



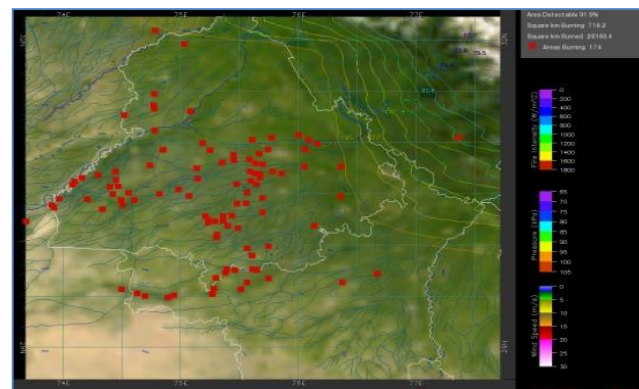
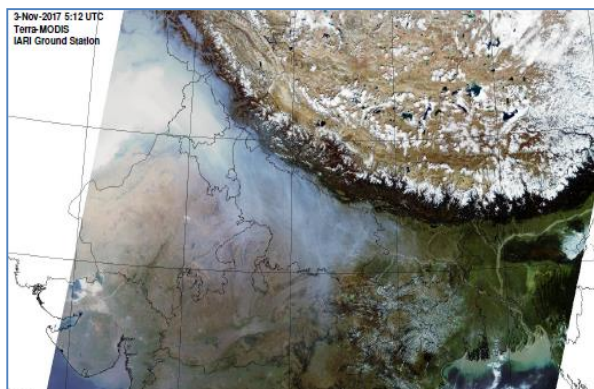
**Bulletin  
No. 59**

**Events Date:  
28-Nov-2019**

**Issued on:  
29-Nov-2019**



# **MONITORING PADDY RESIDUE BURNING IN NORTH INDIA USING SATELLITE REMOTE SENSING DURING 2019**



**Prepared by:**

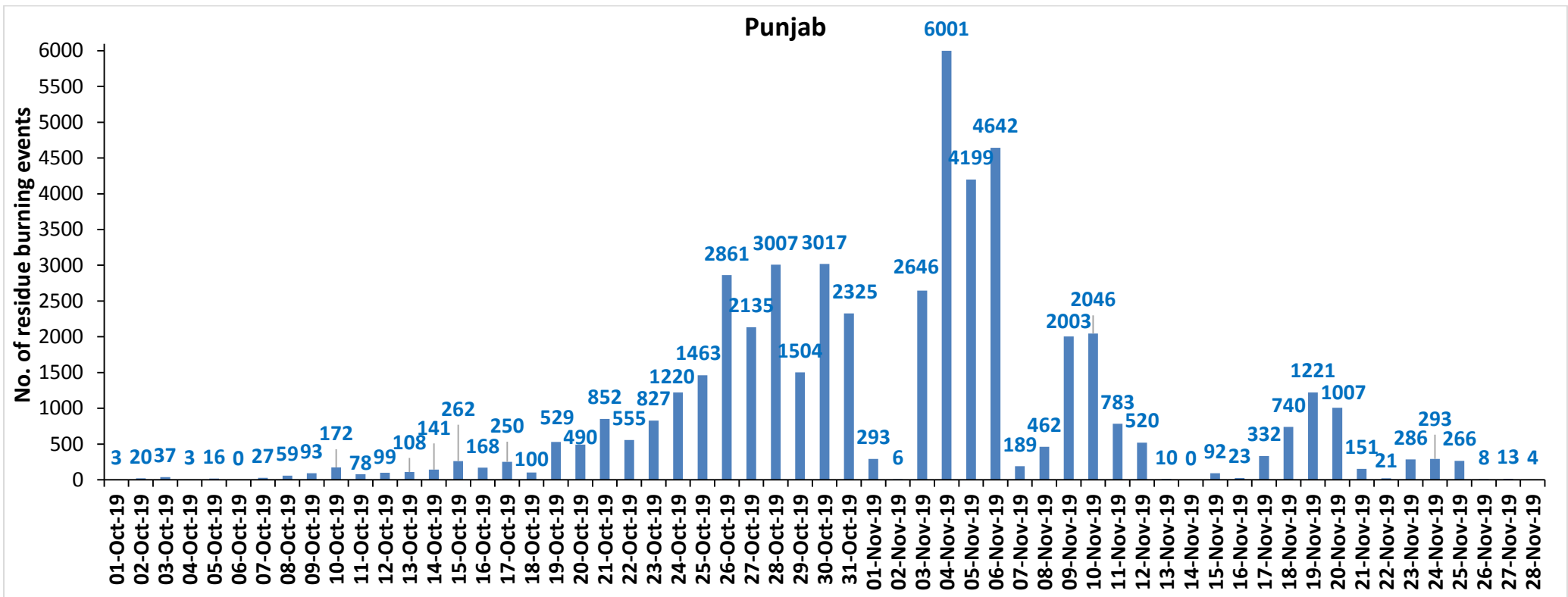
**Consortium for Research on Agroecosystem Monitoring and Modeling from Space (CREAMS) Laboratory,  
Division of Agricultural Physics, ICAR – Indian Agricultural Research Institute, New Delhi – 110012**

**<http://creams.iari.res.in>**

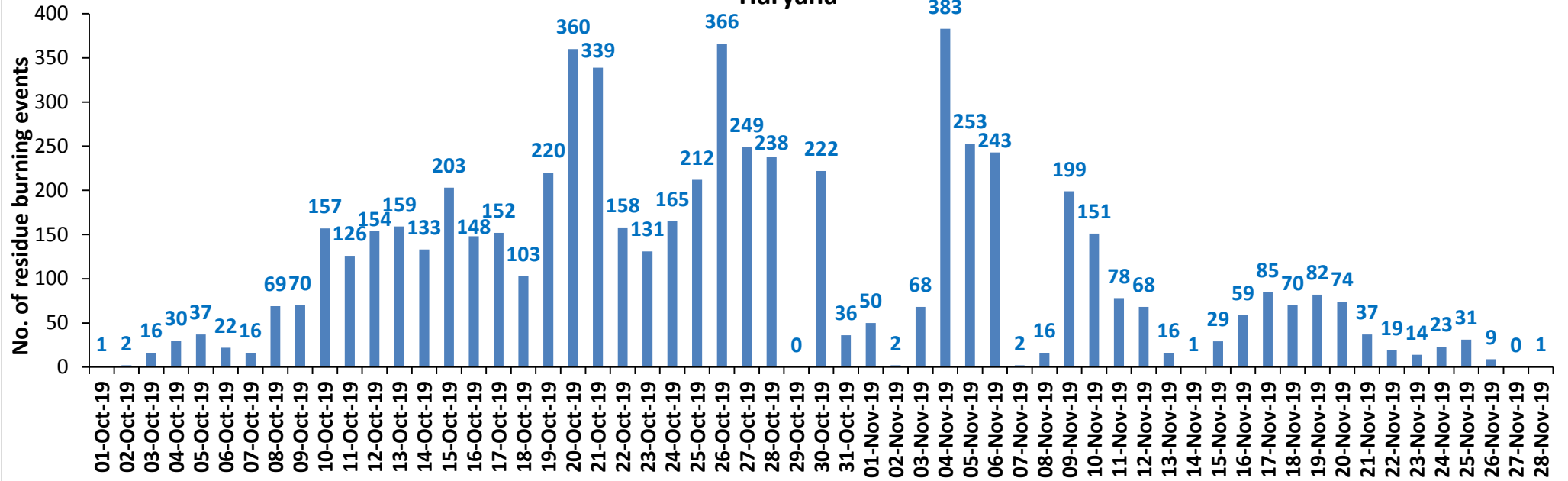
## Highlights for 28-November-2019

- Satellites detected **155** residue burning events in the three study States on **28-Nov-2019**.
- The burning events detected on **28-Nov-2019** are **04**, **01** and **150** in Punjab, Haryana and UP, respectively.
- The number of events has increased from **145** on **27-Nov-2019** to **155** on **28-Nov-2019** in the three states.
- The state of Haryana was partially covered with clouds which prevented fire event detection by satellites.
- Total **61194** burning events were detected in the three States between **01-Oct-2019** and **28-Nov-2019**, which are distributed as **50678**, **6357** and **4159** in Punjab, Haryana and UP, respectively.
- Overall, the total burning events recorded in the three states are **18.6%** less than in 2018 till date. UP recorded **35.0%** reduction, Haryana recorded **30.5%** reduction, and Punjab recorded **15.0%** reduction, respectively, in the current season than in 2018.

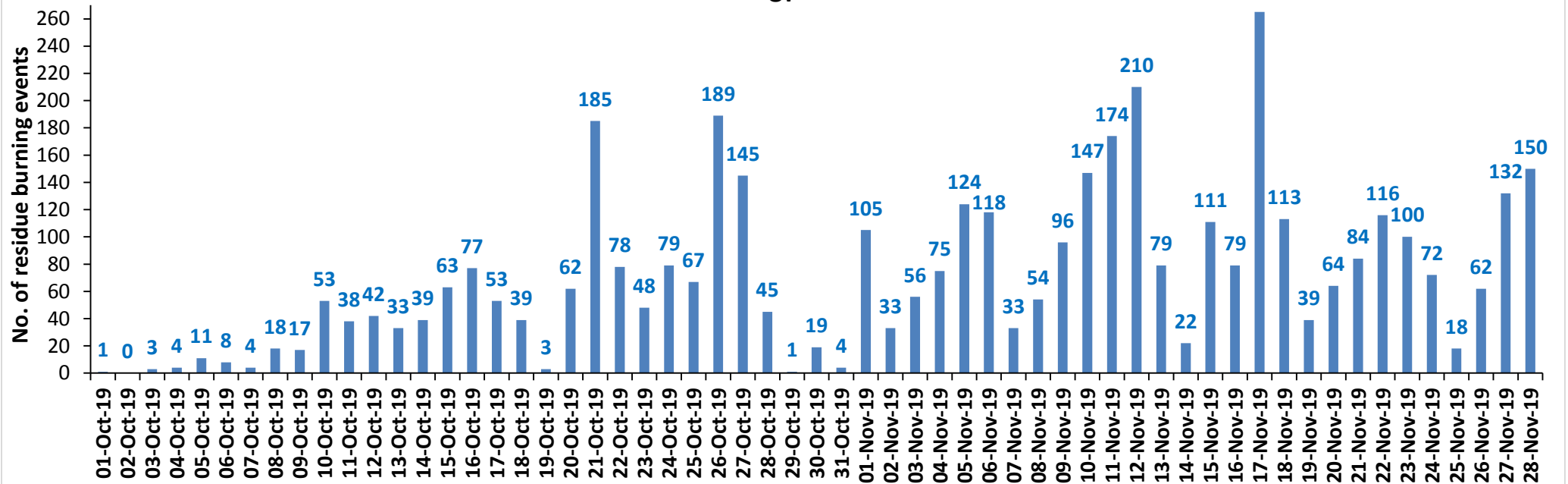
Temporal distribution of residue burning events for the three study States in 2019



### Haryana

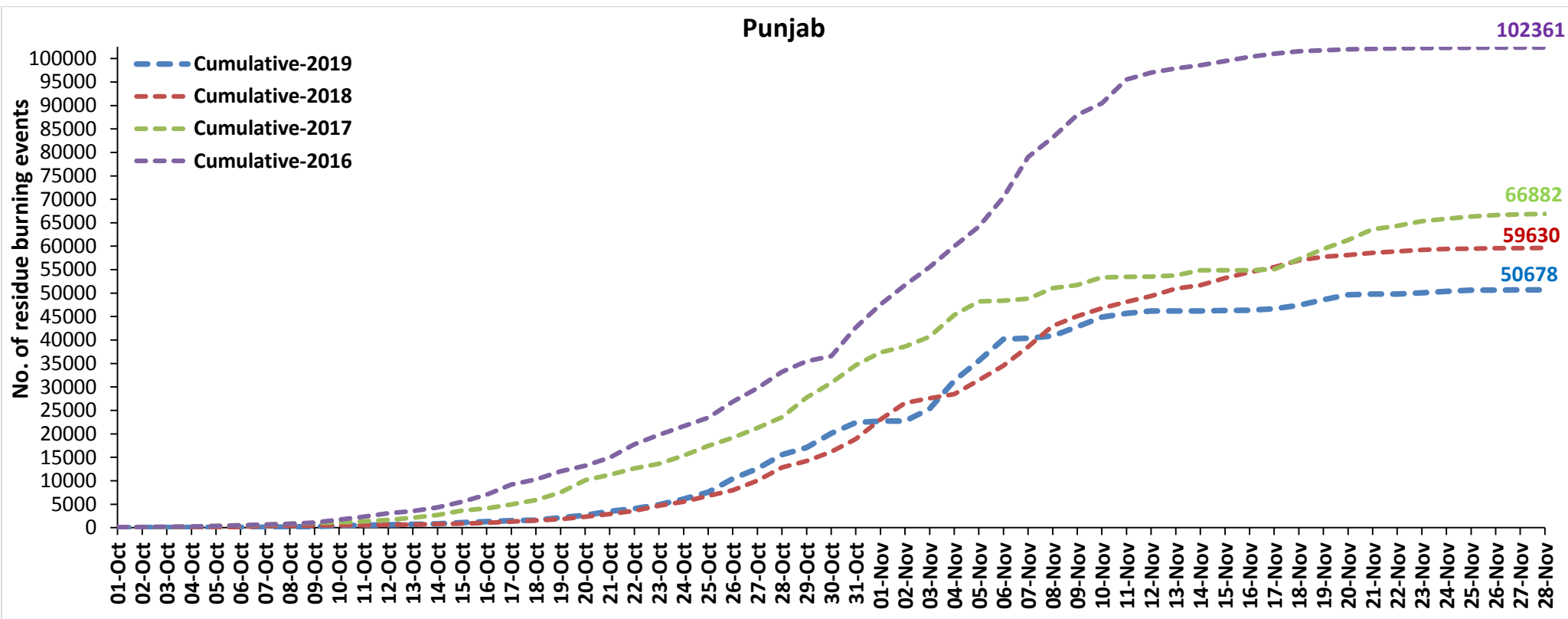


### UP

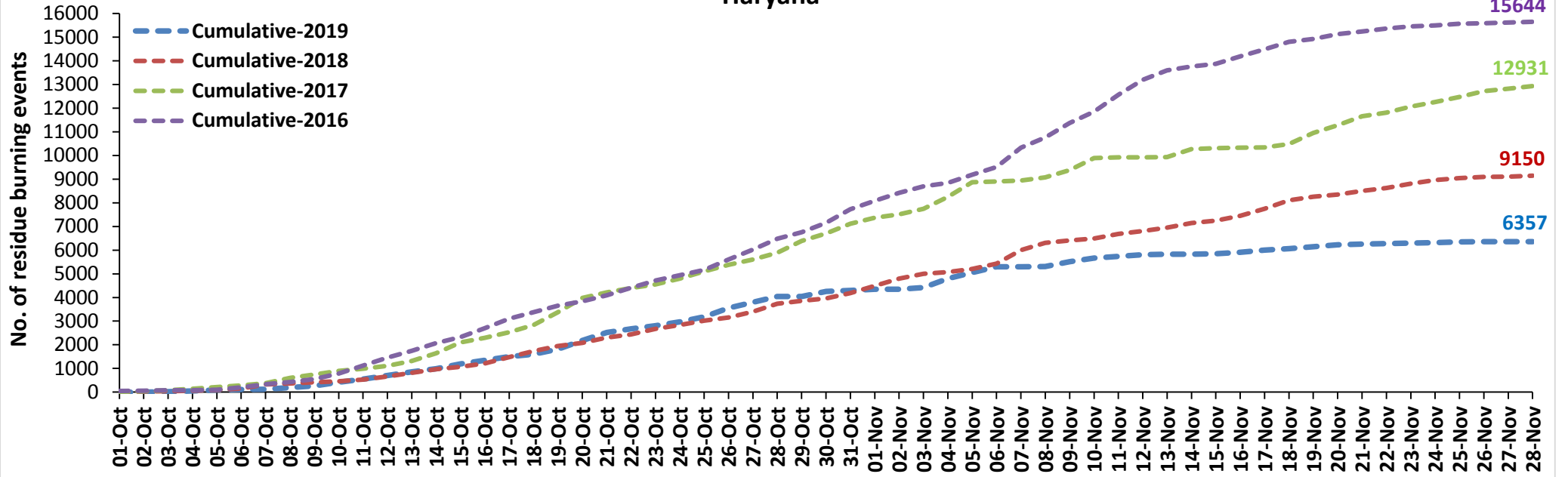


**Comparison of residue burning events in current year (2019) with previous years (2018, 2017 & 2016) for the three study States**  
**(01-Oct to 28-Nov)**

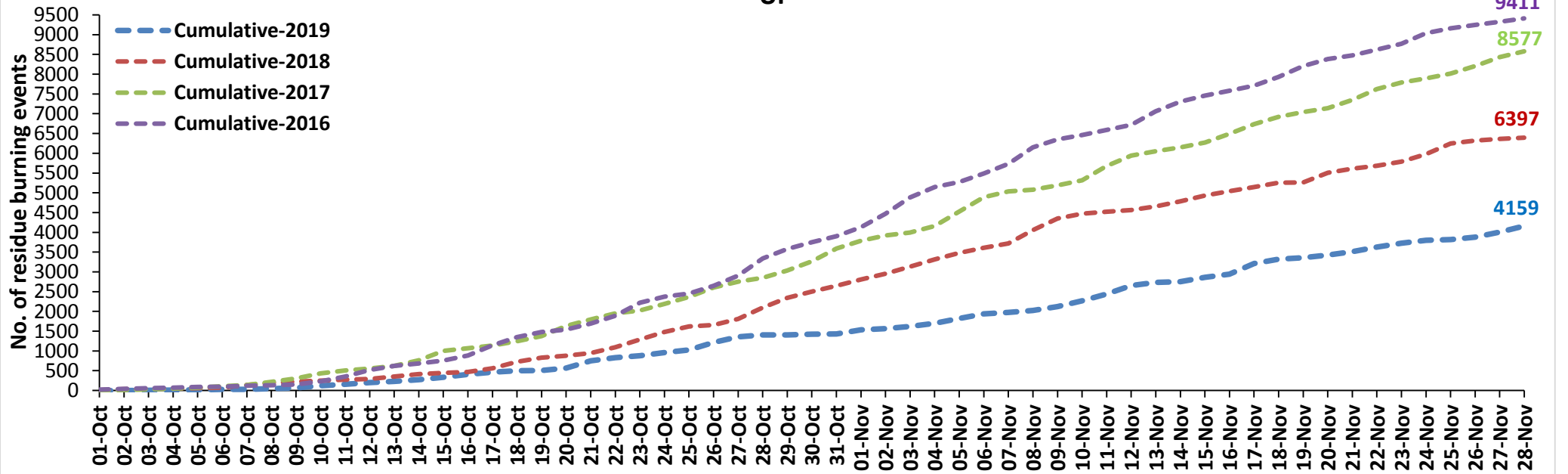
**Punjab**



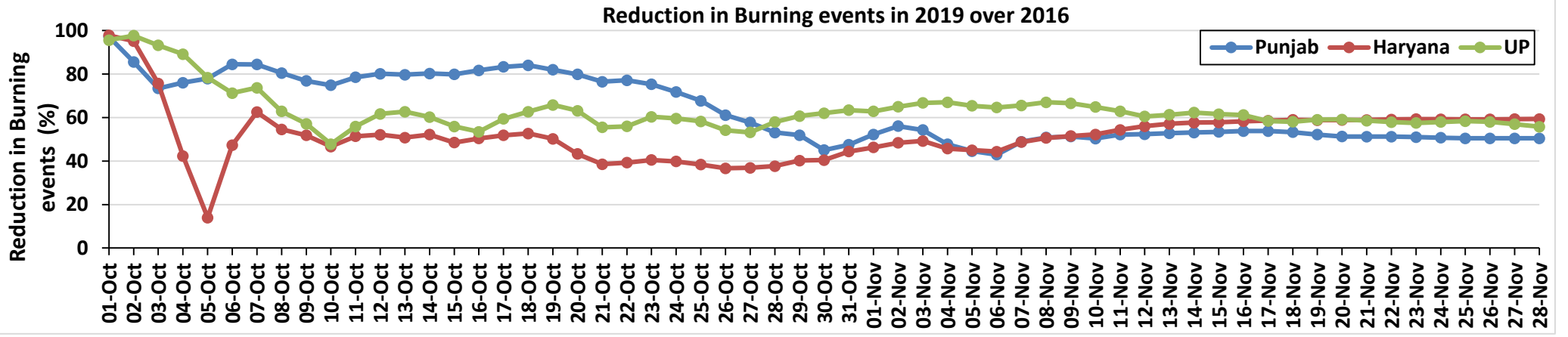
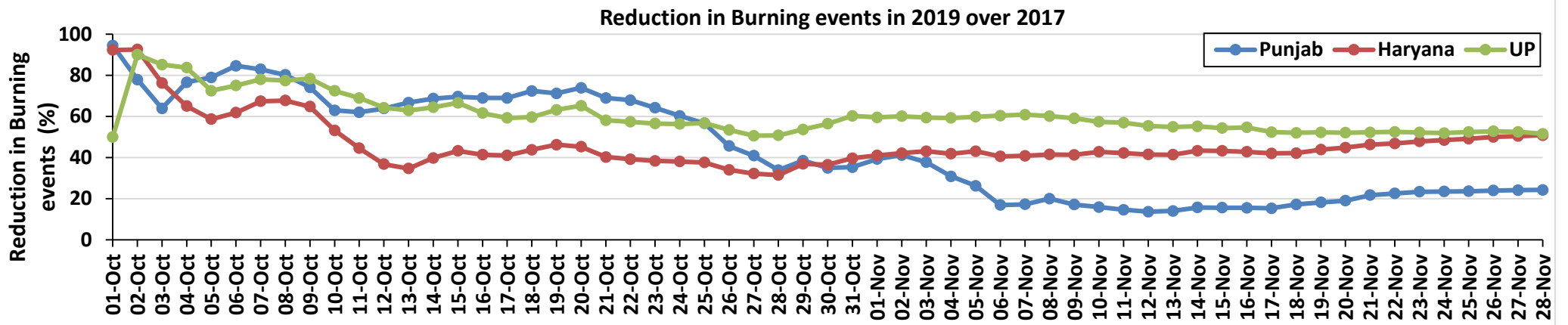
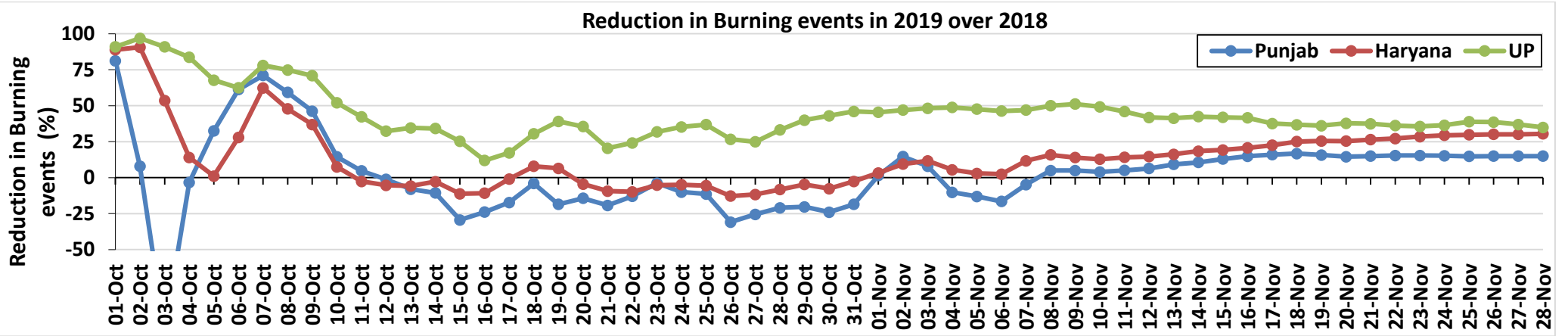
### Haryana



### UP



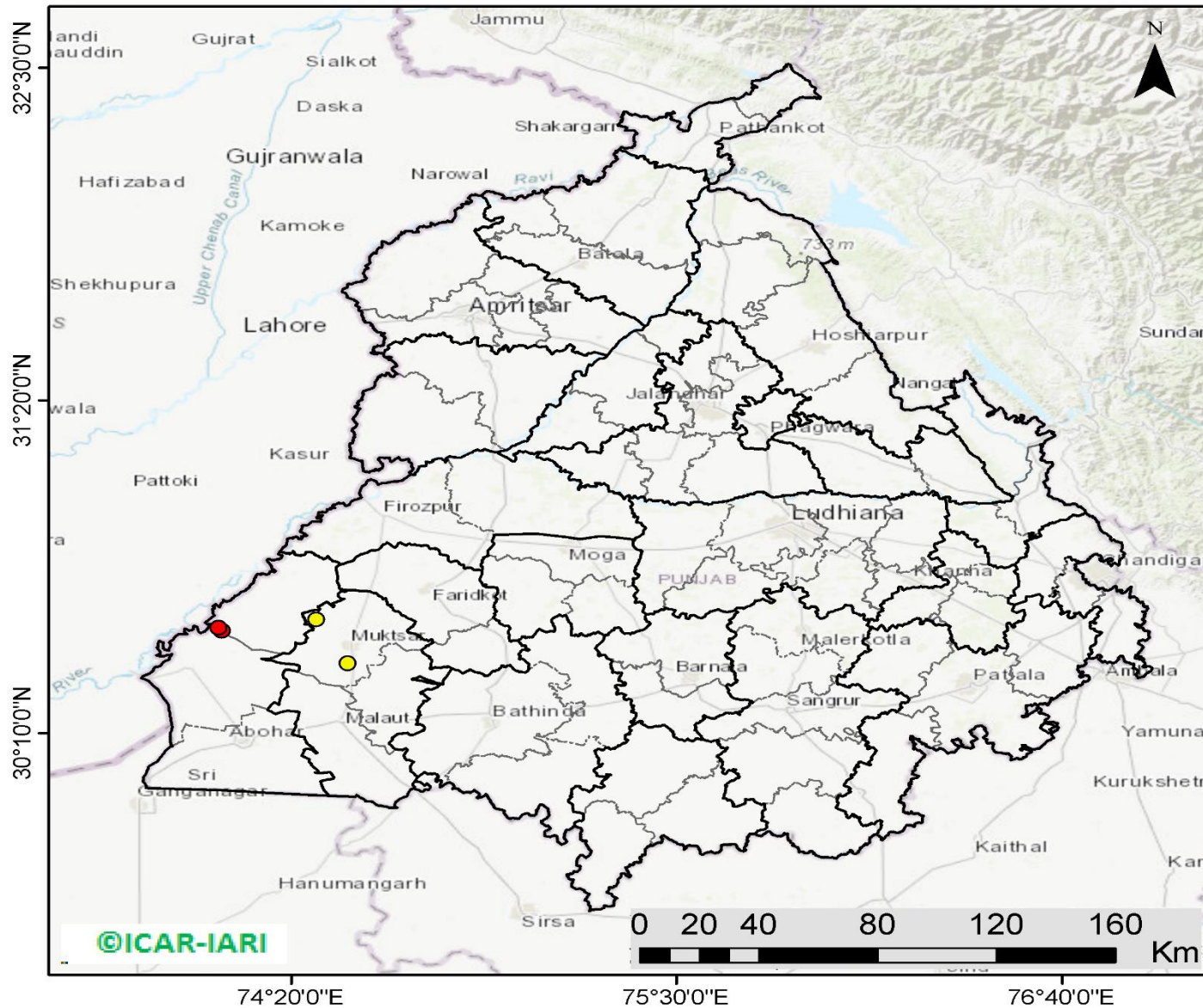
## Percent Reduction in Burning events in 2019 over 2018, 2017 and 2016 (Daily Cumulative)





(a) Punjab

RICE RESIDUE BURNING IN PUNJAB



**04** burning events detected in Punjab on 28th November 2019

Fire Intensity (W/m<sup>2</sup>)

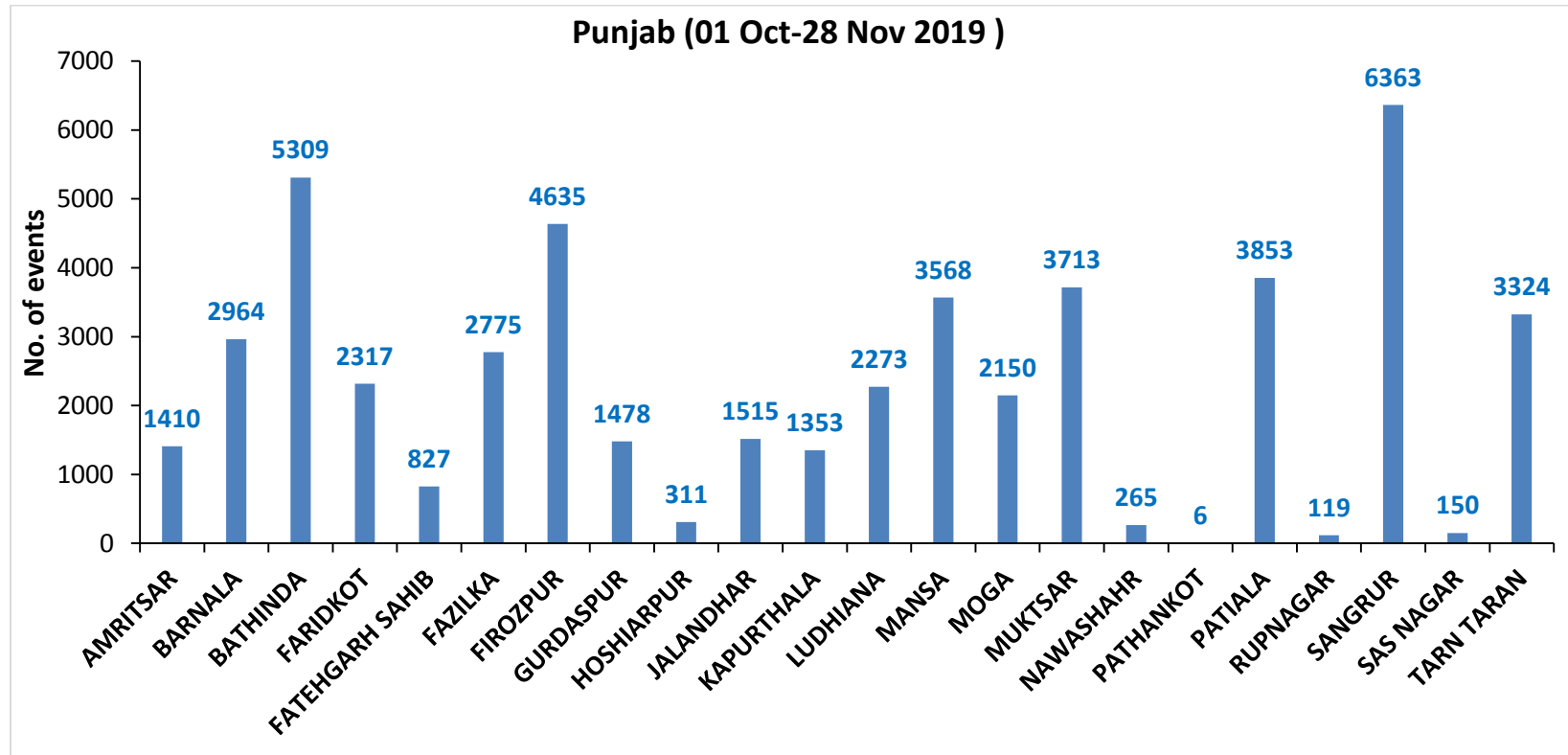
-  0 - 5
-  6 - 10
-  11 - 15
-  16 - 20
-  >20

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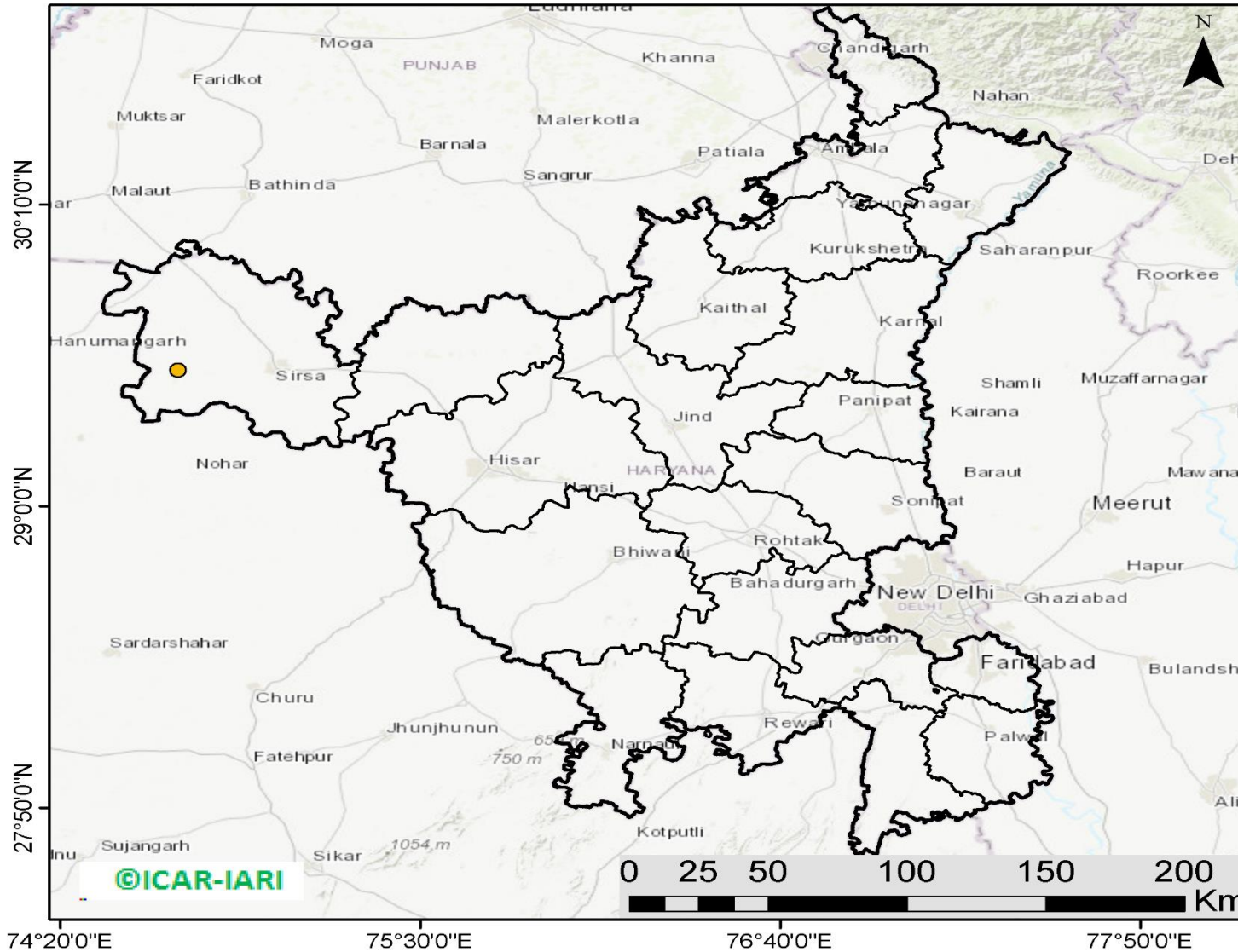
**District-wise cumulative number of residues burning events in Punjab (01 Oct to 28-Nov 2019)**






(b) Haryana

**RICE RESIDUE BURNING IN HARYANA**



**01** burning events  
detected in Haryana on  
**28th November 2019**

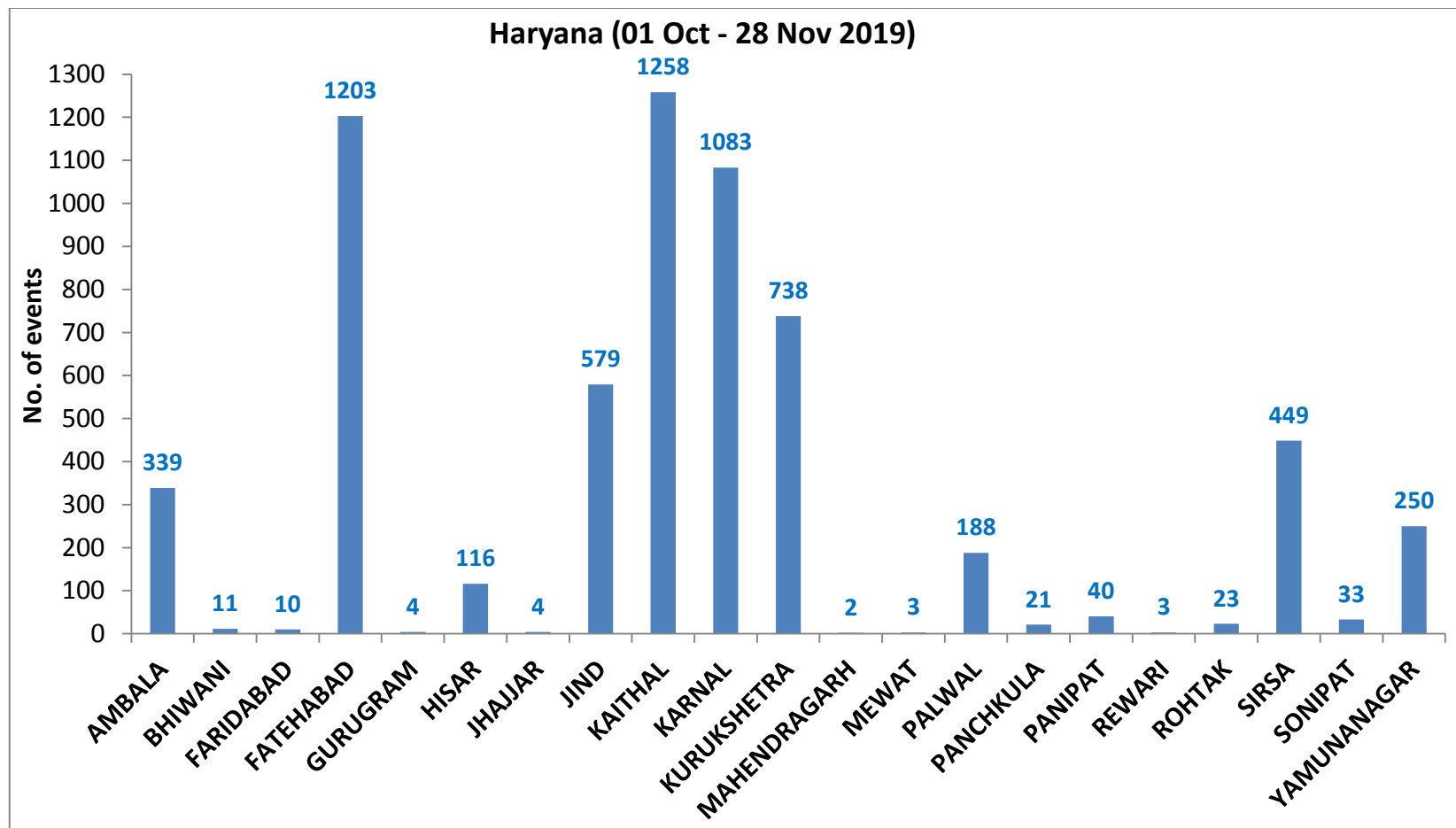
**Fire Intensity (W/m<sup>2</sup>)**

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



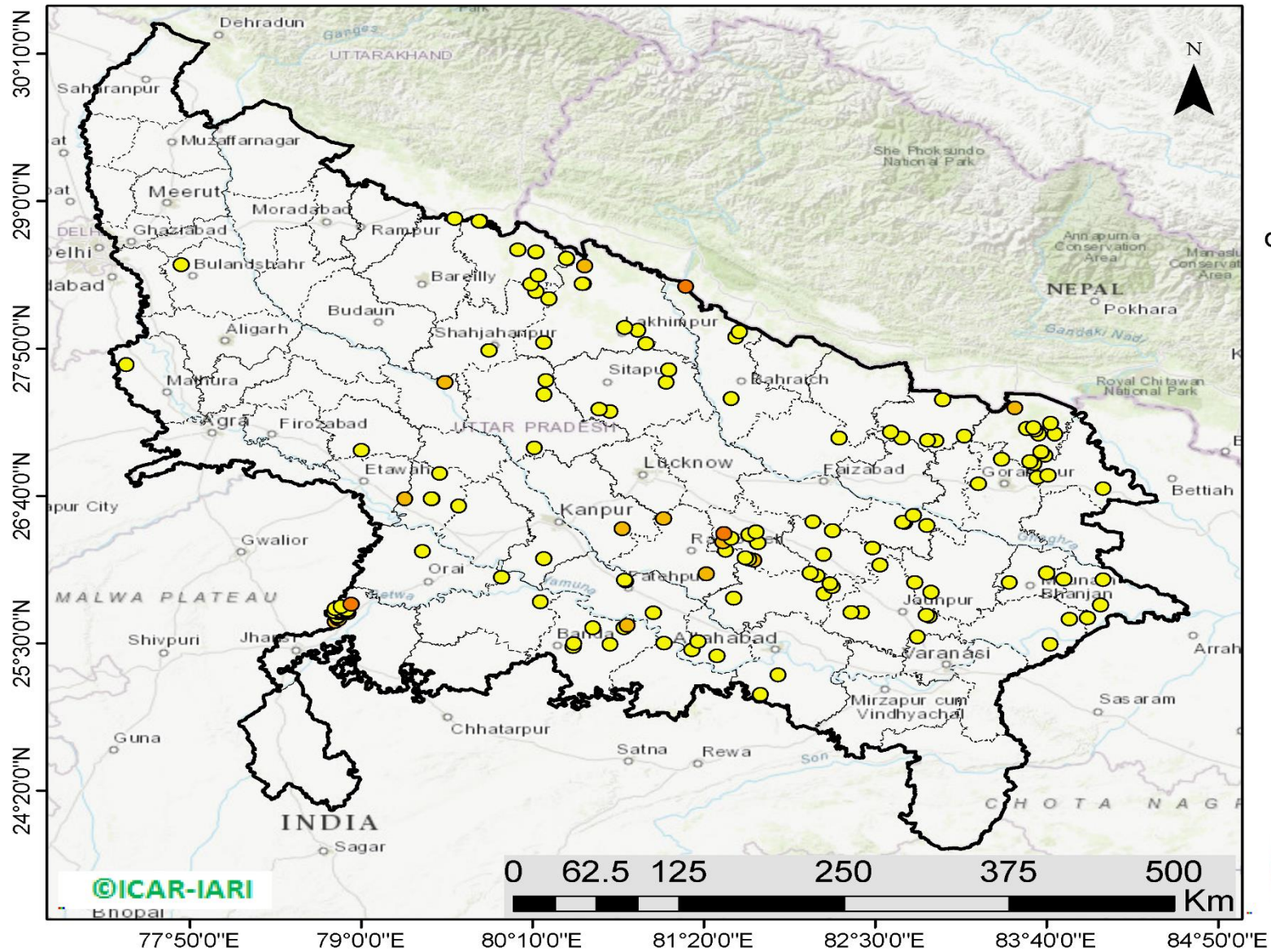
<http://geoportal.icar.gov.in:8080/geoexplorer/composer/>

**District-wise cumulative number of residues burning events in Haryana (01 Oct to 28-Nov 2019)**



(c) UP

### RICE RESIDUE BURNING IN UTTAR PRADESH



**150** burning events detected in Uttar Pradesh on 28th November 2019

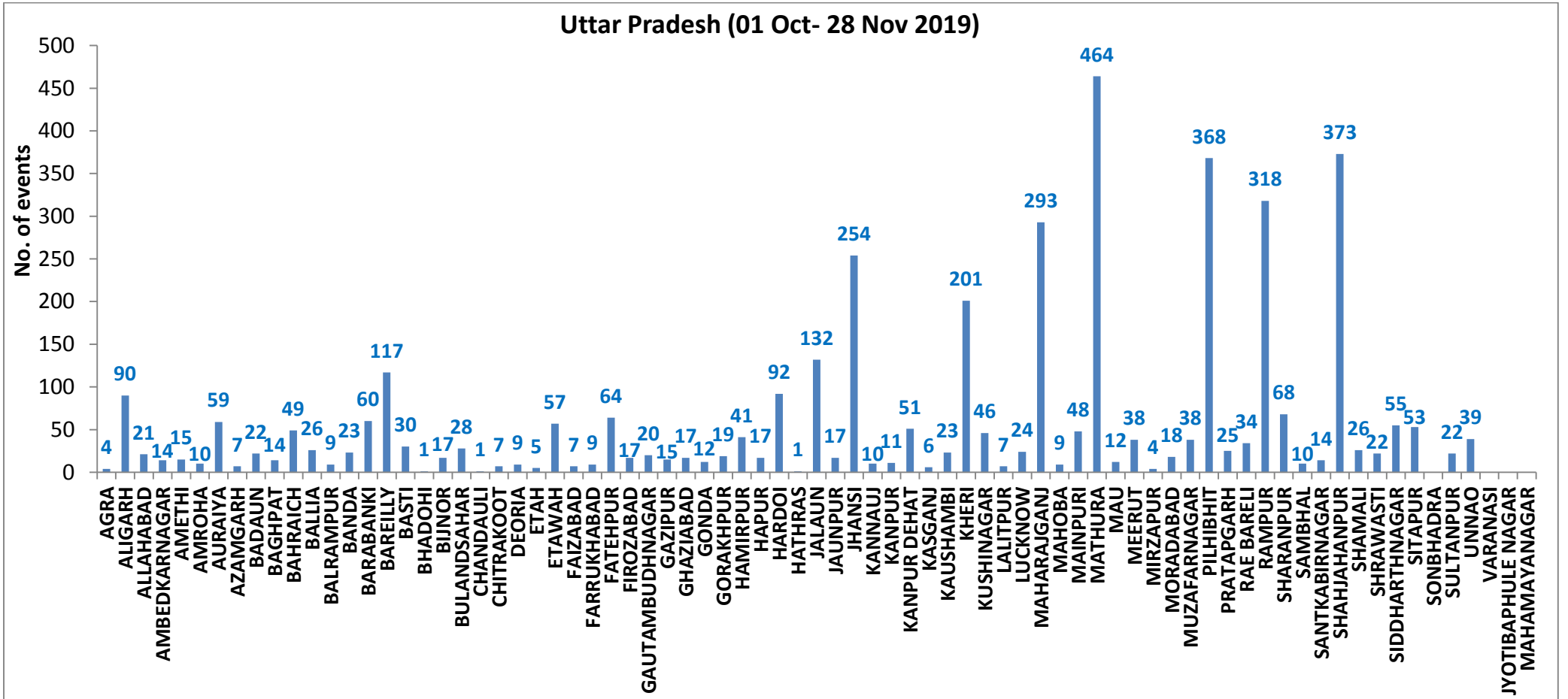
#### Fire Intensity ( $W/m^2$ )

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



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

**District-wise cumulative number of residues burning events in Uttar Pradesh (01 Oct to 28-Nov 2019)**





**State-wise, date-wise and district-wise number of residues burning events detected in 2016, 2017, 2018 and 2019**  
**(Period: 01-Oct to 28-Nov)**

Date	Punjab				Haryana				UP				Total			
	2019	2018	2017	2016	2019	2018	2017	2016	2019	2018	2017	2016	2019	2018	2017	2016
01-Oct	3	16	54	109	1	9	13	46	1	11	2	23	5	36	69	178
02-Oct	20	9	50	51	2	23	27	16	0	21	8	20	23	53	85	87
03-Oct	37	4	62	66	16	9	40	16	3	12	17	16	56	25	119	98
04-Oct	3	32	103	37	30	16	60	7	4	5	22	15	37	53	185	59
05-Oct	16	56	106	95	37	30	68	15	11	10	20	14	64	96	194	124
06-Oct	0	87	138	152	22	63	75	105	8	13	39	6	30	163	252	263
07-Oct	27	162	105	171	16	180	97	126	4	69	33	24	47	411	235	321
08-Oct	59	39	215	166	69	40	218	94	18	54	76	14	146	133	509	274
09-Oct	93	75	163	270	70	47	148	121	17	32	88	22	180	154	399	413
10-Oct	172	23	164	597	157	37	151	242	53	21	126	74	382	81	441	913
11-Oct	78	30	177	652	126	78	87	336	38	24	74	128	242	131	338	1116
12-Oct	99	67	342	694	154	133	123	338	42	22	51	164	295	222	516	1196
13-Oct	108	62	470	467	159	147	207	284	33	61	69	102	300	270	746	853
14-Oct	141	112	582	812	133	153	333	328	39	57	137	60	313	322	1052	1200
15-Oct	262	90	943	1215	203	110	458	248	63	35	237	76	528	235	1638	1539
16-Oct	168	174	465	1478	148	138	186	385	77	20	71	125	393	332	722	1988
17-Oct	250	272	807	2173	152	268	244	399	53	94	69	261	455	634	1120	2833
18-Oct	100	263	970	1065	103	255	306	270	39	163	108	204	242	681	1384	1539
19-Oct	529	254	1591	1762	220	208	541	276	3	108	128	132	752	570	2260	2170
20-Oct	490	496	2653	1175	360	141	597	188	62	49	255	62	912	686	3505	1425
21-Oct	852	618	1139	1726	339	217	233	257	185	66	168	152	1376	901	1540	2135
22-Oct	555	656	1356	2837	158	134	186	309	78	149	151	194	791	939	1693	3340
23-Oct	827	1113	994	2040	131	232	155	313	48	193	72	331	1006	1538	1221	2684
24-Oct	1220	844	1714	1836	165	166	244	221	79	192	171	152	1464	1202	2129	2209
25-Oct	1463	1247	2104	1813	212	182	303	229	67	142	175	83	1742	1571	2582	2125
26-Oct	2861	1173	1715	3390	366	132	276	434	189	33	240	195	3416	1338	2231	4019
27-Oct	2135	2040	2069	2904	249	252	224	417	145	154	145	255	2529	2446	2438	3576
28-Oct	3007	2864	2318	3493	238	330	292	458	45	290	99	435	3290	3484	2709	4386
29-Oct	1504	1321	4184	2258	0	124	502	278	1	243	180	237	1505	1688	4866	2773
30-Oct	3017	2008	3152	1076	222	103	307	395	19	158	238	175	3258	2269	3697	1646
31-Oct	2325	2715	3743	6132	36	229	413	575	4	148	321	153	2365	3092	4477	6860
01-Nov	293	4140	2736	4843	50	306	250	362	105	161	199	223	448	4607	3185	5428
02-Nov	6	3550	1246	4183	2	306	145	332	33	142	131	345	41	3998	1522	4860

<b>03-Nov</b>	2646	972	2109	3806	68	202	240	275	56	181	75	409	2770	1355	2424	4490
<b>04-Nov</b>	6001	882	4603	4477	383	77	499	146	75	183	168	265	6459	1142	5270	4888
<b>05-Nov</b>	4199	2989	2876	4137	253	129	625	345	124	163	367	125	4576	3281	3868	4607
<b>06-Nov</b>	4642	3071	171	6303	243	222	26	322	118	130	357	215	5003	3423	554	6840
<b>07-Nov</b>	189	4033	420	8575	2	568	46	821	33	108	149	244	224	4709	615	9640
<b>08-Nov</b>	462	4450	2256	4129	16	313	128	432	54	338	43	419	532	5101	2427	4980
<b>09-Nov</b>	2003	2083	675	4857	199	199	311	608	96	294	107	205	2298	2473	1093	5670
<b>10-Nov</b>	2046	1675	1642	2468	151	85	509	484	147	125	131	109	2344	1885	2282	3061
<b>11-Nov</b>	783	1364	103	5040	78	196	29	716	174	45	358	129	1035	1605	490	5885
<b>12-Nov</b>	520	1256	33	1477	68	122	3	634	210	45	269	129	798	1423	305	2240
<b>13-Nov</b>	10	1563	237	885	16	146	7	389	79	94	109	338	105	1803	353	1612
<b>14-Nov</b>	0	765	1101	692	1	189	340	171	22	128	95	247	23	1082	1536	1110
<b>15-Nov</b>	92	1480	5	871	29	107	40	107	111	146	123	154	232	1733	168	1132
<b>16-Nov</b>	23	1250	8	911	59	204	17	318	79	112	218	123	161	1566	243	1352
<b>17-Nov</b>	332	1132	217	638	85	289	12	299	265	103	249	130	682	1524	478	1067
<b>18-Nov</b>	740	1400	2147	568	70	356	139	312	113	111	180	217	923	1867	2466	1097
<b>19-Nov</b>	1221	752	2200	168	82	159	471	125	39	3	122	273	1342	914	2793	566
<b>20-Nov</b>	1007	385	1857	240	74	88	325	204	64	243	101	183	1145	716	2283	627
<b>21-Nov</b>	151	480	2310	112	37	161	378	115	84	107	205	86	272	748	2893	313
<b>22-Nov</b>	21	287	719	99	19	122	154	118	116	72	281	148	156	481	1154	365
<b>23-Nov</b>	283	317	1033	54	14	180	259	97	100	106	163	151	400	603	1455	302
<b>24-Nov</b>	293	229	507	21	23	152	192	36	72	186	105	265	388	567	804	322
<b>25-Nov</b>	266	72	443	33	31	81	219	68	18	272	124	123	315	425	786	224
<b>26-Nov</b>	8	95	334	27	9	57	240	25	62	73	186	85	79	225	760	137
<b>27-Nov</b>	13	1	151	22	0	2	99	34	132	42	227	80	145	45	477	136
<b>28-Nov</b>	4	35	95	13	1	49	114	23	150	35	145	87	155	119	354	123
<b>Total</b>	<b>50678</b>	<b>59630</b>	<b>66882</b>	<b>102361</b>	<b>6357</b>	<b>9150</b>	<b>12931</b>	<b>15644</b>	<b>4159</b>	<b>6397</b>	<b>8577</b>	<b>9411</b>	<b>61194</b>	<b>75177</b>	<b>88390</b>	<b>127416</b>



**(a) Punjab**

Districts	01Oct-28 Nov			
	2016	2017	2018	2019
AMRITSAR	2170	1355	1397	1410
BARNALA	5701	3425	3279	2964
BATHINDA	8846	5762	6344	5309
FARIDKOT	4629	3472	3057	2317
FATEHGARH SAHIB	2461	1642	863	827
FAZILKA	0	0	0	2775
FIROZPUR	13641	9925	9983	4635
GURDASPUR	2218	1591	1171	1478
HOSHIARPUR	903	497	198	311
JALANDHAR	4660	2119	1393	1515
KAPURTHALA	3136	1626	750	1353
LUDHIANA	9546	4744	3041	2273
MANSA	5651	4490	4316	3568
MOGA	6393	2773	2730	2150
MUKTSAR	7037	5432	5781	3713
NAWASHAHR (SBS Nagar)	1614	825	394	265
PATHANKOT	0	0	0	6
PATIALA	6544	5034	4215	3853
RUPNAGAR	719	328	87	119
SANGRUR	11862	8428	7780	6363
SAS NAGAR	117	107	104	150
TARN TARAN	4513	3307	2747	3324
<b>Total</b>	<b>102361</b>	<b>66882</b>	<b>59630</b>	<b>50678</b>

**(b) Haryana**

Districts	01Oct-28 Nov			
	2016	2017	2018	2019
AMBALA	534	502	330	339
BHIWANI	90	47	22	11
FARIDABAD	288	343	187	10
FATEHABAD	4831	3722	2544	1203
GURUGRAM	0	0	0	4
HISAR	413	192	211	116
JHAJJAR	39	19	30	4
JIND	859	943	886	579
KAITHAL	1748	1512	1292	1258
KARNAL	1639	1512	855	1083
KURUKSHETRA	1078	1148	680	738
MAHENDRAGARH	0	0	0	2
MEWAT	0	0	0	3
PALWAL	0	0	0	188
PANCHKULA	0	0	3	21
PANIPAT	102	108	60	40
REWARI	0	0	0	3
ROHTAK	103	94	49	23
SIRSA	3577	2382	1758	449
SONIPAT	97	86	43	33
YAMUNANAGAR	246	321	200	250
<b>Total</b>	<b>15644</b>	<b>12931</b>	<b>9150</b>	<b>6357</b>

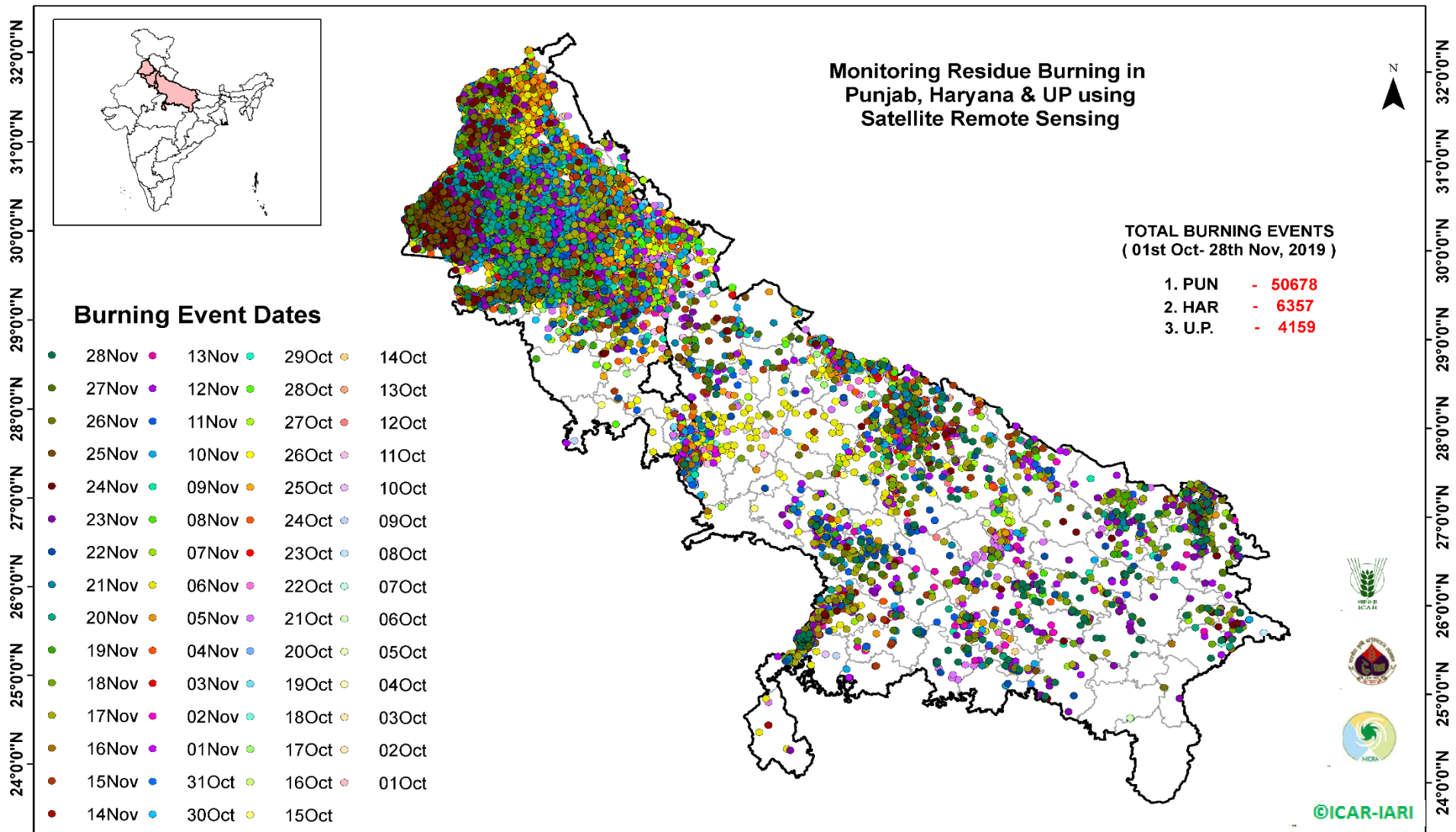
(c) Uttar Pradesh

Districts	01Oct-28 Nov			
	2016	2017	2018	2019
AGRA	0	0	0	4
ALIGARH	58	82	93	90
ALLAHABAD	6	18	20	21
AMBEDKARNAGAR	77	71	28	14
AMETHI	0	0	0	15
AMROHA	0	0	0	10
AURAIYA	285	251	70	59
AZAMGARH	38	55	36	7
BADAUN	13	11	14	22
BAGHPAT	0	0	0	14
BAHRAICH	81	42	60	49
BALLIA	19	48	31	26
BALRAMPUR	37	27	45	9
BANDA	2	23	12	23
BARABANKI	222	168	175	60
BAREILLY	262	236	120	117
BASTI	146	187	126	30
BHADOHI	0	0	0	1
BIJNOR	71	71	21	17
BULANDSAHAR	36	38	25	28
CHANDAULI	18	22	3	1
CHITRAKOOT	0	0	0	7
DEORIA	62	86	80	9
ETAH	24	33	28	5
ETAWAH	188	145	70	57
FAIZABAD	18	16	10	7
FARRUKHABAD	0	0	0	9
FATEHPUR	82	69	92	64
FIROZABAD	23	18	11	17

GAUTAMBUDHNAGAR	31	46	12	20
GAZIPUR	16	21	27	15
GHAZIABAD	90	66	43	17
GONDA	48	39	22	12
GORAKHPUR	66	115	141	19
HAMIRPUR	0	0	1	41
HAPUR	0	0	0	17
HARDOI	257	209	113	92
HATHRAS	0	0	0	1
JALAUN	0	0	0	132
JAUNPUR	25	42	26	17
JHANSI	0	0	2	254
KANNAUJ	35	20	8	10
KANPUR	20	14	13	11
KANPUR DEHAT	72	75	29	51
KASGANJ	0	0	0	6
KAUSHAMBI	34	54	53	23
KHERI	496	347	229	201
KUSHINAGAR	66	156	172	46
LALITPUR	0	0	0	7
LUCKNOW	64	30	26	24
MAHARAJGANJ	722	1029	1072	293
MAHOBAB	0	0	0	9
MAINPURI	97	96	60	48
MATHURA	1462	1083	1049	464
MAU	15	23	22	12
MEERUT	99	115	28	38
MIRZAPUR	5	21	9	4
MORADABAD	62	44	15	18
MUZAFARNAGAR	153	184	63	38
PILHIBHIT	958	745	436	368
PRATAPGARH	46	63	43	25

RAE BARELI	117	149	73	34
RAMPUR	627	654	226	318
SHARANPUR	129	160	76	68
SAMBHAL	0	0	0	10
SANTKABIRNAGAR	56	65	54	14
SHAHJAHANPUR	1156	711	389	373
SHAMALI	0	0	0	26
SHRAWASTI	37	32	37	22
SIDDHARTHANAGAR	262	188	476	55
SITAPUR	138	85	48	53
SONBHADRA	16	16	13	0
SULTANPUR	80	82	63	22
UNNAO	68	59	41	39
VARANASI	2	0	0	0
JYOTIBAPHULE NAGAR	12	20	9	0
MAHAMAYANAGAR	4	2	8	0
<b>Total</b>	<b>9411</b>	<b>8577</b>	<b>6397</b>	<b>4159</b>

### Map of Cumulative Burning Events (01 Oct – 28 Nov 2019)



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

**Details of residue burning events in Punjab on 28-Nov-2019**

<b>S. No.</b>	<b>District</b>	<b>Tehsil / Block</b>	<b>Satellite</b>	<b>Longitude</b>	<b>Latitude</b>	<b>Time (IST)</b>	<b>Day / Night</b>	<b>Fire Power (W/m<sup>2</sup>)</b>
1	FAZILKA	JALALABAD	AQUA	74.12300	30.52600	14:30:00	D	27.00
2	FAZILKA	JALALABAD	AQUA	74.11400	30.53600	14:30:00	D	33.00
3	MUKTSAR	MUKTSAR	S-NPP	74.50468	30.41128	13:06:00	D	3.00
4	MUKTSAR	MUKTSAR	S-NPP	74.41006	30.56439	13:06:00	D	3.00

**Details of residue burning events in Haryana on 28-Nov-2019**

<b>S. No.</b>	<b>District</b>	<b>Tehsil / Block</b>	<b>Satellite</b>	<b>Longitude</b>	<b>Latitude</b>	<b>Time (IST)</b>	<b>Day / Night</b>	<b>Fire Power (W/m<sup>2</sup>)</b>
1	SIRSA	RANIA	NOAA-18	74.71591	29.52635	20:45:00	N	7.00

**Details of residue burning events in Uttar Pradesh on 28-Nov-2019**

<b>S. No.</b>	<b>District</b>	<b>Tehsil / Block</b>	<b>Satellite</b>	<b>Longitude</b>	<b>Latitude</b>	<b>Time (IST)</b>	<b>Day / Night</b>	<b>Fire Power (W/m2)</b>
1	ALLAHABAD	BARA	S-NPP	81.71649	25.08209	01:48:00	N	1.00
2	ALLAHABAD	BARA	S-NPP	81.71876	25.09403	13:00:00	D	3.00
3	ALLAHABAD	KARCHHANA	S-NPP	81.83898	25.25103	13:00:00	D	4.00
4	AMBEDKARNAGAR	AKBARPUR	S-NPP	82.68743	26.45652	13:00:00	D	3.00
5	AMBEDKARNAGAR	ALAPUR	S-NPP	82.84962	26.43378	13:00:00	D	2.00
6	AMBEDKARNAGAR	TANDA	S-NPP	82.70341	26.45558	13:00:00	D	2.00
7	AMBEDKARNAGAR	TANDA	S-NPP	82.76001	26.51165	13:00:00	D	3.00
8	AMETHI	GAURIGANJ	S-NPP	81.67531	26.15845	13:00:00	D	8.00
9	AMETHI	GAURIGANJ	S-NPP	81.64116	26.16675	13:00:00	D	5.00
10	AMETHI	GAURIGANJ	S-NPP	81.70171	26.29167	13:00:00	D	3.00
11	AMETHI	GAURIGANJ	S-NPP	81.63983	26.35946	13:00:00	D	4.00
12	AMETHI	GAURIGANJ	S-NPP	81.68832	26.38104	13:00:00	D	4.00
13	AURAIYA	BIDHUNA	S-NPP	79.48215	26.64289	01:48:00	N	1.00
14	AURAIYA	BIDHUNA	S-NPP	79.47825	26.64348	01:48:00	N	1.00
15	AURAIYA	BIDHUNA	S-NPP	79.53433	26.84471	01:48:00	N	1.00
16	AZAMGARH	PHULPUR	S-NPP	82.87809	25.90343	13:00:00	D	2.00
17	AZAMGARH	PHULPUR	S-NPP	82.76891	25.98120	13:00:00	D	3.00
18	BAHRAICH	KAISARGANJ	S-NPP	81.52138	27.43607	13:06:00	D	2.00
19	BAHRAICH	NANPARA	S-NPP	81.55077	27.92471	13:06:00	D	2.00
20	BAHRAICH	NANPARA	S-NPP	81.57495	27.96625	13:06:00	D	2.00
21	BAHRAICH	NANPARA	TERRA	81.21000	28.32200	11:15:00	D	12.00
22	BALLIA	BALLIA	S-NPP	84.03406	25.80246	13:00:00	D	3.00
23	BALLIA	BELTHARA ROAD	S-NPP	83.78448	26.00537	13:00:00	D	2.00
24	BALLIA	SIKANDARPUR	S-NPP	84.05145	26.00077	13:00:00	D	1.00
25	BANDA	BABERU	S-NPP	80.69547	25.48878	13:00:00	D	4.00
26	BANDA	BABERU	S-NPP	80.79014	25.62261	13:00:00	D	4.00
27	BANDA	BABERU	S-NPP	80.81223	25.64057	13:00:00	D	9.00
28	BANDA	BANDA	S-NPP	80.44125	25.47203	13:00:00	D	2.00
29	BANDA	BANDA	S-NPP	80.44975	25.49512	13:00:00	D	3.00
30	BANDA	BANDA	S-NPP	80.57803	25.62207	13:00:00	D	5.00

31	BAREILLY	BAHERI	S-NPP	79.63744	28.85940	01:48:00	N	1.00
32	BULANDSAHAR	SIKANDARABAD	S-NPP	77.77409	28.49596	01:48:00	N	1.00
33	CHITRAKOOT	KARWI	S-NPP	81.06094	25.50032	13:00:00	D	4.00
34	ETAWAH	BHARTHNA	NOAA-18	79.29707	26.64276	20:45:00	N	7.00
35	FARRUKHABAD	AMRITPUR	TERRA	79.56900	27.56500	11:15:00	D	7.00
36	FATEHPUR	FATEHPUR	S-NPP	80.98780	25.74075	13:00:00	D	2.00
37	FATEHPUR	FATEHPUR	S-NPP	80.80302	25.99038	13:00:00	D	2.00
38	FATEHPUR	FATEHPUR	S-NPP	80.79264	25.99925	13:00:00	D	4.00
39	GAZIPUR	MUHAMMADBAD	S-NPP	83.82053	25.68938	13:00:00	D	1.00
40	GAZIPUR	MUHAMMADBAD	S-NPP	83.94556	25.69745	13:00:00	D	3.00
41	GAZIPUR	ZAMANIA	S-NPP	83.69081	25.49136	13:00:00	D	3.00
42	GONDA	MANKAPUR	S-NPP	82.25439	27.12470	13:00:00	D	3.00
43	GORAKHPUR	CAMPIERGANJ	S-NPP	83.35875	26.95687	13:00:00	D	2.00
44	GORAKHPUR	SAHJANWA	S-NPP	83.20202	26.76051	01:48:00	N	1.00
45	HAMIRPUR	HAMIRPUR	S-NPP	80.22219	25.82933	13:00:00	D	2.00
46	HAMIRPUR	HAMIRPUR	S-NPP	79.95419	26.02215	13:00:00	D	2.00
47	HARDOI	BILGRAM	S-NPP	80.17882	27.04452	13:06:00	D	3.00
48	HARDOI	HARDOI	S-NPP	80.24686	27.46806	01:48:00	N	1.00
49	HARDOI	HARDOI	S-NPP	80.25809	27.57837	13:06:00	D	5.00
50	JALAUN	JALAUN	S-NPP	79.41672	26.22626	13:00:00	D	3.00
51	JAUNPUR	KIRAKAT	S-NPP	82.78651	25.55049	13:00:00	D	1.00
52	JAUNPUR	KIRAKAT	S-NPP	82.87007	25.71269	13:00:00	D	2.00
53	JAUNPUR	KIRAKAT	S-NPP	82.84914	25.71967	13:00:00	D	3.00
54	JAUNPUR	MACHHALI SAHAR	S-NPP	82.40414	25.74174	13:00:00	D	4.00
55	JAUNPUR	MACHHALI SAHAR	S-NPP	82.33671	25.74381	01:48:00	N	1.00
56	JAUNPUR	SHHGANJ	S-NPP	82.53333	26.12078	13:00:00	D	3.00
57	JHANSI	MOTH	S-NPP	78.82258	25.66899	13:00:00	D	10.00
58	JHANSI	MOTH	S-NPP	78.84419	25.68843	13:00:00	D	9.00
59	JHANSI	MOTH	S-NPP	78.83508	25.70615	13:00:00	D	4.00
60	JHANSI	MOTH	S-NPP	78.83707	25.70670	13:00:00	D	9.00
61	JHANSI	MOTH	S-NPP	78.84006	25.70705	13:00:00	D	4.00
62	JHANSI	MOTH	S-NPP	78.83425	25.70988	13:00:00	D	4.00
63	JHANSI	MOTH	S-NPP	78.83624	25.71042	13:00:00	D	9.00



64	JHANSI	MOTH	S-NPP	78.83923	25.71077	13:00:00	D	4.00
65	JHANSI	MOTH	S-NPP	78.84618	25.73552	13:00:00	D	4.00
66	JHANSI	MOTH	S-NPP	78.84535	25.73924	13:00:00	D	5.00
67	JHANSI	MOTH	S-NPP	78.91205	25.73993	13:00:00	D	6.00
68	JHANSI	MOTH	S-NPP	78.87094	25.74008	13:00:00	D	4.00
69	JHANSI	MOTH	S-NPP	78.87507	25.74471	13:00:00	D	10.00
70	JHANSI	MOTH	S-NPP	78.85940	25.74569	13:00:00	D	5.00
71	JHANSI	MOTH	S-NPP	78.81804	25.74584	13:00:00	D	2.00
72	JHANSI	MOTH	S-NPP	78.86434	25.74660	13:00:00	D	5.00
73	JHANSI	MOTH	S-NPP	78.86929	25.74751	13:00:00	D	10.00
74	JHANSI	MOTH	S-NPP	78.86353	25.75032	13:00:00	D	9.00
75	JHANSI	MOTH	S-NPP	78.86848	25.75123	13:00:00	D	10.00
76	JHANSI	MOTH	S-NPP	78.90385	25.75386	13:00:00	D	2.00
77	JHANSI	MOTH	S-NPP	78.90878	25.75477	13:00:00	D	3.00
78	JHANSI	MOTH	S-NPP	78.90714	25.76218	13:00:00	D	3.00
79	JHANSI	MOTH	S-NPP	78.82304	25.77001	13:00:00	D	4.00
80	JHANSI	MOTH	S-NPP	78.86510	25.79181	01:48:00	N	1.00
81	JHANSI	MOTH	S-NPP	78.93255	25.80920	13:00:00	D	13.00
82	KANPUR	GHATAMPUR	S-NPP	80.24358	26.17025	13:00:00	D	4.00
83	KANPUR DEHAT	DERAPUR	S-NPP	79.66393	26.58855	13:00:00	D	3.00
84	KAUSHAMBI	MANJHANPUR	S-NPP	81.42206	25.39883	13:00:00	D	2.00
85	KAUSHAMBI	MANJHANPUR	S-NPP	81.25153	25.44466	13:00:00	D	4.00
86	KAUSHAMBI	MANJHANPUR	S-NPP	81.29334	25.51093	13:00:00	D	4.00
87	KHERI	LAKHIMPUR	S-NPP	80.88546	27.97739	13:06:00	D	3.00
88	KHERI	LAKHIMPUR	S-NPP	80.79255	28.00040	13:06:00	D	5.00
89	KHERI	MOHMADI	S-NPP	80.24358	27.88161	01:48:00	N	1.00
90	KHERI	PALIA KALAN	S-NPP	80.51044	28.34520	01:48:00	N	1.00
91	KHERI	PALIA KALAN	S-NPP	80.50654	28.34580	01:48:00	N	1.00
92	KHERI	PALIA KALAN	TERRA	80.52000	28.48800	11:15:00	D	9.00
93	KUSHINAGAR	HATA	S-NPP	83.60262	26.81004	01:48:00	N	1.00
94	KUSHINAGAR	HATA	S-NPP	83.67674	26.82822	13:00:00	D	3.00
95	KUSHINAGAR	HATA	S-NPP	83.58049	26.92248	13:00:00	D	2.00
96	KUSHINAGAR	TAMKUHI RAJ	S-NPP	84.05309	26.72362	13:00:00	D	2.00

97	MAHARAJGANJ	MAHARAJGANJ	S-NPP	83.55276	26.93822	01:48:00	N	1.00
98	MAHARAJGANJ	MAHARAJGANJ	S-NPP	83.65676	26.98700	13:00:00	D	5.00
99	MAHARAJGANJ	MAHARAJGANJ	S-NPP	83.62852	27.01016	13:00:00	D	2.00
100	MAHARAJGANJ	MAHARAJGANJ	S-NPP	83.62792	27.01348	13:00:00	D	2.00
101	MAHARAJGANJ	MAHARAJGANJ	S-NPP	83.61420	27.15613	13:00:00	D	2.00
102	MAHARAJGANJ	MAHARAJGANJ	S-NPP	83.58862	27.18652	13:00:00	D	5.00
103	MAHARAJGANJ	MAHARAJGANJ	S-NPP	83.52969	27.20178	13:00:00	D	2.00
104	MAHARAJGANJ	MAHARAJGANJ	S-NPP	83.57718	27.20531	13:00:00	D	2.00
105	MAHARAJGANJ	NAUTANWA	METOP-2	83.45117	27.36141	20:25:00	N	10.00
106	MAHARAJGANJ	NICHLAUL	S-NPP	83.72282	27.15616	13:00:00	D	2.00
107	MAHARAJGANJ	NICHLAUL	S-NPP	83.69497	27.24294	13:00:00	D	4.00
108	MAINPURI	KARHAL	S-NPP	79.00116	27.02734	13:06:00	D	3.00
109	MATHURA	CHHATA	S-NPP	77.40174	27.70528	01:48:00	N	1.00
110	MAU	MADHUBAN	S-NPP	83.66727	26.05581	01:48:00	N	2.00
111	MAU	MUHAMMADABAD	S-NPP	83.41389	25.98114	13:00:00	D	4.00
112	PILHIBHIT	PILHIBHIT	S-NPP	79.80349	28.84167	01:48:00	N	2.00
113	PILHIBHIT	PURANPUR	S-NPP	80.15594	28.34192	01:48:00	N	1.00
114	PILHIBHIT	PURANPUR	S-NPP	80.20502	28.41234	01:48:00	N	1.00
115	PILHIBHIT	PURANPUR	S-NPP	80.39907	28.54838	01:48:00	N	2.00
116	PILHIBHIT	PURANPUR	S-NPP	80.18936	28.59382	01:48:00	N	2.00
117	PILHIBHIT	PURANPUR	S-NPP	80.19001	28.59714	01:48:00	N	2.00
118	PILHIBHIT	PURANPUR	S-NPP	80.06697	28.61223	01:48:00	N	1.00
119	PRATAPGARH	KUNDA	S-NPP	81.53465	25.85615	13:00:00	D	3.00
120	PRATAPGARH	PATTI	S-NPP	82.15285	25.89175	13:00:00	D	2.00
121	PRATAPGARH	PATTI	S-NPP	82.20639	25.94467	13:00:00	D	2.00
122	PRATAPGARH	PATTI	S-NPP	82.19375	25.96936	13:00:00	D	4.00
123	PRATAPGARH	PATTI	S-NPP	82.10548	26.03407	13:00:00	D	3.00
124	RAIBEARELI	MAHARAJGANG	S-NPP	81.05952	26.48538	13:00:00	D	8.00
125	RAIBEARELI	SALON	S-NPP	81.34917	26.04988	13:00:00	D	10.00
126	RAIBEARELI	SALON	S-NPP	81.61494	26.17633	13:00:00	D	2.00
127	RAIBEARELI	TILOI	S-NPP	81.48101	26.23292	01:48:00	N	1.00
128	RAIBEARELI	TILOI	S-NPP	81.46410	26.29985	13:00:00	D	6.00
129	RAIBEARELI	TILOI	S-NPP	81.51952	26.32963	13:00:00	D	2.00

130	RAIBEARELI	TILOI	TERRA	81.46800	26.36900	22:15:00	N	12.00
131	SHAHJAHANPUR	PUWANYA	S-NPP	80.27682	28.22669	13:06:00	D	4.00
132	SHAHJAHANPUR	PUWANYA	S-NPP	80.18947	28.28573	01:48:00	N	1.00
133	SHAHJAHANPUR	SHAHJAHANPUR	S-NPP	79.86909	27.81736	13:06:00	D	3.00
134	SIDDHARTHANAGAR	BANSI	S-NPP	82.91035	27.10297	13:00:00	D	5.00
135	SIDDHARTHANAGAR	BANSI	S-NPP	82.85830	27.10530	13:00:00	D	3.00
136	SIDDHARTHANAGAR	BANSI	S-NPP	83.10622	27.13916	13:00:00	D	2.00
137	SIDDHARTHANAGAR	DOMARIYAGANJ	S-NPP	82.67985	27.12561	13:00:00	D	1.00
138	SIDDHARTHANAGAR	DOMARIYAGANJ	S-NPP	82.60356	27.17170	13:00:00	D	2.00
139	SIDDHARTHANAGAR	SHOHRATGARH	S-NPP	82.95740	27.42824	13:06:00	D	1.00
140	SITAPUR	BISWAN	S-NPP	81.07722	27.56393	13:06:00	D	3.00
141	SITAPUR	LAHARPUR	S-NPP	81.09412	27.66464	13:06:00	D	3.00
142	SITAPUR	LAHARPUR	S-NPP	80.93993	27.87051	13:06:00	D	1.00
143	SITAPUR	MISRIK	S-NPP	80.69514	27.33279	13:06:00	D	3.00
144	SITAPUR	MISRIK	S-NPP	80.61870	27.35244	01:48:00	N	1.00
145	SULTANPUR	JAISINGHPUR	S-NPP	82.20807	26.39243	13:00:00	D	2.00
146	SULTANPUR	KADIRPUR	S-NPP	82.48134	26.25192	13:00:00	D	2.00
147	SULTANPUR	LAMBHUA	S-NPP	82.05711	26.05596	13:00:00	D	2.00
148	SULTANPUR	LAMBHUA	S-NPP	82.14978	26.19990	13:00:00	D	4.00
149	SULTANPUR	SULTANPUR	S-NPP	82.07541	26.45976	13:00:00	D	4.00
150	UNNAO	BIGHAPUR	S-NPP	80.77583	26.40647	13:00:00	D	9.00

## 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 Geoportal website: <http://geoportal.icar.gov.in:8080/geoexplorer/composer/>  
(Part of KRISHI Portal: <https://krishi.icar.gov.in> initiative)

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