



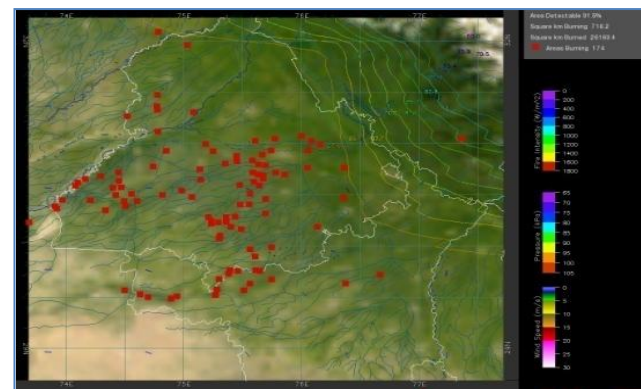
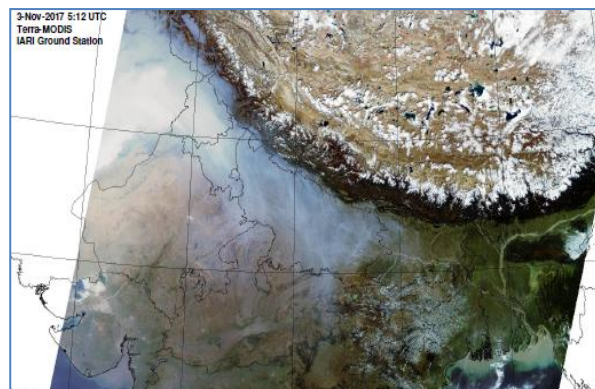
**Bulletin
No. 60**

**Events Date:
30-Nov-2018**

**Issued on:
01-Dec-2018**



MONITORING PADDY RESIDUE BURNING IN NORTH INDIA USING SATELLITE REMOTE SENSING DURING 2018



Prepared by:

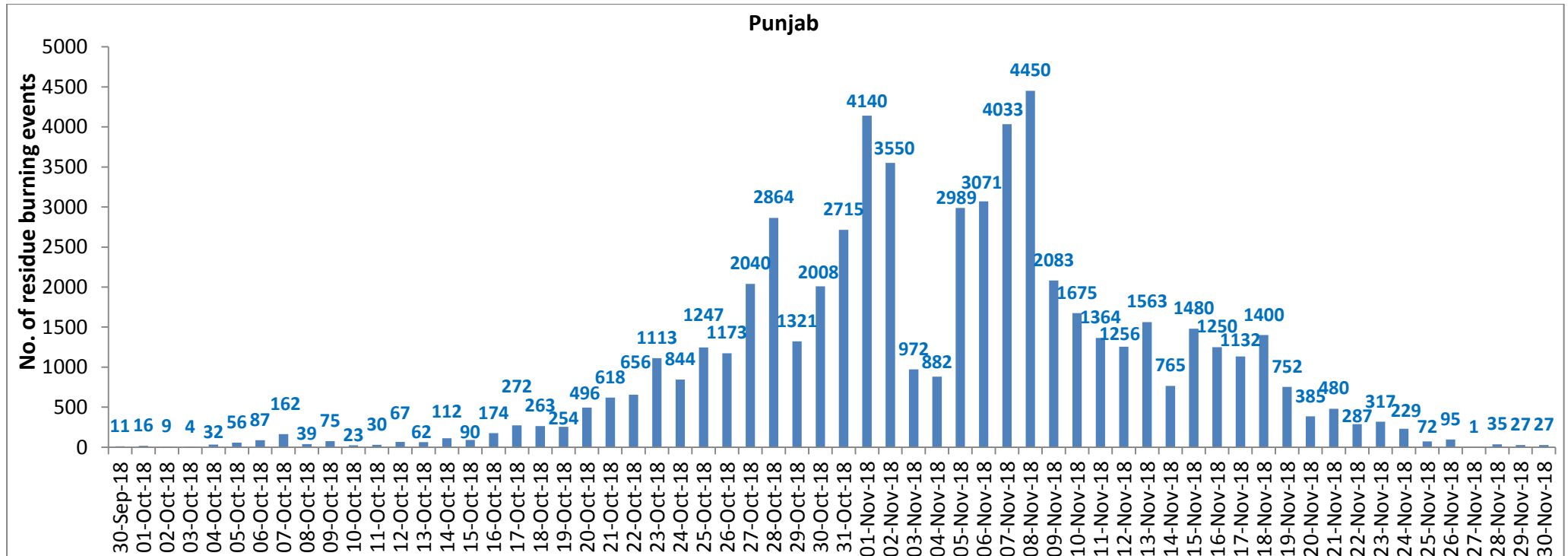
**Consortium for Research on Agroecosystem Monitoring and Modeling from Space (CREAMS) Laboratory,
Division of Agricultural Physics, ICAR – Indian Agricultural Research Institute, New Delhi – 110012**

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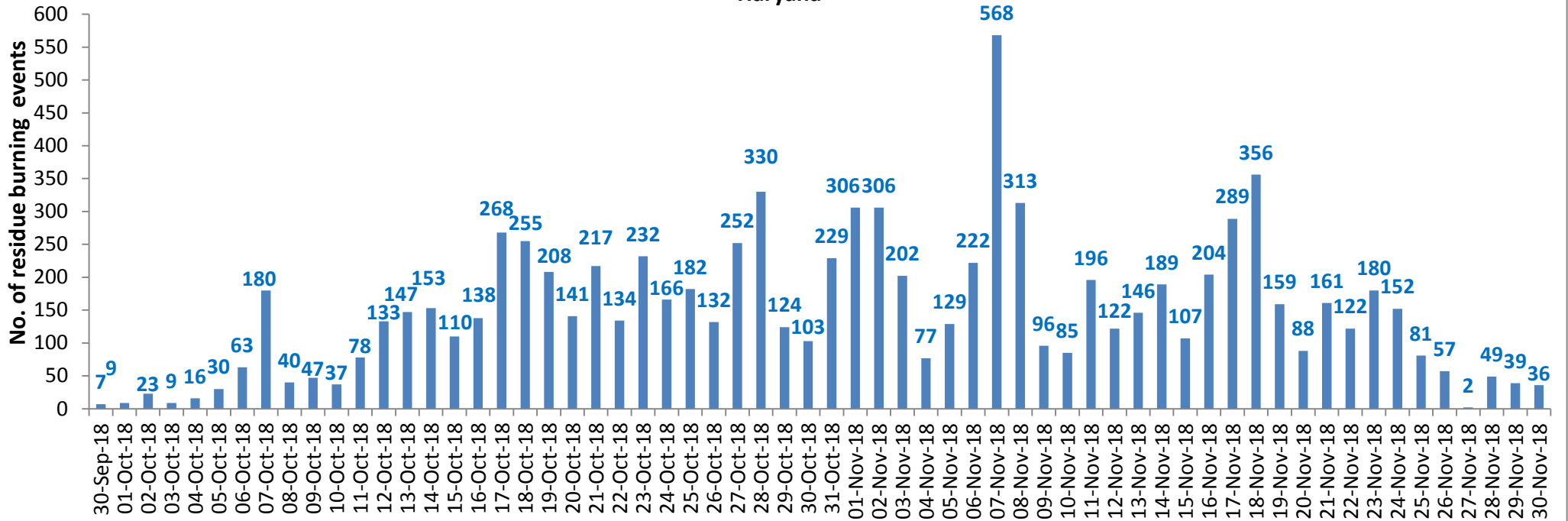
Highlights for 30-November-2018

- Satellites detected **185** residue burning events in the three States (Punjab, Haryana & UP) on **30-Nov-2018**.
- The burning events detected on **30-Nov-2018** are **27**, **36** and **122** in Punjab, Haryana, and UP, respectively.
- The number of events has increased from **170** on **29-Nov-2018** to **185** on **30-Nov-2018** in the three States.
- Total **75563** burning events were detected in the three States between **30-Sept-2018** and **30-Nov-2018**, which are distributed as **59695**, **9232** and **6636** in Punjab, Haryana and UP, respectively.
- Till **30-Nov-2018**, the burning events in the current year are about **85%** of the events detected in 2017 and about **59.1%** of the events detected in 2016.
- Overall, about **15%** and **41%** reduction in burning events are observed in current year (2018) till date as compared to that in 2017 and 2016, respectively.

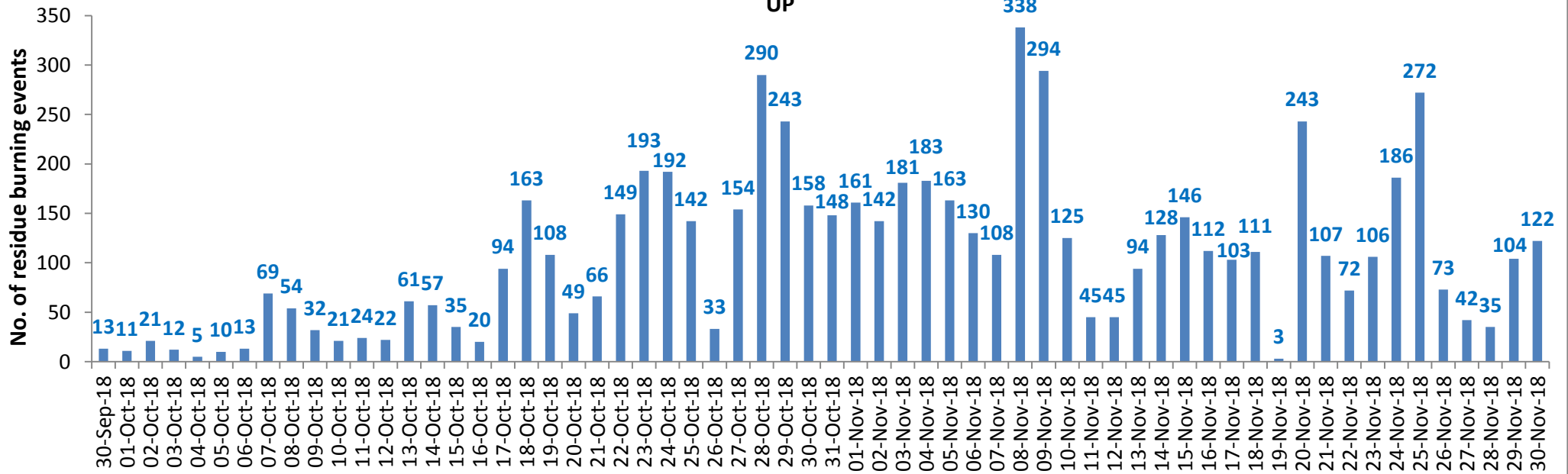
Temporal distribution of residue burning events for the three study States



Haryana

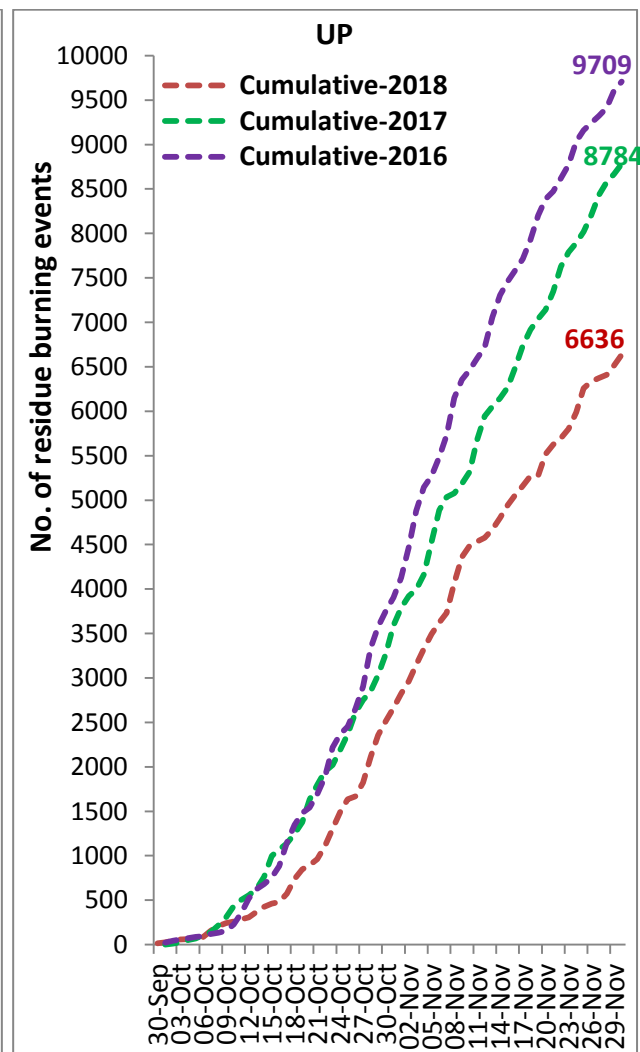
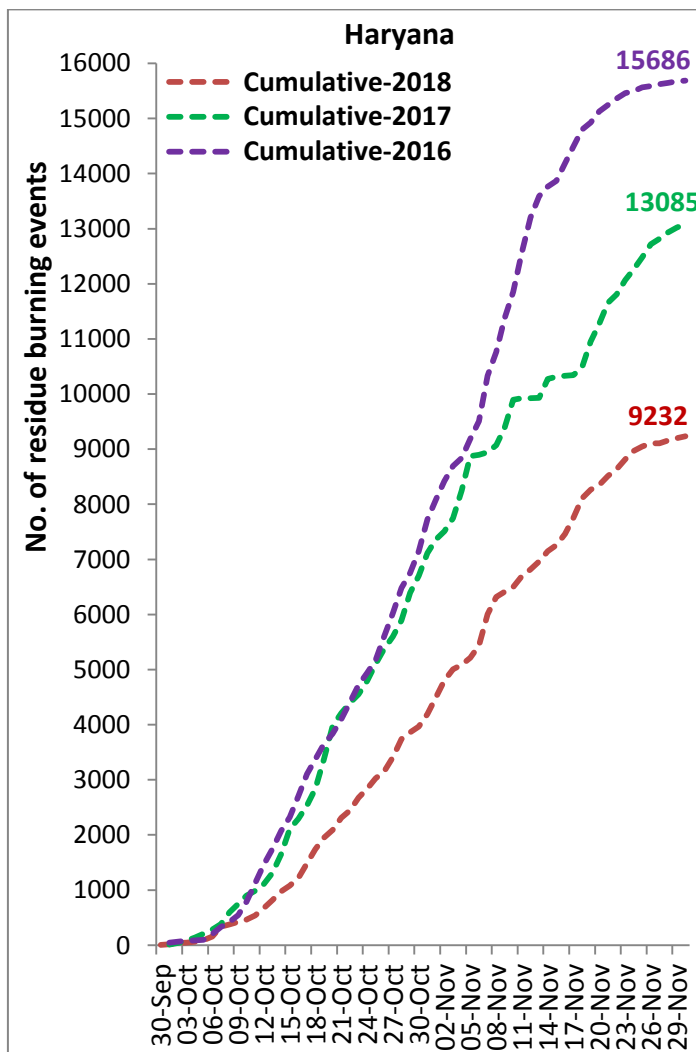
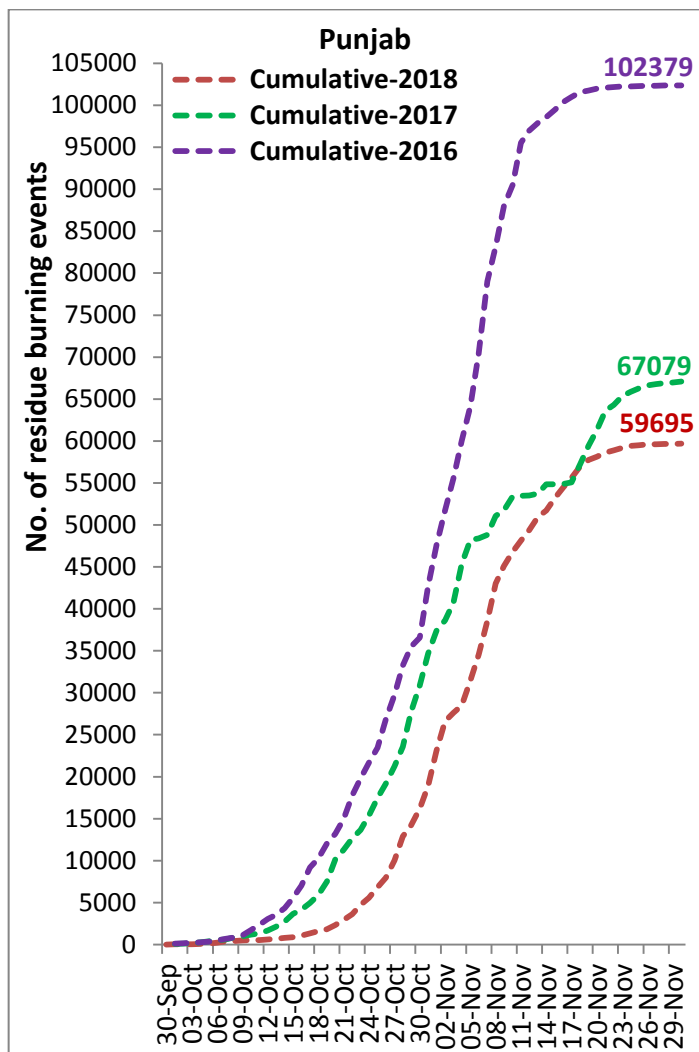


UP

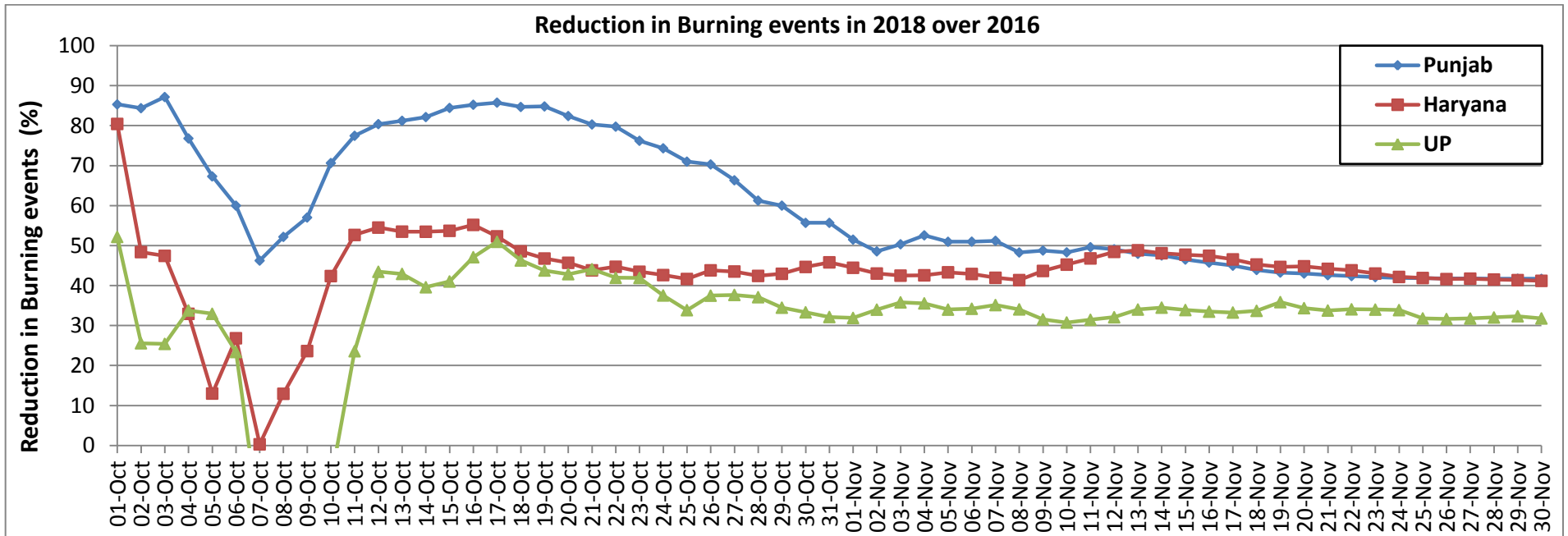
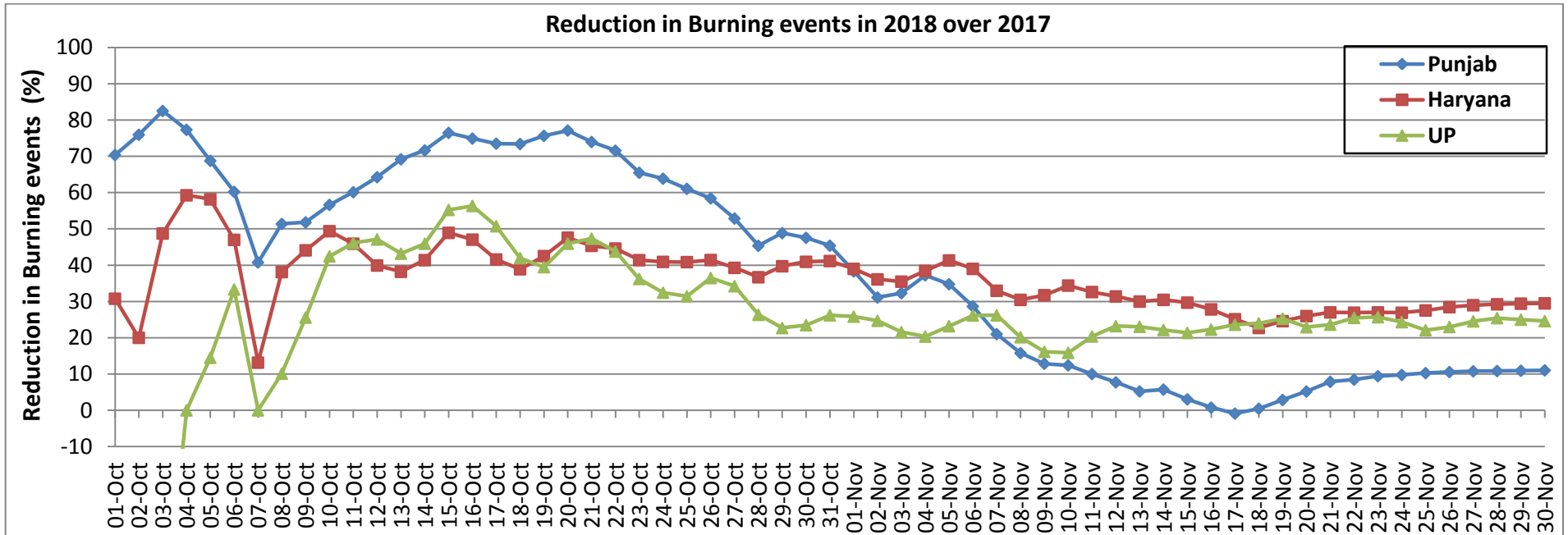


Comparison of residue burning events in current year (2018) with previous years (2017& 2016) for the three study States

(30-Sep to 30-Nov)

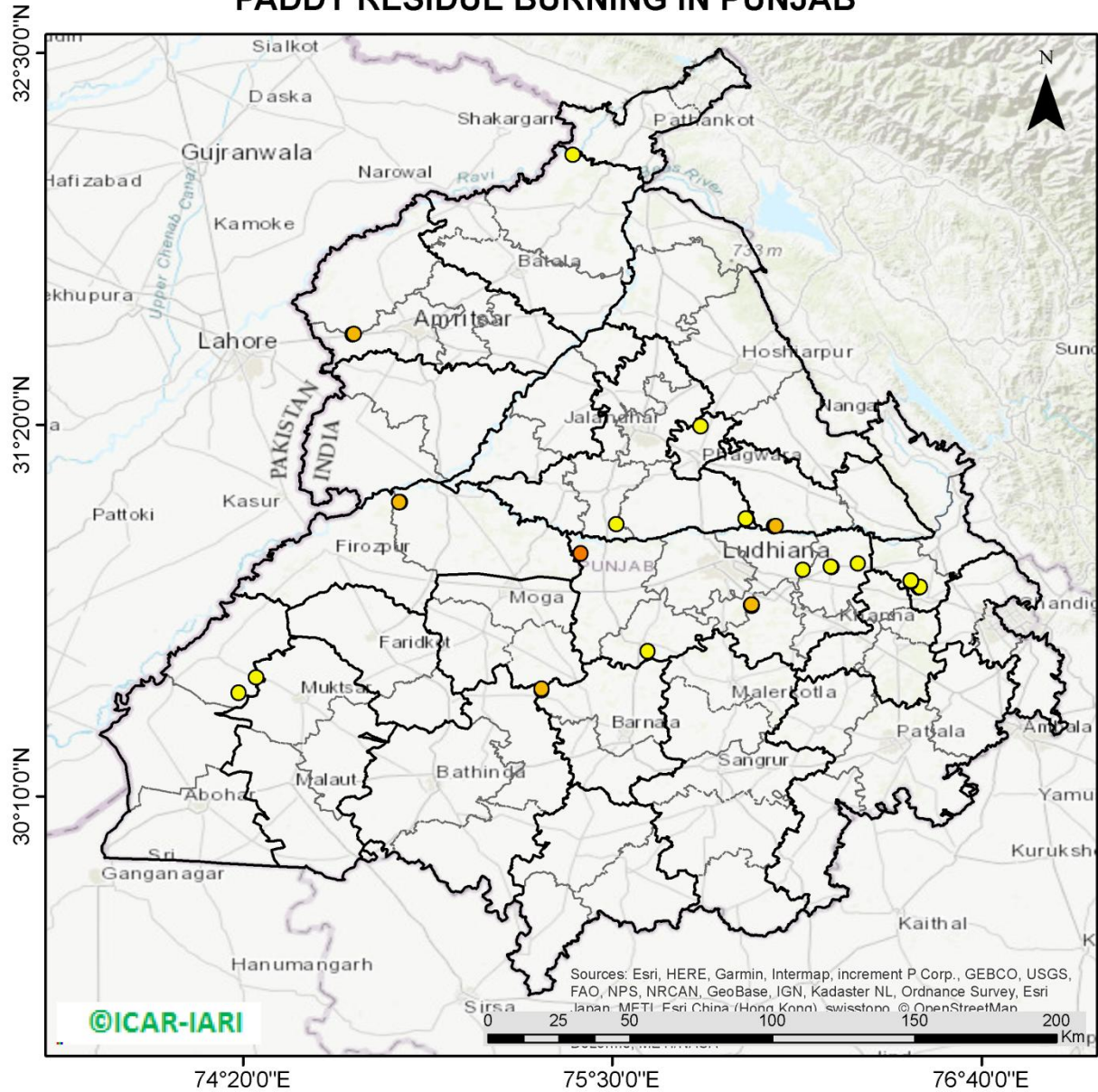


Percent Reduction in Burning events in 2018 over 2017 and 2016 (Daily Cumulative)



(a) Punjab

PADDY RESIDUE BURNING IN PUNJAB



27 burning events detected in Punjab on 30th November, 2018

Fire Intensity (W/m²)

- 0 - 5
- 6 - 10
- 11 - 15
- 16 - 20
- >20

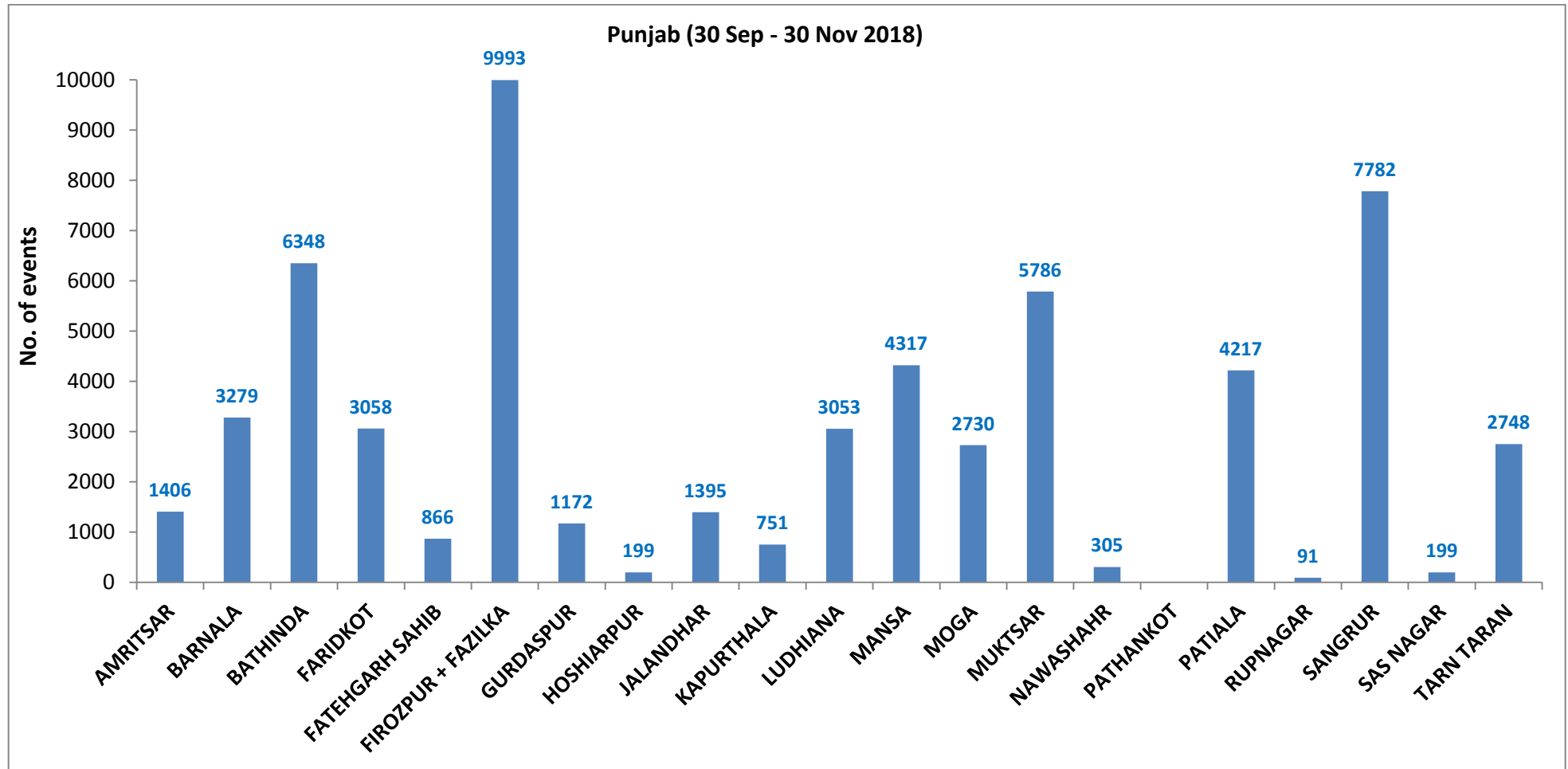
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Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, © OpenStreetMap



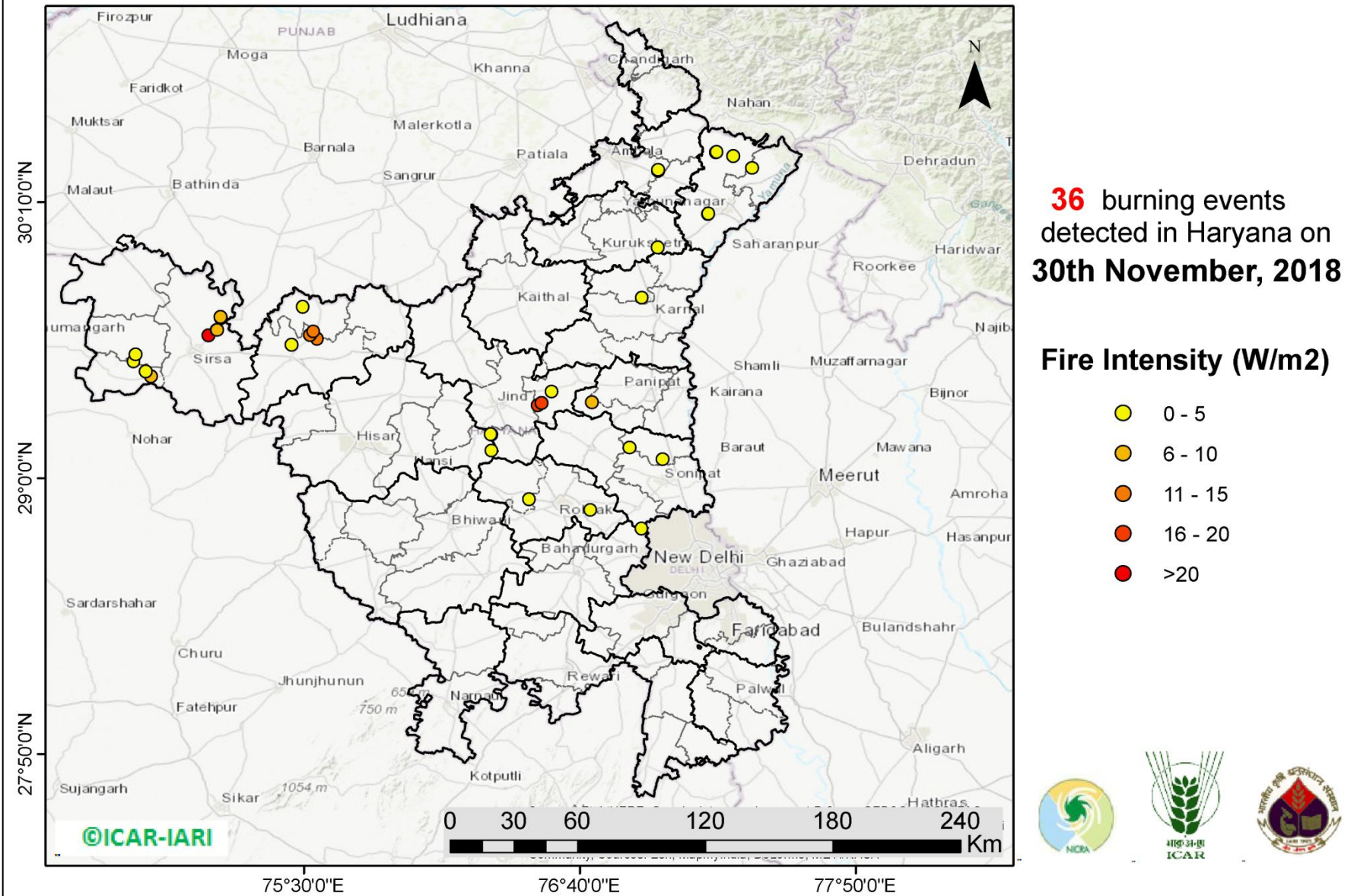
<http://geoportal.icar.gov.in:8080/geoexplorer/composer/>

District-wise cumulative number of residue burning events in Punjab (30-Sep-2018 to 30-Nov-2018)



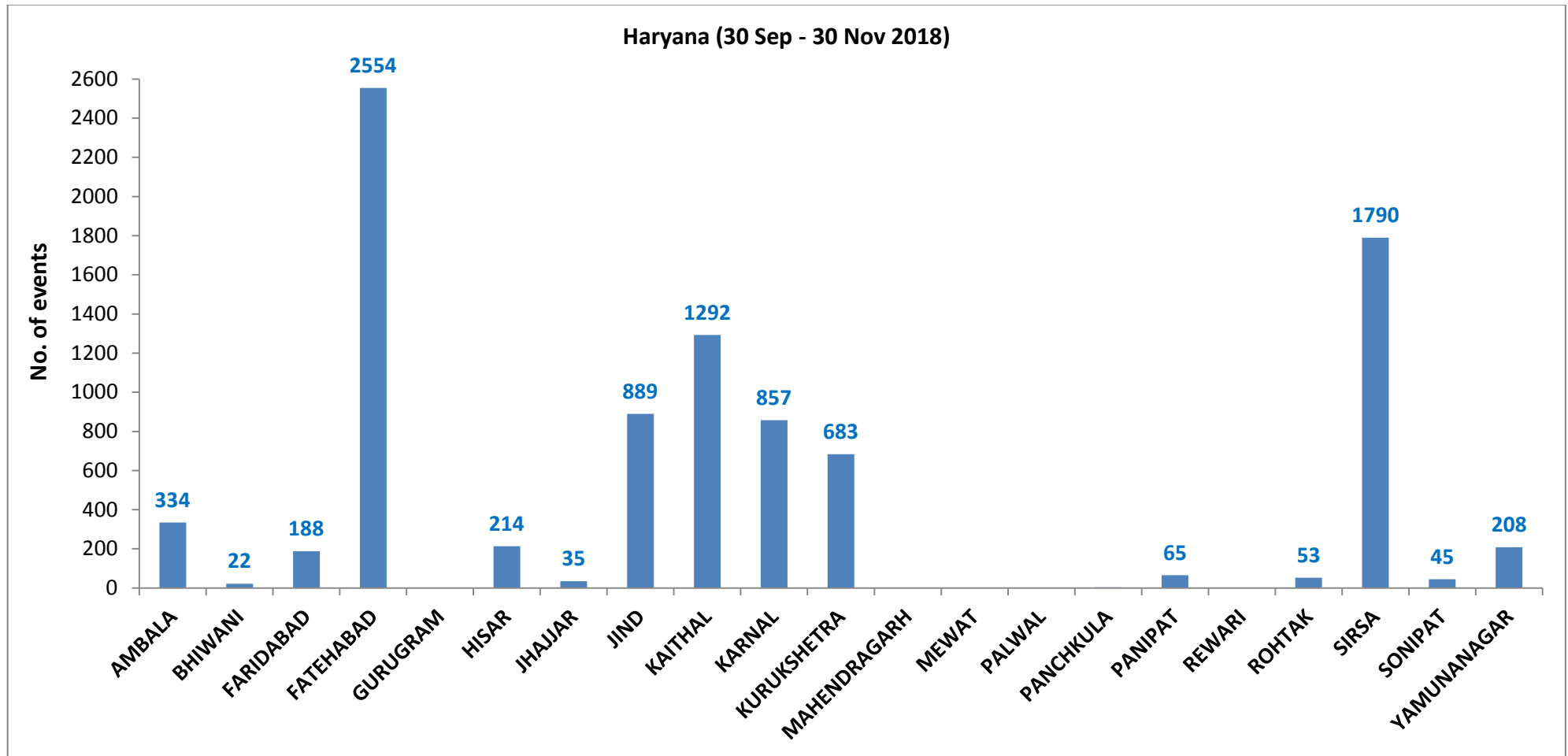
(b) Haryana

PADDY RESIDUE BURNING IN HARYANA



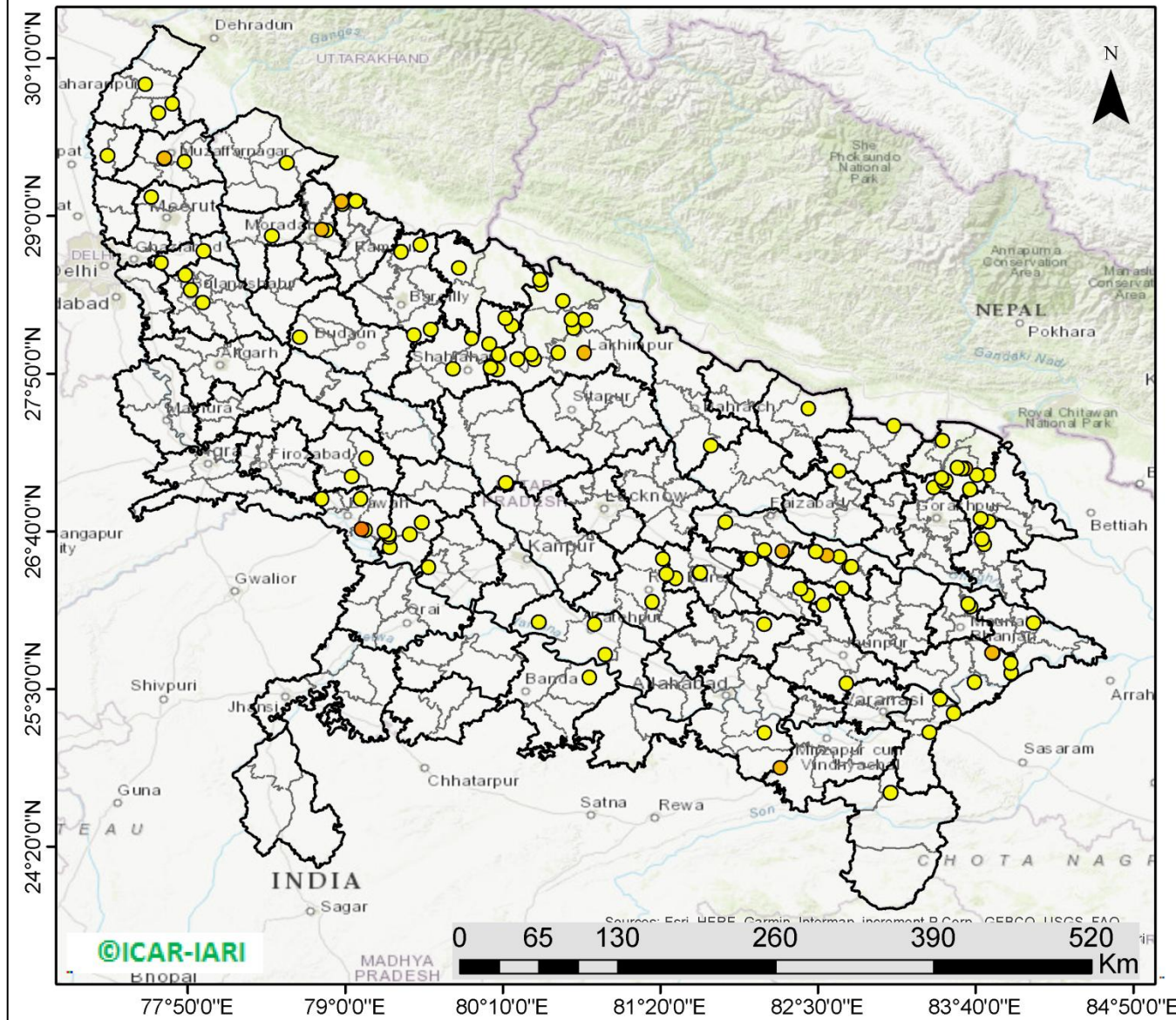
<http://geoportal.icar.gov.in:8080/geoexplorer/composer/>

District-wise cumulative number of residue burning events in Haryana (30-Sep-2018 to 30-Nov-2018)



(c) Uttar Pradesh

PADDY RESIDUE BURNING IN UTTAR PRADESH



122 burning events detected in Uttar Pradesh on **30th Nov, 2018**

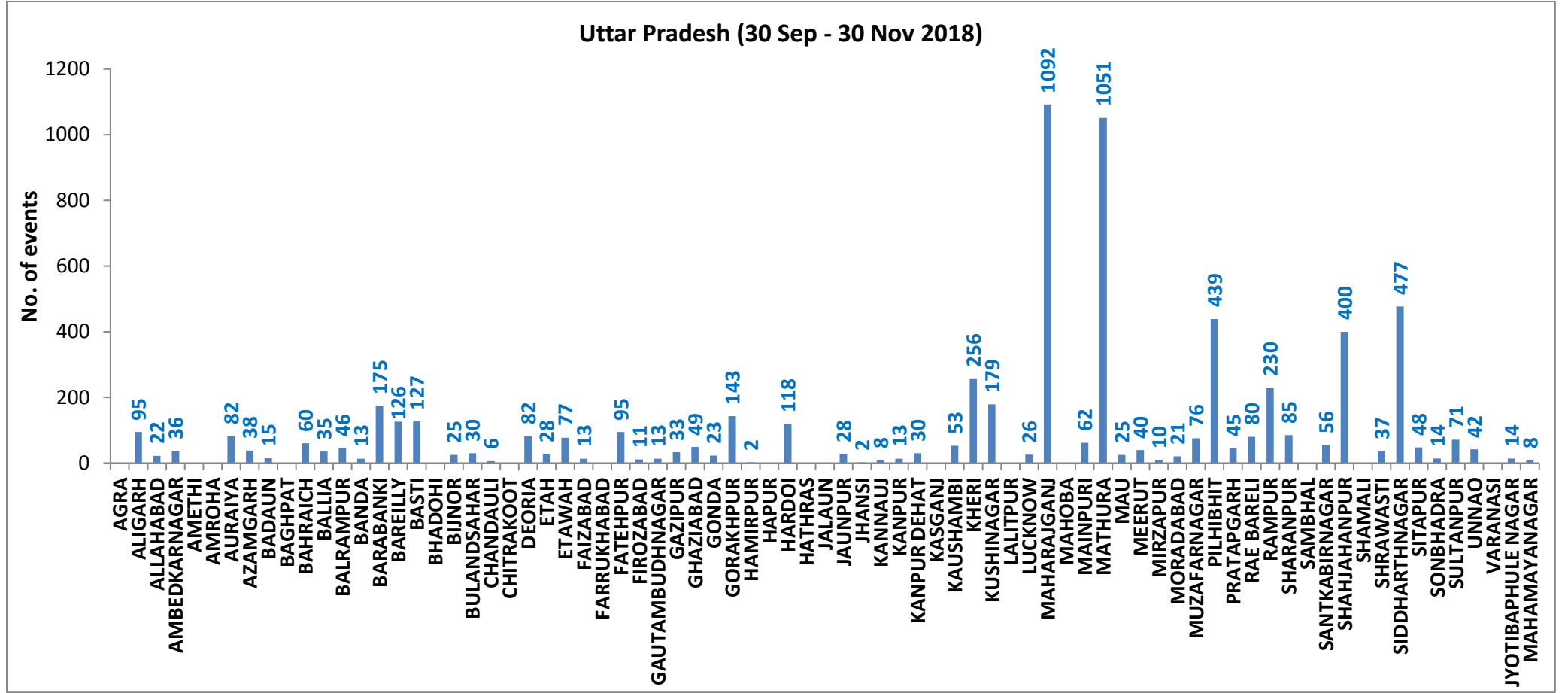
Fire Intensity (W/m²)

- 0 - 5
- 6 - 10
- 11 - 15
- 16 - 20
- >20



<http://geoportal.icar.gov.in:8080/geoexplorer/composer/>

District-wise cumulative number of residue burning events in Uttar Pradesh (30-Sep-2018 to 30-Nov-2018)



State wise, date wise and district-wise number of residue burning events detected in 2016, 2017 and 2018
(Period: 30-Sep to 30-Nov)

Date	Punjab			Haryana			UP			Total		
	2016	2017	2018	2016	2017	2018	2016	2017	2018	2016	2017	2018
30-Sep	--	--	11	--	---	7	--	---	13	--	---	31
1-Oct	109	54	16	46	13	9	23	2	11	178	69	36
2-Oct	51	50	9	16	27	23	20	8	21	87	85	53
3-Oct	66	62	4	16	40	9	16	17	12	98	119	25
4-Oct	37	103	32	7	60	16	15	22	5	59	185	53
5-Oct	95	106	56	15	68	30	14	20	10	124	194	96
6-Oct	152	138	87	105	75	65	6	39	13	263	252	165
7-Oct	171	105	162	126	97	180	24	31	69	321	233	411
8-Oct	166	215	39	94	218	40	14	75	54	274	508	133
9-Oct	270	163	75	121	148	47	22	87	32	413	398	154
10-Oct	597	164	23	242	151	37	74	126	21	913	441	81
11-Oct	652	177	30	336	87	78	128	74	24	1116	338	132
12-Oct	694	342	67	338	123	133	164	51	22	1196	516	222
13-Oct	467	470	62	284	207	147	102	69	61	853	746	270
14-Oct	812	582	112	328	333	153	60	137	57	1200	1052	322
15-Oct	1215	943	90	248	458	110	76	237	35	1539	1638	235
16-Oct	1478	465	174	385	186	138	125	71	20	1988	722	332
17-Oct	2173	807	272	399	244	268	261	69	94	2833	1120	634
18-Oct	1065	970	263	270	306	255	204	108	163	1539	1384	681
19-Oct	1762	1591	254	276	541	208	132	128	108	2170	2260	570
20-Oct	1175	2653	496	188	597	141	62	255	49	1425	3505	686
21-Oct	1726	1139	618	257	233	217	152	168	66	2135	1540	901
22-Oct	2837	1356	656	309	186	134	194	151	149	3340	1693	939
23-Oct	2040	994	1113	313	155	232	331	72	193	2684	1221	1538
24-Oct	1836	1714	844	221	244	166	152	171	192	2209	2129	1202
25-Oct	1813	2104	1247	229	303	182	83	175	142	2125	2582	1571
26-Oct	3390	1715	1173	434	276	132	195	240	33	4019	2231	1338
27-Oct	2904	2069	2040	417	224	252	255	145	154	3576	2438	2446
28-Oct	3493	2318	2864	458	292	330	435	99	290	4386	2709	3484
29-Oct	2258	4184	1321	278	502	124	237	180	243	2773	4866	1688
30-Oct	1076	3152	2008	395	307	103	175	238	158	1646	3697	2269

31-Oct	6132	3743	2715	575	413	229	153	321	148	6860	4447	3092
01-Nov	4843	2736	4140	362	250	306	223	199	161	5628	3185	4607
02-Nov	4183	1246	3550	332	145	306	345	131	142	4860	1522	3998
03-Nov	3806	2109	972	275	240	202	409	75	181	4409	2424	1355
04-Nov	4477	4603	882	146	499	77	265	168	183	4888	5270	1142
05-Nov	4137	2876	2989	345	625	129	125	367	163	4607	3868	3281
06-Nov	6303	171	3071	322	26	222	215	357	130	6840	327	3423
07-Nov	8575	420	4033	821	46	568	244	149	108	9640	615	4709
08-Nov	4129	2256	4450	432	128	313	419	43	338	4874	2427	5101
09-Nov	4857	675	2083	608	311	96	205	107	294	5670	1093	2473
10-Nov	2468	1642	1675	484	509	85	109	131	125	3061	2282	1885
11-Nov	5040	103	1364	716	29	196	129	358	45	5885	490	1605
12-Nov	1477	33	1256	634	3	122	129	269	45	2240	305	1423
13-Nov	885	237	1563	389	7	146	338	109	94	1612	353	1803
14-Nov	692	1101	765	171	340	189	247	95	128	1110	1536	1082
15-Nov	871	5	1480	107	40	107	154	123	146	1132	168	1733
16-Nov	911	8	1250	318	17	204	123	218	112	1352	243	1566
17-Nov	638	217	1132	299	12	289	130	249	103	1067	478	1524
18-Nov	568	2147	1400	312	139	356	217	180	111	1097	2466	1867
19-Nov	168	2200	752	125	471	159	273	122	3	566	2793	914
20-Nov	240	1857	385	204	325	88	183	101	243	627	2283	716
21-Nov	112	2310	480	115	378	161	86	205	107	313	2893	748
22-Nov	99	719	287	118	154	122	148	281	72	365	1154	481
23-Nov	54	1033	317	97	259	180	151	163	106	302	1455	603
24-Nov	21	507	229	36	192	152	265	105	186	322	794	567
25-Nov	33	443	72	68	219	81	123	124	272	224	786	425
26-Nov	27	334	95	25	240	57	85	186	73	137	760	225
27-Nov	22	151	1	34	99	2	80	227	42	136	477	45
28-Nov	13	95	35	23	114	49	87	145	35	123	354	119
29-Nov	10	86	27	28	87	39	197	91	104	235	264	170
30-Nov	8	111	27	14	67	36	101	116	122	123	294	185
Total	102379	67079	59695	15686	13085	9232	9709	8784	6636	127774	88948	75563

(a) Punjab

Districts	01 Oct - 30Nov		
	2016	2017	2018
AMRITSAR	2171	1368	1406
BARNALA	5701	3430	3279
BATHINDA	8846	5783	6348
FARIDKOT	4630	3472	3058
FATEHGARH SAHIB	2461	1643	866
FIROZPUR + FAZILKA	13645	9957	9993
GURDASPUR	2221	1599	1172
HOSHIARPUR	905	497	199
JALANDHAR	4663	2134	1395
KAPURTHALA	3136	1627	751
LUDHIANA	9546	4769	3053
MANSA	5652	4506	4317
MOGA	6393	2786	2730
MUKTSAR	7037	5458	5786
NAWASHAHR (SBS Nagar)	1366	691	305
PATHANKOT	0	0	0
PATIALA	6546	5034	4217
RUPNAGAR	719	329	91
SANGRUR	11862	8430	7782
SAS NAGAR	366	246	199
TARN TARAN	4513	3320	2748
Total	102379	67079	59695

(b) Haryana

Districts	01 Oct - 30Nov		
	2016	2017	2018
AMBALA	538	504	334
BHIWANI	93	49	22
FARIDABAD	288	343	188
FATEHABAD	4833	3749	2554
GURUGRAM	0	0	0
HISAR	416	195	214
JHAJJAR	43	19	35
JIND	862	946	889
KAITHAL	1748	1513	1292
KARNAL	1640	1514	857
KURUKSHETRA	1080	1152	683
MAHENDRAGARH	0	0	0
MEWAT	0	0	0
PALWAL	0	0	0
PANCHKULA	0	0	3
PANIPAT	102	110	65
REWARI	0	0	0
ROHTAK	103	100	53
SIRSA	3580	2479	1790
SONIPAT	102	87	45
YAMUNANAGAR	258	325	208
Total	15686	13085	9232

(c) Uttar Pradesh				FATEHPUR	90	76	95	MUZAFARNAGAR	192	202	76
				FIROZABAD	23	18	11	PILHIBHIT	970	752	439
Distritcs	01 Oct - 30Nov			GAUTAMBUDH				PRATAPGARH	47	65	45
	2016	2017	2018	NAGAR	33	48	13	RAE BARELI	120	153	80
AGRA	0	0	0	GAZIPUR	16	27	33	RAMPUR	640	667	230
ALIGARH	60	83	95	GHAZIABAD	102	73	49	SHARANPUR	144	166	85
ALLAHABAD	8	20	22	GONDA	52	39	23	SAMBHAL	0	0	0
AMBEDKAR				GORAKHPUR	67	115	143	SANTKABIR			
NAGAR	80	71	36	HAMIRPUR	0	0	2	NAGAR	56	65	56
AMETHI	0	0	0	HAPUR	0	0	0	SHAHJAHANPUR	1163	718	400
AMROHA	0	0	0	HARDOI	260	211	118	SHAMALI	0	0	0
AURAIYA	291	263	82	HATHRAS	0	0	0	SHRAWASTI	39	32	37
AZAMGARH	38	58	38	JALAUN	0	0	0	SIDDHARTH			
BADAUN	15	14	15	JAUNPUR	27	46	28	NAGAR	266	188	477
BAGHPAT	0	0	0	JHANSI	0	0	2	SITAPUR	152	88	48
BAHRAICH	85	42	60	KANNAUJ	35	20	8	SONBHADRA	17	20	14
BALLIA	19	48	35	KANPUR	20	14	13	SULTANPUR	82	93	71
BALRAMPUR	39	28	46	KANPUR DEHAT	75	76	30	UNNAO	68	60	42
BANDA	2	23	13	KASGANJ	0	0	0	VARANASI	2	0	0
BARABANKI	222	168	175	KAUSHAMBI	37	60	53	JYOTIBAPHULE			
BAREILLY	271	240	126	KHERI	525	371	256	NAGAR	13	22	14
BASTI	147	187	127	KUSHINAGAR	70	157	179	MAHAMAYA			
BHADOHI	0	0	0	LALITPUR	0	0	0	NAGAR	4	3	8
BIJNOR	88	79	25	LUCKNOW	64	30	26	Total	9709	8784	6636
BULANDSAHAR	39	41	30	MAHARAJGANJ	744	1029	1092				
CHANDAULI	22	28	6	MAHOBA	0	0	0				
CHITRAKOOT	0	0	0	MAINPURI	97	97	62				
DEORIA	62	86	82	MATHURA	1463	1083	1051				
ETAH	24	33	28	MAU	15	24	25				
ETAWAH	189	148	77	MEERUT	123	128	40				
FAIZABAD	20	16	13	MIRZAPUR	6	24	10				
FARRUKHABAD	0	0	0	MORADABAD	69	48	21				

Details of residue burning events in Punjab on 30-Nov-2018

Event S. No.	District	Tehsil/Block	Satellite	Longitude	Latitude	Time (IST)	Day/Night	Fire Power (W/m²)
1	AMRITSAR	AJNALA	S-NPP	74.68300	31.61858	13:12:00	D	5.50
2	AMRITSAR	AMRITSAR II	S-NPP	74.67981	31.61683	13:12:00	D	1.80
3	BATHINDA	RAMPURA PHUL	S-NPP	75.27715	30.50087	13:12:00	D	7.90
4	BATHINDA	RAMPURA PHUL	S-NPP	75.27618	30.50466	13:12:00	D	7.90
5	FIROZPUR	JALALABAD	S-NPP	74.31822	30.49146	13:12:00	D	1.40
6	FIROZPUR	JALALABAD	S-NPP	74.37315	30.54005	13:12:00	D	2.70
7	FIROZPUR	ZIRA	S-NPP	74.82795	31.09070	13:12:00	D	7.00
8	FIROZPUR	ZIRA	S-NPP	74.82645	31.09077	13:12:00	D	5.90
9	GURDASPUR	GURDASPUR	S-NPP	75.37510	32.18140	13:12:00	D	2.50
10	JALANDHAR	NAKODAR	S-NPP	75.51213	31.02115	13:12:00	D	4.40
11	JALANDHAR	PHILLAUR	S-NPP	75.92218	31.03938	13:12:00	D	2.40
12	KAPURTHALA	PHAGWARA	S-NPP	75.77895	31.32878	13:12:00	D	3.20
13	LUDHIANA	JAGRAON	S-NPP	75.40030	30.92982	13:12:00	D	12.70
14	LUDHIANA	LUDHIANA EAST	S-NPP	76.10337	30.87724	13:12:00	D	3.50
15	LUDHIANA	PAYAL	S-NPP	75.94044	30.76473	13:12:00	D	6.20
16	LUDHIANA	PAYAL	S-NPP	75.93805	30.76664	13:12:00	D	9.10
17	LUDHIANA	PAYAL	S-NPP	75.93953	30.76839	13:12:00	D	6.20
18	LUDHIANA	RAIKOT	S-NPP	75.61156	30.62237	13:12:00	D	2.60
19	LUDHIANA	SAMRALA	S-NPP	76.19447	30.88625	01:54:00	N	0.90
20	LUDHIANA	SAMRALA	S-NPP	76.19155	30.88709	01:54:00	N	0.70
21	LUDHIANA	SAMRALA	S-NPP	76.27728	30.89765	13:12:00	D	3.40
22	NAWASHAHR	NAWASHAHR	S-NPP	76.01178	31.01420	13:12:00	D	8.70
23	NAWASHAHR	NAWASHAHR	S-NPP	76.01674	31.01512	13:12:00	D	8.70
24	RUPNAGAR	CHAMKOR SAHIB	S-NPP	76.46851	30.82301	13:12:00	D	2.60
25	RUPNAGAR	CHAMKOR SAHIB	S-NPP	76.47327	30.82388	13:12:00	D	2.60
26	RUPNAGAR	CHAMKOR SAHIB	S-NPP	76.44418	30.84099	13:12:00	D	2.50
27	RUPNAGAR	CHAMKOR SAHIB	S-NPP	76.44331	30.84456	13:12:00	D	2.50

Details of residue burning events in Haryana on 30-Nov-2018

Event S. No.	District	Tehsil/Block	Satellite	Longitude	Latitude	Time (IST)	Day/Night	Fire Power (W/m²)
1	AMBALA	AMBALA	S-NPP	76.99786	30.29991	13:12:00	D	1.80
2	AMBALA	AMBALA	S-NPP	76.99703	30.30343	13:12:00	D	1.80
3	FATEHABAD	FATEHABAD	S-NPP	75.44717	29.56562	13:12:00	D	3.00
4	FATEHABAD	RATIA	S-NPP	75.55482	29.58992	13:12:00	D	10.10
5	FATEHABAD	RATIA	S-NPP	75.52575	29.60633	13:12:00	D	11.60
6	FATEHABAD	RATIA	S-NPP	75.53912	29.62085	13:12:00	D	10.60
7	FATEHABAD	RATIA	S-NPP	75.49445	29.72525	13:12:00	D	2.80
8	HISAR	HANSI	S-NPP	76.29308	29.11613	13:12:00	D	2.40
9	HISAR	HANSI	S-NPP	76.29230	29.18529	13:12:00	D	3.00
10	HISAR	HANSI	S-NPP	76.28915	29.18584	13:12:00	D	2.60
11	JHAJJAR	BAHADURGARH	S-NPP	76.92734	28.78710	01:54:00	N	2.30
12	JIND	SAFIDON	TERRA-1	76.48891	29.30967	22:30:00	N	15.76
13	JIND	SAFIDON	METOP-1	76.50425	29.31865	21:48:00	N	20.00
14	JIND	SAFIDON	S-NPP	76.54813	29.36660	13:12:00	D	2.60
15	KARNAL	NILOKHERI	S-NPP	76.92848	29.76320	13:12:00	D	3.90
16	KURUKSHETRA	THANESAR	S-NPP	76.99633	29.97678	13:12:00	D	2.20
17	PANIPAT	ISRANA	S-NPP	76.71819	29.32233	13:12:00	D	7.40
18	ROHTAK	MAHAM	S-NPP	76.45202	28.91205	13:12:00	D	3.10
19	ROHTAK	ROHTAK	S-NPP	76.71091	28.86580	13:12:00	D	1.60
20	SIRSA	ELLENABAD	S-NPP	74.85244	29.43092	13:12:00	D	6.50
21	SIRSA	ELLENABAD	S-NPP	74.83069	29.45156	13:12:00	D	2.90
22	SIRSA	RANIA	S-NPP	74.77898	29.49282	13:12:00	D	2.00
23	SIRSA	RANIA	S-NPP	74.78766	29.52363	13:12:00	D	2.60
24	SIRSA	SIRSA	S-NPP	75.09657	29.60415	13:12:00	D	28.20
25	SIRSA	SIRSA	S-NPP	75.13115	29.62628	13:12:00	D	8.00
26	SIRSA	SIRSA	S-NPP	75.13233	29.62727	13:12:00	D	6.20
27	SIRSA	SIRSA	S-NPP	75.14764	29.67827	13:12:00	D	6.20
28	SIRSA	SIRSA	S-NPP	75.14667	29.68214	13:12:00	D	6.20

29	SONIPAT	GANAUR	S-NPP	77.01708	29.07924	13:12:00	D	4.30
30	SONIPAT	SONIPAT	S-NPP	76.87675	29.12856	01:54:00	N	0.50
31	YAMUNANAGAR	CHHACHHRAULII	S-NPP	77.39548	30.31143	13:12:00	D	2.90
32	YAMUNANAGAR	JAGADHRI	S-NPP	77.20849	30.11892	13:12:00	D	1.70
33	YAMUNANAGAR	JAGADHRI	S-NPP	77.20990	30.11915	13:12:00	D	2.80
34	YAMUNANAGAR	JAGADHRI	S-NPP	77.31516	30.36325	13:12:00	D	2.20
35	YAMUNANAGAR	JAGADHRI	S-NPP	77.24140	30.37918	13:12:00	D	3.70
36	YAMUNANAGAR	JAGADHRI	S-NPP	77.24590	30.37998	13:12:00	D	3.70

Details of residue burning events in Uttar Pradesh on 30-Nov-2018

Event S. No.	District	Tehsil/Block	Satellite	Longitude	Latitude	Time (IST)	Day/Night	Fire Power (W/m²)
1	ALLAHABAD	MEZA	S-NPP	82.10506	25.17377	13:12:00	D	1.70
2	AMBEDKARNAGAR	AKBARPUR	S-NPP	82.56534	26.48483	13:12:00	D	5.20
3	AMBEDKARNAGAR	AKBARPUR	S-NPP	82.48307	26.51577	13:12:00	D	1.60
4	AMBEDKARNAGAR	JALALPUR	S-NPP	82.73399	26.40062	13:12:00	D	9.50
5	AMBEDKARNAGAR	JALALPUR	S-NPP	82.74988	26.40287	13:12:00	D	2.40
6	AMBEDKARNAGAR	TANDA	S-NPP	82.65981	26.47769	13:12:00	D	1.80
7	AURAIYA	AURAIYA	S-NPP	79.33033	26.54544	13:12:00	D	3.50
8	AURAIYA	AURAIYA	S-NPP	79.32366	26.62520	13:12:00	D	2.70
9	AURAIYA	AURAIYA	S-NPP	79.32427	26.64279	13:12:00	D	2.60
10	AURAIYA	BIDHUNA	S-NPP	79.47874	26.64381	13:12:00	D	3.90
11	AURAIYA	BIDHUNA	S-NPP	79.56554	26.72825	13:12:00	D	2.70
12	BADAUN	SAHASWAN	S-NPP	78.66230	28.10264	13:12:00	D	2.70
13	BALLIA	BALLIA	S-NPP	83.93195	25.62090	13:12:00	D	2.70
14	BALLIA	SIKANDARPUR	S-NPP	84.09760	25.98531	13:12:00	D	4.30
15	BALRAMPUR	TULSIPUR	S-NPP	82.43000	27.57342	13:12:00	D	2.80
16	BANDA	BABERU	S-NPP	80.80733	25.58564	13:12:00	D	1.80
17	BAREILLY	BAHERI	S-NPP	79.41457	28.73446	13:12:00	D	2.30
18	BAREILLY	BAHERI	S-NPP	79.55680	28.78711	13:12:00	D	3.90
19	BAREILLY	FARIDPUR	S-NPP	79.51075	28.11781	13:12:00	D	1.90
20	BAREILLY	FARIDPUR	S-NPP	79.63418	28.15848	13:12:00	D	1.30
21	BASTI	BHANPUR	S-NPP	82.65784	27.11163	13:12:00	D	2.20
22	BIJNOR	DHAMPUR	S-NPP	78.56726	29.39184	13:12:00	D	2.00
23	BULANSAHAR	BULANSHAHAR	S-NPP	77.94571	28.35639	13:12:00	D	4.00
24	BULANSAHAR	BULANSHAHAR	S-NPP	77.85677	28.45320	13:12:00	D	2.90
25	BULANSAHAR	BULANSHAHAR	S-NPP	77.81538	28.56237	13:12:00	D	1.80
26	CHANDAULI	CHANDAULI	S-NPP	83.32604	25.17806	13:12:00	D	3.50
27	CHANDAULI	CHANDAULI	S-NPP	83.50510	25.31815	13:12:00	D	2.50
28	CHANDAULI	SHAKALDIHA	S-NPP	83.40513	25.42239	13:12:00	D	3.60

29	DEORIA	DEORIA	S-NPP	83.73196	26.56731	13:12:00	D	2.30
30	DEORIA	DEORIA	S-NPP	83.71278	26.60901	13:12:00	D	4.70
31	ETAWAH	BHARTHNA	S-NPP	79.29025	26.66517	13:12:00	D	1.90
32	ETAWAH	BHARTHNA	S-NPP	79.14879	26.67645	13:12:00	D	1.60
33	ETAWAH	BHARTHNA	S-NPP	79.12205	26.68252	13:12:00	D	14.50
34	ETAWAH	ETAWAH	S-NPP	79.11504	26.90572	13:12:00	D	2.20
35	ETAWAH	JASWANTNAGAR	S-NPP	78.82751	26.90703	13:12:00	D	3.10
36	FAIZABAD	BIKAPUR	S-NPP	82.23756	26.51815	13:12:00	D	5.60
37	FAIZABAD	BIKAPUR	S-NPP	82.10431	26.52606	13:12:00	D	3.60
38	FAIZABAD	RUDAULI	S-NPP	81.81258	26.73358	13:12:00	D	2.90
39	FATEHPUR	BINKI	S-NPP	80.43172	25.99319	13:12:00	D	2.30
40	FATEHPUR	FATEHPUR	S-NPP	80.92548	25.75273	13:12:00	D	3.10
41	FATEHPUR	FATEHPUR	S-NPP	80.84776	25.97783	13:12:00	D	4.50
42	GAZIPUR	MUHAMMADBAD	S-NPP	83.93252	25.61743	13:12:00	D	2.70
43	GAZIPUR	MUHAMMADBAD	S-NPP	83.92983	25.68928	13:12:00	D	3.30
44	GAZIPUR	MUHAMMADBAD	S-NPP	83.79452	25.76133	13:12:00	D	2.80
45	GAZIPUR	MUHAMMADBAD	S-NPP	83.78978	25.76422	13:12:00	D	7.20
46	GAZIPUR	ZAMANIA	S-NPP	83.65879	25.55174	13:12:00	D	4.90
47	GHAZIABAD	GARHMUKTESAR	S-NPP	77.95210	28.73903	13:12:00	D	4.70
48	GHAZIABAD	HAPUR	S-NPP	77.63949	28.65138	13:12:00	D	3.90
49	GONDA	COLONELGANJ	S-NPP	81.70573	27.29890	13:12:00	D	3.00
50	HARDOI	BILGRAM	S-NPP	80.18788	27.02353	13:12:00	D	2.10
51	JAUNPUR	MARIAHU	S-NPP	82.71201	25.54002	13:12:00	D	2.70
52	JAUNPUR	SHHGANJ	S-NPP	82.53989	26.12248	13:12:00	D	3.00
53	JYOTIBAPHULE NAGAR	AMROHA	S-NPP	78.45557	28.85043	13:12:00	D	2.00
54	KANPUR DEHAT	SIKANDRA	S-NPP	79.61784	26.40079	13:12:00	D	1.80
55	KHERI	GOLA	S-NPP	80.39874	27.94037	13:12:00	D	3.40
56	KHERI	GOLA	S-NPP	80.27387	27.94130	13:12:00	D	3.20
57	KHERI	GOLA	S-NPP	80.37925	27.97819	13:12:00	D	2.90
58	KHERI	GOLA	S-NPP	80.69128	28.16895	13:12:00	D	3.40
59	KHERI	GOLA	S-NPP	80.67522	28.23388	13:12:00	D	1.50

60	KHERI	LAKHIMPUR	S-NPP	80.77036	27.98804	13:12:00	D	5.10
61	KHERI	LAKHIMPUR	S-NPP	80.57791	27.98856	13:12:00	D	2.30
62	KHERI	MOHMADI	S-NPP	80.12070	27.86012	13:12:00	D	4.90
63	KHERI	MOHMADI	S-NPP	80.12461	27.86074	13:12:00	D	4.90
64	KHERI	MOHMADI	S-NPP	80.07687	27.87714	13:12:00	D	4.50
65	KHERI	MOHMADI	S-NPP	80.13437	27.97397	13:12:00	D	2.20
66	KHERI	NIGHASAN	S-NPP	80.77583	28.23225	13:12:00	D	1.50
67	KHERI	PALIA KALAN	S-NPP	80.61270	28.37022	13:12:00	D	2.20
68	KHERI	PALIA KALAN	S-NPP	80.45178	28.49429	13:12:00	D	2.70
69	KUSHINAGAR	HATA	S-NPP	83.76667	26.73440	13:12:00	D	1.70
70	KUSHINAGAR	HATA	S-NPP	83.70602	26.75817	13:12:00	D	2.80
71	KUSHINAGAR	PADRAUNA	S-NPP	83.76557	27.07908	13:12:00	D	1.90
72	MAHARAJGANJ	MAHARAJGANJ	S-NPP	83.62400	26.97688	13:12:00	D	4.10
73	MAHARAJGANJ	MAHARAJGANJ	S-NPP	83.35566	26.98862	13:12:00	D	2.40
74	MAHARAJGANJ	MAHARAJGANJ	S-NPP	83.43536	27.02402	13:12:00	D	2.30
75	MAHARAJGANJ	MAHARAJGANJ	S-NPP	83.44089	27.04237	13:12:00	D	1.80
76	MAHARAJGANJ	MAHARAJGANJ	S-NPP	83.44510	27.04294	13:12:00	D	2.50
77	MAHARAJGANJ	MAHARAJGANJ	S-NPP	83.41643	27.06015	13:12:00	D	2.60
78	MAHARAJGANJ	MAHARAJGANJ	S-NPP	83.67731	27.08146	13:12:00	D	1.70
79	MAHARAJGANJ	MAHARAJGANJ	S-NPP	83.59101	27.13135	13:12:00	D	5.60
80	MAHARAJGANJ	MAHARAJGANJ	S-NPP	83.56914	27.13196	13:12:00	D	1.90
81	MAHARAJGANJ	MAHARAJGANJ	S-NPP	83.53342	27.13778	13:12:00	D	2.20
82	MAHARAJGANJ	NAUTANWA	S-NPP	83.42446	27.33514	13:12:00	D	1.70
83	MAINPURI	BHOGAON	S-NPP	79.15651	27.20728	13:12:00	D	1.40
84	MAINPURI	KARHAL	S-NPP	79.04880	27.06976	13:12:00	D	2.30
85	MAU	MADHUBAN	S-NPP	83.62827	26.11121	13:12:00	D	4.10
86	MAU	MADHUBAN	S-NPP	83.61317	26.12926	13:12:00	D	4.90
87	MAU	MADHUBAN	S-NPP	83.61238	26.13011	13:12:00	D	4.60
88	MEERUT	SARDHANA	S-NPP	77.56525	29.13952	13:12:00	D	3.10
89	MIRZAPUR	LALGANJ	S-NPP	82.22150	24.91425	13:12:00	D	5.20
90	MORADABAD	MORADABAD	S-NPP	78.85701	28.89182	01:54:00	N	0.50

91	MORADABAD	MORADABAD	S-NPP	78.85684	28.89452	01:54:00	N	0.30
92	MORADABAD	MORADABAD	METOP-2	78.82682	28.89644	20:44:00	N	6.00
93	MORADABAD	MORADABAD	S-NPP	78.97061	29.10738	13:12:00	D	5.20
94	MUZAFARNAGAR	JANSATH	S-NPP	77.81153	29.40028	13:12:00	D	2.00
95	MUZAFARNAGAR	KAIRANA	S-NPP	77.24072	29.44553	13:12:00	D	2.00
96	MUZAFARNAGAR	MUZAFFARNAGAR	S-NPP	77.66087	29.42099	13:12:00	D	9.20
97	MUZAFARNAGAR	MUZAFFARNAGAR	S-NPP	77.66009	29.42446	13:12:00	D	9.20
98	PILHIBHIT	PILHIBHIT	S-NPP	79.84209	28.61223	13:12:00	D	3.90
99	PILHIBHIT	PURANPUR	S-NPP	80.44138	28.52668	13:12:00	D	2.50
100	PRATAPGARH	PATTI	S-NPP	82.10291	25.97845	13:12:00	D	3.40
101	RAIBEARELI	MAHARAJGANG	S-NPP	81.37650	26.34997	13:12:00	D	1.10
102	RAIBEARELI	MAHARAJGANG	S-NPP	81.35246	26.46161	13:12:00	D	2.00
103	RAIBEARELI	RAEBARELI	S-NPP	81.27322	26.14481	13:12:00	D	2.50
104	RAIBEARELI	TILOI	S-NPP	81.44594	26.31687	13:12:00	D	1.20
105	RAMPUR	SUAR	S-NPP	79.07923	29.11122	13:12:00	D	3.40
106	RAMPUR	TANDA	S-NPP	78.97896	29.08793	13:12:00	D	2.90
107	SHAHJAHANPUR	PUWANYA	S-NPP	80.06528	28.04961	01:54:00	N	1.30
108	SHAHJAHANPUR	PUWANYA	S-NPP	79.93743	28.09152	13:12:00	D	4.60
109	SHAHJAHANPUR	PUWANYA	S-NPP	80.23428	28.18612	13:12:00	D	2.30
110	SHAHJAHANPUR	PUWANYA	S-NPP	80.18684	28.24302	13:12:00	D	2.10
111	SHAHJAHANPUR	SHAHJAHANPUR	S-NPP	79.79877	27.86592	13:12:00	D	0.90
112	SHARANPUR	DEOBAND	S-NPP	77.61611	29.76241	13:12:00	D	2.10
113	SHARANPUR	DEOBAND	S-NPP	77.71929	29.83065	13:12:00	D	2.30
114	SHARANPUR	SHARANPUR	S-NPP	77.52061	29.97185	01:54:00	N	0.50
115	SIDDHARTHANAGAR	SHOHRATGARH	S-NPP	83.06368	27.44658	13:12:00	D	2.20
116	SONBHADRA	REBUTSHGANJ	S-NPP	83.03684	24.73260	13:12:00	D	2.30
117	SULTANPUR	GAURIGANJ	S-NPP	81.62380	26.35719	13:12:00	D	3.00
118	SULTANPUR	GAURIGANJ	S-NPP	81.62703	26.36107	13:12:00	D	3.70
119	SULTANPUR	KADIRPUR	S-NPP	82.42782	26.19073	13:12:00	D	1.80
120	SULTANPUR	KADIRPUR	S-NPP	82.37097	26.24065	13:12:00	D	1.60
121	SULTANPUR	KADIRPUR	S-NPP	82.68009	26.24387	13:12:00	D	2.40
122	SULTANPUR	SULTANPUR	S-NPP	82.00465	26.46039	13:12:00	D	3.30

The study used images received from following Satellites at IARI Satellite Ground Station

S. No.	Satellite Name	Sensor	Resolution (meter)	Day / Night Passes
1.	Suomi NPP	VIIRS	375 / 1000	Both
2.	Terra	MODIS	1000	Both
3.	Aqua	MODIS	1000	Both
4.	NOAA – 18	AVHRR	1000	Night
5.	NOAA – 19	AVHRR	1000	Night
6.	Metop - 1	AVHRR	1000	Night
7.	Metop - 2	AVHRR	1000	Night

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GIS Maps of fire events can be visualized online on ICAR KRISHI & CREAMS Geoportal

websites:<http://geoportal.icar.gov.in:8080/geoexplorer/composer/>

<http://creams.iari.res.in:8080/geoexplorer/composer/>
