complex. As well, personnel from New Brunswick, Parks Canada and Prince Edward Island all provided support to Nova Scotia during mid August.

Towards the end of August another tanker group was requested by the United States and Alberta was able to supply. By early September both tanker groups were returned to Canada from the United States.

As the fire response season wound down across the country the long process of demobilizing and recycling equipment carried on into the fall.

Season Summary

The number of fires and hectares burned in 2016 was less than ten year averages. The early start and severity of the fire season in western Canada was followed by moderating weather patterns and lower activity for the duration of the season with a few spikes.

During the 2016 Fire Season CIFFC processed 138 Resource Orders resulting in the mobilization of 2077 personnel, 220 pumps and 10,028 lengths of hose along with 5 land based airtankers and 13 skimmer airtankers. Although not a record breaking year in terms of fire numbers, hectares or resources mobilized the extreme intensity and timing of the early season activity challenged fire managers at the provincial/territorial and CIFFC levels.

Agency Seasonal Summary

Alberta

Alberta's 2016 fire season can be divided into two time periods relating to wildfire danger. Wildfire hazard conditions escalated in mid-April and continued well into May. This elevation was due to early snow melt, higher than normal temperatures, strong winds, and lower than normal relative humidity and rainfall. A more typical weather pattern returned in June, with well received precipitation throughout much of the province reducing hazard conditions for the remainder of the summer. During the fire season, 1,338 wildfires started in Alberta's Forest Protection Area. This is slightly below the five-year average of 1,418. These wildfires burned over 611,000 hectares, which is twice the 25-year average. However, one wildfire attributed for 96 per cent of the total area burned in 2016. Slightly over 1,200 additional firefighting personnel were brought in from many agencies within Canada, the United States, Mexico and South Africa. The Wildfire Management Branch was successful at containing approximately 97 per cent of wildfire arrivals with the first burning period.

Alberta recorded the third largest wildfire in the province's history, the Horse River wildfire during the 2016 fire season. This wildfire started on May 1, burnt almost 590,000 hectares and had a significant negative economic impact on the province and country. It burned through portions of Fort McMurray and resulted in the evacuation of close to 90,000 people. Approximately 2,400 homes and other buildings were destroyed as a result of the wildfire, and it is the most damaging natural disaster experienced in Canada to date. Significant firefighting resources were deployed to this incident during a period of two months, peaking on June 3 with approximately 2,000 firefighters, 77 helicopters, 5 air tanker groups and 269 pieces of heavy equipment engaged in suppression operations.



Manitoba

The spring of 2016 started slow until May 5 when 2 large border fires incidents occurred on the Manitoba/Ontario border at Beresford Lake/Red Lake in the north and Caddy Lake/Kenora area in the south. This resulted in many joint operations between Manitoba and Ontario, including: Command and Control, Values Protection, Heavy Equipment and inter-agency Helicopter IR services.

A Manitoba IMT was dispatched to the Beresford fire and Ontario IMT to the Red Lake fire. An Ontario IMT assumed command and control of the Caddy Lake/Kenora fire. History was created with the joint operations efforts and resource sharing between Ontario and Manitoba on border fires and Ontario taking command and control of a border fire.

Values protection was a major factor on suppression of the two border fires due to number of cottages and values at risk. Hundreds of personnel from the two agencies including personnel from the Office of the Fire Commissioner and Mutual Aid Fire Departments were involved in the efforts of structure protection.

Both large border fires were de-mobilized and scanned by the end of May. The weather pattern from the beginning of June was a continual parade of warm, humid weather followed by major precipitation and wind events. The Caddy Lake fire area in the Whiteshell went from evacuation due to fire to evacuation due to flooding. Precipitation events resulted in some areas recording nearly 200 mm in a 24 hour period.

Saskatchewan

We had 364 Wildfires with 52 Request for Assistance fires/incidents for a total of 416. There were no evacuations or fire related fatalities.

The spring of 2016 started with much higher than normal drought codes percentiles. As shown by fire weather conditions, the spring was extremely dry leading to widespread and numerous days of extreme fire danger. Conditions gradually abated in June with the arrival of regional precipitation events. Significant precipitation events brought the drought codes down to average or below average values by the end of July.

Quebec

The 2016 forest fire season ended with a count of 502 fires that affected 782 hectares of forest in the intensive protection zone. The number of fires fought in this zone was close to the 10-year moving average of 497 fires. In addition, SOPFEU responded to 29 of the 100 fires in the northern zone. Those fires affected a total of 32 589 hectares.

The last season was characterized by warm temperatures and below average precipitation in the extreme south and southwest of the province. To the north of the 48th parallel, conditions were reversed, with a high rainfall frequency and temperatures around seasonal norms. The month of August was also drier and hotter than average across the territory.

SOPFEU responded favourably to a request from Alberta for a loaning of personnel. Two Quebec sections lent a hand in the Fort McMurray area. SOPFEU also provided water bombers to Alberta and Nova Scotia in addition to sending two information officers to the CIFFC as well as an agency representative to the Government Operations Centre in Ottawa. Lastly, firefighters from New Hampshire and Maine came to support SOPFEU in its operations from July 13 to 19.



New Brunswick

On the whole, the New Brunswick fire season was fairly typical, with numerous spring brush and grass fires, followed by a relatively quiet summer season. We had 1 fire, caused by lightning strike in August, which occurred around the same time as the Nova Scotia fire flap, burning 20.4 ha requiring a few days to extinguish.

It was also a slow season for mobilizations, with crews and overhead being sent to Alberta and Nova Scotia, during their larger fire occurrences.

Prince Edward Island

Overall, 2016 turned out to be a relatively typical fire year in PEI with the number of starts marginally below the 10 year average and the total area burned slightly above the 10 year average. Fire danger levels peaked during the latter half of June.

Nova Scotia

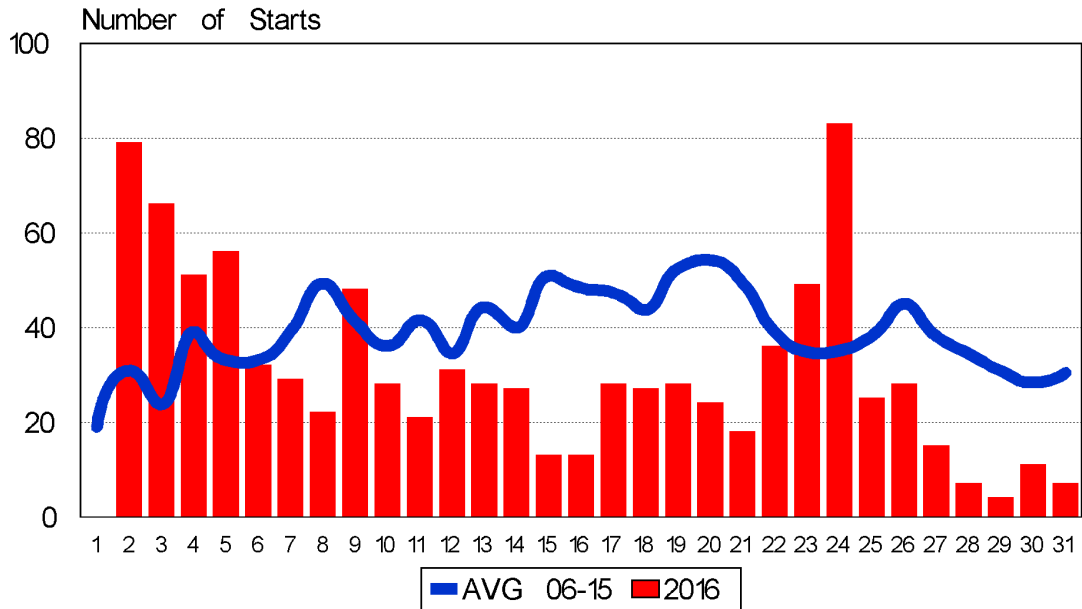
The winter of 2016 was fairly normal for Nova Scotia with regards to snowfalls and temperatures. We had our typical spring fires before green up. In June, we started to get less rainfall, as the summer progressed we were in a drought situation in two of our three regions in the province. Our permit system for domestic burning allows us to restrict burning on any given day that the fire weather indices are not safe to burn. We did that on numerous days this past summer. We also proclaimed a province-wide woods travel ban for two weeks in August.

During the month of August, we experienced a higher than normal volume of wildfires and the indices made them very difficult to control and extinguish. As a result, we experienced numerous large wildfires at the same time which developed into a Type 1 complex with numerous events and agencies involved. We had staff from all over our province involved in this complex and imported resources from other agencies to help us. We were very lucky that no structures or infrastructure was destroyed by these fires. We did have the only highway which crosses that portion of the province closed for over a week. This was a major inconvenience for all concerned but necessary for the safety of all.

The drought continued until late October and we extended our fire crews in two of our regions for two more weeks to ensure we were ready for new starts. We were fortunate that all of the starts after August were controlled very quickly and did not develop into another complex.

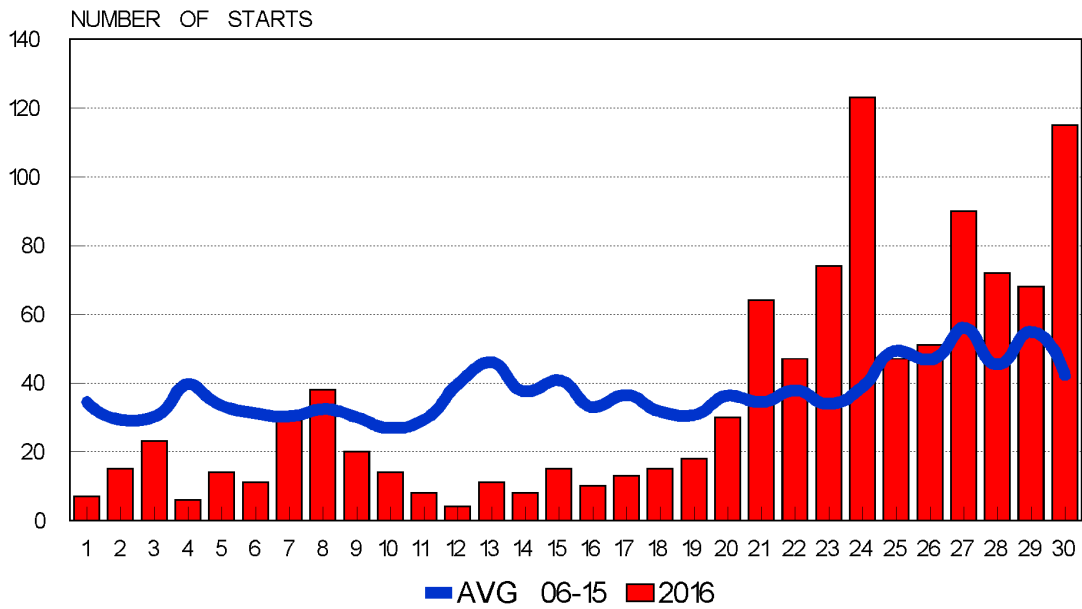


May Fire Starts



Current as of May 31, 2016

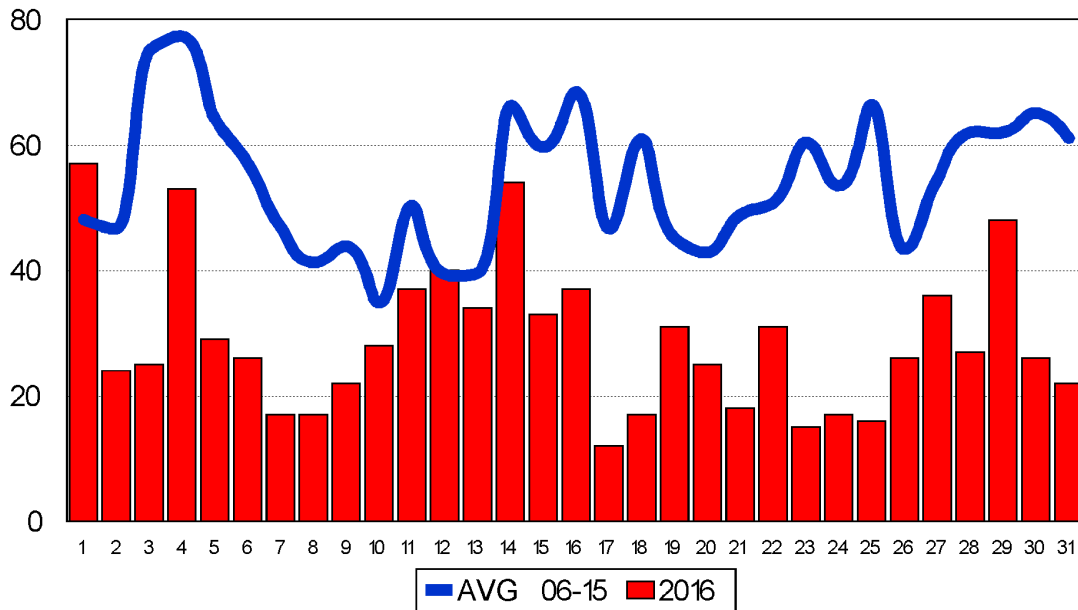
June Fire Starts



Current as of June 30, 2016

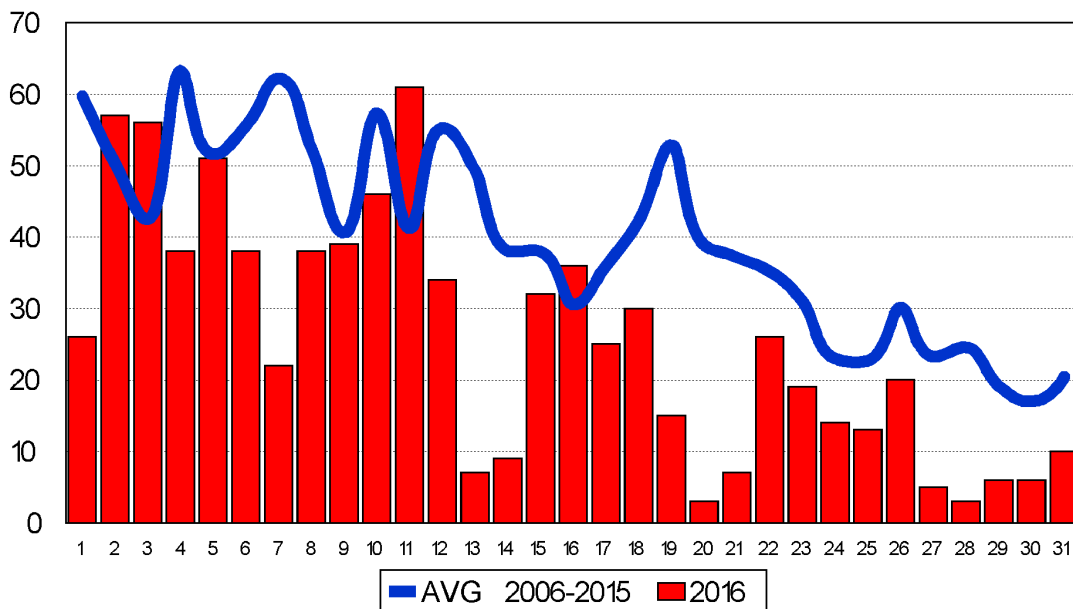


July Fire Starts



Current as of July 31, 2016

August Fire Starts



Current as of August 31, 2016

Statistics

As of December 31, 2016 Canadian Fire Management Agencies recorded 5173 fires with an area consumed of 1,499,883.27 hectares for the 2016 Fire Season.

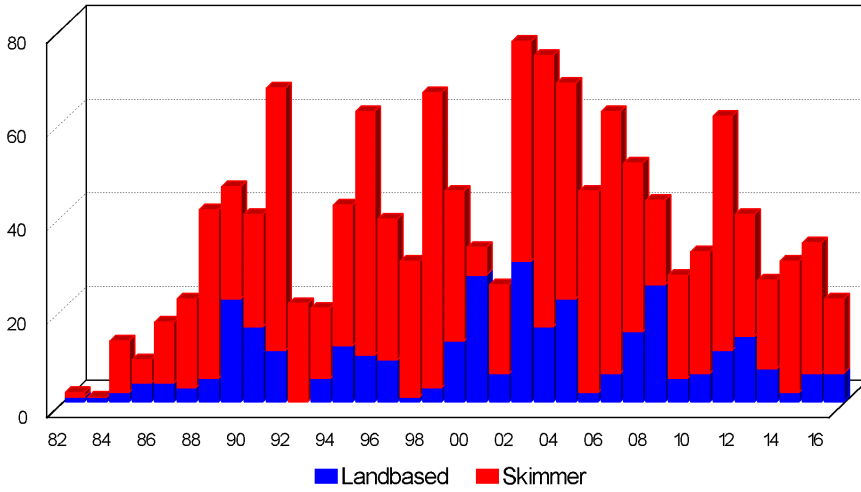
WILDLAND FIRE STATISTICS - 2016 AS OF DECEMBER 31, 2016												
	FIRES							HECTARES			PRESCRIBED FIRE	
	Full		Modified		Total		Total	Full	Modified	Total	Fires	Ha
	Ltg	Human	Ltg	Human	Ltg	Human						
BC	440	531	46	32	486	563	1049	93209	7157	100366	0	0
YT	9	19	20	5	29	24	53	10	21533	21543	0	0
AB	521	845	0	0	521	845	1366	741550.1	0	741550.1	24	2339.48
NT	42	11	128	8	170	19	189	8112.47	246868.4	254980.9	0	0
SK	79	152	92	41	171	193	364	14,289.6	227,318.2	241,607.8	1	6
MB	59	104	37	2	96	106	202	21,491	16,917	38,408	0	0
ON	149	465	24	10	173	475	648	7273.2	75840.0	83113.2	2	3096
QC	78	424	93	7	171	431	602	782	32589	33371	-	-
NL	12	68	3	8	15	76	91	10210.3	743.2	10953.5	1	87.0
NB	13	272	0	0	13	272	285	264.8	0	264.8	0	0
NS	11	263	0	0	11	263	274	754.9	0	754.9	0	0
PE	0	7	0	0	0	7	7	19.7	0	19.7	0	0
PC	10	17	15	1	25	18	43	4770.3	769.1	5539.4	15	2965.85
Tot.	1423	3178	458	114	1881	3292	5173	902737.4	597145.9	1499883.27	43	8494.33

NATIONAL PREPAREDNESS LEVEL DAYS					
Levels	1	2	3	4	5
No. of days	53	37	16	2	13

Fires by Month	May	June	July	August
	934	1060	900	792

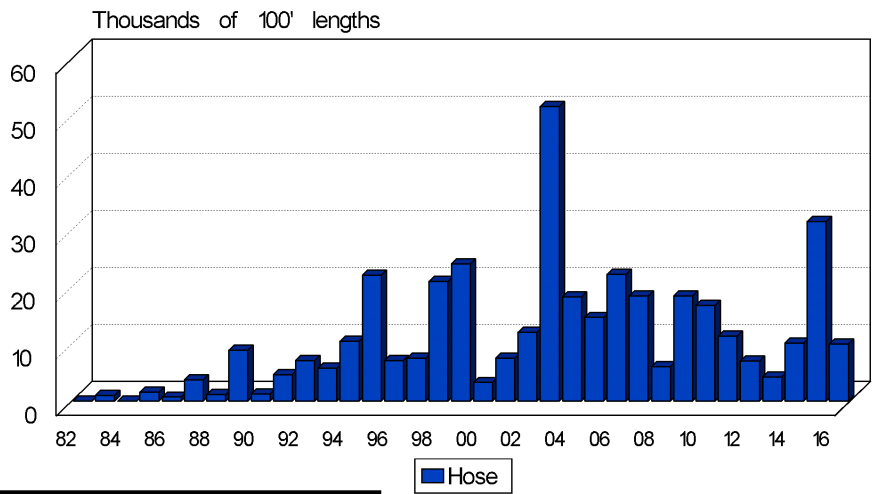
Wildfire Related Fatalities																															
Year	86	87	88	89	90	91	92	93	94	95	96	97	98	99	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Fatalities	6	3	3	0	3	4	2	0	2	4	0	0	0	0	0	2	0	3	2	0	3	3	2	1	5	4	0	1	0	2	1

Airtankers 1982 - 2016

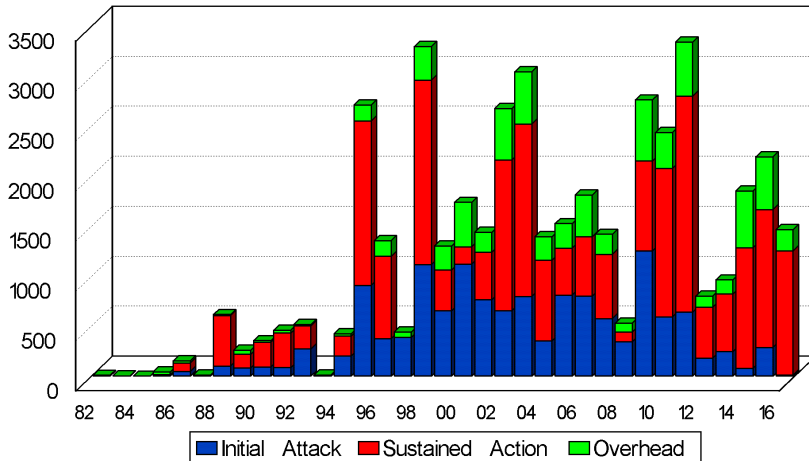


Current as of August 25, 2016

Hose



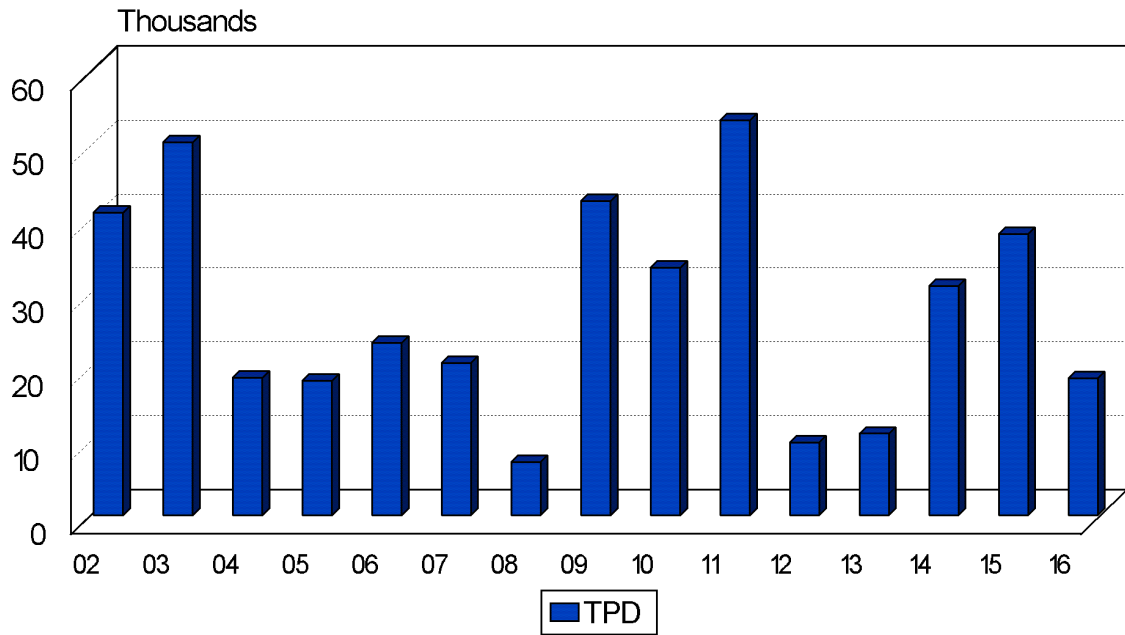
Personnel Mobilized 1982-2016



Current as of August 30, 2016



Total Person Days

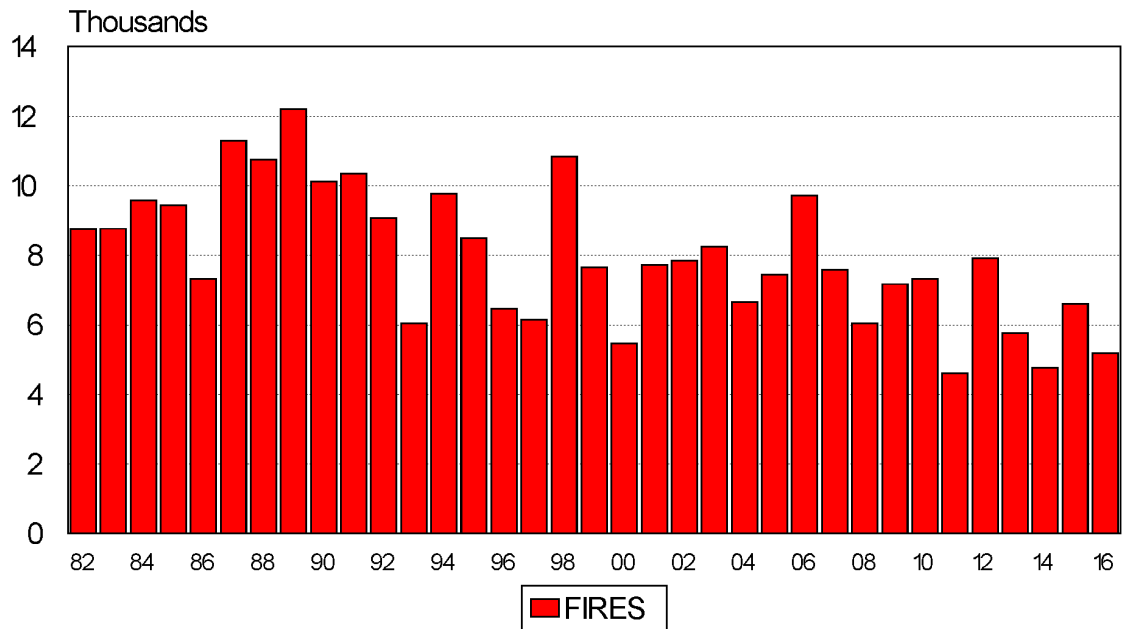


The graph shows Total Person Days for Type 1 personnel mobilized from 2002 to 2016.



WILDLAND FIRE STARTS												
TOTAL NUMBERS OF FIRES (LIGHTNING AND HUMAN CAUSED)												
	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	Avg.	2016
BC	2,751	1,437	1,817	3,084	1,678	646	1,642	1,854	1,455	1,836	1,733	1,049
YT	80	110	67	118	88	56	126	177	34	184	94	53
AB	1,938	1,164	1,695	1,655	1,837	1,097	1,555	1,214	1,451	1,850	1,496	1,366
NT	166	1,353	241	42	224	207	279	248	385	245	340	189
SK	501	370	599	511	571	303	409	429	403	723	442	364
MB	682	364	397	184	583	315	497	494	245	454	401	202
ON	2,281	1,015	338	385	931	1,334	1,615	582	303	668	1,074	648
QC	683	935	222	483	737	329	795	515	292	384	636	602
NL	96	87	139	176	61	53	198	101	124	128	118	91
NB	310	282	168	192	179	81	344	356	178	222	240	285
NS	234	392	247	193	313	116	352	171	171	247	249	274
PE	36	8	3	8	4	4	8	9	4	5	10	7
PC	135	64	103	136	113	67	87	96	81	122	98	43
TOTAL	9,893	7,581	6,036	7,167	7,319	4,608	7,907	6,246	5,126	7,068	6,931	5173

Fires by Year



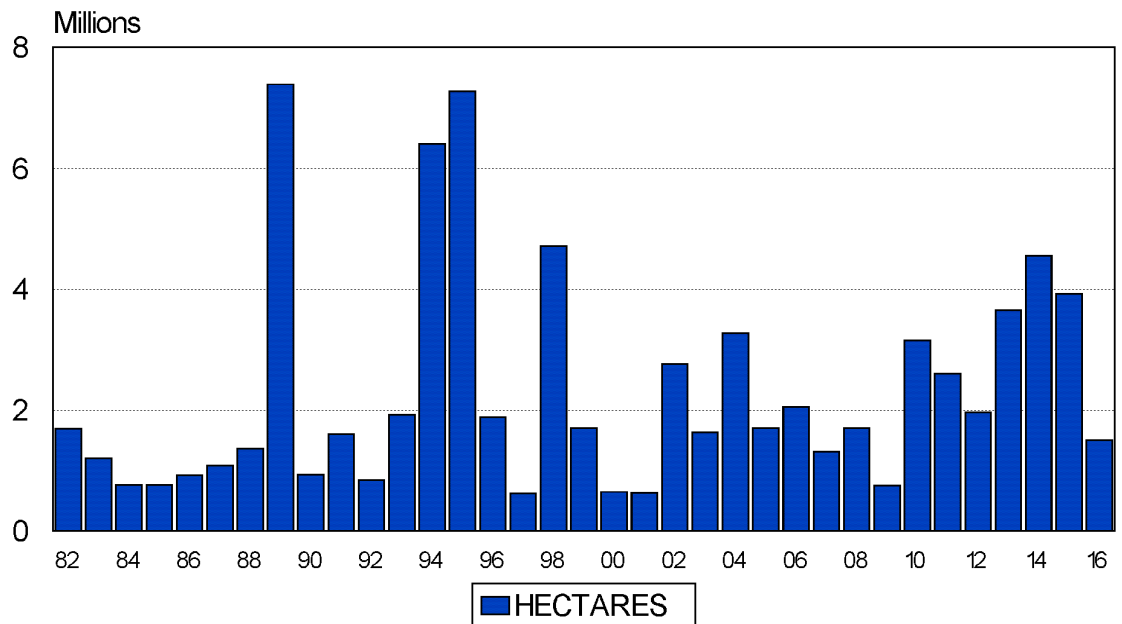
Current as of December 31, 2016



WILDLAND FIRE HECTARES

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	Avg.	2016
BC	135,634	28,704	11,939	229,566	331,508	12,357	102,042	17,990	368,785	280,445	151,897	100,366
YT	95,033	41,288	18,845	227,057	146,957	39,091	58,280	179,510	3,160	169,841	97,906	21,543
AB	118,782	105,321	20,644	66,826	83,643	940,596	337,000	21,890	23,120	492,536	221,036	741,550.10
NT	53,398	439,886	353,852	2,057	333,435	406,693	297,618	537,912	3,416,291	646,955	648,810	254,980.90
SK	1,203,722	212,907	1,130,179	37,559	1,734,799	343,720	227,512	312,194	343,430	1,758,376	730,440	241,607.80
MB	166,050	206,924	150,673	2,872	187,494	126,844	216,888	1,115,412	40,333	47,358	226,085	38,408
ON	149,518	40,591	1,314	20,656	14,824	635,373	151,564	43,422	5,386	39,311	110,196	83,113.20
QC	124,176	342,682	1,481	93,972	314,884	12,726	70,086	1,872,842	63,721	5,380	255,961	33,371
NL	3437	10,892	5,140	35,267	1,020	594	225,524	43,076	16,816	3,958	34,572	10,953.50
NB	507	446	143	249	156	45	362	886	112	262	316.8	264.8
NS	1,576	692	2,719	892	463	136	817	301	564	517	868	754.9
PE	51	20	8	3.09	5	6	12	55	4	2	16.609	19.7
PC	2,768	222,134	4,439	38,429	5,912	85,653	273,037	58,377	282,125	458,336	143,121	5,539.40
TOTAL	2,054,652	1,310,148	1,701,376	755,405	3,155,100	2,603,833	1,960,742	4,203,867	4,563,847	3,903,277	2,621,225	1,499,883

Hectares by Year



Current as of December 31, 2016

