



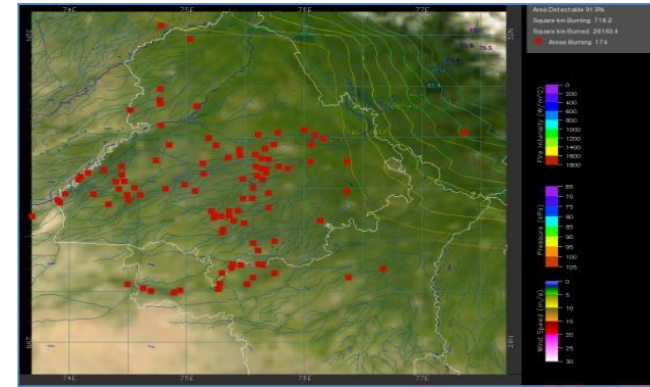
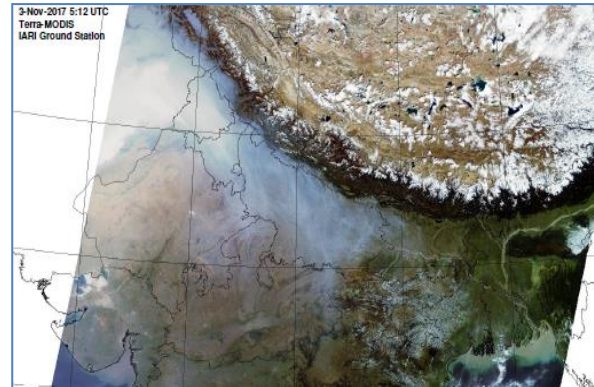
Bulletin No. 48

Events Date:
18-May-2022

Issued on:
19-May-2022



MONITORING WHEAT RESIDUE BURNING IN INDIA USING SATELLITE REMOTE SENSING DURING 2022



Prepared by:

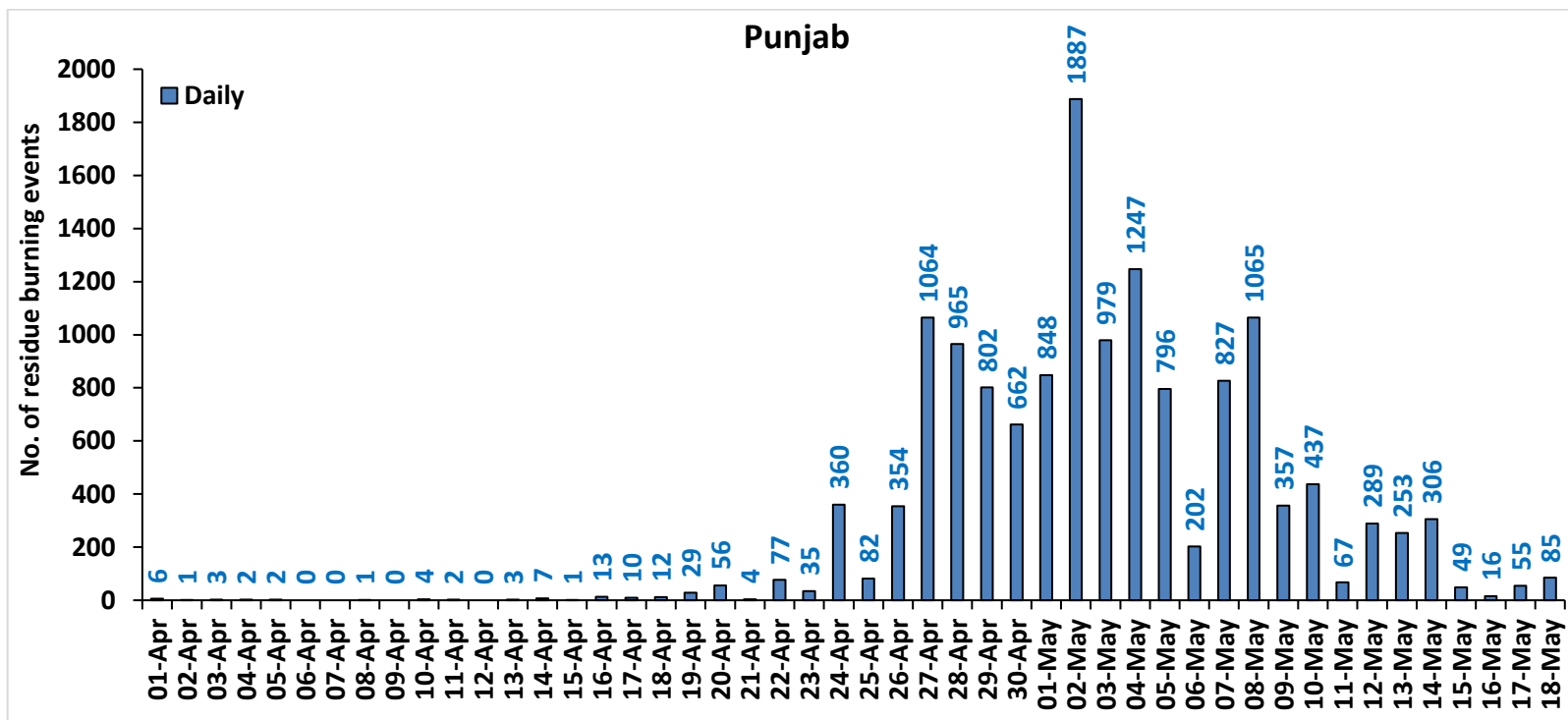
Consortium for Research on Agroecosystem Monitoring and Modeling from Space (CREAMS) Laboratory,
Division of Agricultural Physics, ICAR – Indian Agricultural Research Institute, New Delhi – 110012

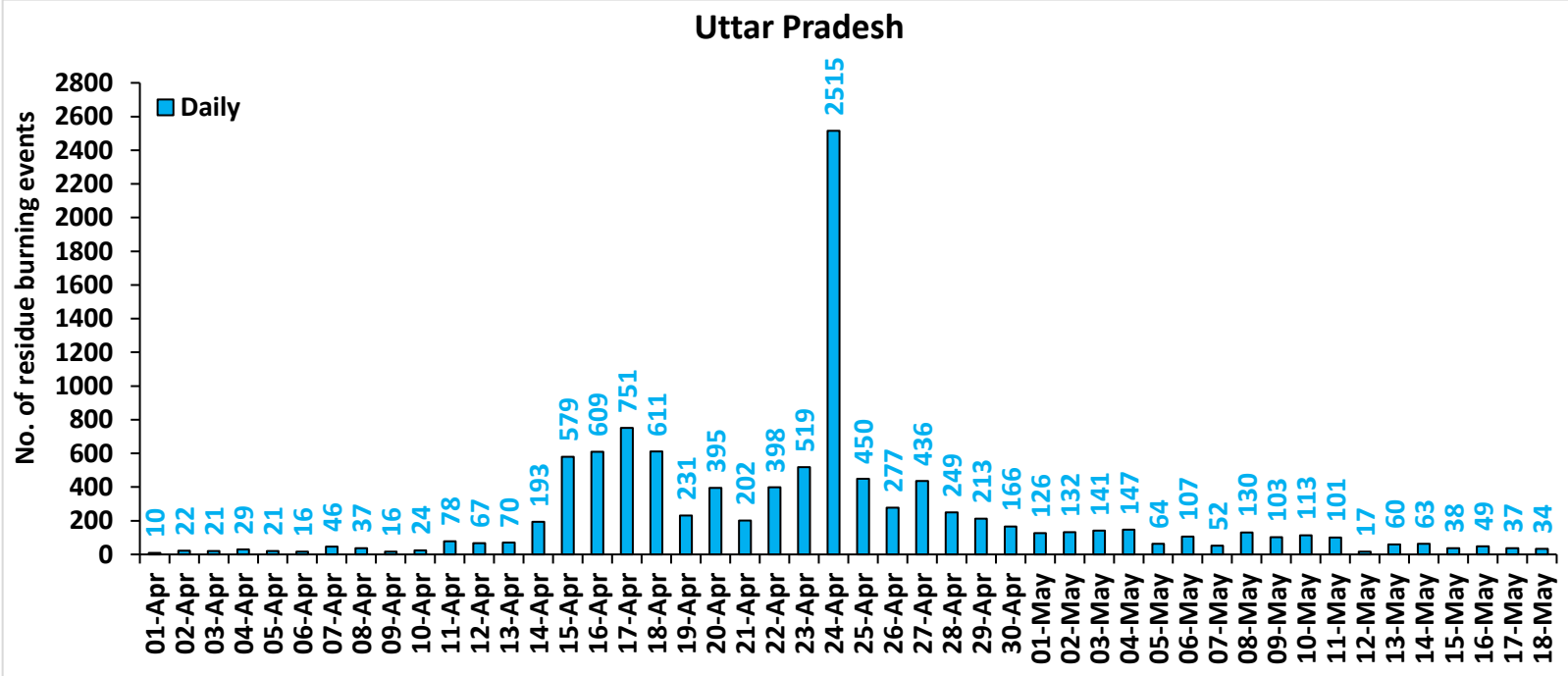
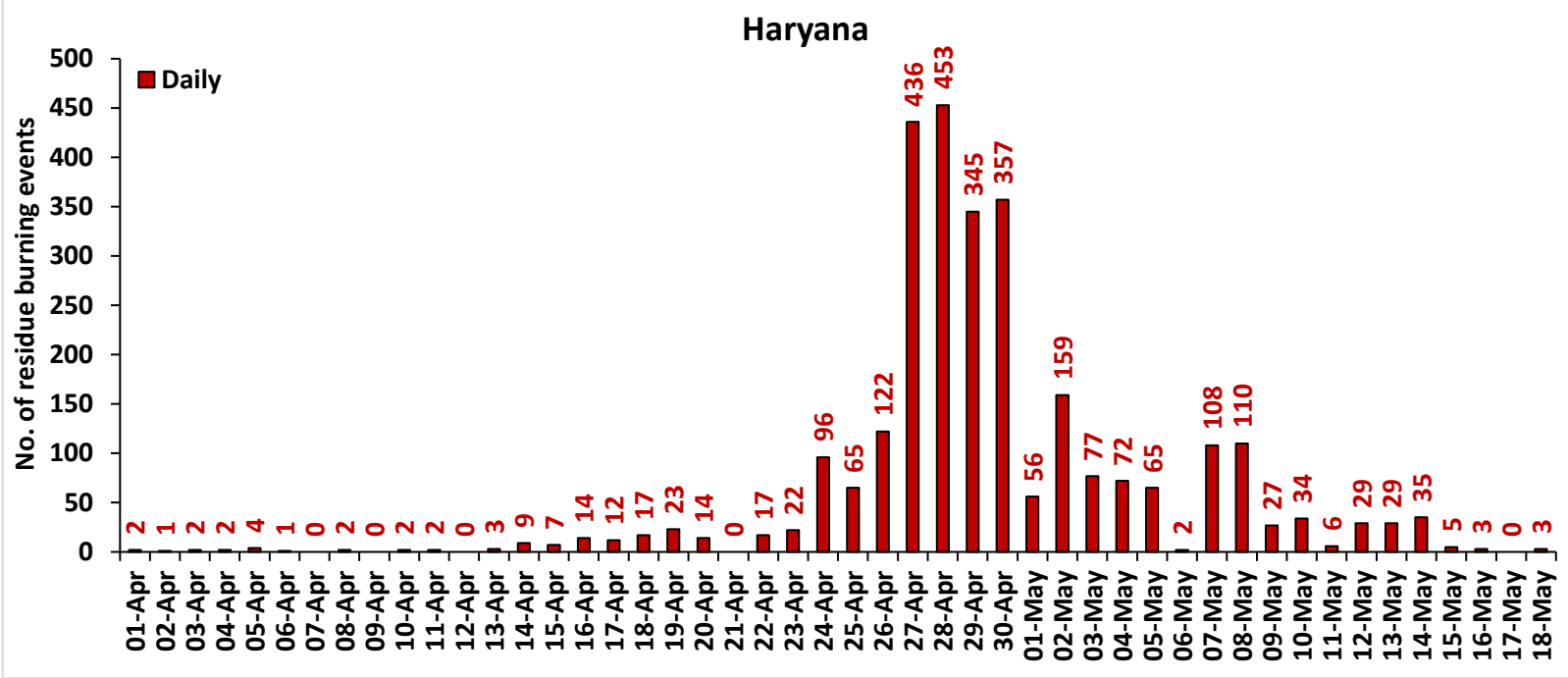
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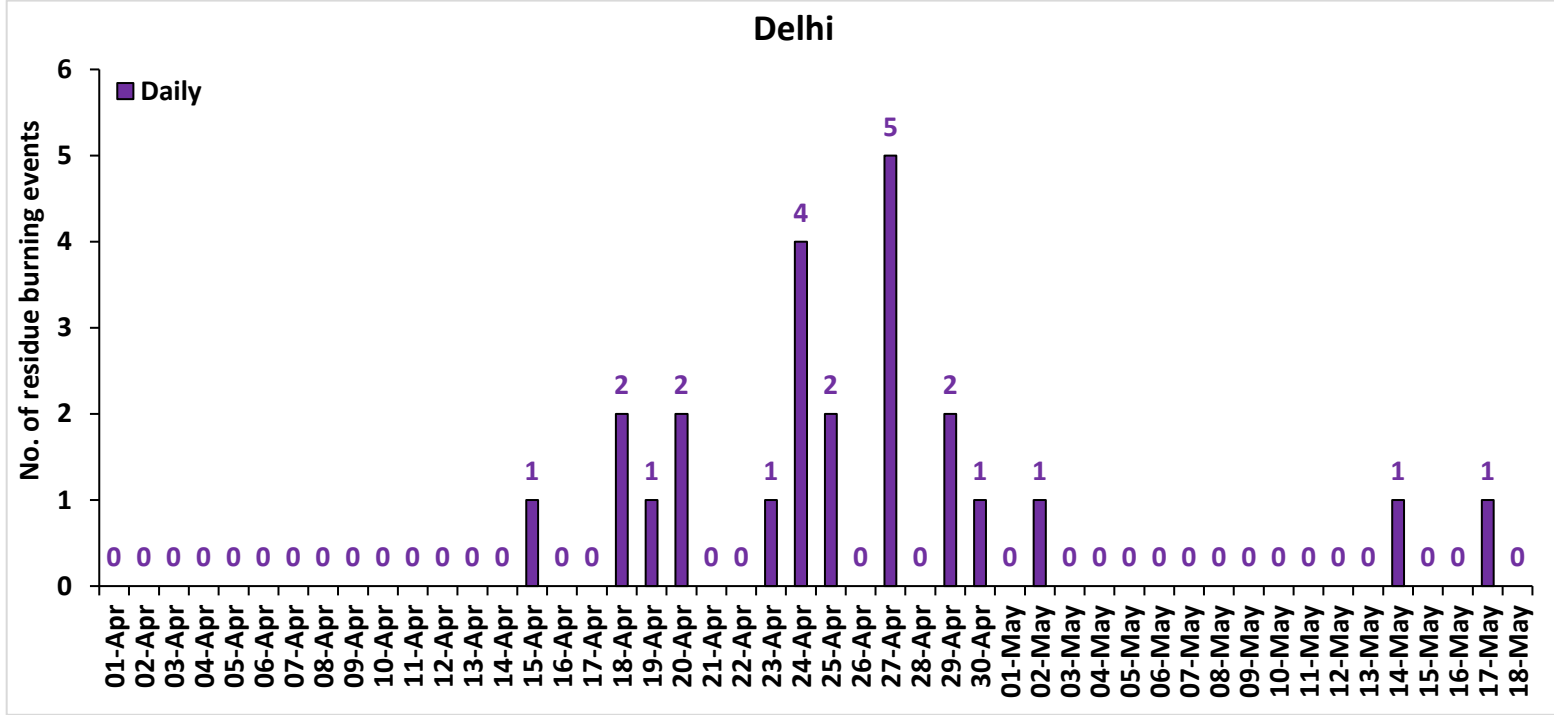
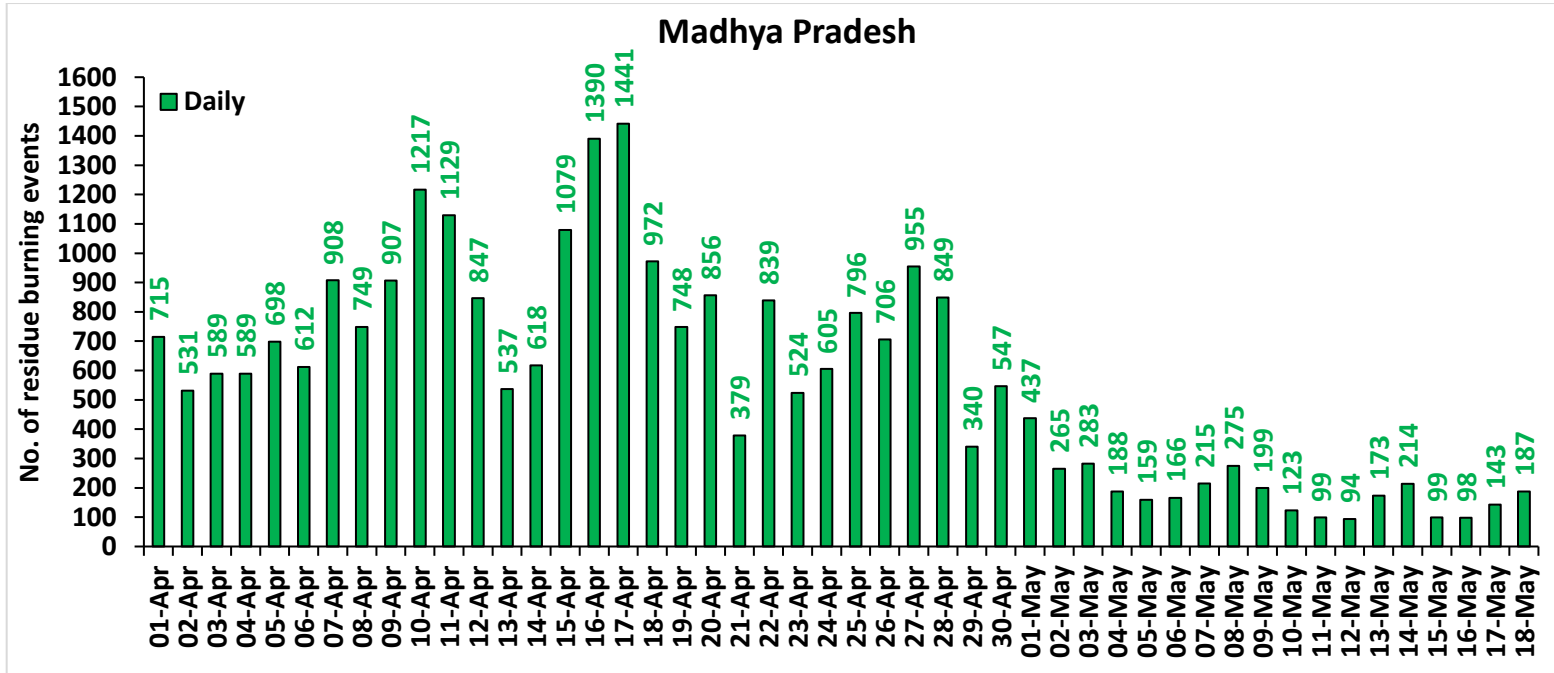
Highlights for 18-May-2022

- The active fire events due to wheat residue burning were monitored using satellite remote sensing, following the new "Standard Protocol for Estimation of Crop Residue Burning Fire Events using Satellite Data".
- Satellites detected **309** residue burning events in the five study States on 18-May-2022.
- The state wise events detected on 18-May-2022 were **85** in Punjab, **03** in Haryana, **00** in Delhi, **34** in Uttar Pradesh and **187** in Madhya Pradesh.
- The number of events has increased from **236** on 17-May-2022 to **309** on 18-May-2022 in the five study states.
- Total **55050** burning events were detected in the five states between 01-Apr-2022 and 18-May-2022, which are distributed as **14322**, **2850**, **10765**, **24**, and **27089** in Punjab, Haryana, UP, Delhi, and MP, respectively.

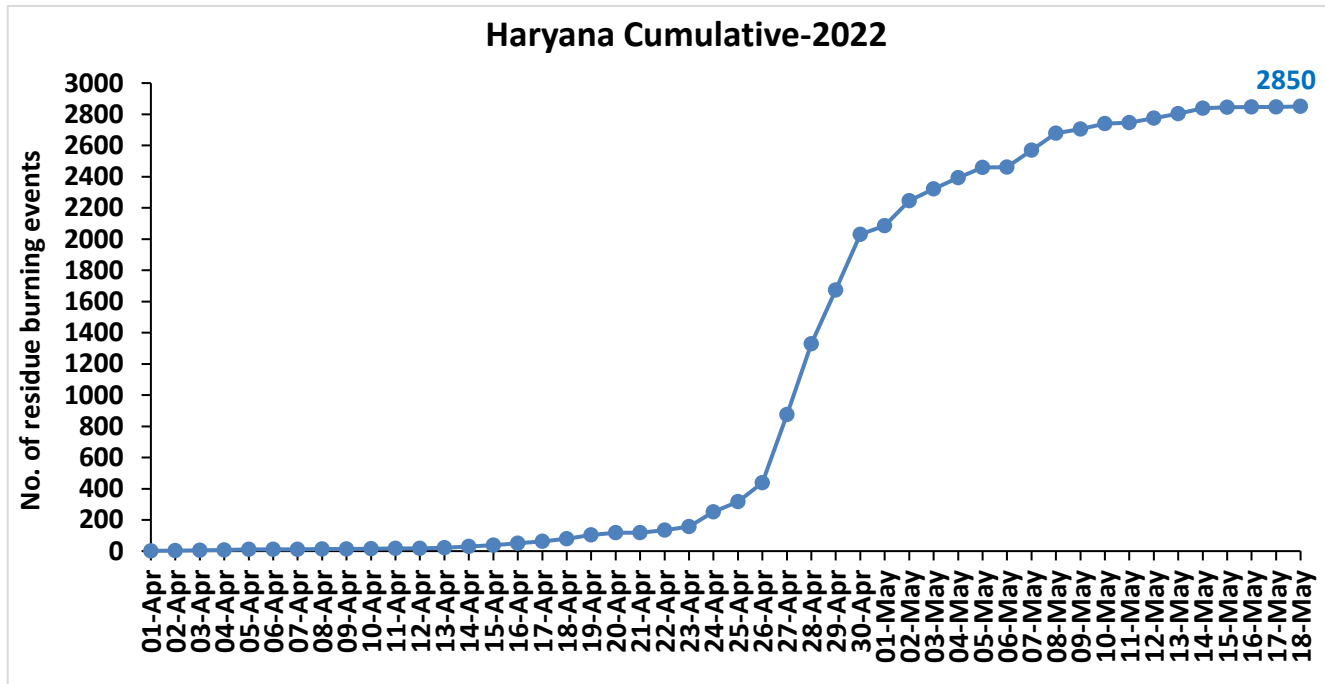
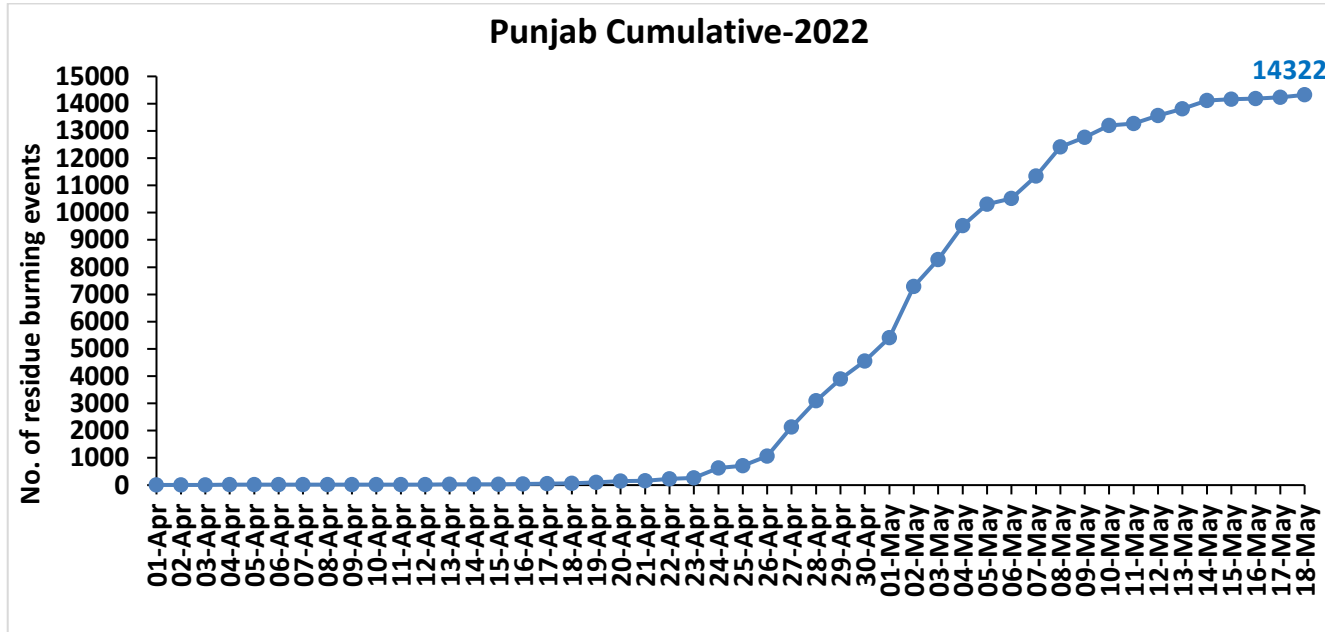
Temporal distribution of wheat residue burning events for the study States in 2022



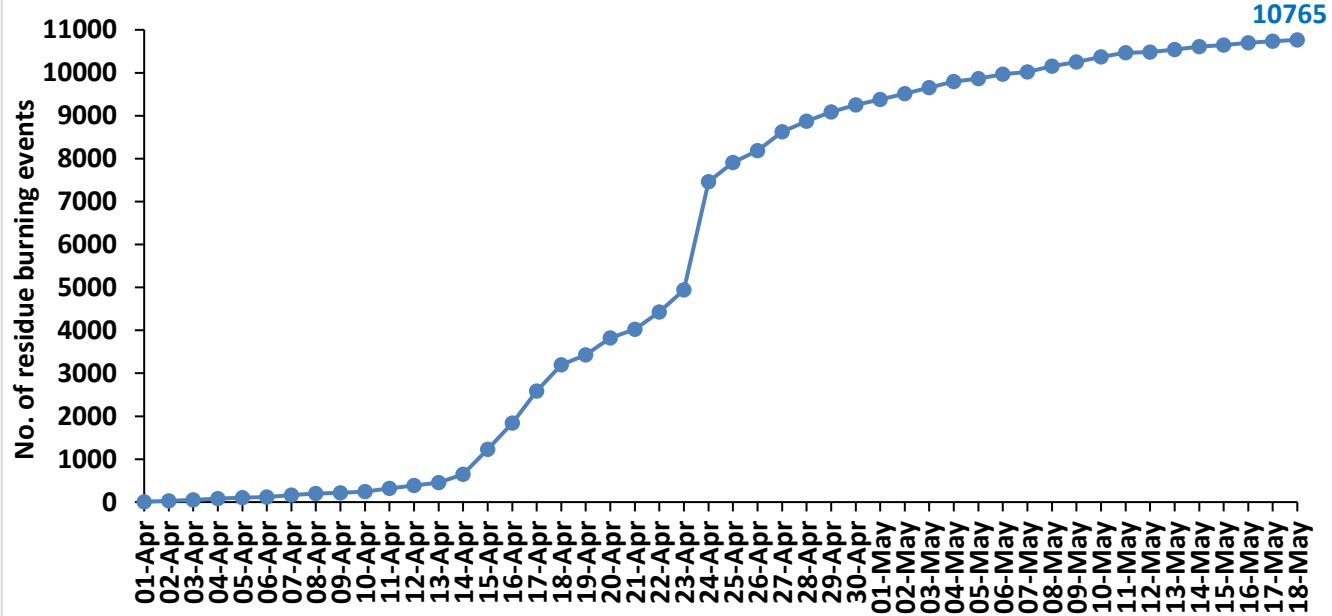




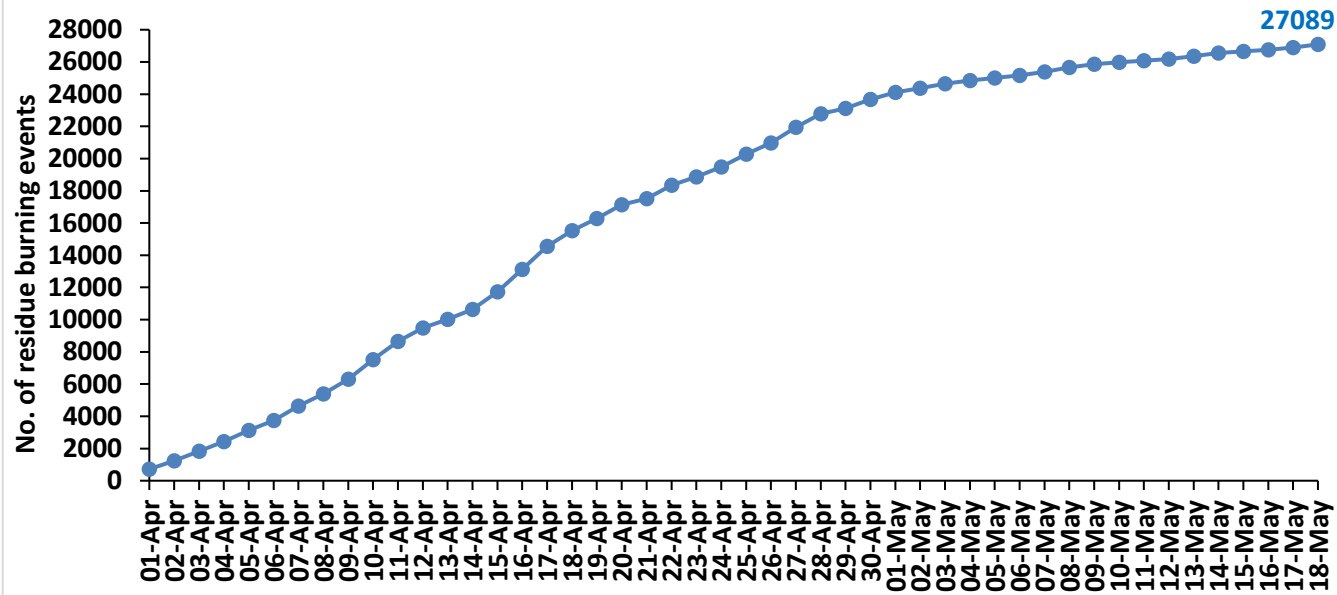
Cumulative Wheat Residue burning events in current year (2022) for the study States



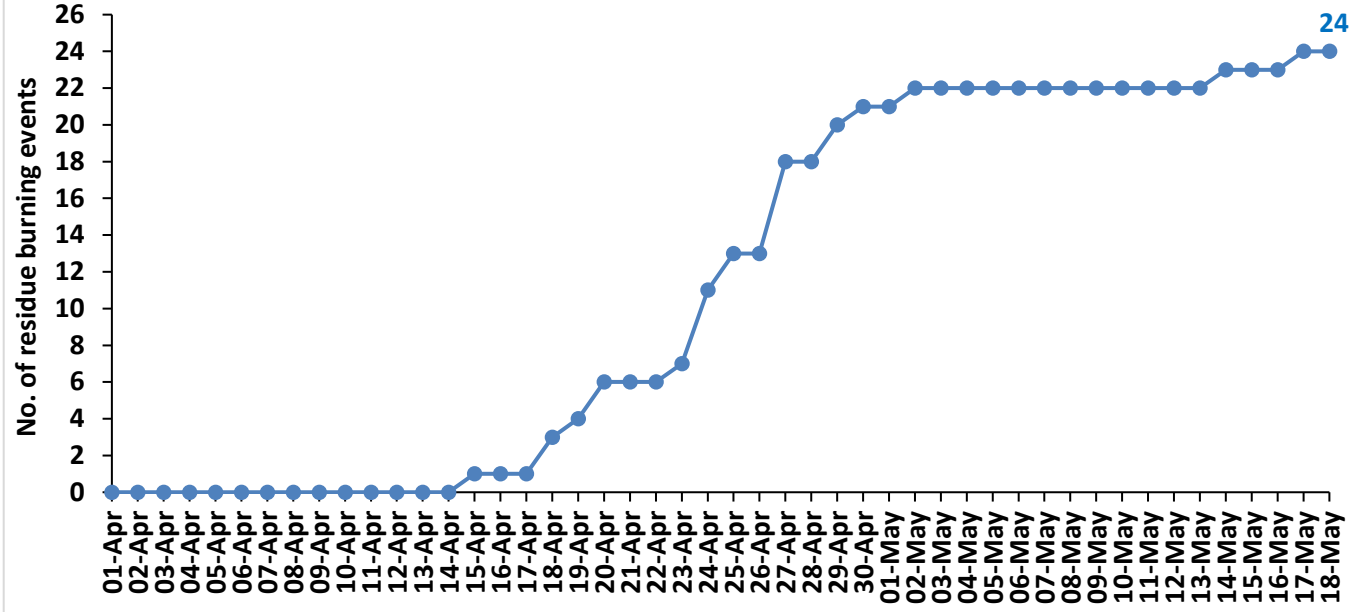
Uttar Pradesh Cumulative-2022



Madhya Pradesh Cumulative-2022

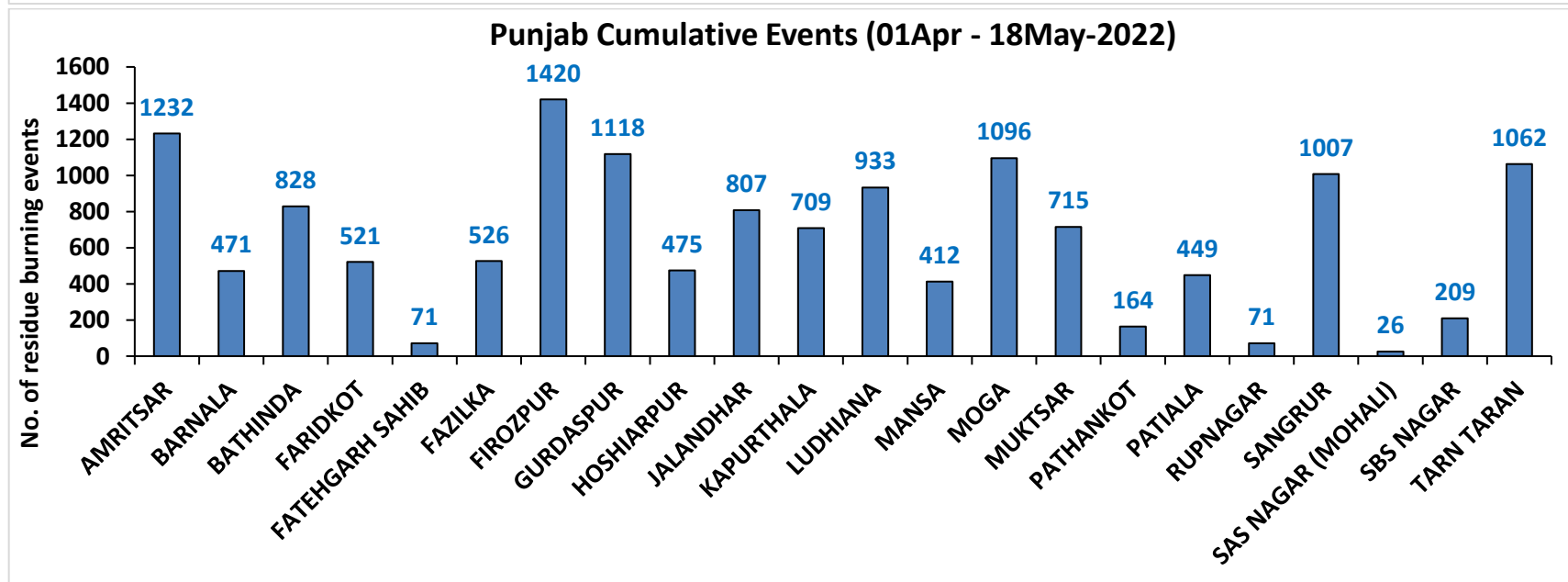
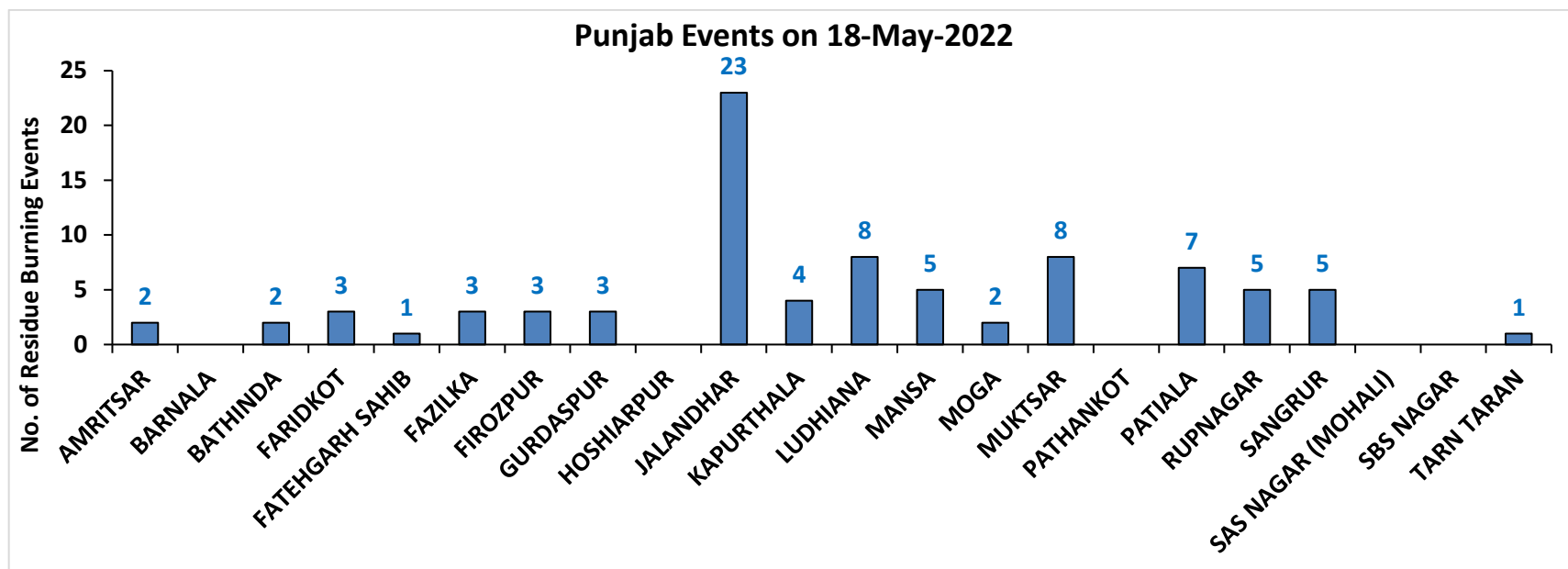


Delhi Cumulative-2022



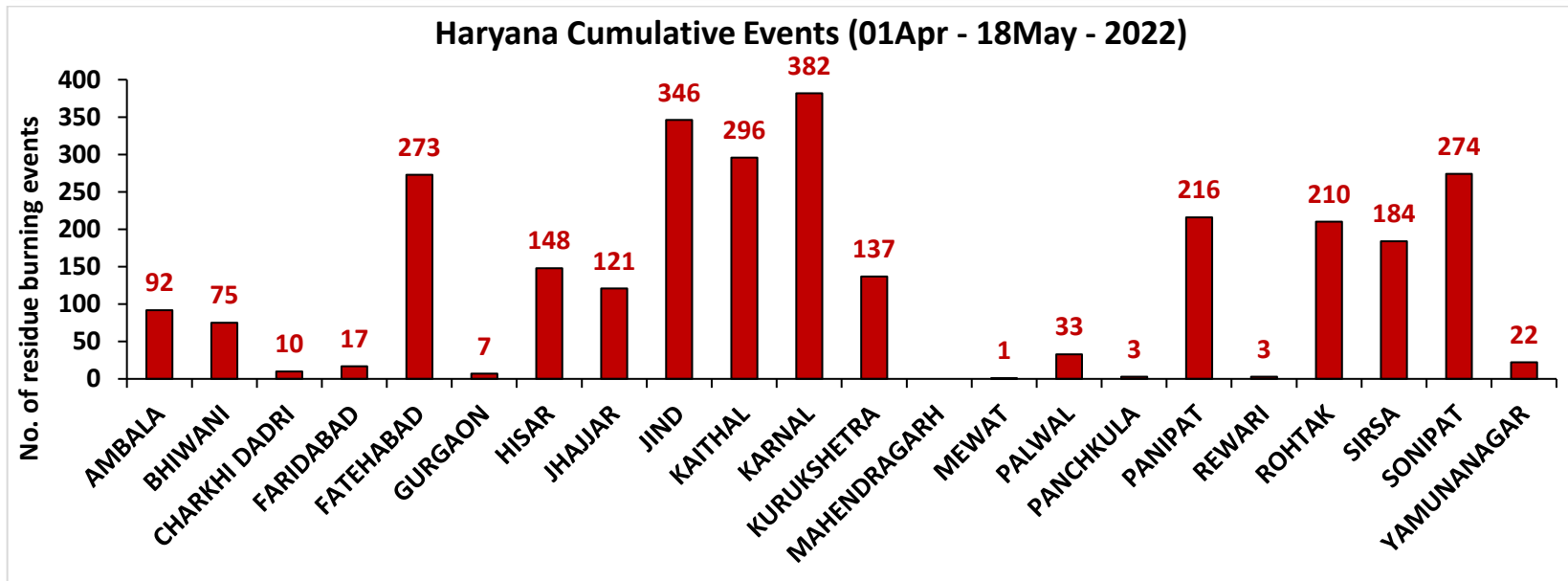
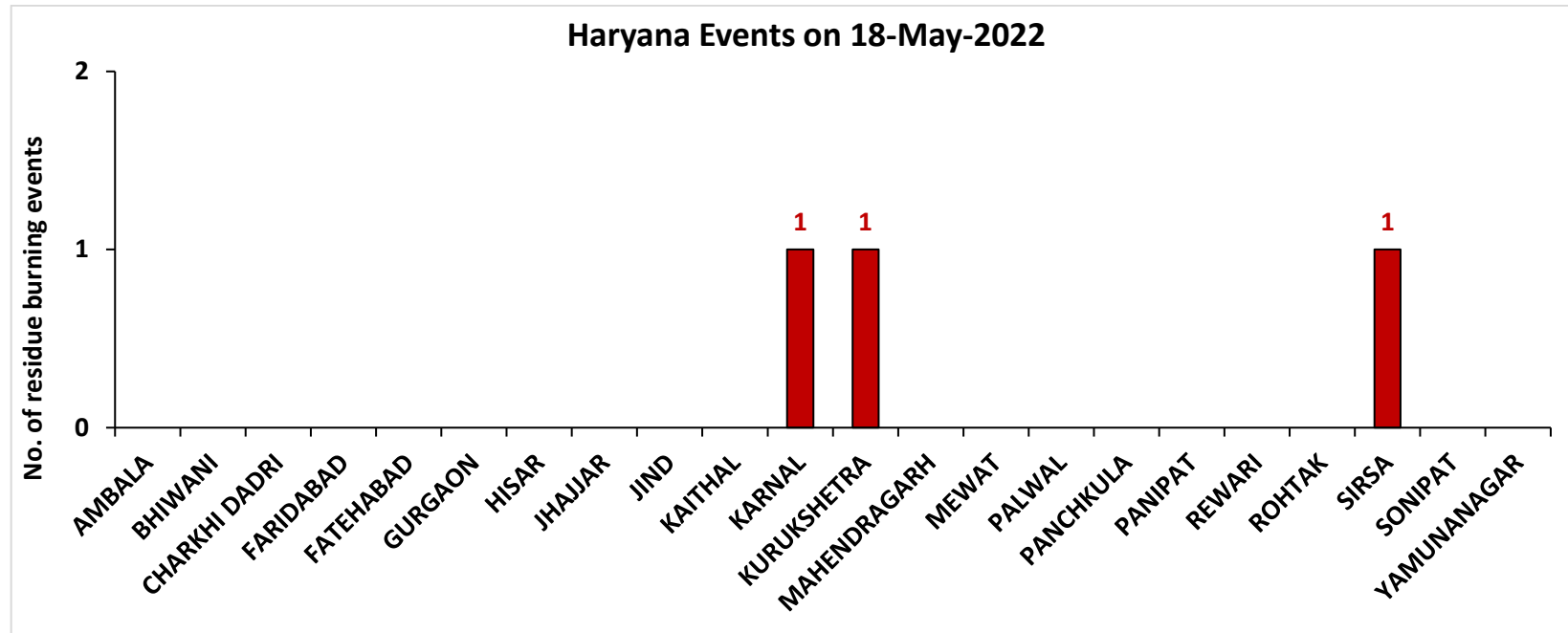
Punjab

District-wise cumulative number of wheat residue burning events in Punjab (01 Apr-18 May-2022)



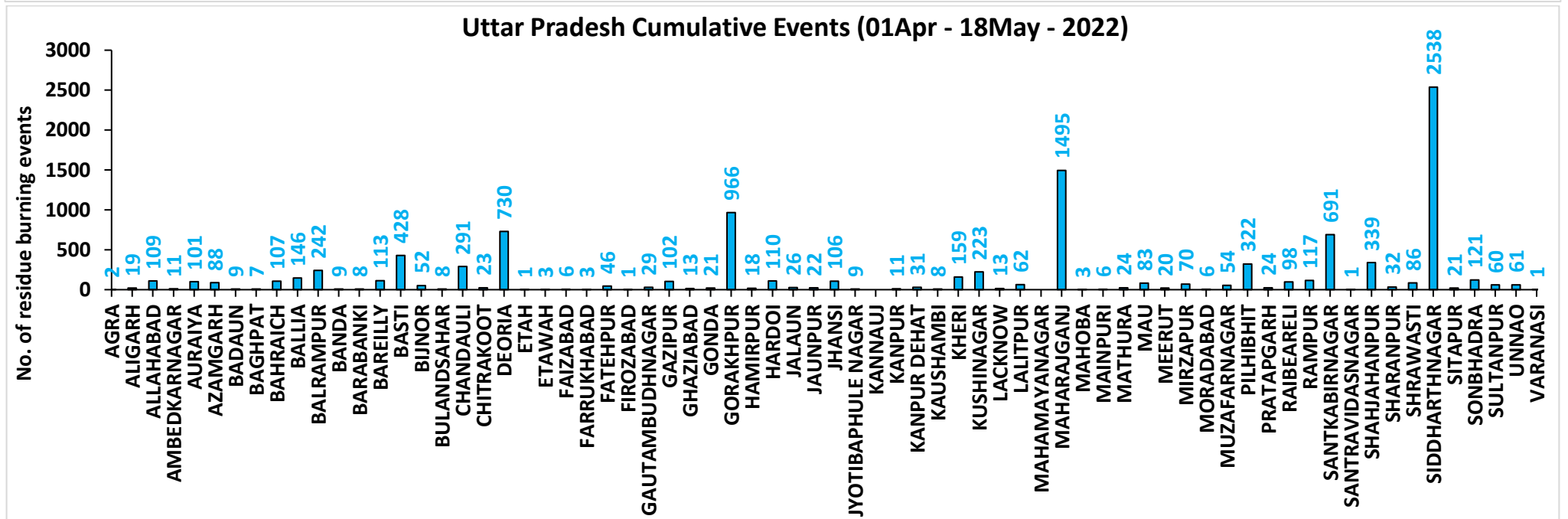
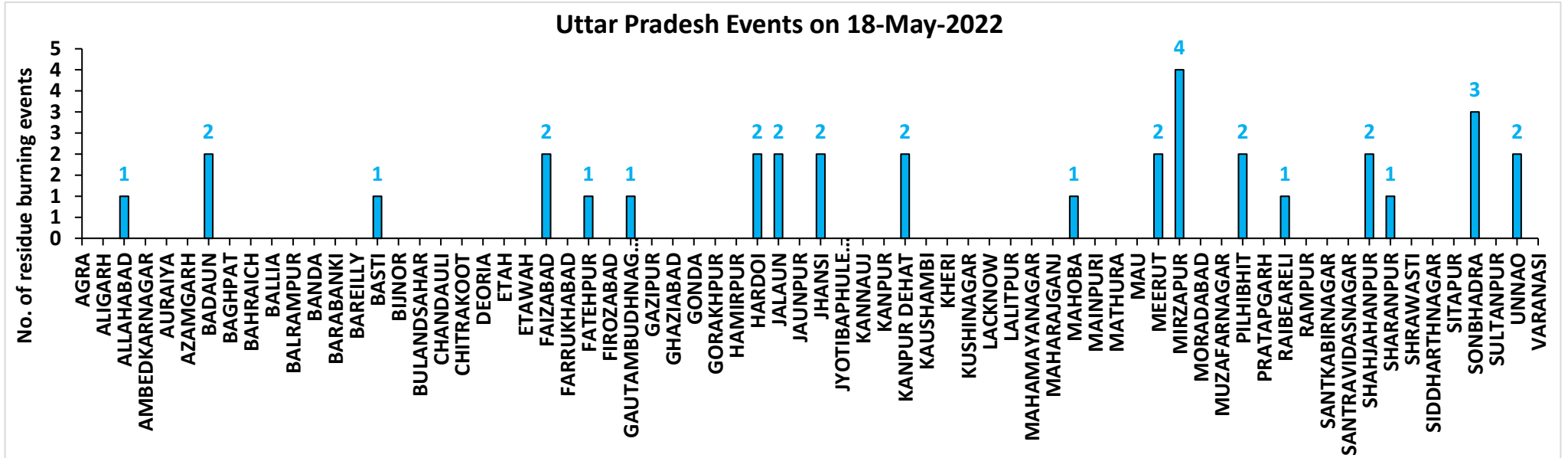
Haryana

District-wise cumulative number of residue burning events in Haryana (01 Apr-18 May-2022)



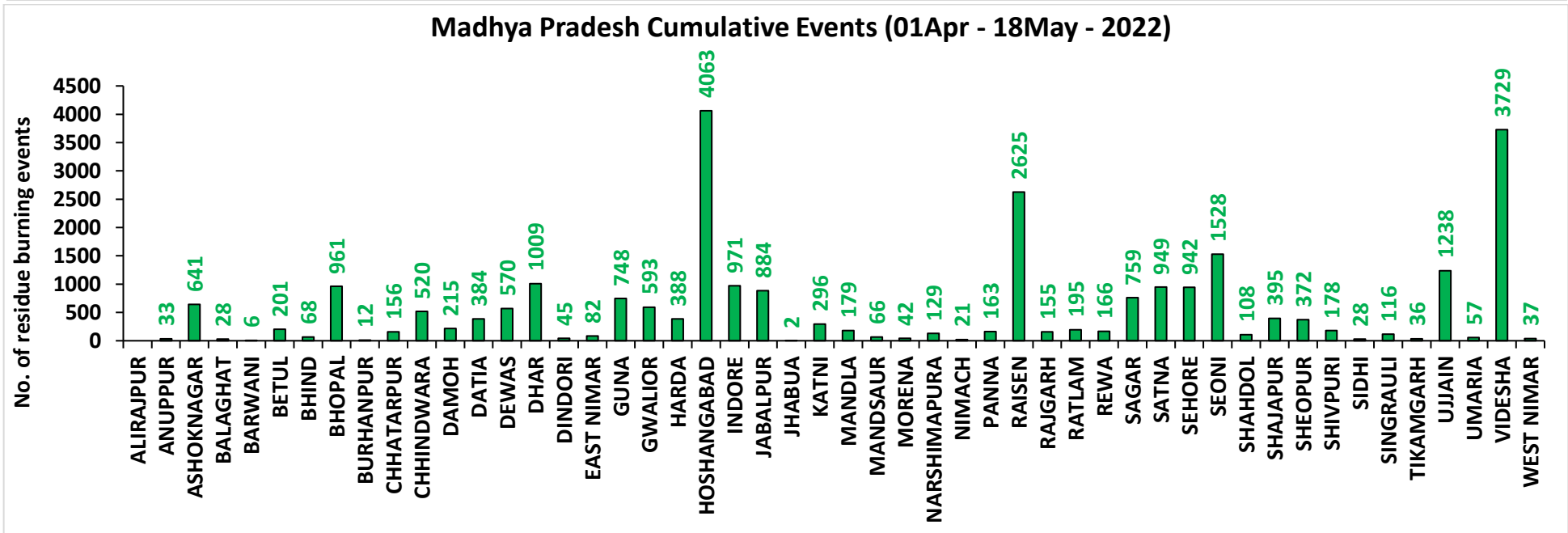
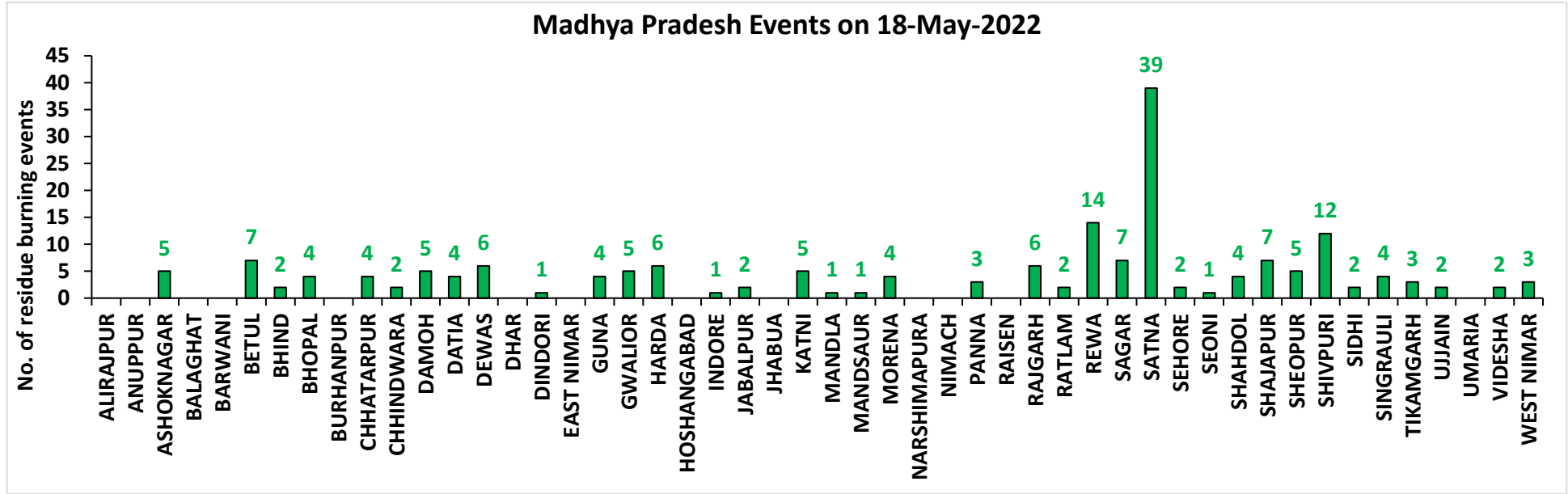
Uttar Pradesh

District-wise cumulative number of wheat residue burning events in Uttar Pradesh (01 Apr-18 May-2022)



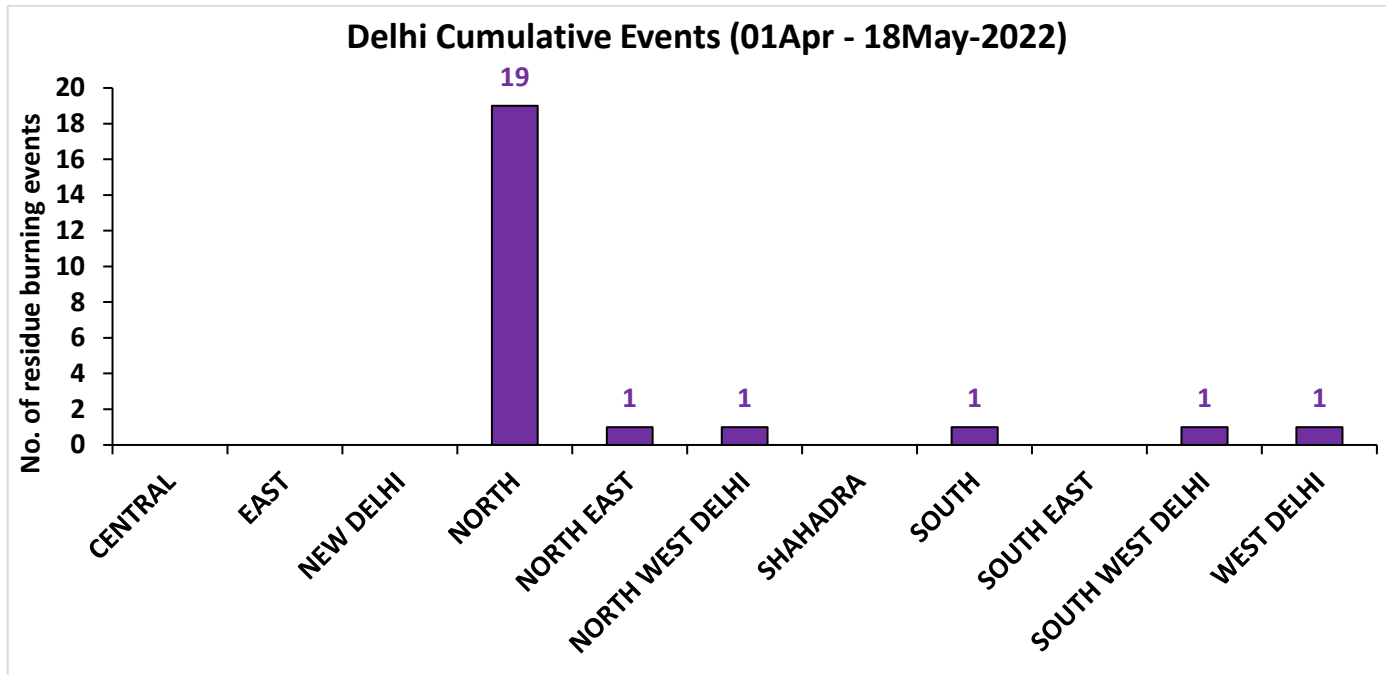
Madhya Pradesh

District-wise cumulative number of wheat residue burning events in Madhya Pradesh (01 Apr-18 May-2022)



Delhi

District-wise cumulative number of wheat residue burning events in Delhi (01 Apr-18May-2022)



District-wise cumulative number of wheat residue burning events detected in 2022
(Period: 01 April – 18 May)

(a) Punjab

District	01Apr-18 May
	Year 2022
Amritsar	1232
Barnala	471
Bathinda	828
Faridkot	521
Fatehgarh Sahib	71
Fazilka	526
Firozpur	1420
Gurdaspur	1118
Hoshiarpur	475
Jalandhar	807
Kapurthala	709
Ludhiana	933
Mansa	412
Moga	1096
Muktsar	715
Pathankot	164
Patiala	449
Rupnagar	71
Sangrur	1007
SAS NAGAR (Mohali)	26
SBS Nagar	209
Tarn Taran	1062
Total	14322

(b) Haryana

District	01Apr-18 May
	Year 2022
Ambala	92
Bhiwani	75
Charkhi Dadri	10
Faridabad	17
Fatehabad	273
Gurgaon	7
Hisar	148
Jhajjar	121
Jind	346
Kaithal	296
Karnal	382
Kurukshetra	137
Mahendragarh	0
Mewat	1
Palwal	33
Panchkula	3
Panipat	216
Rewari	3
Rohtak	210
Sirsa	184
Sonipat	274
Yamunanagar	22
Total	2850

(c) Uttar Pradesh

District	01Apr-18 May				
	Year 2022				
		GAUTAMBUDHNAGAR	29	MUZAFARNAGAR	54
		GAZIPUR	102	PILHIBHIT	322
AGRA	2	GHAZIABAD	13	PRATAPGARH	24
ALIGARH	19	GONDA	21	RAIBEARELI	98
ALLAHABAD	109	GORAKHPUR	966	RAMPUR	117
AMBEDKARNAGAR	11	HAMIRPUR	18	SANTKABIRNAGAR	691
AURAIYA	101	HARDOI	110	SANTRAVIDASNAGAR	1
AZAMGARH	88	JALAUN	26	SHAHJAHANPUR	339
BADAUN	9	JAUNPUR	22	SHARANPUR	32
BAGHPAT	7	JHANSI	106	SHRAWASTI	86
BAHRAICH	107	JYOTIBAPHULE NAGAR	9	SIDDHARTHANAGAR	2538
BALLIA	146	KANNAUJ	0	SITAPUR	21
BALRAMPUR	242	KANPUR	11	SONBHADRA	121
BANDA	9	KANPUR DEHAT	31	SULTANPUR	60
BARABANKI	8	KAUSHAMBI	8	UNNAO	61
BAREILLY	113	KHERI	159	VARANASI	1
BASTI	428	KUSHINAGAR	223	Total	10765
BIJNOR	52	LACKNOW	13		
BULANDSAHAR	8	LALITPUR	62		
CHANDAULI	291	MAHAMAYANAGAR	0		
CHITRAKOOT	23	MAHARAJGANJ	1495		
DEORIA	730	MAHOBA	3		
ETAH	1	MAINPURI	6		
ETAWAH	3	MATHURA	24		
FAIZABAD	6	MAU	83		
FARRUKHABAD	3	MEERUT	20		
FATEHPUR	46	MIRZAPUR	70		
FIROZABAD	1	MORADABAD	6		

(f) Madhya Pradesh

District	01Apr-18 May	
	Year 2022	
ALIRAJPUR	0	PANNA 163
ANUPPUR	33	RAISEN 2625
ASHOKNAGAR	641	RAJGARH 155
BALAGHAT	28	RATLAM 195
BARWANI	6	REWA 166
BETUL	201	SAGAR 759
BHIND	68	SATNA 949
BHOPAL	961	SEHORE 942
BURHANPUR	12	SEONI 1528
CHHATARPUR	156	SHAHDOL 108
CHHINDWARA	520	SHAJAPUR 395
DAMOH	215	SHEOPUR 372
DATIA	384	SHIVPURI 178
DEWAS	570	SIDHI 28
DHAR	1009	SINGRAULI 116
DINDORI	45	TIKAMGARH 36
EAST NIMAR	82	UJJAIN 1238
GUNA	748	UMARIA 57
GWALIOR	593	VIDESHA 3729
HARDA	388	WEST NIMAR 37
HOSHANGABAD	4063	Total 27089
INDORE	971	
JABALPUR	884	
JHABUA	2	
KATNI	296	
MANDLA	179	
MANDSAUR	66	
MORENA	42	
NARSHIMAPURA	129	
NIMACH	21	

(g) Delhi

District	01Apr-18 May
	2022
CENTRAL	0
EAST	0
NEW DELHI	0
NORTH	19
NORTH EAST	1
NORTH WEST DELHI	1
SHAHADRA	0
SOUTH	1
SOUTH EAST	0
SOUTH WEST DELHI	1
WEST DELHI	1
Total	24

State-wise and date-wise number of wheat residue burning events detected in 2022

(Period: 01 April – 18 May)

Date	Punjab	Haryana	UP	MP	Delhi
1-Apr	6	2	10	715	0
2-Apr	1	1	22	531	0
3-Apr	3	2	21	589	0
4-Apr	2	2	29	589	0
5-Apr	2	4	21	698	0
6-Apr	0	1	16	612	0
7-Apr	0	0	46	908	0
8-Apr	1	2	37	749	0
9-Apr	0	0	16	907	0
10-Apr	4	2	24	1217	0
11-Apr	2	2	78	1129	0
12-Apr	0	0	67	847	0
13-Apr	3	3	70	537	0
14-Apr	7	9	193	618	0
15-Apr	1	7	579	1079	1
16-Apr	13	14	609	1390	0
17-Apr	10	12	751	1441	0
18-Apr	12	17	611	972	2
19-Apr	29	23	231	748	1
20-Apr	56	14	395	856	2
21-Apr	4	0	202	379	0
22-Apr	77	17	398	839	0
23-Apr	35	22	519	524	1
24-Apr	360	96	2515	605	4
25-Apr	82	65	450	796	2
26-Apr	354	122	277	706	0
27-Apr	1064	436	436	955	5
28-Apr	965	453	249	849	0
29-Apr	802	345	213	340	2
30-Apr	662	357	166	547	1
01-May	848	56	126	437	0

02-May	1887	159	132	265	1
03-May	979	77	141	283	0
04-May	1247	72	147	188	0
05-May	796	65	64	159	0
06-May	202	2	107	166	0
07-May	827	108	52	215	0
08-May	1065	110	130	275	0
09-May	357	27	103	199	0
10-May	437	34	113	123	0
11-May	67	6	101	99	0
12-May	289	29	17	94	0
13-May	253	29	60	173	0
14-May	306	35	63	214	1
15-May	49	5	38	99	0
16-May	16	3	49	98	0
17-May	55	0	37	143	1
18-May	85	3	34	187	0
Total	14322	2850	10765	27089	24

Details of wheat residue burning events in Punjab on 18-May-2022

S. No.	District	Tehsil / Block	Satellite	Latitude	Longitude	ACQ_DATE	ACQ_TIME	Day / Night	Fire Power (W/m2)
1	AMRITSAR	AJNALA	npp	31.99110	74.84200	5/18/2022	12:51:10	D	1.00
2	AMRITSAR	CHOGAWAN	npp	31.64260	74.70310	5/18/2022	12:51:10	D	4.20
3	BATHINDA	NATHANA	npp	30.24120	75.13730	5/18/2022	12:51:10	D	1.90
4	BATHINDA	SANGAT	npp	30.05000	74.88540	5/18/2022	12:51:10	D	4.40
5	FARIDKOT	FARIDKOT	npp	30.74240	74.76490	5/18/2022	12:51:10	D	3.90
6	FARIDKOT	FARIDKOT	npp	30.74350	74.76710	5/18/2022	12:51:10	D	3.90
7	FARIDKOT	FARIDKOT	npp	30.74520	74.59190	5/18/2022	12:51:10	D	3.30
8	FATEHGARH SAHIB	KHERA	npp	30.63710	76.60370	5/18/2022	12:51:10	D	6.70
9	FAZILKA	ABOHAR	npp	30.21930	74.27830	5/18/2022	14:31:28	D	4.80
10	FAZILKA	ABOHAR	npp	30.22110	74.27540	5/18/2022	14:31:28	D	7.60
11	FAZILKA	ARNIWALA SHEIKH SUBANPUR	npp	30.34810	74.31680	5/18/2022	12:51:10	D	2.80
12	FIROZPUR	GHALL KHURD	npp	30.92100	74.74840	5/18/2022	12:51:10	D	4.20
13	FIROZPUR	MAMDOT	Aqua	30.81700	74.31500	5/18/2022	13:43:21	D	25.90
14	FIROZPUR	ZIRA	npp	30.93460	75.01050	5/18/2022	12:51:10	D	3.20
15	GURDASPUR	DINA NAGAR	npp	32.07830	75.50780	5/18/2022	12:51:10	D	9.10
16	GURDASPUR	DINA NAGAR	npp	32.18660	75.32060	5/18/2022	12:51:10	D	4.10
17	GURDASPUR	SRI HARGOBINDPUR	npp	31.69970	75.45290	5/18/2022	12:51:10	D	7.10
18	JALANDHAR	MEHATPUR	npp	30.98930	75.42250	5/18/2022	12:51:10	D	5.80
19	JALANDHAR	MEHATPUR	Aqua	31.00700	75.54700	5/18/2022	13:43:21	D	10.20
20	JALANDHAR	NAKODAR	npp	31.14500	75.55140	5/18/2022	12:51:10	D	2.00
21	JALANDHAR	NAKODAR	npp	31.14610	75.55080	5/18/2022	12:51:10	D	2.90
22	JALANDHAR	NAKODAR	npp	31.18910	75.55780	5/18/2022	12:51:10	D	3.20
23	JALANDHAR	NUR MAHAL	npp	31.00150	75.67830	5/18/2022	12:51:10	D	16.60
24	JALANDHAR	NUR MAHAL	npp	31.03920	75.57220	5/18/2022	12:51:10	D	4.00
25	JALANDHAR	NUR MAHAL	npp	31.07610	75.63350	5/18/2022	12:51:10	D	8.90
26	JALANDHAR	NUR MAHAL	npp	31.08890	75.55510	5/18/2022	12:51:10	D	3.10
27	JALANDHAR	NUR MAHAL	Aqua	30.99800	75.61200	5/18/2022	13:43:21	D	19.80
28	JALANDHAR	NUR MAHAL	Aqua	30.99900	75.62300	5/18/2022	13:43:21	D	12.40

29	JALANDHAR	PHILLAUR	npp	31.01410	75.93150	5/18/2022	12:51:10	D	12.30
30	JALANDHAR	PHILLAUR	npp	31.10590	75.84960	5/18/2022	12:51:10	D	6.70
31	JALANDHAR	PHILLAUR	npp	31.10730	75.85570	5/18/2022	12:51:10	D	6.70
32	JALANDHAR	PHILLAUR	npp	31.10750	75.85110	5/18/2022	12:51:10	D	9.20
33	JALANDHAR	PHILLAUR	Aqua	31.04200	75.86000	5/18/2022	13:43:21	D	9.60
34	JALANDHAR	PHILLAUR	Aqua	31.04300	75.87000	5/18/2022	13:43:21	D	12.80
35	JALANDHAR	RURKA KALAN	npp	31.11080	75.64970	5/18/2022	12:51:10	D	11.30
36	JALANDHAR	RURKA KALAN	npp	31.11220	75.65590	5/18/2022	12:51:10	D	11.30
37	JALANDHAR	RURKA KALAN	npp	31.11710	75.65450	5/18/2022	12:51:10	D	11.30
38	JALANDHAR	RURKA KALAN	npp	31.20380	75.68740	5/18/2022	12:51:10	D	5.90
39	JALANDHAR	SHAHKOT	npp	31.09300	75.32570	5/18/2022	12:51:10	D	3.60
40	JALANDHAR	SHAHKOT	npp	31.09340	75.32570	5/18/2022	12:51:10	D	4.20
41	KAPURTHALA	KAPURTHALA	npp	31.40400	75.28870	5/18/2022	12:51:10	D	5.00
42	KAPURTHALA	KAPURTHALA	npp	31.40420	75.28730	5/18/2022	12:51:10	D	5.10
43	KAPURTHALA	PHAGWARA	npp	31.26490	75.81990	5/18/2022	12:51:10	D	7.60
44	KAPURTHALA	SULTANPUR LODHI	npp	31.18170	75.09960	5/18/2022	12:51:10	D	1.80
45	LUDHIANA	LUDHIANA-1	npp	30.85800	75.77780	5/18/2022	12:51:10	D	5.10
46	LUDHIANA	LUDHIANA-1	npp	30.86080	75.77900	5/18/2022	12:51:10	D	4.80
47	LUDHIANA	LUDHIANA-2	npp	30.95430	76.10580	5/18/2022	12:51:10	D	5.10
48	LUDHIANA	LUDHIANA-2	npp	30.95490	76.10770	5/18/2022	12:51:10	D	4.60
49	LUDHIANA	LUDHIANA-2	npp	30.95900	76.10440	5/18/2022	12:51:10	D	5.10
50	LUDHIANA	LUDHIANA-2	npp	30.95970	76.10630	5/18/2022	12:51:10	D	4.60
51	LUDHIANA	SIDHWAN BET	npp	30.94930	75.65590	5/18/2022	14:31:28	D	4.70
52	LUDHIANA	SIDHWAN BET	npp	30.98440	75.42400	5/18/2022	12:51:10	D	3.50
53	MANSA	BHIKHI	npp	30.09120	75.41520	5/18/2022	12:51:10	D	1.70
54	MANSA	BHIKHI	npp	30.09200	75.41860	5/18/2022	12:51:10	D	1.70
55	MANSA	BUDHLADA	npp	29.81190	75.43770	5/18/2022	12:51:10	D	2.70
56	MANSA	BUDHLADA	npp	29.94650	75.53970	5/18/2022	12:51:10	D	2.20
57	MANSA	MANSA	npp	30.05850	75.29780	5/18/2022	12:51:10	D	1.60
58	MOGA	KOT ISE KHAN AT DHARAMKOT	npp	31.06900	75.15770	5/18/2022	12:51:10	D	4.60
59	MOGA	NIHAL SINGH	npp	30.59560	75.37540	5/18/2022	12:51:10	D	5.10
60	MUKTSAR	KOT BHAI AT GIDDERBAHA	npp	30.35150	74.60330	5/18/2022	12:51:10	D	4.70

61	MUKTSAR	LAMBI	npp	30.11300	74.51680	5/18/2022	14:31:28	D	4.60
62	MUKTSAR	MALOUT	npp	30.15320	74.50090	5/18/2022	14:31:28	D	3.30
63	MUKTSAR	MALOUT	npp	30.31410	74.34000	5/18/2022	12:51:10	D	4.90
64	MUKTSAR	MALOUT	npp	30.31630	74.33760	5/18/2022	12:51:10	D	5.10
65	MUKTSAR	MUKTSAR	npp	30.42970	74.40940	5/18/2022	12:51:10	D	3.60
66	MUKTSAR	MUKTSAR	npp	30.43390	74.36790	5/18/2022	12:51:10	D	2.60
67	MUKTSAR	MUKTSAR	npp	30.43610	74.36640	5/18/2022	12:51:10	D	3.10
68	PATIALA	NABHA	npp	30.38850	76.02910	5/18/2022	12:51:10	D	4.30
69	PATIALA	NABHA	npp	30.51230	76.09890	5/18/2022	12:51:10	D	2.70
70	PATIALA	NABHA	npp	30.51390	76.10020	5/18/2022	12:51:10	D	4.30
71	PATIALA	PATRAN	npp	29.99950	76.10990	5/18/2022	12:51:10	D	4.30
72	PATIALA	RAJPURA	npp	30.53910	76.65870	5/18/2022	12:51:10	D	4.10
73	PATIALA	SANAUR	npp	30.27550	76.33350	5/18/2022	12:51:10	D	8.30
74	PATIALA	SHAMBU KALAN	Aqua	30.45200	76.73100	5/18/2022	13:43:21	D	8.80
75	RUPNAGAR	ANANDPUR SAHIB	npp	31.32920	76.37250	5/18/2022	12:51:10	D	8.40
76	RUPNAGAR	ANANDPUR SAHIB	npp	31.33070	76.37090	5/18/2022	12:51:10	D	8.40
77	RUPNAGAR	ANANDPUR SAHIB	Aqua	31.20900	76.48300	5/18/2022	13:43:21	D	9.40
78	RUPNAGAR	NURPUR BEDI	npp	31.18510	76.50740	5/18/2022	12:51:10	D	5.40
79	RUPNAGAR	NURPUR BEDI	npp	31.19710	76.47410	5/18/2022	12:51:10	D	4.30
80	SANGRUR	BHAWANIGARH	npp	30.31490	76.11000	5/18/2022	12:51:10	D	7.90
81	SANGRUR	DHURI	npp	30.40480	75.95640	5/18/2022	12:51:10	D	7.00
82	SANGRUR	DIRBA	npp	30.04570	75.94970	5/18/2022	12:51:10	D	8.80
83	SANGRUR	DIRBA	npp	30.04690	75.94750	5/18/2022	12:51:10	D	9.60
84	SANGRUR	MALERKOTLA-1	npp	30.56180	76.07120	5/18/2022	12:51:10	D	5.10
85	TARN TARAN	KHADUR SAHIB	npp	31.43930	75.03420	5/18/2022	12:51:10	D	3.70

Details of wheat residue burning events in Haryana on 18-May-2022

S. No.	District	Tehsil / Block	Satellite	Latitude	Longitude	ACQ_DATE	ACQ_TIME	Day / Night	Fire Power (W/m ²)
1	KARNAL	KARNAL	Aqua	29.74500	76.87400	5/18/2022	13:43:21	D	13.50
2	KURUKSHETRA	ISMAILABAD	npp	30.09540	76.68810	5/18/2022	12:51:10	D	5.30
3	SIRSA	BARAGUNDA	npp	29.79250	75.19550	5/18/2022	12:51:10	D	6.10

Details of wheat residue burning events in Uttar Pradesh on 18-May-2022

S. No.	District	Tehsil / Block	Satellite	Latitude	Longitude	ACQ_DATE	ACQ_TIME	Day / Night	Fire Power (W/m ²)
1	ALLAHABAD	BARA	npp	25.07530	81.70440	5/18/2022	01:40:28	N	1.00
2	BADAUN	DATAGANJ	npp	27.84750	79.35140	5/18/2022	12:51:10	D	5.10
3	BADAUN	DATAGANJ	npp	27.85170	79.35040	5/18/2022	12:51:10	D	4.80
4	BASTI	BASTI	npp	26.75690	82.90780	5/18/2022	01:40:28	N	0.80
5	FAIZABAD	FAIZSBAD	npp	26.63480	82.29760	5/18/2022	01:40:28	N	8.90
6	FAIZABAD	FAIZSBAD	Aqua	26.63900	82.29400	5/18/2022	13:43:21	D	16.90
7	FATEHPUR	FATEHPUR	npp	25.74990	80.90410	5/18/2022	01:40:28	N	0.80
8	GAUTAMBUDHNAGAR	JEVAR	npp	28.18340	77.68000	5/18/2022	12:51:10	D	4.20
9	HARDOI	BILGRAM	npp	27.03780	80.17510	5/18/2022	12:51:10	D	5.90
10	HARDOI	SHAHABAD	npp	27.53870	79.90540	5/18/2022	12:51:10	D	9.00
11	JALAUN	KONCH	npp	25.83630	79.20380	5/18/2022	12:51:10	D	12.40
12	JALAUN	KONCH	npp	26.06320	79.08520	5/18/2022	12:51:10	D	7.50
13	JHANSI	JHANSI	npp	25.57280	78.66700	5/18/2022	01:40:28	N	4.00
14	JHANSI	JHANSI	Aqua	25.40200	78.43000	5/18/2022	13:43:21	D	11.40
15	KANPUR DEHAT	SIKANDRA	npp	26.42550	79.59710	5/18/2022	12:51:10	D	8.00
16	KANPUR DEHAT	SIKANDRA	npp	26.42820	79.59760	5/18/2022	12:51:10	D	7.60
17	MAHOBA	KULPAHAR	npp	25.13290	79.41310	5/18/2022	12:51:10	D	20.10
18	MEERUT	MAWANA	npp	28.95770	78.03000	5/18/2022	12:51:10	D	4.20
19	MEERUT	MAWANA	npp	28.96060	78.03170	5/18/2022	12:51:10	D	3.00
20	MIRZAPUR	CHUNAR	npp	25.13380	82.89660	5/18/2022	01:40:28	N	2.00

21	MIRZAPUR	LALGANJ	npp	24.92530	82.26780	5/18/2022	01:40:28	N	2.10
22	MIRZAPUR	MARIHAN	npp	24.90060	82.69980	5/18/2022	01:40:28	N	3.90
23	MIRZAPUR	MARIHAN	npp	24.90320	82.69930	5/18/2022	01:40:28	N	5.10
24	PILHIBHIT	BISALPUR	npp	28.29280	79.71780	5/18/2022	12:51:10	D	7.40
25	PILHIBHIT	PILHIBHIT	npp	28.57090	79.93630	5/18/2022	12:51:10	D	6.70
26	RAIBEARELI	RAEBARELI	npp	26.38390	81.10260	5/18/2022	01:40:28	N	5.10
27	SHAHJAHANPUR	SHAHJAHANPUR	npp	27.80630	79.64730	5/18/2022	01:40:28	N	3.00
28	SHAHJAHANPUR	SHAHJAHANPUR	npp	27.80660	79.64550	5/18/2022	01:40:28	N	3.80
29	SHARANPUR	BEHAT	npp	30.22030	77.51270	5/18/2022	12:51:10	D	7.40
30	SONBHADRA	DUDHI	npp	24.26060	82.77800	5/18/2022	12:51:10	D	12.90
31	SONBHADRA	REBUTSHGANJ	npp	24.69560	83.03610	5/18/2022	01:40:28	N	4.10
32	SONBHADRA	REBUTSHGANJ	npp	24.71060	83.02720	5/18/2022	01:40:28	N	5.20
33	UNNAO	SAFIPUR	npp	26.69210	80.23560	5/18/2022	12:51:10	D	5.90
34	UNNAO	UNNAO	npp	26.57530	80.38070	5/18/2022	01:40:28	N	2.00

Details of wheat residue burning events in Madhya Pradesh on 18-May-2022

S. No.	District	Tehsil / Block	Satellite	Latitude	Longitude	ACQ_DATE	ACQ_TIME	Day / Night	Fire Power (W/m ²)
1	ASHOKNAGAR	ASHOKNAGAR	npp	24.45250	77.59760	5/18/2022	12:51:10	D	4.00
2	ASHOKNAGAR	ASHOKNAGAR	npp	24.45320	77.60080	5/18/2022	12:51:10	D	4.00
3	ASHOKNAGAR	ISAGARH	npp	24.71800	77.83950	5/18/2022	12:51:10	D	19.50
4	ASHOKNAGAR	MUNGAOLI	npp	24.28280	78.04190	5/18/2022	01:40:28	N	2.00
5	ASHOKNAGAR	MUNGAOLI	npp	24.28350	78.03650	5/18/2022	01:40:28	N	2.40
6	BETUL	AMLAL	npp	22.00590	78.26510	5/18/2022	12:51:10	D	5.20
7	BETUL	AMLAL	npp	22.00940	78.26410	5/18/2022	12:51:10	D	8.30
8	BETUL	AMLAL	npp	22.01010	78.26730	5/18/2022	12:51:10	D	6.70
9	BETUL	AMLAL	npp	22.01090	78.26380	5/18/2022	12:51:10	D	4.10
10	BETUL	BETUL	npp	22.03730	77.69660	5/18/2022	01:40:28	N	0.70
11	BETUL	MULTAI	npp	21.85580	78.11800	5/18/2022	12:51:10	D	5.10
12	BETUL	MULTAI	npp	21.85650	78.12120	5/18/2022	12:51:10	D	5.10
13	BHIND	GOHAD	npp	26.45600	78.34860	5/18/2022	12:51:10	D	13.50
14	BHIND	GOHAD	Aqua	26.45000	78.35500	5/18/2022	13:43:21	D	42.00
15	BHOPAL	BERASIYA	npp	23.46510	77.41450	5/18/2022	12:51:10	D	6.80
16	BHOPAL	BERASIYA	Aqua	23.61300	77.45400	5/18/2022	13:43:21	D	16.00
17	BHOPAL	HUZUR	npp	23.36500	77.24560	5/18/2022	01:40:28	N	1.50
18	BHOPAL	HUZUR	npp	23.39620	77.54590	5/18/2022	12:51:10	D	6.40
19	CHHATARPUR	BARAMALEHRA	npp	24.49340	79.14620	5/18/2022	12:51:10	D	14.20
20	CHHATARPUR	BARAMALEHRA	npp	24.49370	79.14380	5/18/2022	12:51:10	D	6.80
21	CHHATARPUR	BARAMALEHRA	npp	24.49470	79.14890	5/18/2022	12:51:10	D	6.80
22	CHHATARPUR	CHHATARPUR	npp	24.87100	79.51230	5/18/2022	12:51:10	D	28.20
23	CHHINDWARA	AMARWARA	npp	22.67260	79.27190	5/18/2022	01:40:28	N	2.10
24	CHHINDWARA	CHHINDWARA	npp	22.05300	79.02210	5/18/2022	01:40:28	N	2.90
25	DAMOH	DAMOH	npp	23.80210	79.40160	5/18/2022	12:51:10	D	5.40
26	DAMOH	HATTA	npp	24.12180	79.76220	5/18/2022	12:51:10	D	12.30
27	DAMOH	JABERA	npp	23.66790	79.69650	5/18/2022	12:51:10	D	1.90
28	DAMOH	JABERA	Terra	23.67900	79.69400	5/18/2022	10:34:07	D	9.80
29	DAMOH	PATHARIA	npp	23.90470	79.24390	5/18/2022	01:40:28	N	4.30

30	DATIA	BHANDER	npp	25.57210	78.66540	5/18/2022	01:40:28	N	3.60
31	DATIA	DATIA	npp	25.63200	78.53910	5/18/2022	01:40:28	N	2.00
32	DATIA	DATIA	npp	25.75750	78.41930	5/18/2022	01:40:28	N	3.70
33	DATIA	DATIA	Aqua	25.58600	78.62200	5/18/2022	13:43:21	D	12.50
34	DEWAS	BAGLI	npp	22.80370	76.27590	5/18/2022	14:31:28	D	6.30
35	DEWAS	BAGLI	npp	22.87930	76.25330	5/18/2022	01:40:28	N	1.00
36	DEWAS	BAGLI	npp	22.88670	76.29160	5/18/2022	12:51:10	D	2.30
37	DEWAS	BAGLI	npp	22.88990	76.29090	5/18/2022	12:51:10	D	2.10
38	DEWAS	KHATEGOAN	npp	22.52380	76.84490	5/18/2022	01:40:28	N	3.00
39	DEWAS	SONKACH	npp	23.00180	76.41980	5/18/2022	01:40:28	N	0.80
40	DINDORI	SHAPURA	npp	23.16030	80.74210	5/18/2022	12:51:10	D	9.20
41	GUNA	GUNA	npp	24.73620	77.06820	5/18/2022	01:40:28	N	1.30
42	GUNA	GUNA	npp	24.74040	77.06880	5/18/2022	01:40:28	N	1.30
43	GUNA	GUNA	npp	24.74090	77.06450	5/18/2022	01:40:28	N	0.70
44	GUNA	RAGHOGARH	npp	24.10990	77.24940	5/18/2022	12:51:10	D	4.20
45	GWALIOR	BHITARWAR	npp	25.76800	78.12830	5/18/2022	01:40:28	N	6.50
46	GWALIOR	BHITARWAR	npp	25.77200	78.12890	5/18/2022	01:40:28	N	6.50
47	GWALIOR	BHITARWAR	npp	25.78580	77.97630	5/18/2022	01:40:28	N	3.20
48	GWALIOR	BHITARWAR	npp	25.78990	77.97690	5/18/2022	01:40:28	N	2.70
49	GWALIOR	BHITARWAR	npp	25.85560	78.09250	5/18/2022	12:51:10	D	18.30
50	HARDA	HARDA	npp	22.28290	76.99600	5/18/2022	01:40:28	N	1.40
51	HARDA	HARDA	npp	22.38960	76.89690	5/18/2022	01:40:28	N	1.00
52	HARDA	KHIRKIYAN	npp	22.17010	76.87170	5/18/2022	01:40:28	N	0.90
53	HARDA	KHIRKIYAN	npp	22.17430	76.87230	5/18/2022	01:40:28	N	1.20
54	HARDA	TIMURNI	npp	22.54020	77.18410	5/18/2022	01:40:28	N	2.60
55	HARDA	TIMURNI	npp	22.54430	77.18470	5/18/2022	01:40:28	N	2.60
56	INDORE	SANWER	npp	22.82260	75.73350	5/18/2022	14:31:28	D	3.40
57	JABALPUR	PATAN	npp	23.27540	79.67760	5/18/2022	12:51:10	D	10.00
58	JABALPUR	PATAN	npp	23.27650	79.68060	5/18/2022	12:51:10	D	5.70
59	KATNI	BAHURIBAND	npp	23.60690	80.12890	5/18/2022	01:40:28	N	0.90
60	KATNI	BAHURIBAND	Terra	23.61000	80.14000	5/18/2022	10:34:07	D	31.90
61	KATNI	BIJERAGHOGARH	Terra	23.97600	80.55500	5/18/2022	10:34:07	D	9.50
62	KATNI	MURBARA	npp	23.69210	80.47630	5/18/2022	12:51:10	D	7.30

63	KATNI	RITHI	npp	23.80090	80.22600	5/18/2022	12:51:10	D	4.80
64	MANDLA	NAINPUR	npp	22.51220	80.03900	5/18/2022	01:40:28	N	0.50
65	MANDSAUR	BHANPURA	npp	24.44590	75.74890	5/18/2022	01:40:28	N	3.20
66	MORENA	JORA	npp	26.40390	77.71070	5/18/2022	12:51:10	D	15.30
67	MORENA	JORA	Aqua	26.41200	77.73300	5/18/2022	13:43:21	D	19.10
68	MORENA	JORA	Aqua	26.41400	77.74400	5/18/2022	13:43:21	D	17.70
69	MORENA	SABALGARH	npp	26.32780	77.49740	5/18/2022	01:40:28	N	3.80
70	PANNA	GUNAU	npp	24.40640	80.27280	5/18/2022	12:51:10	D	15.40
71	PANNA	GUNAU	Terra	24.43400	80.15500	5/18/2022	10:34:07	D	20.00
72	PANNA	PAWAI	npp	24.26650	80.07630	5/18/2022	12:51:10	D	13.20
73	RAJGARH	NARSINGHAR	npp	23.67690	76.90490	5/18/2022	01:40:28	N	1.30
74	RAJGARH	NARSINGHAR	npp	23.69370	76.90720	5/18/2022	01:40:28	N	1.90
75	RAJGARH	NARSINGHAR	npp	23.69540	77.14200	5/18/2022	01:40:28	N	3.60
76	RAJGARH	SARANGPUR	npp	23.55790	76.45890	5/18/2022	01:40:28	N	1.10
77	RAJGARH	SARANGPUR	npp	23.59410	76.50200	5/18/2022	01:40:28	N	1.80
78	RAJGARH	SARANGPUR	npp	23.64510	76.58950	5/18/2022	01:40:28	N	6.80
79	RATLAM	JAURA	npp	23.71250	75.09870	5/18/2022	12:51:10	D	2.70
80	RATLAM	JAURA	npp	23.71410	75.09460	5/18/2022	12:51:10	D	3.80
81	REWA	HUZUR	npp	24.51270	81.20770	5/18/2022	01:40:28	N	0.80
82	REWA	HUZUR	npp	24.51430	81.26980	5/18/2022	01:40:28	N	0.30
83	REWA	HUZUR	npp	24.56780	81.22240	5/18/2022	12:51:10	D	5.30
84	REWA	HUZUR	npp	24.57070	81.22080	5/18/2022	12:51:10	D	12.80
85	REWA	HUZUR	npp	24.57180	81.22150	5/18/2022	12:51:10	D	5.30
86	REWA	RAJPUR KUCHULIYAN	npp	24.59390	81.63350	5/18/2022	01:40:28	N	0.50
87	REWA	RAJPUR KUCHULIYAN	npp	24.60460	81.63130	5/18/2022	01:40:28	N	0.80
88	REWA	SIRMAUR	npp	24.69540	81.19560	5/18/2022	01:40:28	N	2.50
89	REWA	SIRMAUR	npp	24.84540	81.43900	5/18/2022	01:40:28	N	2.80
90	REWA	SIRMAUR	npp	24.87770	81.15990	5/18/2022	12:51:10	D	8.60
91	REWA	TEONTHAR	npp	24.99370	81.66690	5/18/2022	01:40:28	N	1.50
92	REWA	TEONTHAR	npp	25.02620	81.70510	5/18/2022	01:40:28	N	0.50
93	REWA	TEONTHAR	npp	25.15650	81.57590	5/18/2022	01:40:28	N	2.60
94	REWA	TEONTHAR	Aqua	24.97900	81.80100	5/18/2022	13:43:21	D	17.20

95	SAGAR	BANDA	npp	23.90480	78.94390	5/18/2022	01:40:28	N	6.10
96	SAGAR	BANDA	npp	23.99320	78.79520	5/18/2022	12:51:10	D	11.00
97	SAGAR	BANDA	npp	24.34270	79.12650	5/18/2022	01:40:28	N	6.90
98	SAGAR	RAHAT GARH	npp	23.77390	78.32490	5/18/2022	12:51:10	D	9.90
99	SAGAR	RAHAT GARH	Terra	23.88100	78.53900	5/18/2022	10:34:07	D	16.00
100	SAGAR	SAGAR	npp	23.80170	78.52450	5/18/2022	12:51:10	D	15.60
101	SAGAR	SAGAR	npp	23.80180	78.52070	5/18/2022	12:51:10	D	17.60
102	SATNA	AMARPATAN	npp	24.36430	81.12730	5/18/2022	01:40:28	N	2.30
103	SATNA	AMARPATAN	npp	24.44160	81.12280	5/18/2022	01:40:28	N	0.70
104	SATNA	MAIHAR	npp	24.09210	80.75820	5/18/2022	12:51:10	D	10.50
105	SATNA	MAIHAR	npp	24.14570	80.87660	5/18/2022	01:40:28	N	3.20
106	SATNA	MAIHAR	npp	24.26150	80.80500	5/18/2022	12:51:10	D	12.30
107	SATNA	MAIHAR	npp	24.30780	80.92160	5/18/2022	12:51:10	D	7.60
108	SATNA	MAIHAR	npp	24.31190	80.92060	5/18/2022	12:51:10	D	7.60
109	SATNA	MAIHAR	npp	24.31270	80.92460	5/18/2022	12:51:10	D	7.60
110	SATNA	MAIHAR	npp	24.31470	80.86960	5/18/2022	12:51:10	D	13.00
111	SATNA	MAIHAR	npp	24.31720	80.86050	5/18/2022	12:51:10	D	8.90
112	SATNA	MAIHAR	npp	24.31800	80.86460	5/18/2022	12:51:10	D	8.90
113	SATNA	MAIHAR	npp	24.32570	80.92580	5/18/2022	12:51:10	D	22.80
114	SATNA	MAIHAR	npp	24.33630	80.82650	5/18/2022	12:51:10	D	11.10
115	SATNA	MAIHAR	Terra	24.31400	80.91900	5/18/2022	10:34:07	D	8.50
116	SATNA	NAGOD	npp	24.54320	80.60800	5/18/2022	01:40:28	N	3.50
117	SATNA	RAGURAJNAGAR	npp	24.59130	80.90770	5/18/2022	12:51:10	D	9.10
118	SATNA	RAGURAJNAGAR	npp	24.65650	80.94660	5/18/2022	12:51:10	D	11.80
119	SATNA	RAGURAJNAGAR	npp	24.66540	80.94860	5/18/2022	12:51:10	D	21.90
120	SATNA	RAGURAJNAGAR	npp	24.70220	80.85320	5/18/2022	12:51:10	D	5.70
121	SATNA	RAMPURBAGHLEAN	npp	24.37670	80.94750	5/18/2022	12:51:10	D	22.80
122	SATNA	RAMPURBAGHLEAN	npp	24.39040	81.01980	5/18/2022	01:40:28	N	0.90
123	SATNA	RAMPURBAGHLEAN	npp	24.45750	80.97870	5/18/2022	12:51:10	D	8.90
124	SATNA	RAMPURBAGHLEAN	npp	24.50900	81.04900	5/18/2022	12:51:10	D	9.90
125	SATNA	RAMPURBAGHLEAN	npp	24.52040	81.05550	5/18/2022	01:40:28	N	1.00
126	SATNA	RAMPURBAGHLEAN	npp	24.52070	81.02180	5/18/2022	12:51:10	D	6.50
127	SATNA	RAMPURBAGHLEAN	npp	24.52140	81.02570	5/18/2022	12:51:10	D	6.50

128	SATNA	RAMPURBAGHLEAN	npp	24.55130	81.06080	5/18/2022	01:40:28	N	0.50
129	SATNA	RAMPURBAGHLEAN	npp	24.59300	81.06370	5/18/2022	01:40:28	N	1.10
130	SATNA	RAMPURBAGHLEAN	npp	24.65860	81.11590	5/18/2022	01:40:28	N	0.90
131	SATNA	RAMPURBAGHLEAN	npp	24.74520	81.09170	5/18/2022	01:40:28	N	0.80
132	SATNA	UCHAHAR	npp	24.33120	80.75550	5/18/2022	12:51:10	D	9.00
133	SATNA	UCHAHAR	npp	24.45800	80.84930	5/18/2022	12:51:10	D	9.60
134	SATNA	UCHAHAR	npp	24.46210	80.84830	5/18/2022	12:51:10	D	4.60
135	SATNA	UCHAHAR	npp	24.49810	80.75710	5/18/2022	12:51:10	D	14.00
136	SATNA	UCHAHAR	npp	24.51370	80.74920	5/18/2022	12:51:10	D	12.30
137	SATNA	UCHAHAR	npp	24.51450	80.75330	5/18/2022	12:51:10	D	12.30
138	SATNA	UCHAHAR	npp	24.51530	80.75730	5/18/2022	12:51:10	D	36.70
139	SATNA	UCHAHAR	npp	24.51860	80.75230	5/18/2022	12:51:10	D	15.00
140	SATNA	UCHAHAR	Terra	24.51000	80.82900	5/18/2022	10:34:07	D	20.80
141	SEHORE	AASHTA	npp	23.05940	76.84040	5/18/2022	01:40:28	N	0.90
142	SEHORE	SEHORE	npp	23.36580	76.99610	5/18/2022	01:40:28	N	2.70
143	SEONI	KEWLARI	npp	22.41660	79.97820	5/18/2022	01:40:28	N	0.70
144	SHAH DOL	BEOHARI	npp	24.03860	81.28580	5/18/2022	12:51:10	D	8.00
145	SHAH DOL	BEOHARI	npp	24.03870	81.28490	5/18/2022	12:51:10	D	7.20
146	SHAH DOL	JASINGH NAGAR	npp	23.74650	81.29020	5/18/2022	12:51:10	D	20.10
147	SHAH DOL	SOHAGPUR	npp	23.62640	81.32120	5/18/2022	12:51:10	D	8.30
148	SHAJAPUR	AGAR	npp	23.58310	76.17980	5/18/2022	12:51:10	D	1.10
149	SHAJAPUR	AGAR	npp	23.58860	76.17830	5/18/2022	12:51:10	D	1.10
150	SHAJAPUR	MOMAN BARODIY	npp	23.61520	76.23300	5/18/2022	01:40:28	N	2.60
151	SHAJAPUR	MOMAN BARODIY	npp	23.61540	76.23030	5/18/2022	01:40:28	N	2.00
152	SHAJAPUR	SHAJAPUR	npp	23.34840	76.38770	5/18/2022	12:51:10	D	4.10
153	SHAJAPUR	SHAJAPUR	npp	23.34890	76.38760	5/18/2022	12:51:10	D	4.10
154	SHAJAPUR	SUJALPUR	npp	23.28380	76.67700	5/18/2022	01:40:28	N	0.70
155	SHEOPUR	KARAHAL	Terra	25.37300	76.86600	5/18/2022	10:34:07	D	39.70
156	SHEOPUR	SHEOPUR	npp	25.45730	76.71820	5/18/2022	12:51:10	D	4.70
157	SHEOPUR	SHEOPUR	npp	25.45810	76.72170	5/18/2022	12:51:10	D	4.70
158	SHEOPUR	SHEOPUR	npp	25.50340	76.58310	5/18/2022	12:51:10	D	10.90
159	SHEOPUR	SHEOPUR	npp	25.68360	76.58940	5/18/2022	01:40:28	N	1.50
160	SHIVPURI	KOLARAS	Terra	25.07000	77.72700	5/18/2022	10:34:07	D	43.20

161	SHIVPURI	NARWAR	npp	25.58430	78.04400	5/18/2022	01:40:28	N	4.00
162	SHIVPURI	NARWAR	npp	25.70030	77.99320	5/18/2022	12:51:10	D	40.00
163	SHIVPURI	NARWAR	npp	25.71100	77.99640	5/18/2022	12:51:10	D	36.80
164	SHIVPURI	NARWAR	npp	25.71220	78.00210	5/18/2022	12:51:10	D	17.50
165	SHIVPURI	NARWAR	npp	25.71450	77.98960	5/18/2022	12:51:10	D	36.80
166	SHIVPURI	NARWAR	npp	25.71700	78.00090	5/18/2022	12:51:10	D	17.50
167	SHIVPURI	NARWAR	Aqua	25.69500	77.99200	5/18/2022	13:43:21	D	10.40
168	SHIVPURI	NARWAR	Aqua	25.70300	77.99600	5/18/2022	13:43:21	D	15.00
169	SHIVPURI	NARWAR	Aqua	25.71000	77.98400	5/18/2022	13:43:21	D	11.50
170	SHIVPURI	NARWAR	Aqua	25.71200	77.99400	5/18/2022	13:43:21	D	36.80
171	SHIVPURI	NARWAR	Aqua	25.71300	78.00400	5/18/2022	13:43:21	D	57.80
172	SIDHI	RAMPURNEKIN	npp	24.29790	81.58050	5/18/2022	01:40:28	N	3.60
173	SIDHI	SIHAWAL	npp	24.46520	82.03800	5/18/2022	01:40:28	N	1.20
174	SINGRAULI	CHITRANGI	npp	24.30170	82.57560	5/18/2022	12:51:10	D	8.70
175	SINGRAULI	SINGRAULI	npp	24.17290	82.65180	5/18/2022	01:40:28	N	1.40
176	SINGRAULI	SINGRAULI	npp	24.20110	82.64530	5/18/2022	01:40:28	N	0.80
177	SINGRAULI	SINGRAULI	npp	24.20380	82.64970	5/18/2022	01:40:28	N	0.80
178	TIKAMGARH	TIKAMGARH	npp	24.44200	78.97010	5/18/2022	12:51:10	D	12.70
179	TIKAMGARH	TIKAMGARH	npp	24.44350	78.96720	5/18/2022	12:51:10	D	10.80
180	TIKAMGARH	TIKAMGARH	npp	24.44660	78.96900	5/18/2022	12:51:10	D	14.50
181	UJJAIN	UJJAIN	npp	23.07610	75.62950	5/18/2022	12:51:10	D	2.50
182	UJJAIN	UJJAIN	npp	23.08080	75.62890	5/18/2022	12:51:10	D	5.90
183	VIDESHA	NATERAN	npp	23.91450	77.64270	5/18/2022	01:40:28	N	3.60
184	VIDESHA	VIDESHA	npp	23.54700	77.51680	5/18/2022	12:51:10	D	8.40
185	WEST NIMAR	BARWAH	npp	22.02770	76.04640	5/18/2022	12:51:10	D	9.70
186	WEST NIMAR	KHARGON	Terra	21.78700	75.62800	5/18/2022	10:34:07	D	27.40
187	WEST NIMAR	MAHESHWAR	npp	22.21190	75.82470	5/18/2022	01:40:28	N	0.90

The study used data received from following Satellites at NRSC Ground Station

S. No.	Satellite Name	Sensor	Resolution (meter)	Day / Night Passes
1.	Suomi NPP	VIIRS	375 / 750	Both
2.	Terra	MODIS	1000	Both
3.	Aqua	MODIS	1000	Both

**The wheat masks for the Punjab and Haryana were provided by MNCFC, MoA&FW, Govt of India
The rabi crop masks for Delhi, Uttar Pradesh and Madhya Pradesh were provided by NRSC (ISRO)**

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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)
