



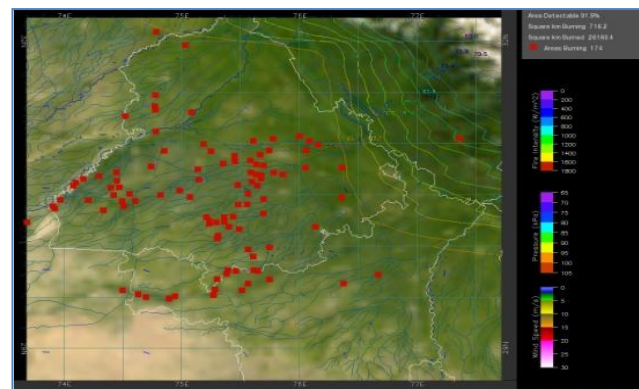
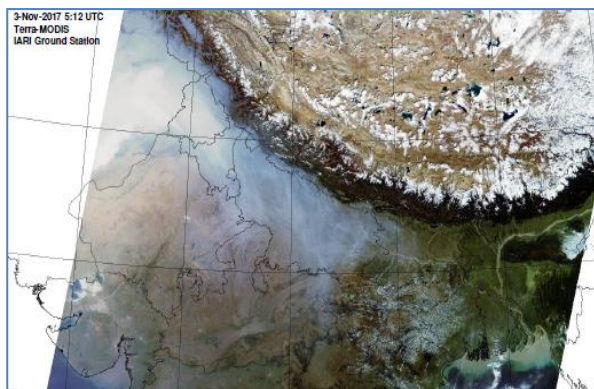
**Bulletin  
No. 8**

**Events Date:  
08-Oct-2018**

**Issued on:  
09-Oct-2018**



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



**Prepared by:**

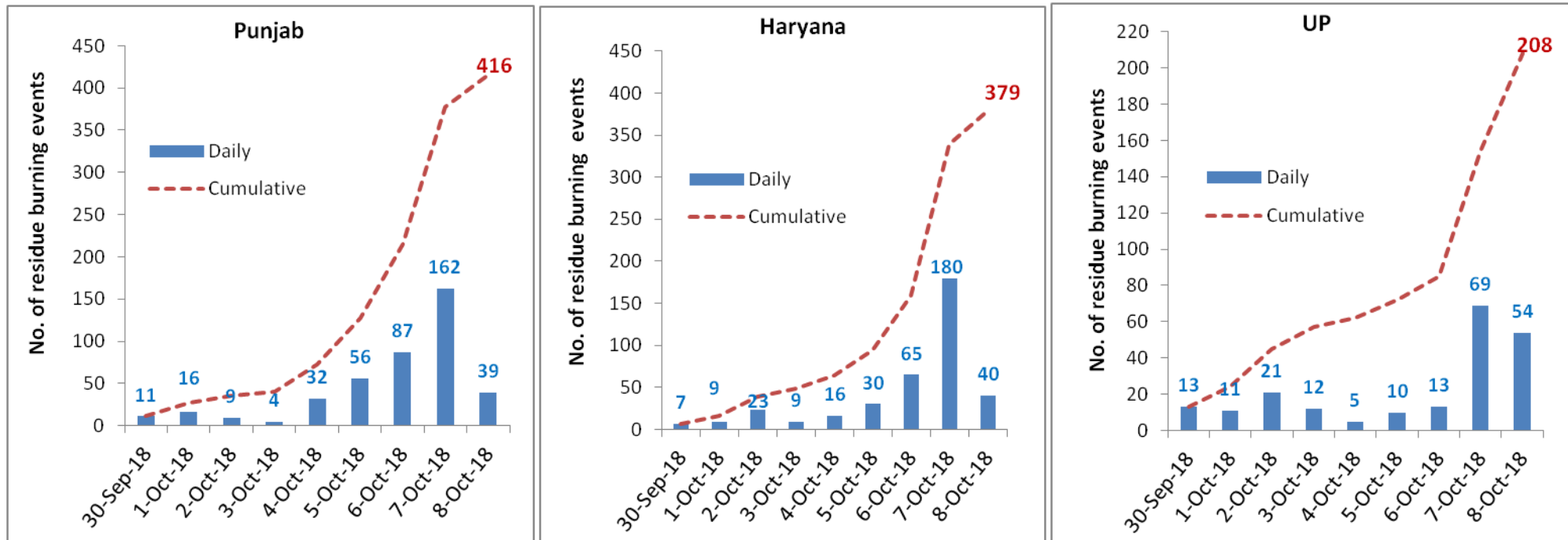
**Consortium for Research on Agroecosystem Monitoring and Modeling from Space (CREAMS) Laboratory,  
Division of Agricultural Physics, ICAR – Indian Agricultural Research Institute, New Delhi – 110012**

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

## Highlights for 08-October-2018

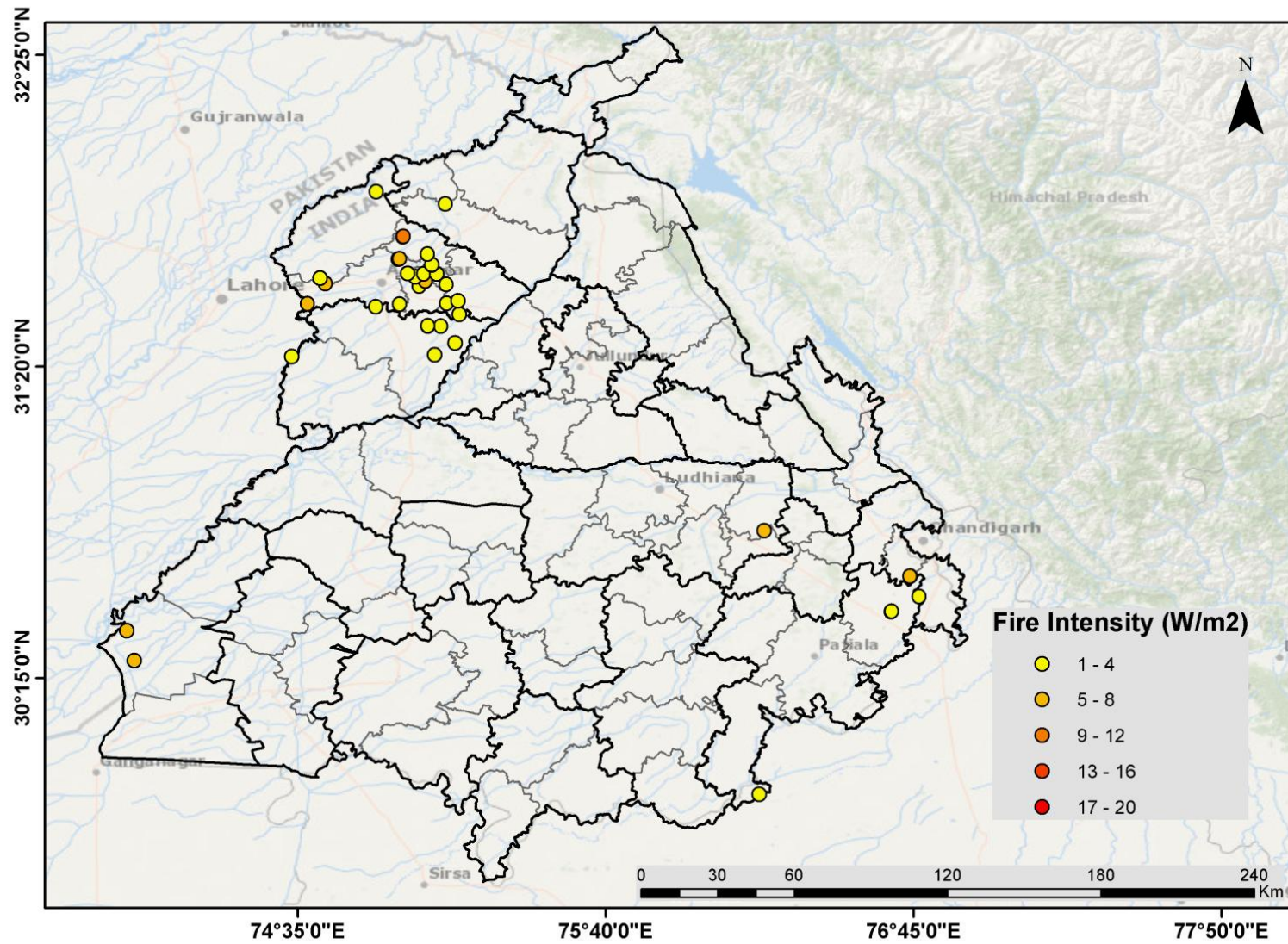
- Satellites detected 133 residue burning events in the three States (Punjab, Haryana & UP) on 08-Oct-2018.
- The burning events detected on 08-Oct-2018 are 39, 40 and 54 in Punjab, Haryana, and UP, respectively.
- The number of events decreased from 411 on 07-Oct-2018 to 133 on 08-Oct-2018 in the three States.
- Total 1003 burning events were detected in three States between 30-Sep-2018 and 08-Oct-2018, which were distributed as 416, 379 and 208 in Punjab, Haryana and UP, respectively.
- Large reduction in burning events was observed in Punjab and Haryana on 08-Oct-2018 as compared to previous two days.

### Temporal distribution of residue burning events for the three study States



**(a) Punjab**

Paddy Residue Burning in Punjab on 8th Oct 2018

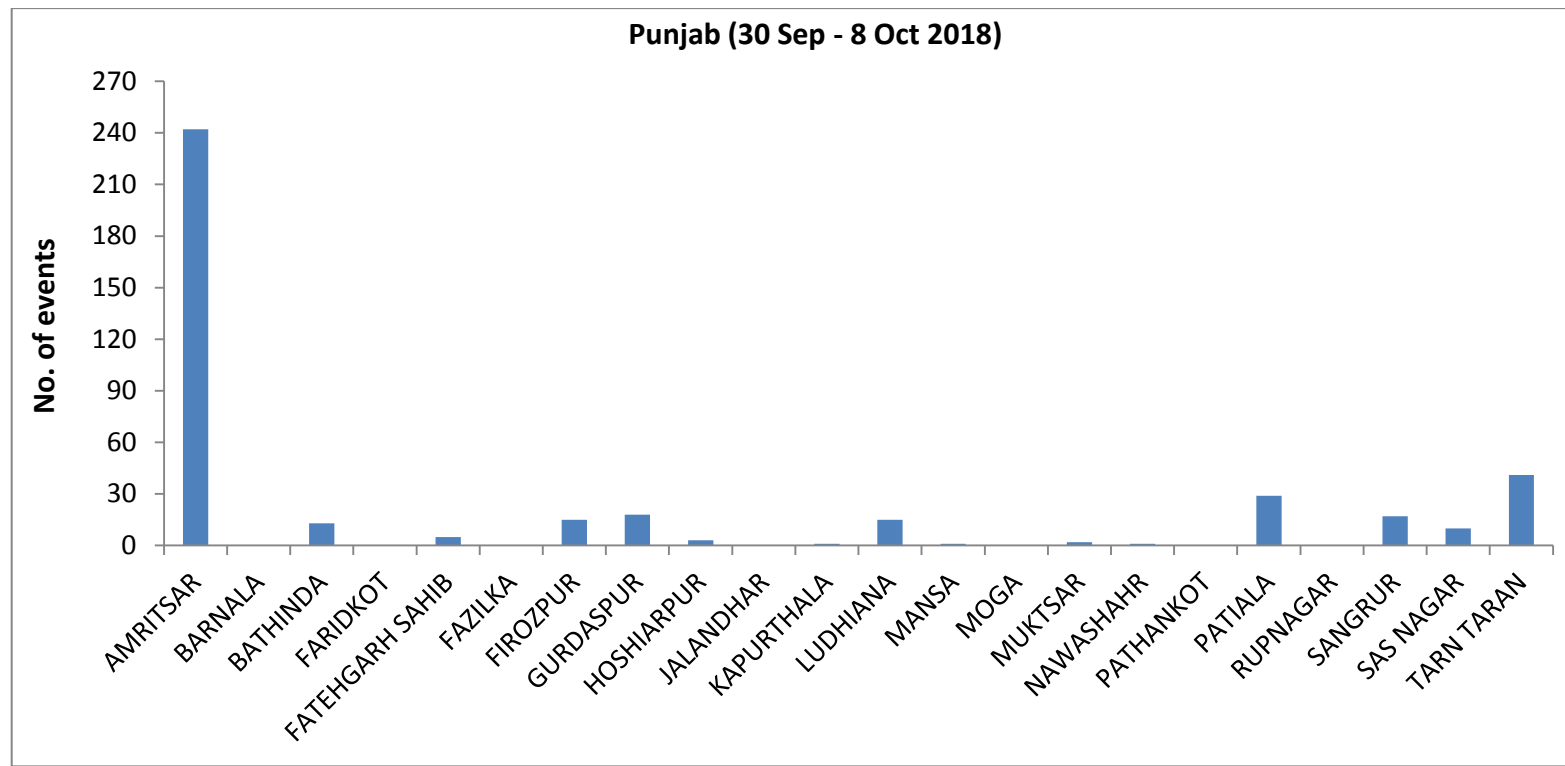


**Details of residue burning events in Punjab on 08-Oct-2018**

<b>Event 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.	AMRITSAR	AJNALA	S-NPP	74.66049	31.64042	13:06:00	D	3.40
2.	AMRITSAR	AJNALA	S-NPP	74.85912	31.94082	13:06:00	D	2.70
3.	AMRITSAR	AMRITSAR I	S-NPP	75.10676	31.55320	13:06:00	D	3.90
4.	AMRITSAR	AMRITSAR I	S-NPP	75.00922	31.61267	13:06:00	D	3.80
5.	AMRITSAR	AMRITSAR I	S-NPP	75.03210	31.63044	13:06:00	D	6.50
6.	AMRITSAR	AMRITSAR I	S-NPP	74.99562	31.64465	13:06:00	D	2.70
7.	AMRITSAR	AMRITSAR I	S-NPP	75.02519	31.65505	13:06:00	D	2.50
8.	AMRITSAR	AMRITSAR I	S-NPP	75.07117	31.65581	13:06:00	D	1.70
9.	AMRITSAR	AMRITSAR I	S-NPP	75.05327	31.68677	13:06:00	D	2.60
10.	AMRITSAR	AMRITSAR I	S-NPP	75.05367	31.68801	13:06:00	D	3.80
11.	AMRITSAR	AMRITSAR I	S-NPP	74.93697	31.70711	13:06:00	D	2.40
12.	AMRITSAR	AMRITSAR I	S-NPP	75.03907	31.72396	13:06:00	D	3.10
13.	AMRITSAR	AMRITSAR I	S-NPP	74.95261	31.78429	13:06:00	D	4.10
14.	AMRITSAR	AMRITSAR I	S-NPP	74.95338	31.78572	13:06:00	D	8.20
15.	AMRITSAR	AMRITSAR II	S-NPP	74.85757	31.54144	13:06:00	D	3.00
16.	AMRITSAR	AMRITSAR II	S-NPP	74.94036	31.54960	13:06:00	D	2.60
17.	AMRITSAR	AMRITSAR II	TERRA-1	74.61653	31.55097	11:13:00	D	6.81
18.	AMRITSAR	AMRITSAR II	S-NPP	74.68013	31.62240	13:06:00	D	4.60
19.	AMRITSAR	AMRITSAR II	S-NPP	74.96898	31.65659	13:06:00	D	2.20
20.	AMRITSAR	AMRITSAR II	S-NPP	74.94139	31.70803	13:06:00	D	4.50
21.	AMRITSAR	BABA BAKALA	S-NPP	75.14964	31.51447	13:06:00	D	2.30
22.	AMRITSAR	BABA BAKALA	S-NPP	75.14584	31.56119	13:06:00	D	2.20
23.	AMRITSAR	BABA BAKALA	S-NPP	75.10432	31.61938	13:06:00	D	3.10
24.	FIROZPUR	FAZILKA	S-NPP	74.00693	30.31162	13:06:00	D	4.10
25.	FIROZPUR	FAZILKA	S-NPP	73.98122	30.41547	13:06:00	D	4.10
26.	GURDASPUR	BATALA	S-NPP	75.10126	31.89840	13:06:00	D	3.60
27.	LUDHIANA	SAMRALA	S-NPP	76.22343	30.76300	13:06:00	D	7.90
28.	PATIALA	RAJPURA	S-NPP	76.67028	30.48188	13:06:00	D	3.60
29.	PATIALA	RAJPURA	S-NPP	76.67255	30.48232	13:06:00	D	3.70
30.	PATIALA	SAMANA	S-NPP	76.20535	29.84619	13:06:00	D	2.10
31.	SAS NAGAR	DERABASSI	S-NPP	76.76826	30.53329	13:06:00	D	2.30
32.	SBS NAGAR	MOHALI	S-NPP	76.73860	30.60385	13:06:00	D	5.50

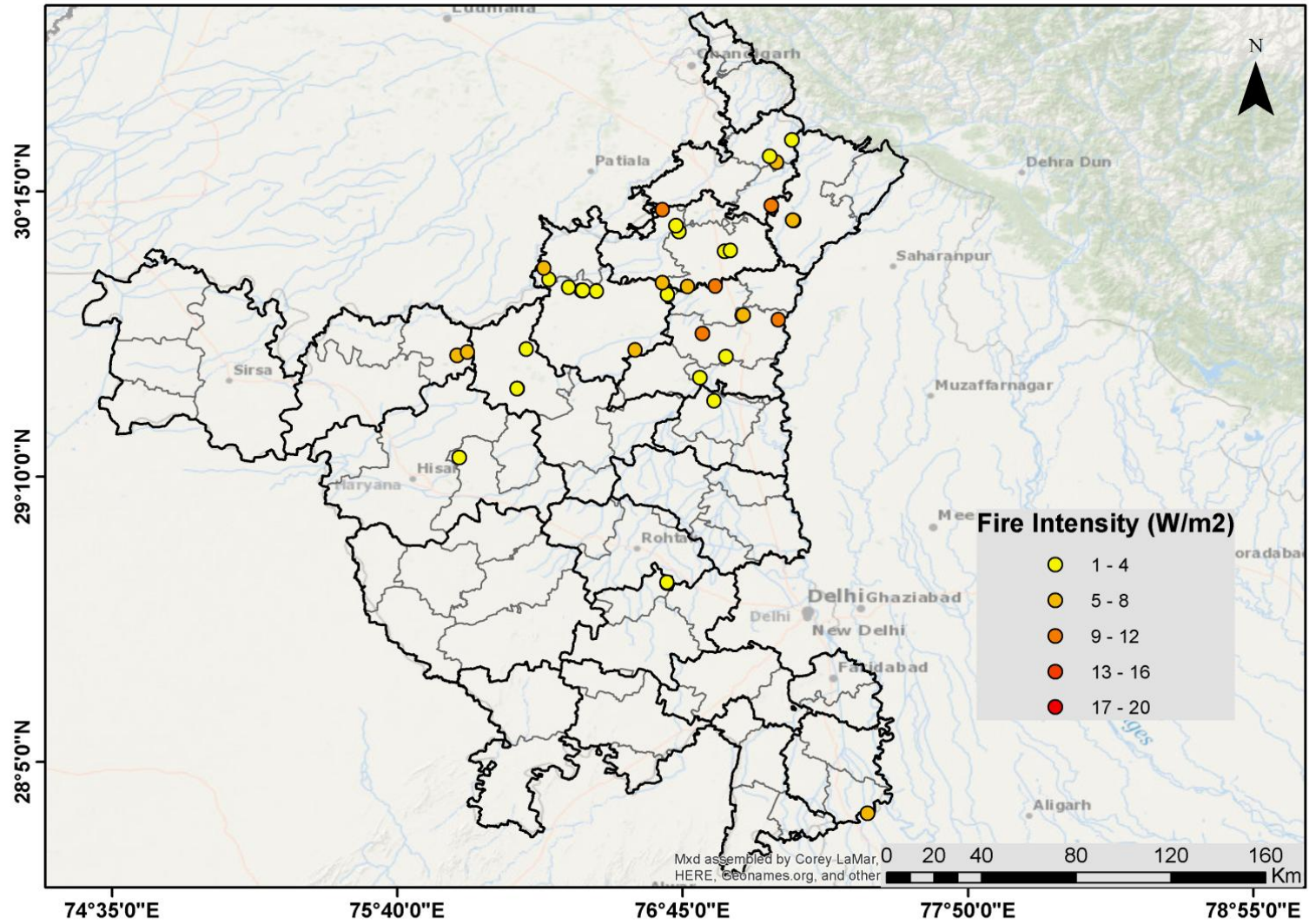
33.	SBS NAGAR	MOHALI	S-NPP	76.73619	30.60453	13:06:00	D	4.50
34.	TARN TARAN	KHADOOR SAHIB	S-NPP	75.06329	31.37402	13:06:00	D	2.70
35.	TARN TARAN	KHADOOR SAHIB	S-NPP	75.13520	31.41504	13:06:00	D	3.80
36.	TARN TARAN	KHADOOR SAHIB	S-NPP	75.04018	31.47372	13:06:00	D	3.60
37.	TARN TARAN	KHADOOR SAHIB	S-NPP	75.08641	31.47441	13:06:00	D	3.80
38.	TARN TARAN	KHADOOR SAHIB	S-NPP	75.04079	31.47443	13:06:00	D	3.20
39.	TARN TARAN	PATTI	S-NPP	74.56173	31.36855	13:06:00	D	1.40

**District-wise cumulative number of residue burning events in Punjab (30-Sep-2018 to 08-Oct-2018)**



(b) Haryana

Paddy Residue Burning in Haryana on 8th Oct 2018

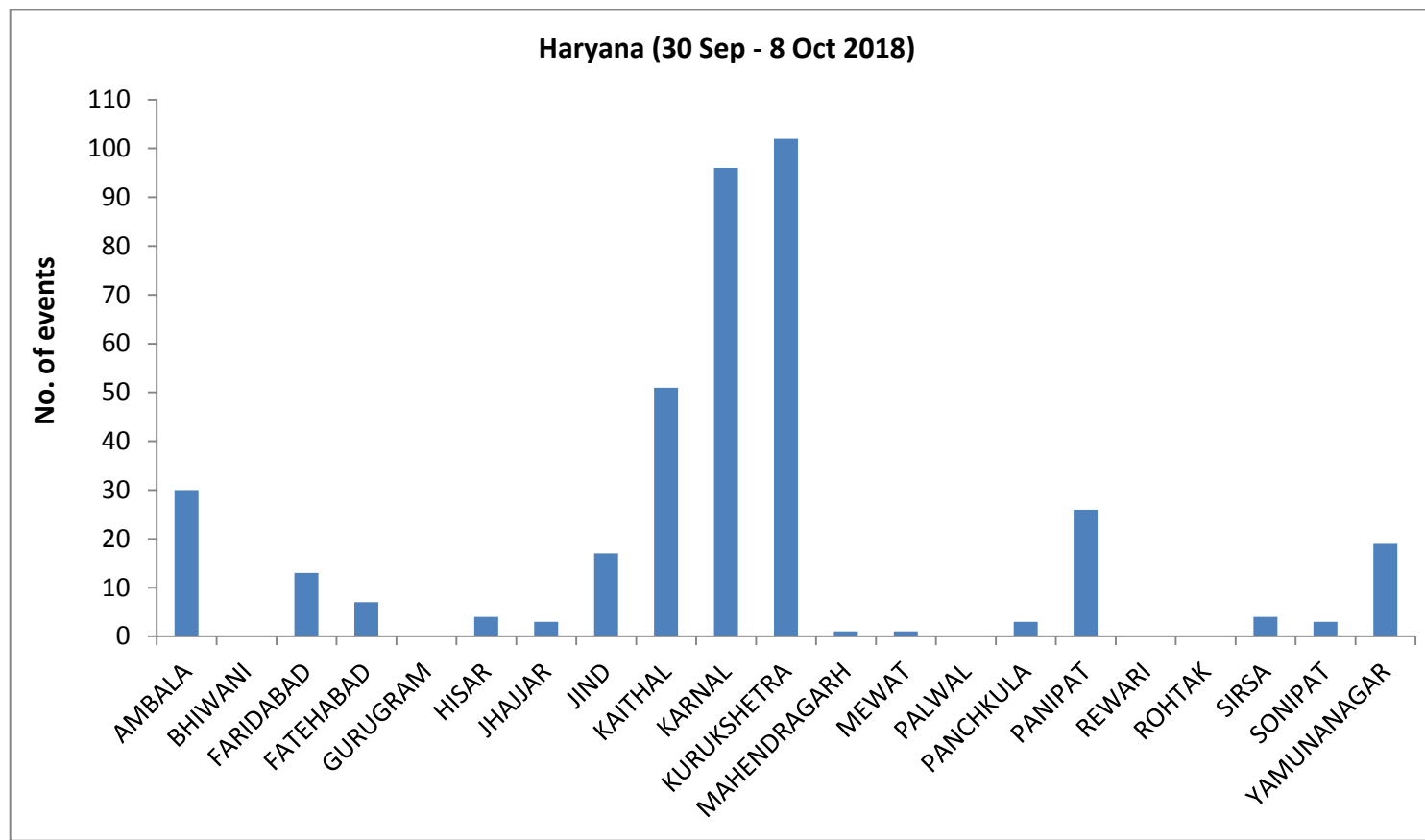


**Details of residue burning events in Haryana on 08-Oct-2018**

<b>Event 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.	AMBALA	AMBALA	TERRA-1	76.67307	30.18104	11:13:00	D	8.95
2.	AMBALA	NARAYANGARH	S-NPP	77.10748	30.36032	13:06:00	D	6.90
3.	AMBALA	NARAYANGARH	S-NPP	77.07939	30.38261	13:06:00	D	3.50
4.	AMBALA	NARAYANGARH	S-NPP	77.16427	30.44607	13:06:00	D	2.30
5.	FARIDABAD	HODAL	S-NPP	77.45109	27.88871	13:06:00	D	4.10
6.	FATEHABAD	TOHANA	S-NPP	75.89229	29.62782	13:06:00	D	5.90
7.	FATEHABAD	TOHANA	S-NPP	75.93324	29.64032	13:06:00	D	4.70
8.	HISAR	HANSI	S-NPP	75.90160	29.23948	01:48:00	N	0.90
9.	JHAJJAR	BERI	S-NPP	76.68995	28.76236	01:48:00	N	1.40
10.	JHAJJAR	BERI	S-NPP	76.69056	28.76611	01:48:00	N	1.40
11.	JIND	NARWANA	S-NPP	76.12184	29.50041	13:06:00	D	1.90
12.	JIND	NARWANA	S-NPP	76.12135	29.50151	13:06:00	D	1.60
13.	JIND	NARWANA	S-NPP	76.15646	29.65105	13:06:00	D	2.70
14.	KAITHAL	GUHLA	S-NPP	76.24200	29.91634	13:06:00	D	3.00
15.	KAITHAL	GUHLA	S-NPP	76.22263	29.95851	13:06:00	D	4.90
16.	KAITHAL	GUHLA	S-NPP	76.22266	29.95888	13:06:00	D	4.60
17.	KAITHAL	KAITHAL	S-NPP	76.56927	29.64816	13:06:00	D	4.40
18.	KAITHAL	KAITHAL	S-NPP	76.69265	29.85828	13:06:00	D	3.10
19.	KAITHAL	KAITHAL	S-NPP	76.42294	29.87133	13:06:00	D	2.60
20.	KAITHAL	KAITHAL	S-NPP	76.36873	29.87323	13:06:00	D	4.90
21.	KAITHAL	KAITHAL	S-NPP	76.36558	29.87426	13:06:00	D	2.60
22.	KAITHAL	KAITHAL	S-NPP	76.36952	29.87505	13:06:00	D	2.90
23.	KAITHAL	KAITHAL	S-NPP	76.31700	29.88534	13:06:00	D	1.50
24.	KAITHAL	KAITHAL	TERRA-1	76.67307	29.90256	11:13:00	D	7.78
25.	KARNAL	GHARAUNDA	S-NPP	76.81539	29.54222	13:06:00	D	3.00
26.	KARNAL	KARNAL	S-NPP	76.91334	29.62213	13:06:00	D	3.70
27.	KARNAL	KARNAL	S-NPP	76.82397	29.70989	13:06:00	D	11.70
28.	KARNAL	KARNAL	TERRA-1	77.11303	29.76332	11:13:00	D	8.03
29.	KARNAL	KARNAL	S-NPP	76.97929	29.78096	13:06:00	D	5.60
30.	KARNAL	NILOKHERI	S-NPP	76.97621	29.77934	13:06:00	D	4.40
31.	KURUKSHETRA	PEHOWA	S-NPP	76.73531	30.09754	13:06:00	D	3.50

32.	KURUKSHETRA	PEHOWA	S-NPP	76.72376	30.11961	13:06:00	D	3.20
33.	KURUKSHETRA	THANESAR	S-NPP	76.76805	29.88930	13:06:00	D	7.30
34.	KURUKSHETRA	THANESAR	S-NPP	76.87383	29.88966	13:06:00	D	8.60
35.	KURUKSHETRA	THANESAR	S-NPP	76.90896	30.02220	13:06:00	D	4.00
36.	KURUKSHETRA	THANESAR	S-NPP	76.93105	30.02647	13:06:00	D	3.00
37.	PANIPAT	PANIPAT	TERRA-1	76.87771	29.45789	11:13:00	D	12.34
38.	YAMUNANAGAR	JAGADHRI	S-NPP	77.17033	30.13972	13:06:00	D	4.60
39.	YAMUNANAGAR	JAGADHRI	S-NPP	77.16733	30.14134	13:06:00	D	5.60
40.	YAMUNANAGAR	JAGADHRI	S-NPP	77.08581	30.19704	13:06:00	D	8.20

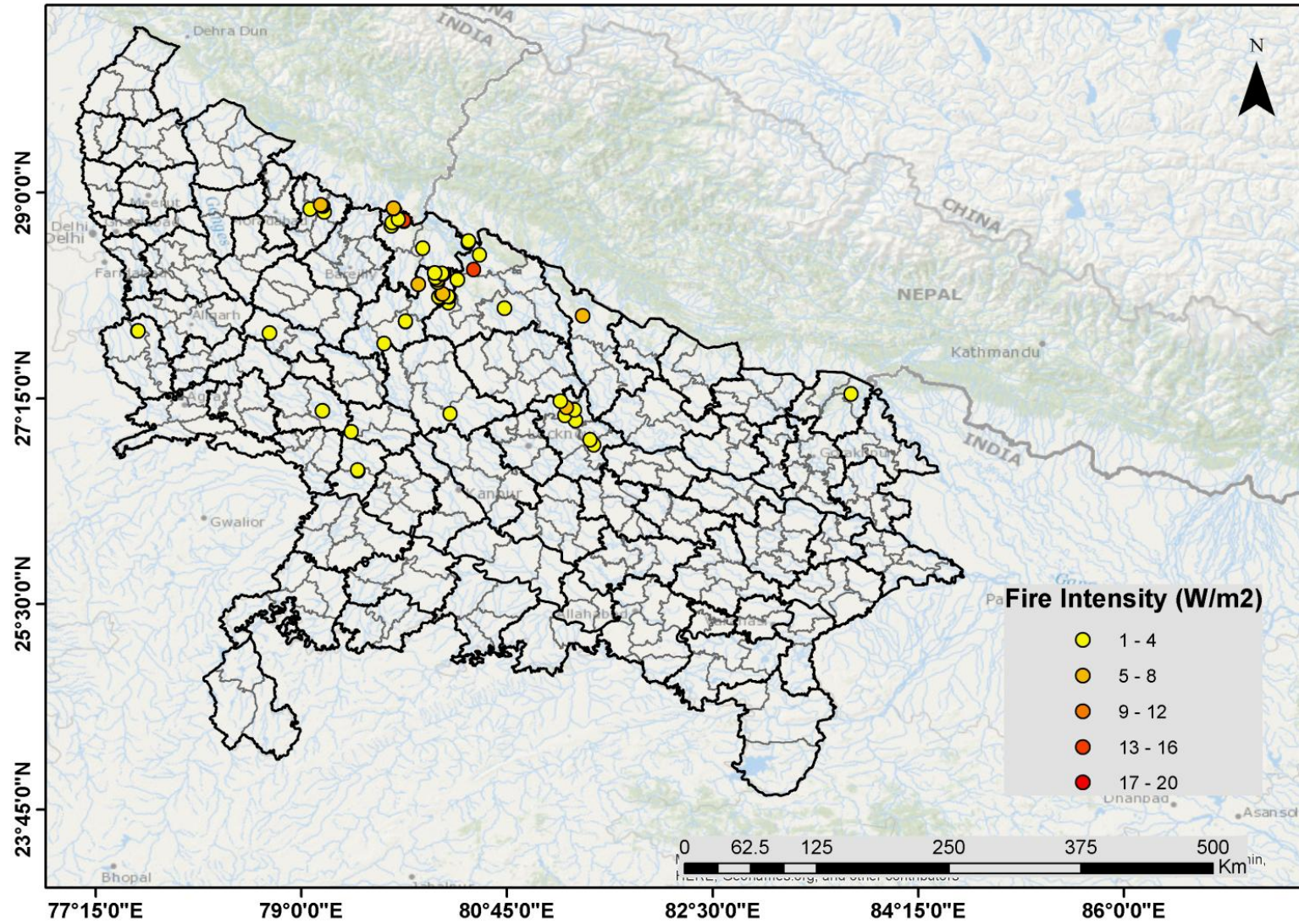
**District-wise cumulative number of residue burning events in Haryana (30-Sep-2018 to 08-Oct-2018)**





(c) Uttar Pradesh

Paddy Residue Burning in Uttar Pradesh on 8th Oct 2018



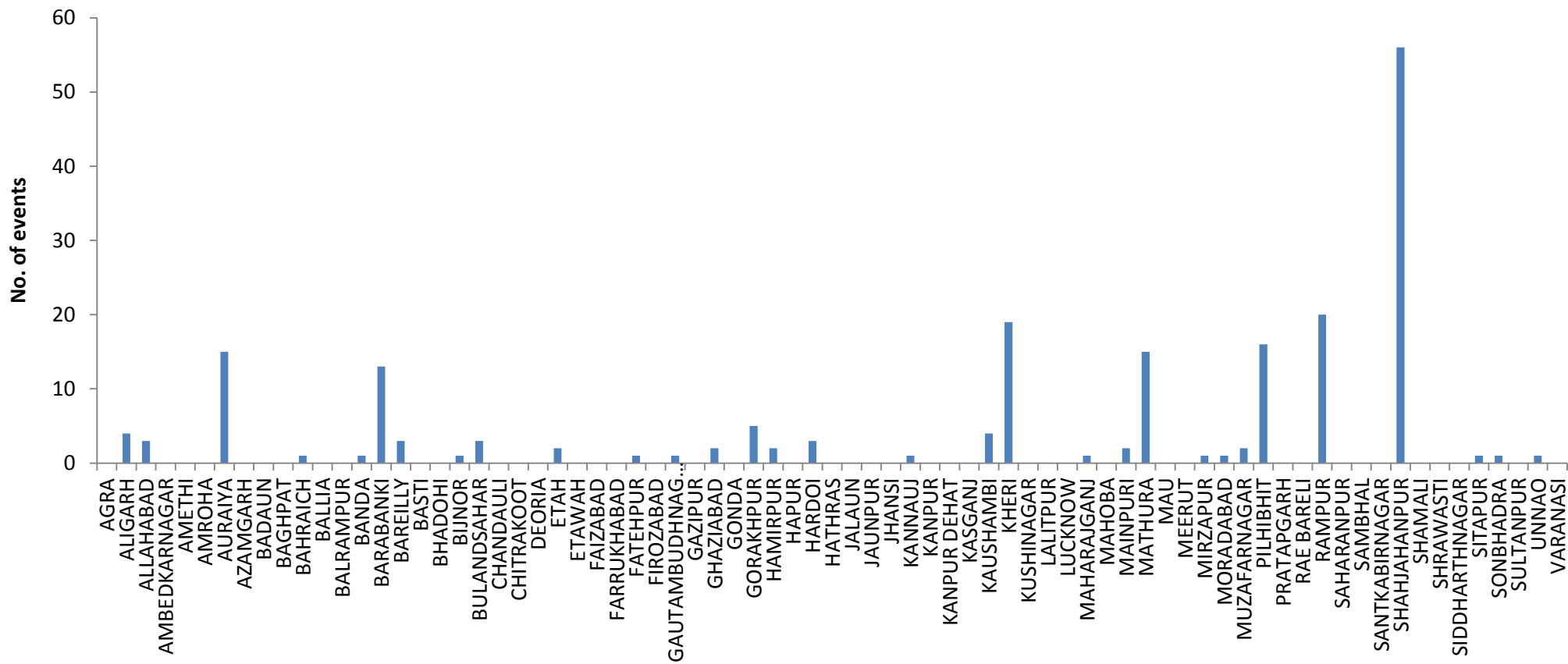
**Details of residue burning events in Uttar Pradesh on 08-Oct-2018**

<b>Event 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.	AURAIYA	BIDHUNA	NOAA-18	79.48164	26.63269	19:47:00	N	7.00
2.	AURAIYA	BIDHUNA	S-NPP	79.47987	26.64143	01:48:00	N	0.90
3.	BAHRAICH	NANPARA	S-NPP	81.39331	27.95482	13:06:00	D	5.20
4.	BARABANKI	FATEHPUR	S-NPP	81.24104	27.10660	13:06:00	D	2.90
5.	BARABANKI	FATEHPUR	S-NPP	81.25671	27.17250	13:06:00	D	5.40
6.	BARABANKI	FATEHPUR	S-NPP	81.20440	27.22635	13:06:00	D	2.10
7.	BARABANKI	RAMNAGAR	S-NPP	81.33242	27.06111	13:06:00	D	1.80
8.	BARABANKI	RAMNAGAR	S-NPP	81.32282	27.15103	13:06:00	D	2.90
9.	BARABANKI	SIRAU LI GAUSPUR	S-NPP	81.48775	26.85522	13:06:00	D	2.60
10.	BARABANKI	SIRAU LI GAUSPUR	S-NPP	81.45513	26.89656	13:06:00	D	2.10
11.	ETAH	KASGANJ	S-NPP	78.72695	27.80778	13:06:00	D	2.10
12.	HARDOI	BILGRAM	S-NPP	80.26480	27.11849	13:06:00	D	3.50
13.	KANNAUJ	CHHIBRAMAU	S-NPP	79.42581	26.96779	13:06:00	D	3.80
14.	KHERI	GOLA	S-NPP	80.32793	28.25933	13:06:00	D	3.10
15.	KHERI	LAKHIMPUR	S-NPP	80.72765	28.01701	13:06:00	D	3.20
16.	KHERI	MOHMADI	S-NPP	80.25043	28.06418	13:06:00	D	1.60
17.	KHERI	MOHMADI	S-NPP	80.25780	28.11378	13:06:00	D	5.10
18.	KHERI	MOHMADI	S-NPP	80.24794	28.11918	13:06:00	D	2.50
19.	KHERI	PALIA KALAN	S-NPP	80.46513	28.34515	13:06:00	D	12.20
20.	KHERI	PALIA KALAN	S-NPP	80.51556	28.47309	13:06:00	D	2.70
21.	KHERI	PALIA KALAN	S-NPP	80.42132	28.57630	13:06:00	D	4.50
22.	KHERI	PALIA KALAN	S-NPP	80.42258	28.59053	13:06:00	D	3.80
23.	MAHARAJGANJ	NICHLAUL	S-NPP	83.67833	27.28906	13:06:00	D	2.10
24.	MAINPURI	BHOGAON	S-NPP	79.17963	27.14510	13:06:00	D	3.20
25.	MATHURA	MAT	S-NPP	77.60902	27.82613	13:06:00	D	1.10
26.	MATHURA	MAT	S-NPP	77.61161	27.82614	13:06:00	D	4.00
27.	PILHIBHIT	PILHIBHIT	S-NPP	79.76637	28.71827	13:06:00	D	3.50
28.	PILHIBHIT	PILHIBHIT	S-NPP	79.77325	28.74806	13:06:00	D	3.40
29.	PILHIBHIT	PILHIBHIT	S-NPP	79.87372	28.75797	13:06:00	D	4.80
30.	PILHIBHIT	PILHIBHIT	TERRA-1	79.87249	28.76529	11:13:00	D	14.73

31.	PILHIBHIT	PILHIBHIT	S-NPP	79.82604	28.77677	13:06:00	D	2.30
32.	PILHIBHIT	PILHIBHIT	S-NPP	79.78413	28.86597	13:06:00	D	6.60
33.	PILHIBHIT	PILHIBHIT	S-NPP	79.78456	28.86749	13:06:00	D	5.70
34.	PILHIBHIT	PURANPUR	S-NPP	80.03193	28.52824	13:06:00	D	3.70
35.	RAMPUR	BILASPUR	S-NPP	79.19212	28.83641	13:06:00	D	2.40
36.	RAMPUR	BILASPUR	S-NPP	79.18253	28.88538	13:06:00	D	2.10
37.	RAMPUR	BILASPUR	S-NPP	79.17644	28.89161	13:06:00	D	3.80
38.	RAMPUR	RAMPUR	S-NPP	79.07454	28.86246	13:06:00	D	2.90
39.	RAMPUR	SUAR	S-NPP	79.16582	28.89704	13:06:00	D	4.80
40.	SHAHJAHANPUR	JALALABAD	S-NPP	79.70389	27.71757	13:06:00	D	3.00
41.	SHAHJAHANPUR	PUWANYA	S-NPP	80.18124	28.10433	13:06:00	D	3.00
42.	SHAHJAHANPUR	PUWANYA	S-NPP	80.17059	28.11316	13:06:00	D	3.70
43.	SHAHJAHANPUR	PUWANYA	S-NPP	80.19574	28.13870	13:06:00	D	2.50
44.	SHAHJAHANPUR	PUWANYA	S-NPP	80.19995	28.13941	13:06:00	D	5.00
45.	SHAHJAHANPUR	PUWANYA	S-NPP	79.99467	28.22077	13:06:00	D	6.60
46.	SHAHJAHANPUR	PUWANYA	S-NPP	80.15842	28.23784	13:06:00	D	2.70
47.	SHAHJAHANPUR	PUWANYA	S-NPP	80.15823	28.25909	13:06:00	D	5.00
48.	SHAHJAHANPUR	PUWANYA	S-NPP	80.14112	28.27749	13:06:00	D	1.90
49.	SHAHJAHANPUR	PUWANYA	S-NPP	80.14127	28.27962	13:06:00	D	3.90
50.	SHAHJAHANPUR	PUWANYA	S-NPP	80.20084	28.30751	13:06:00	D	2.80
51.	SHAHJAHANPUR	PUWANYA	S-NPP	80.19518	28.31363	13:06:00	D	2.30
52.	SHAHJAHANPUR	PUWANYA	S-NPP	80.13316	28.31726	13:06:00	D	2.50
53.	SHAHJAHANPUR	SHAHJAHANPUR	S-NPP	79.88599	27.90435	13:06:00	D	2.30
54.	SHAHJAHANPUR	SHAHJAHANPUR	S-NPP	79.88666	27.90574	13:06:00	D	1.80

### District-wise cumulative number of residue burning events in Uttar Pradesh (30-Sep-2018 to 08-Oct-2018)

#### Uttar Pradesh (30 Sep - 8 Oct 2018)



## 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

### Study Team

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GIS Maps of fire events can be visualized online on ICAR KRISHI Geoportal websites:

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

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

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