

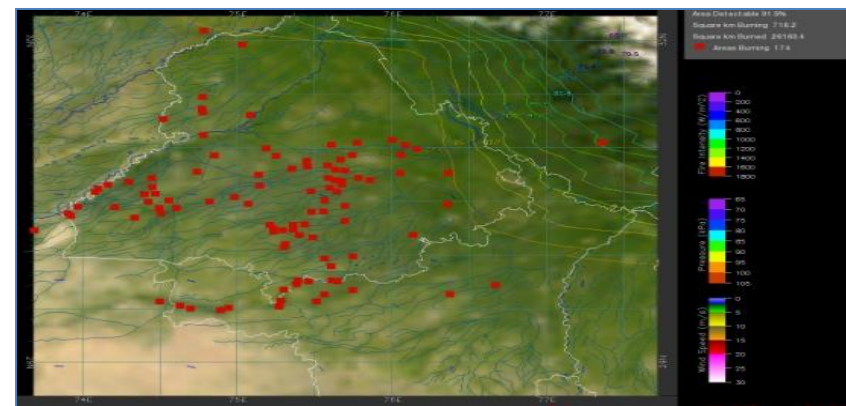
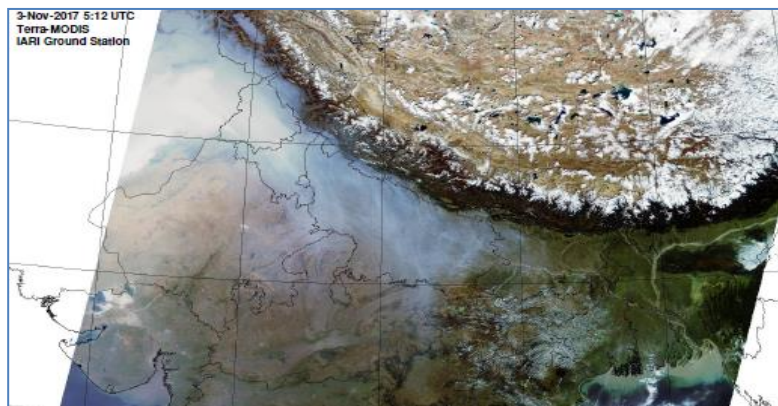


MONITORING PADDY RESIDUE BURNING IN INDIA USING SATELLITE REMOTE SENSING DURING 2023

Bulletin
No. 74

Events Date:
27-Nov-2023

Issued on:
27-Nov-2023



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

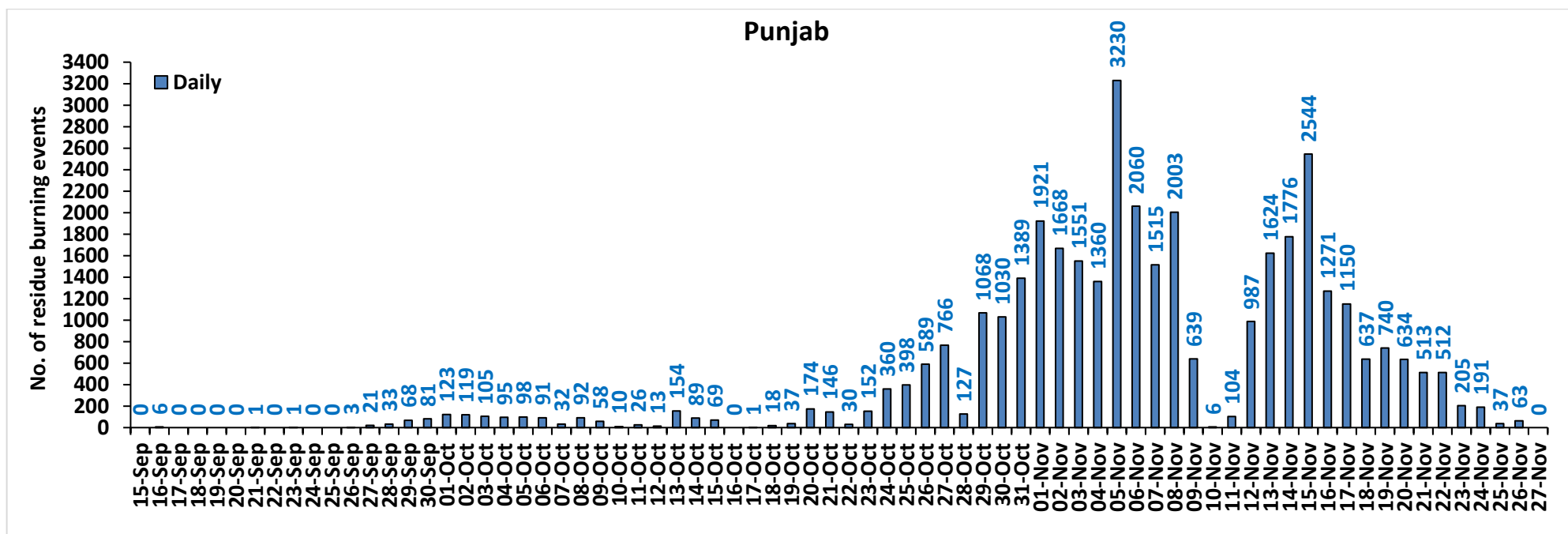
<http://creams.iari.res.in>



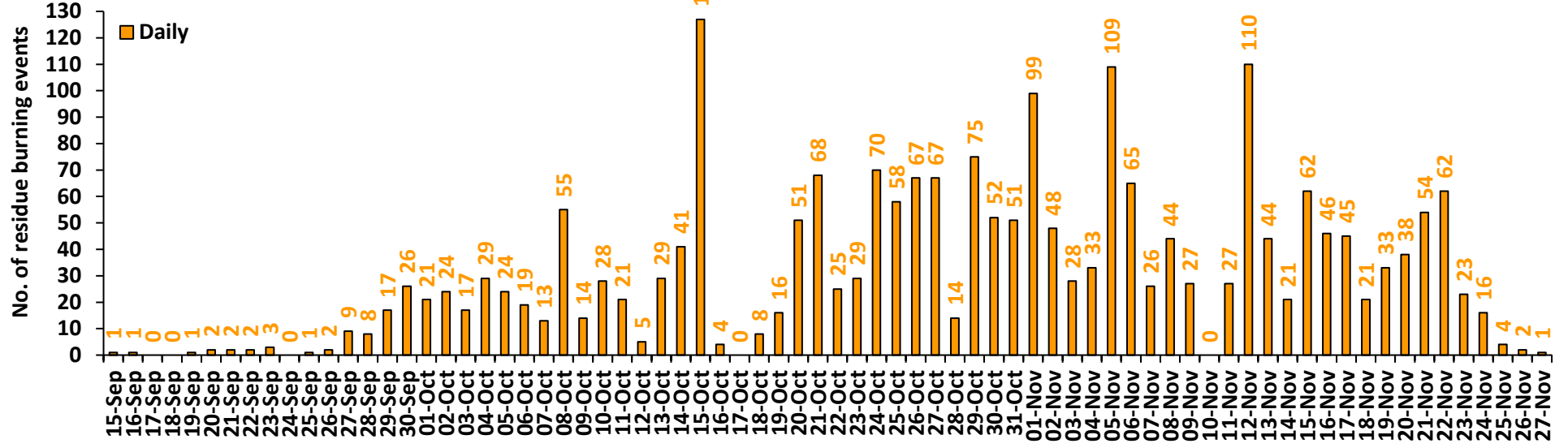
Highlights for 27-Nov-2023

- The active fire events due to rice residue burning were monitored using satellite remote sensing, following the "Standard Protocol for Estimation of Crop Residue Burning Fire Events using Satellite Data".
- Satellites detected **12** residue burning events in the six study States on 27-Nov-2023.
- The state wise events detected on 27-Nov-2023 were **00** in Punjab, **01** in Haryana, **11** in UP, **00** in Delhi, **00** in Rajasthan and **00** in MP.
- Total **56905** burning events were detected in the six states between 15-Sept-2023 and 27-Nov-2023, which are distributed as **36614**, **2285**, **3748**, **05**, **1769** and **12484** in Punjab, Haryana, UP, Delhi, Rajasthan and MP, respectively.
- Detection of residue burning events was hampered by the presence of clouds over Punjab, Haryana, Delhi, Uttar Pradesh, Rajasthan and Madhya Pradesh states.

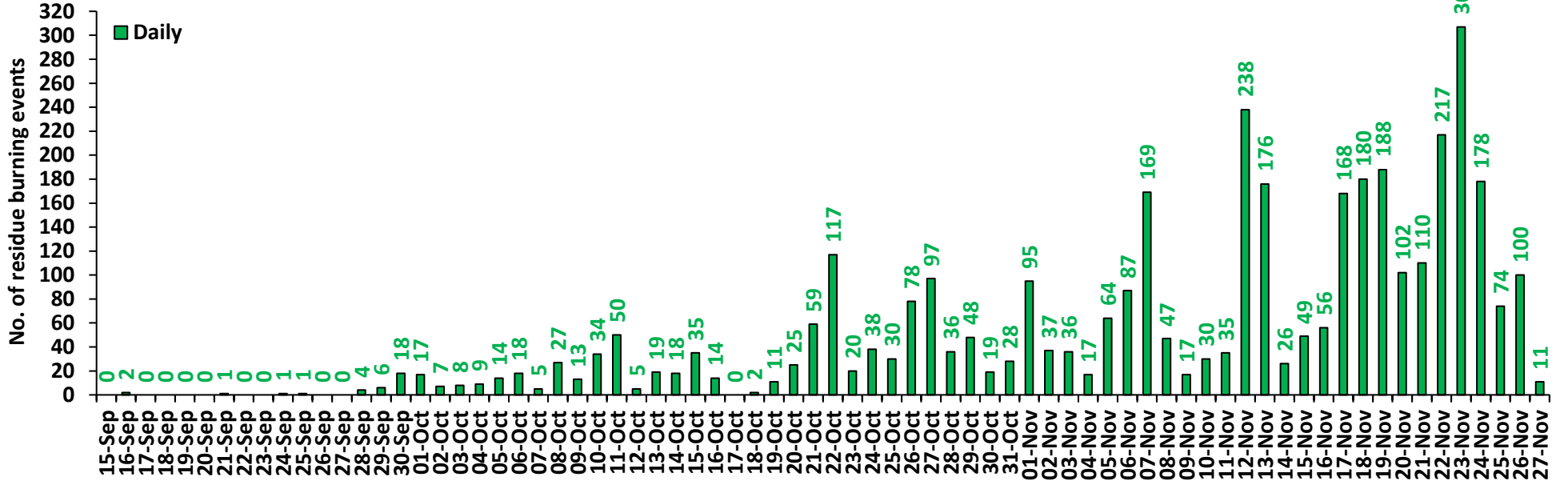
Temporal distribution of rice residue burning events for the study States in 2023



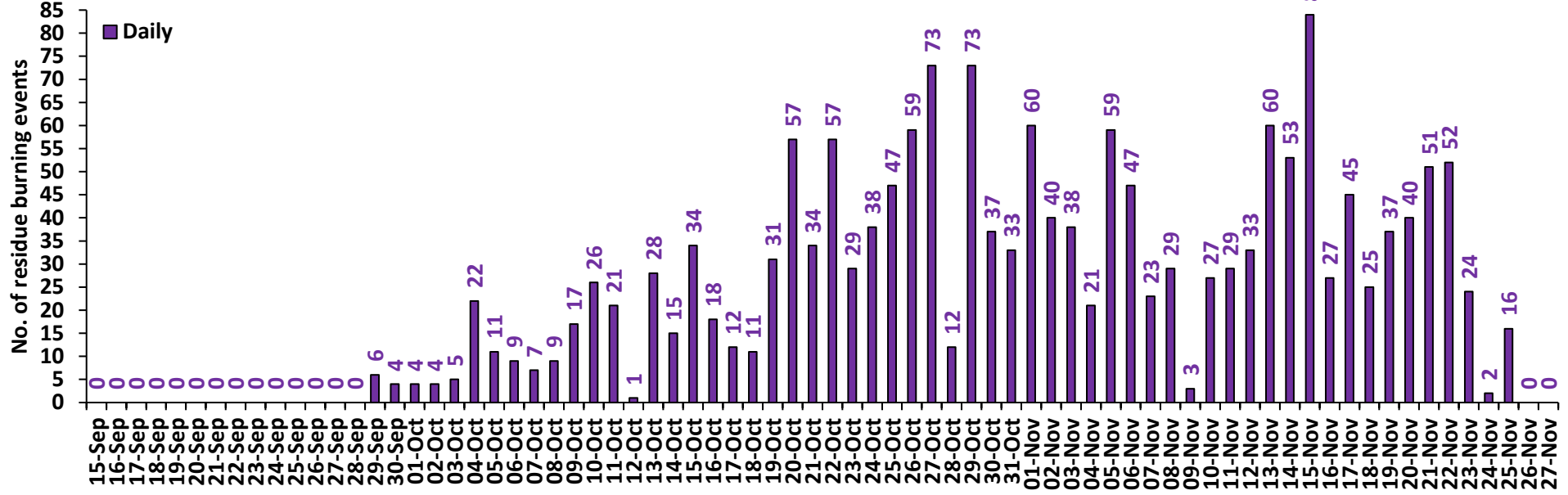
Haryana



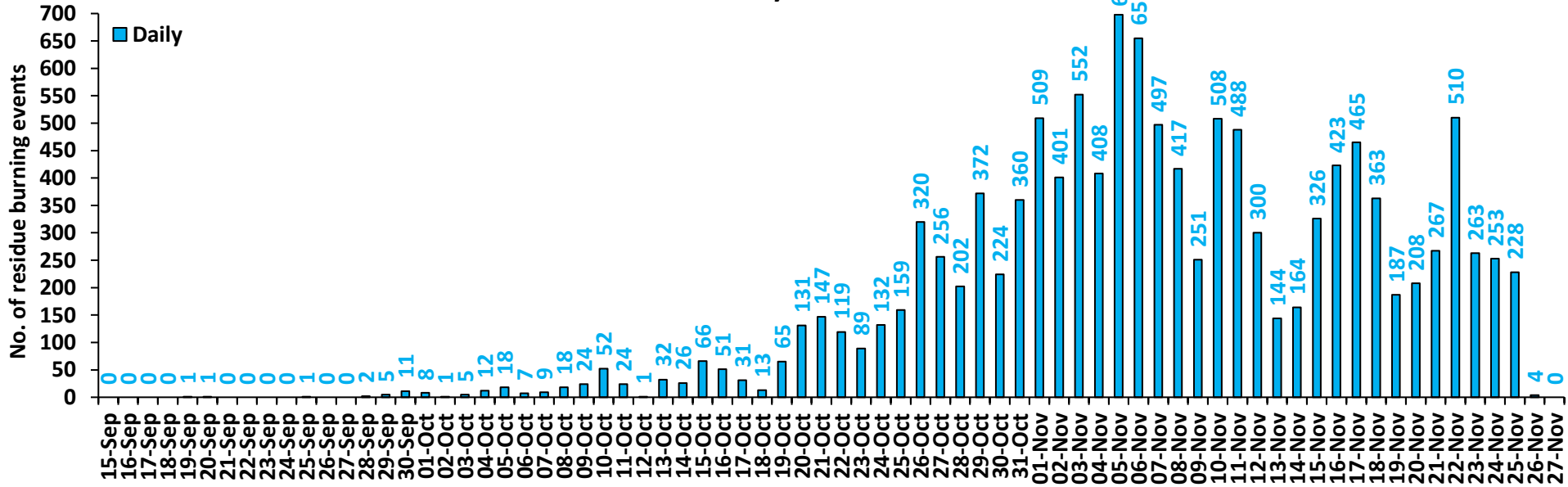
Uttar Pradesh



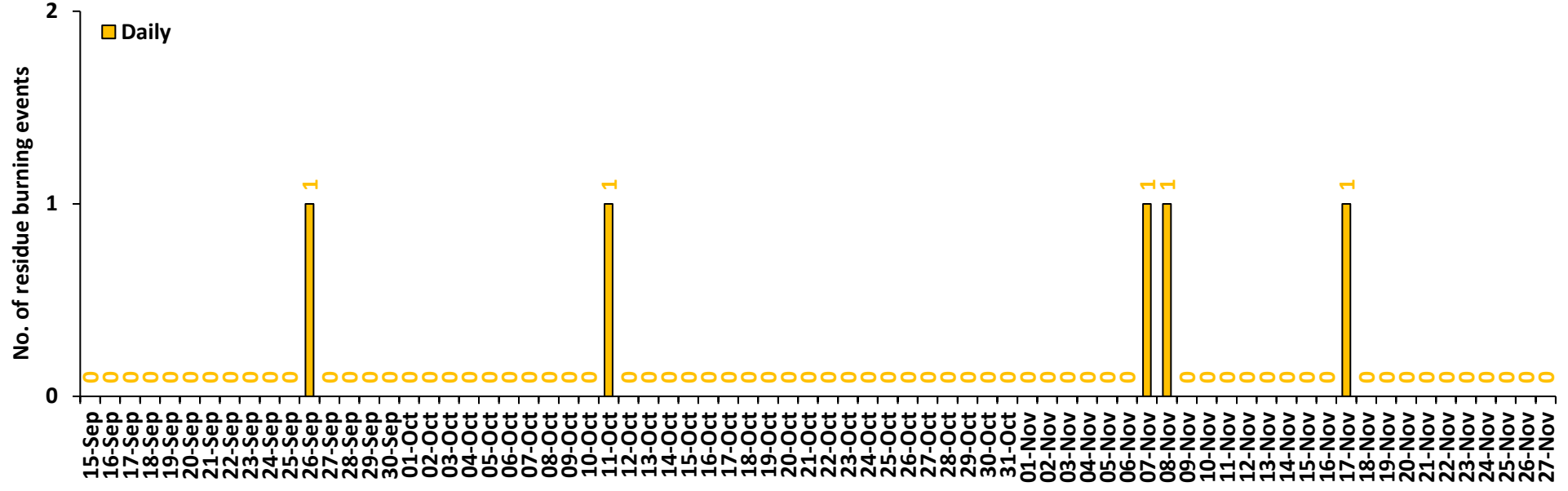
Rajasthan



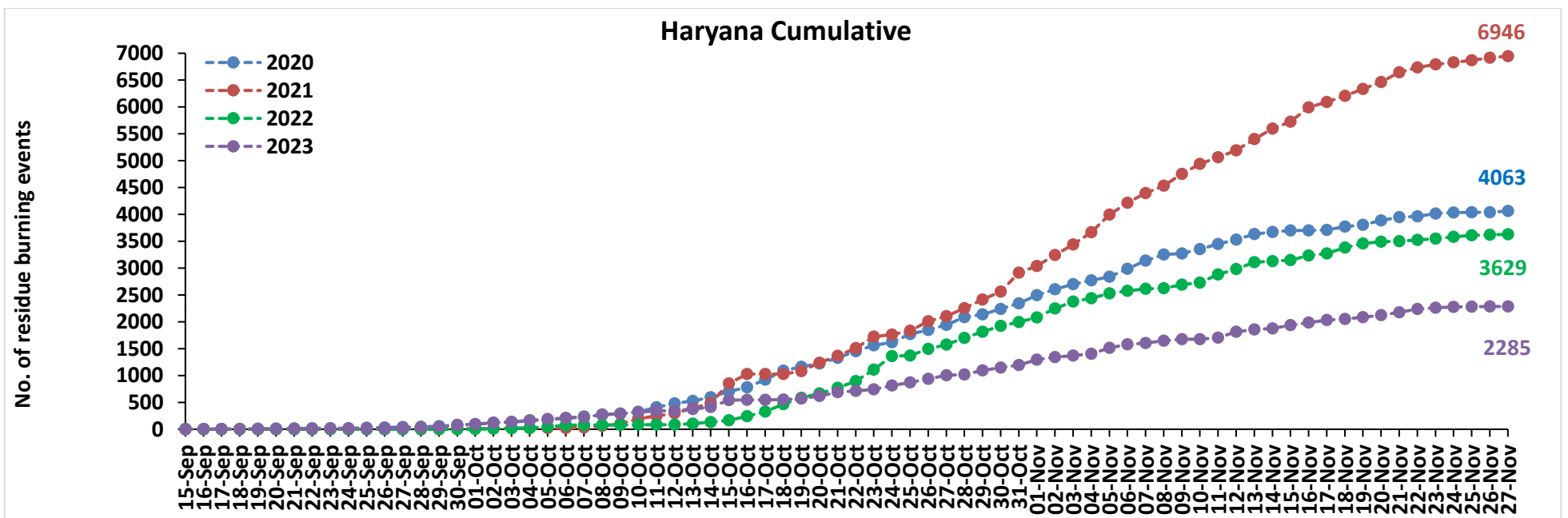
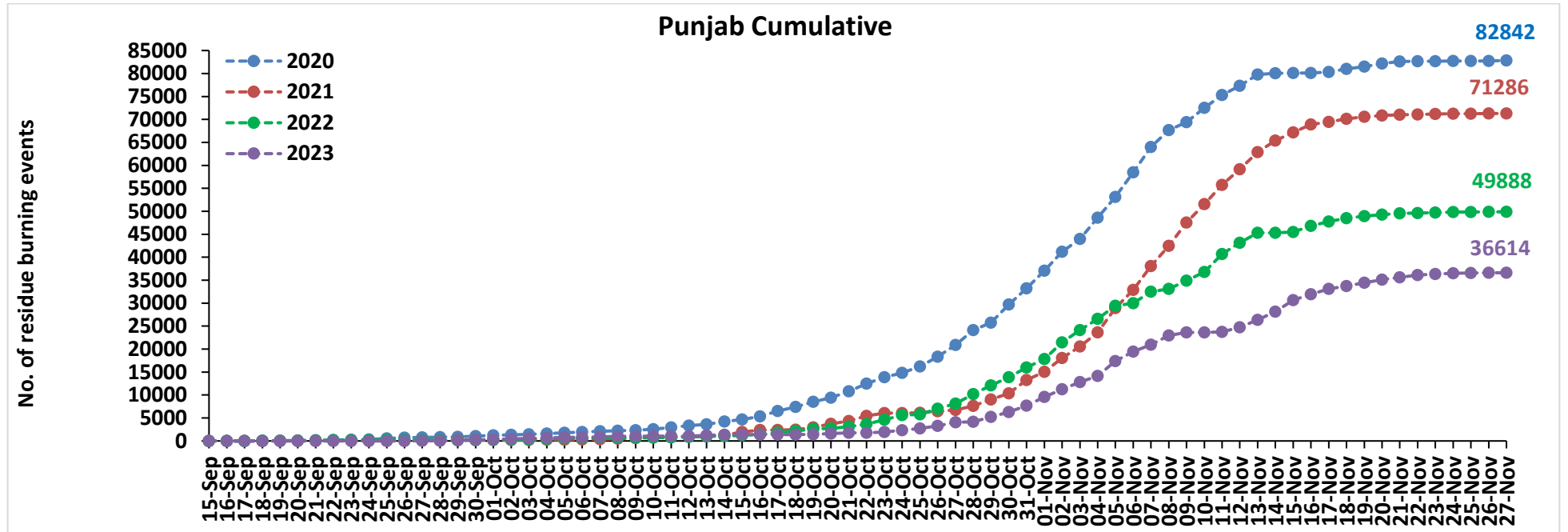
Madhya Pradesh



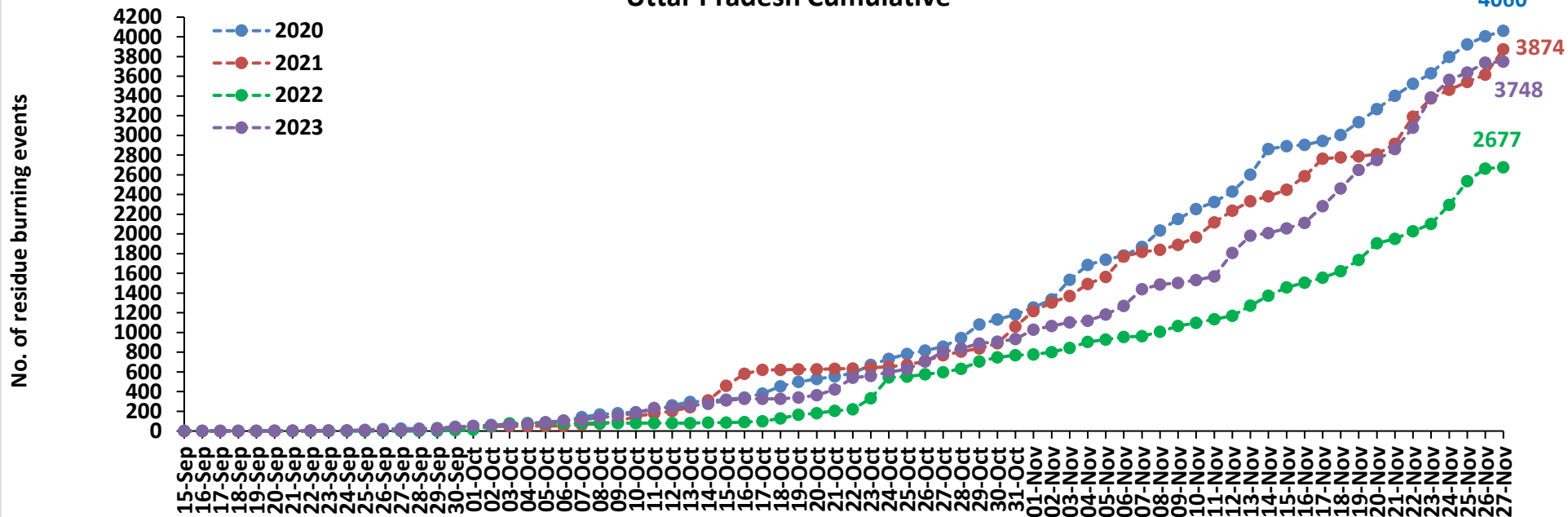
Delhi



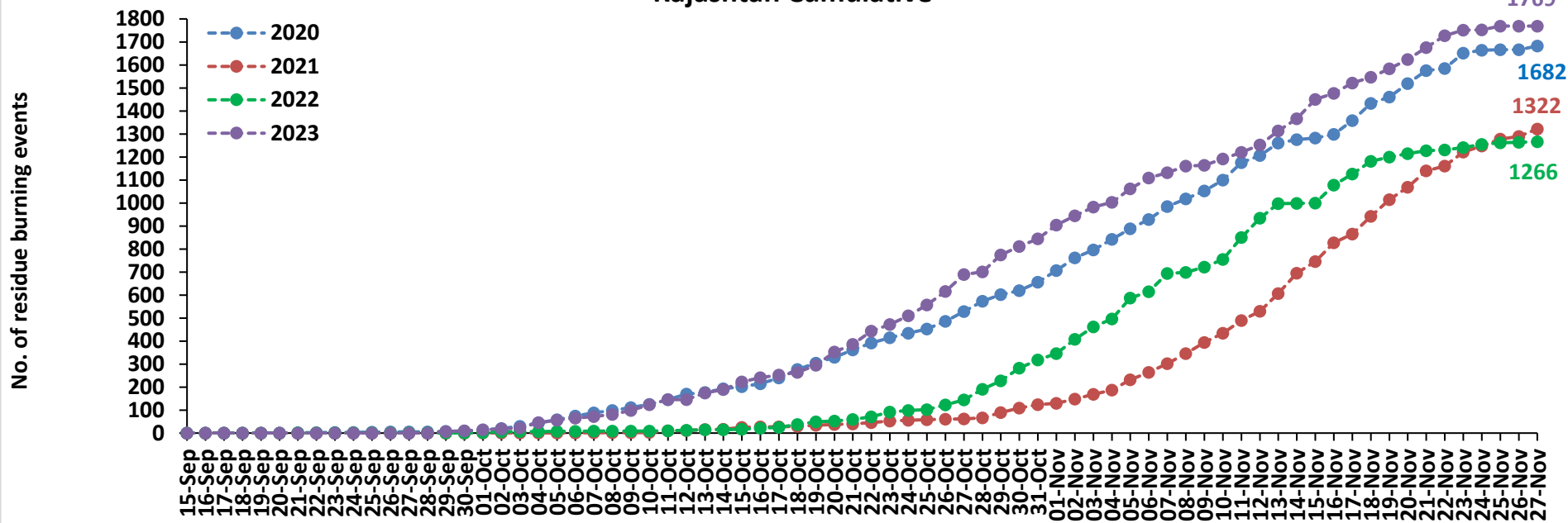
Comparison of residue burning events in current year (2023) with previous years (2020, 2021 and 2022) for the study State



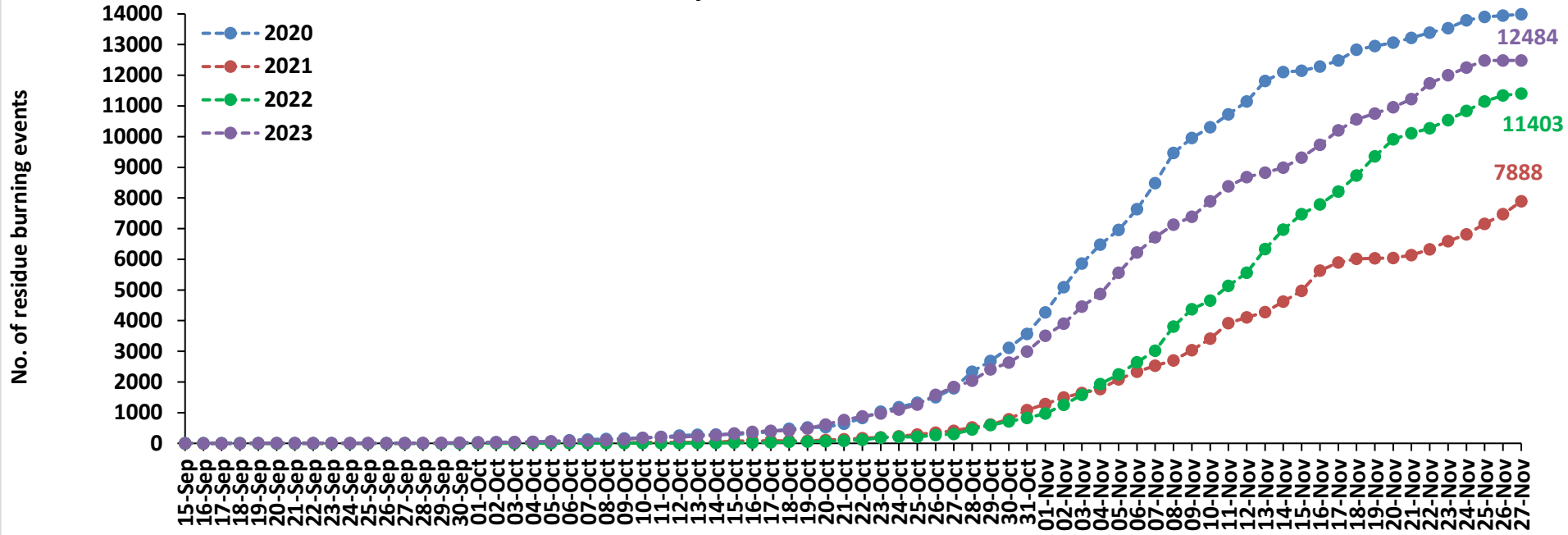
Uttar Pradesh Cumulative



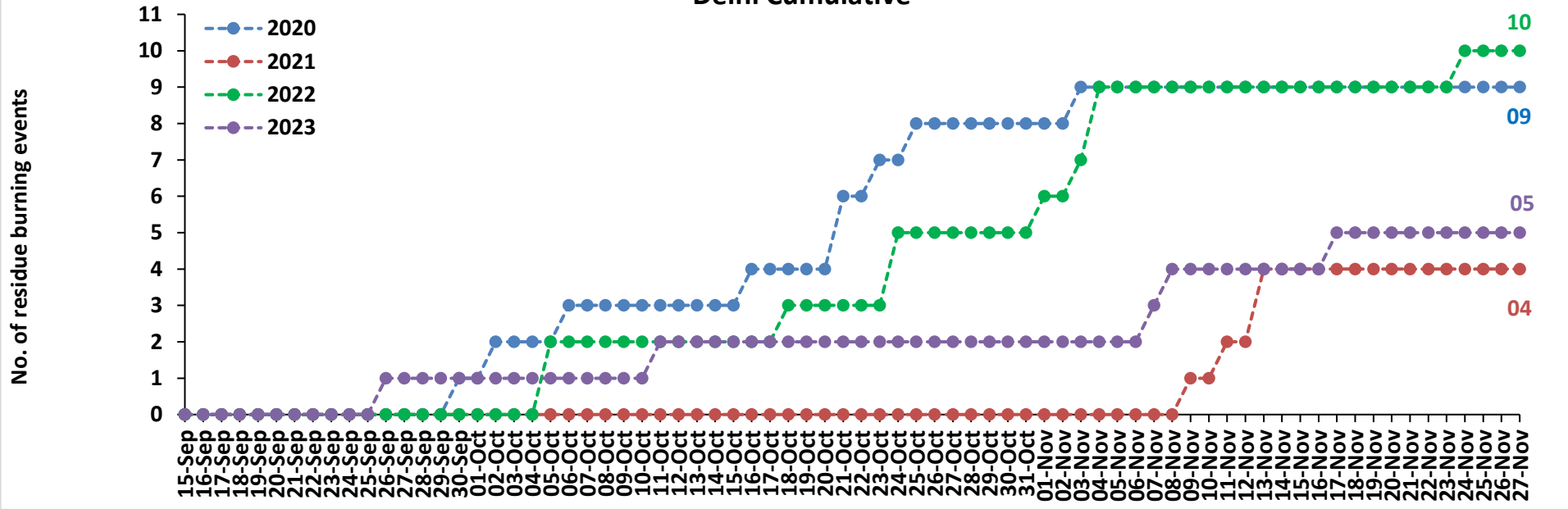
Rajasthan Cumulative



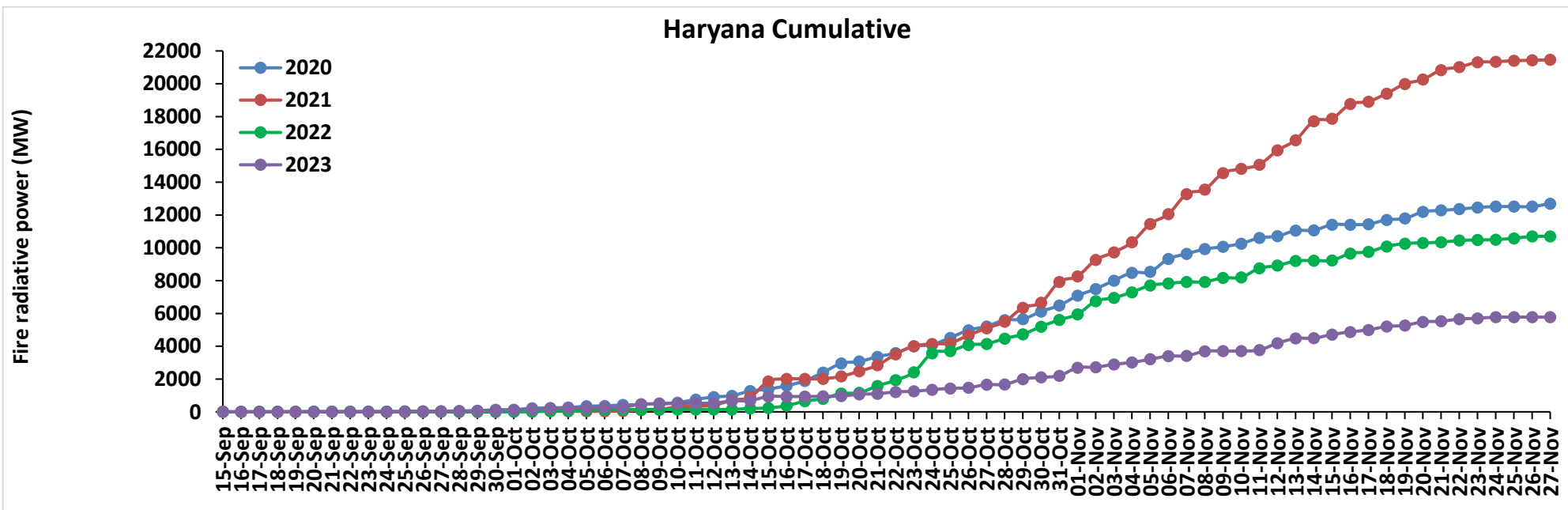
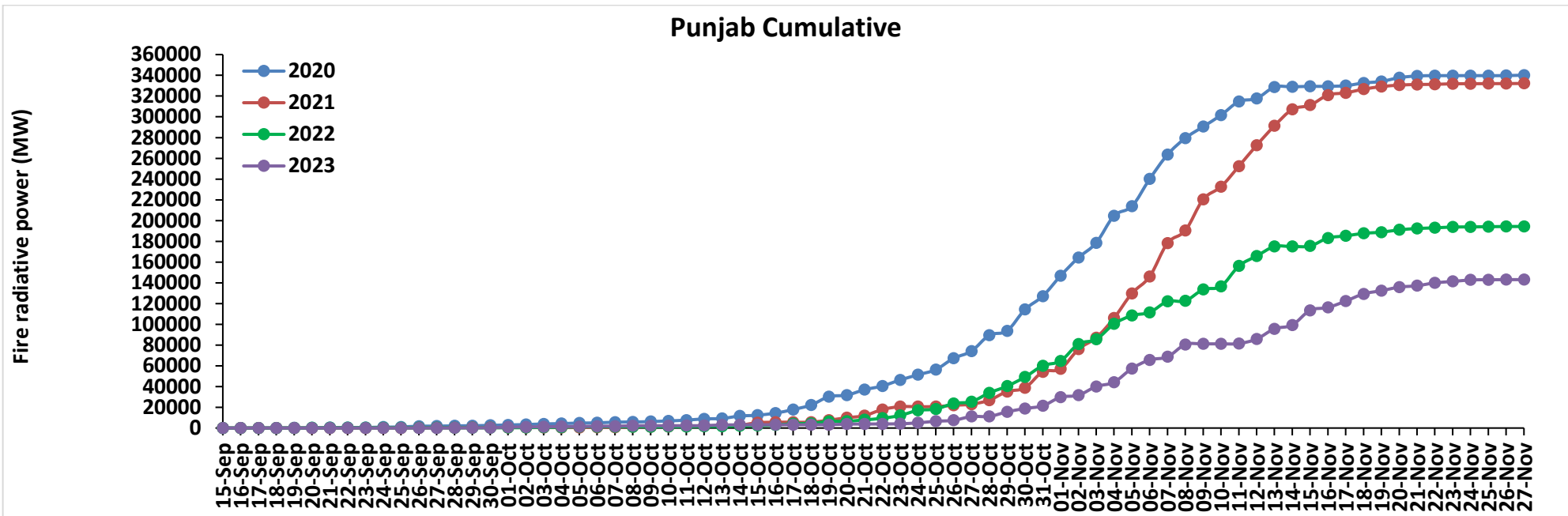
Madhya Pradesh Cumulative



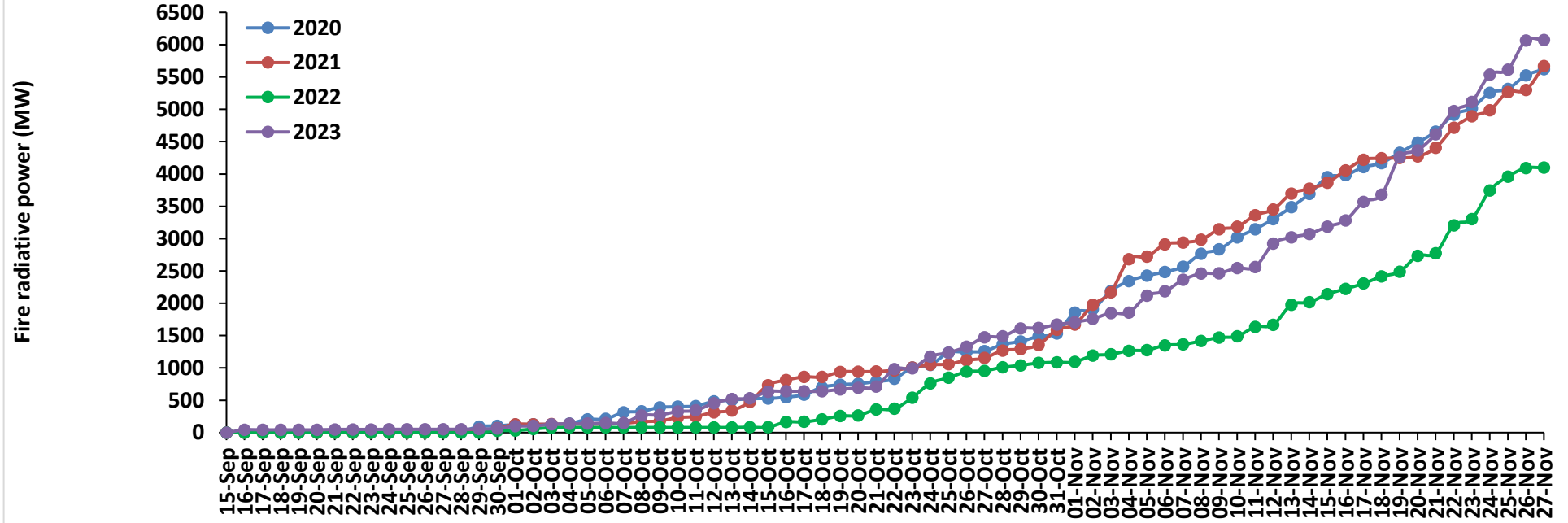
Delhi Cumulative



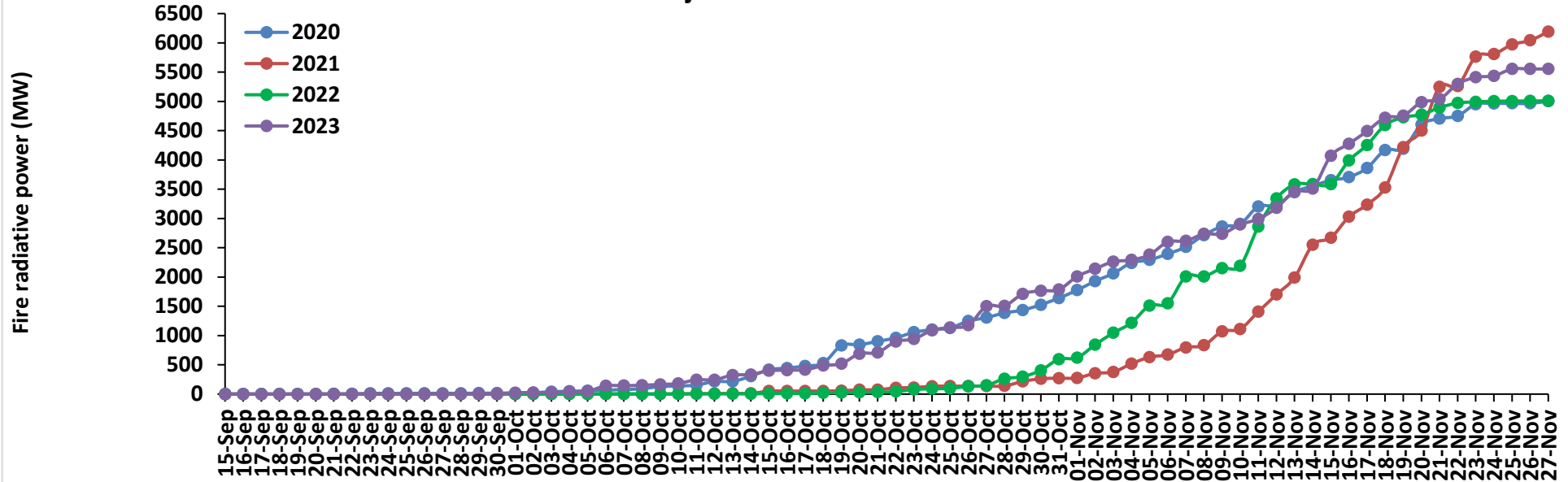
Comparison of residue burning fire power in current year (2023) with previous years (2020, 2021 and 2022) for the study States



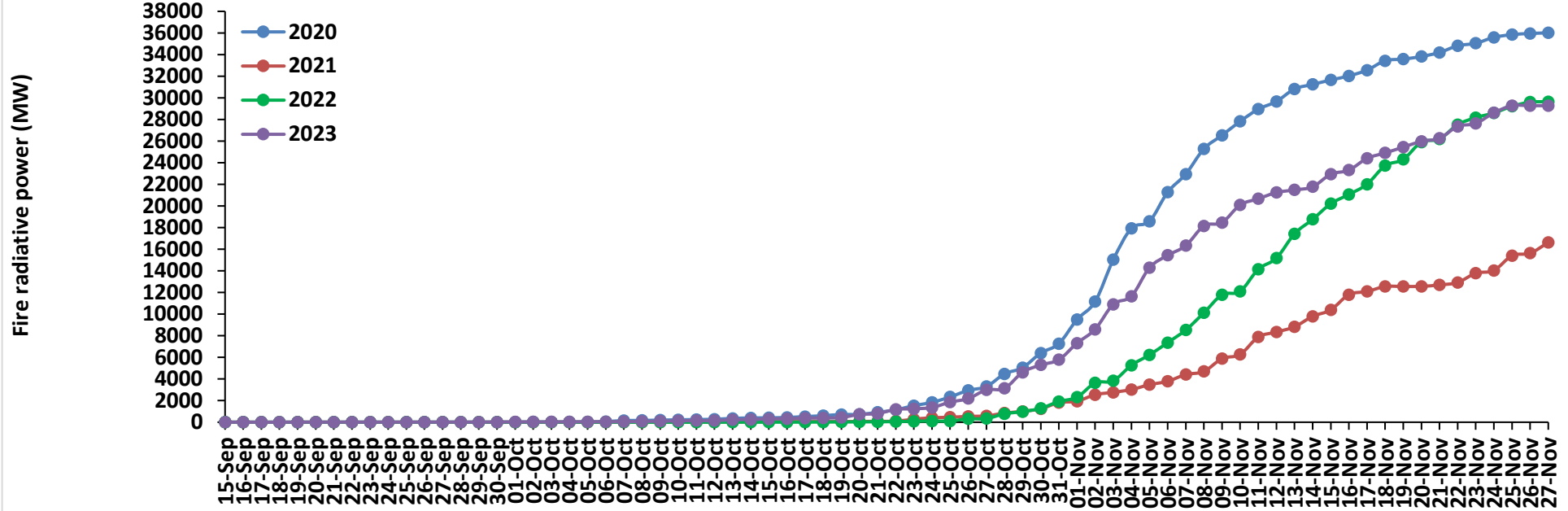
Uttar Pradesh Cumulative



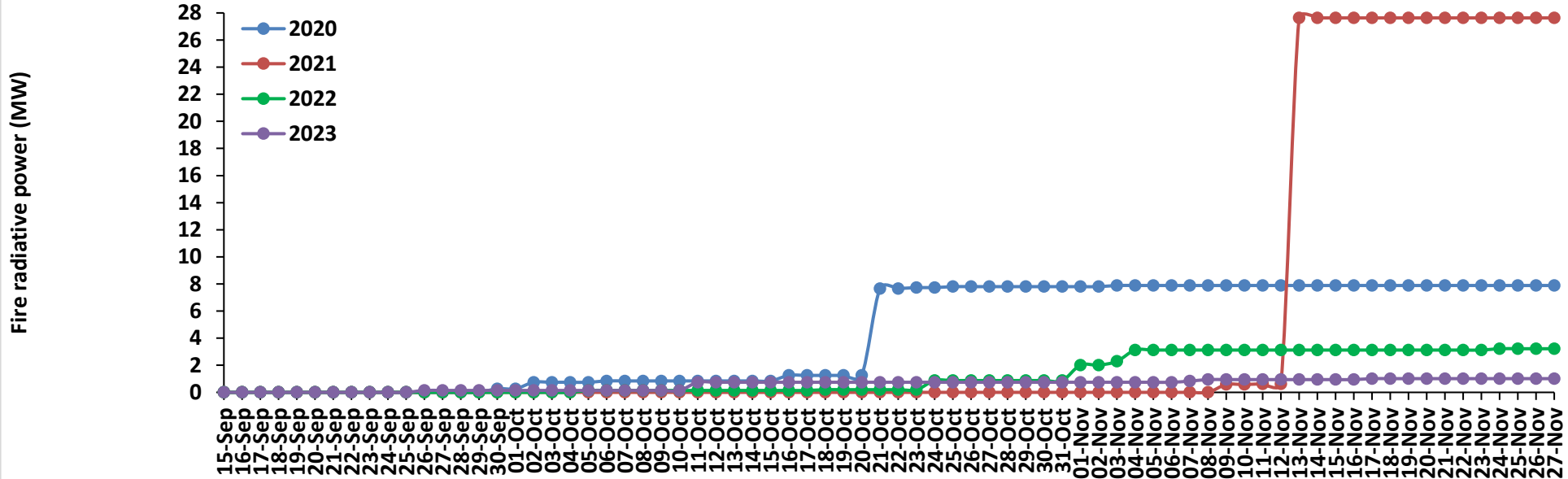
Rajasthan Cumulative



Madhya Pradesh Cumulative

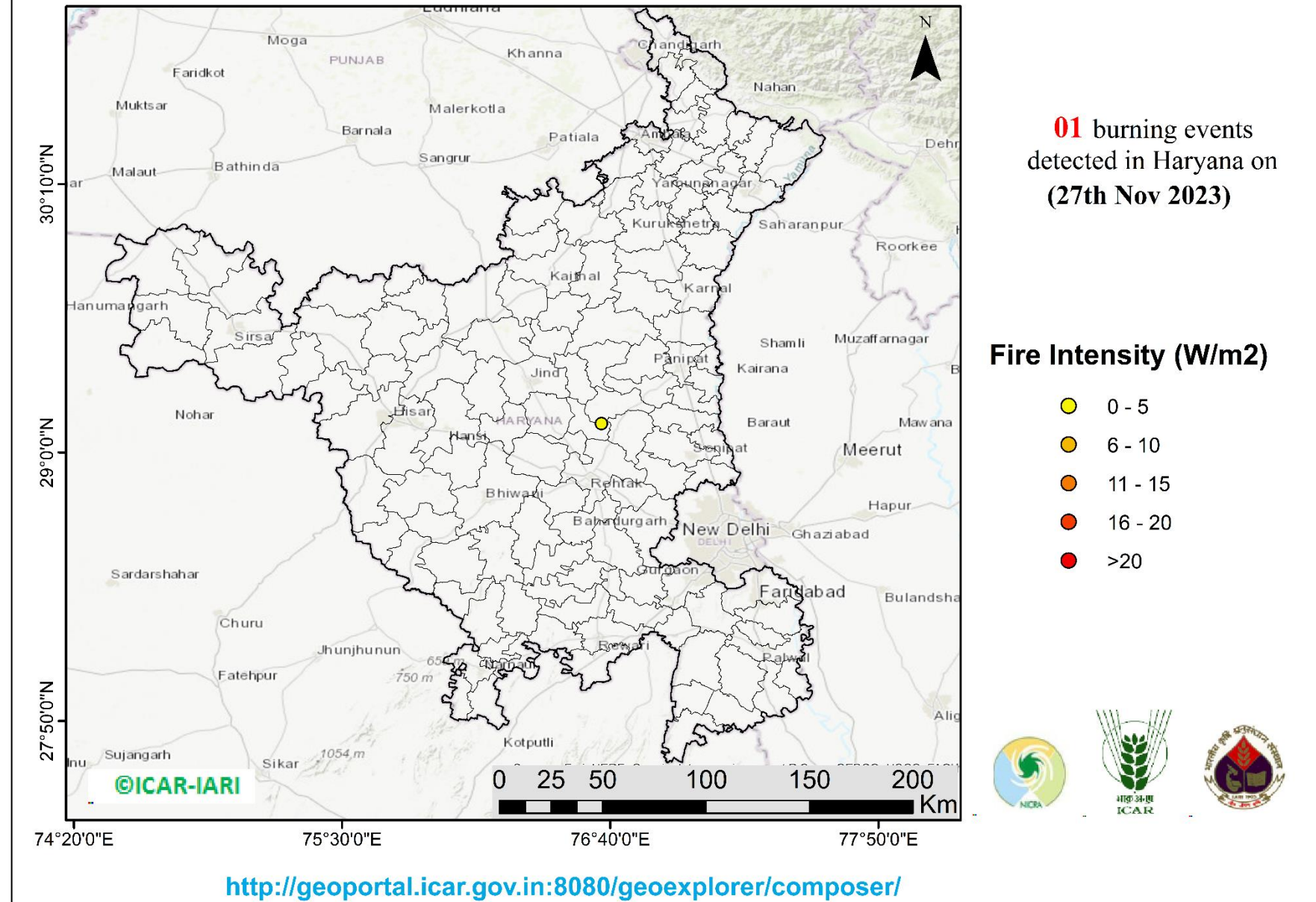


Delhi Cumulative

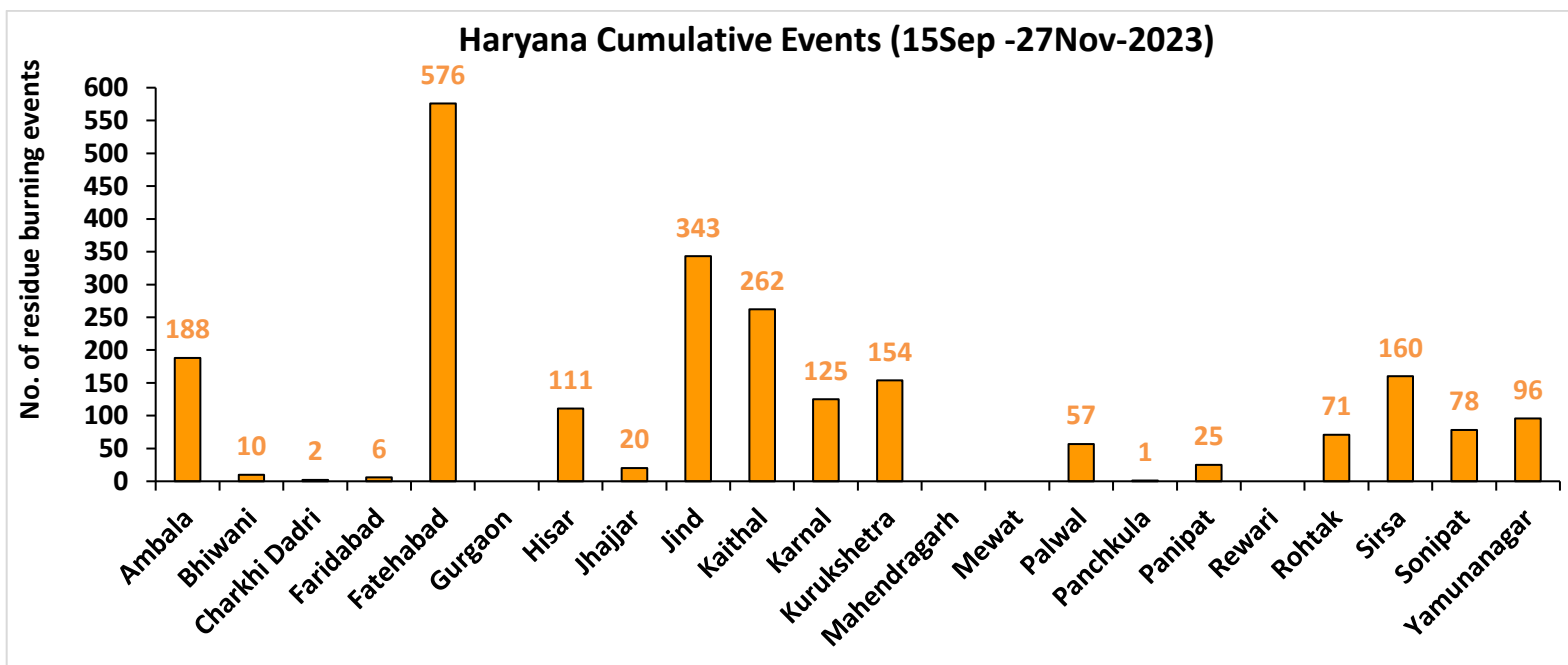
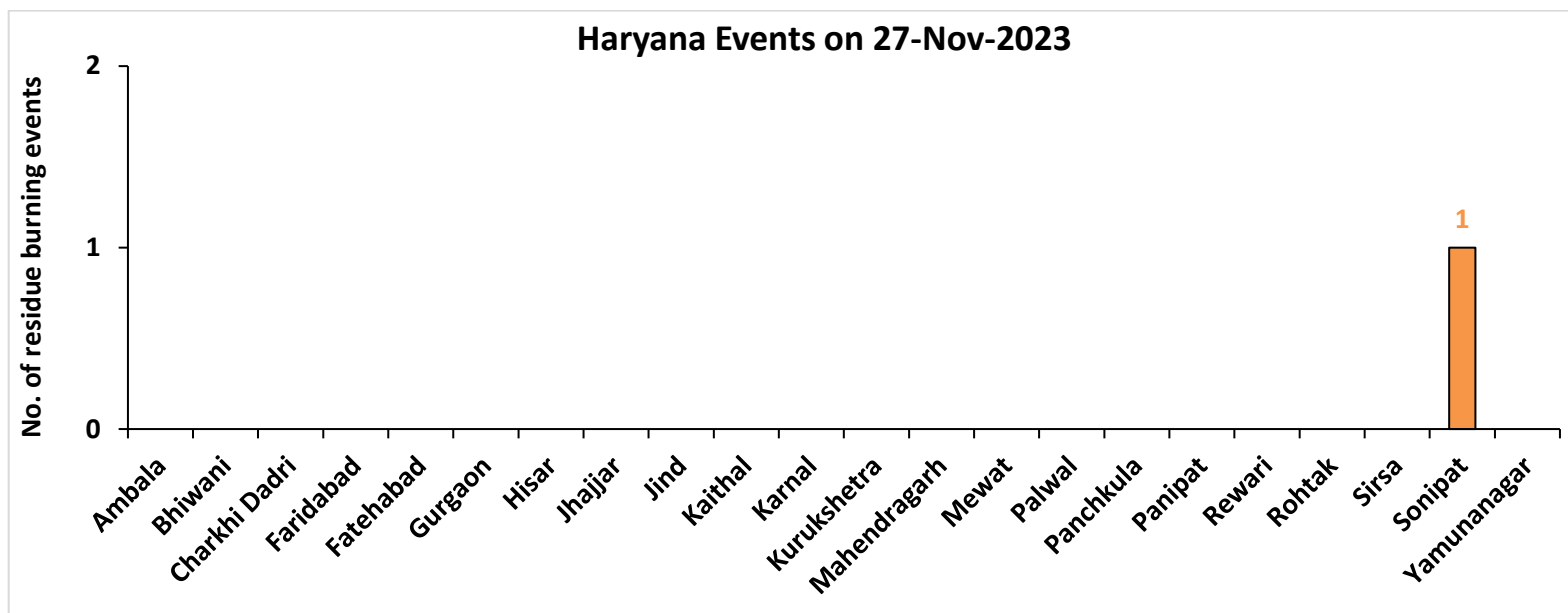


Haryana

RICE RESIDUE BURNING IN HARYANA

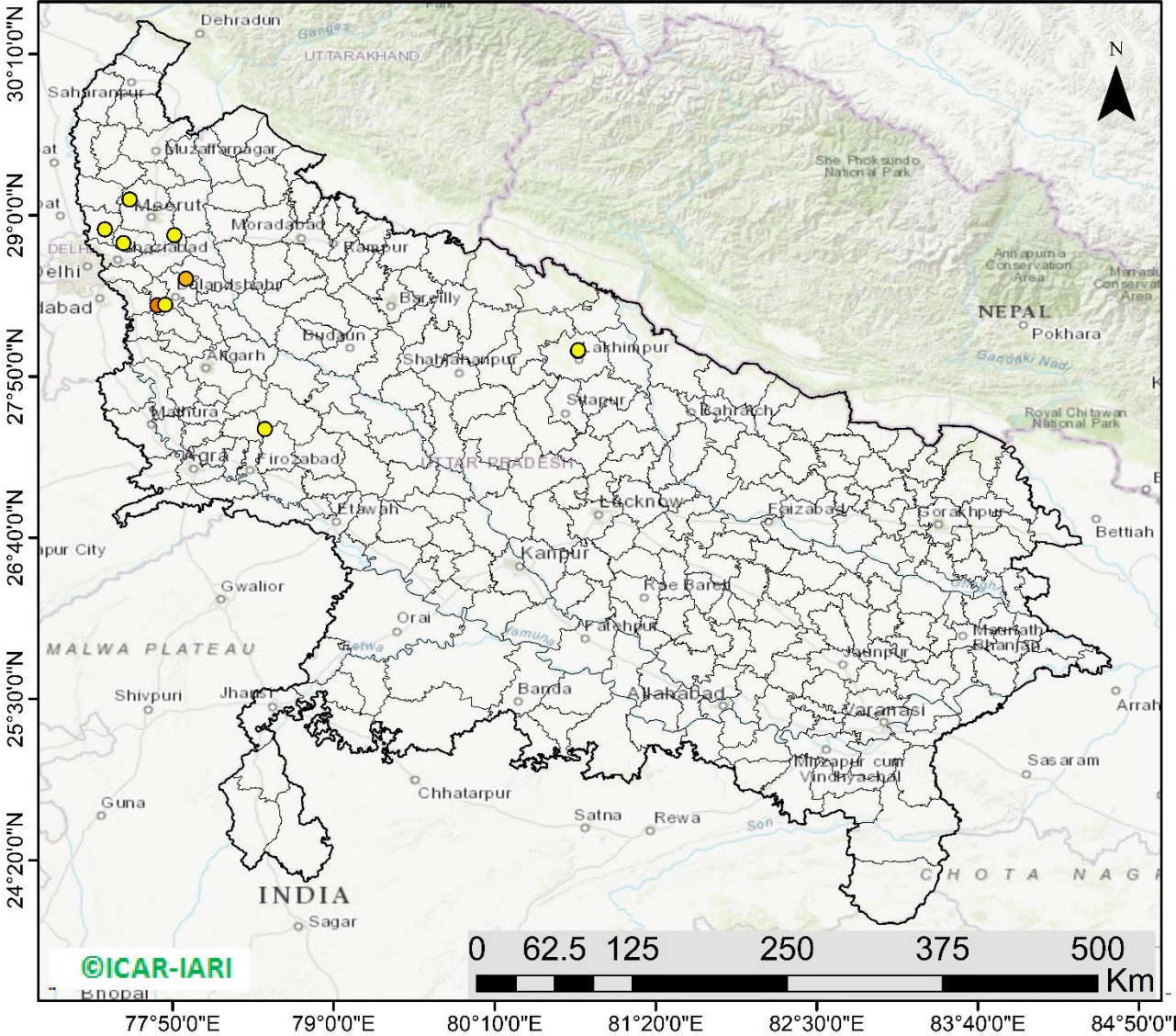


District-wise cumulative number of residues burning events in Haryana (15Sep- 27Nov-2023)



Uttar Pradesh

RICE RESIDUE BURNING IN UTTAR PRADESH



11 burning events detected in Uttar Pradesh on (27th Nov 2023)

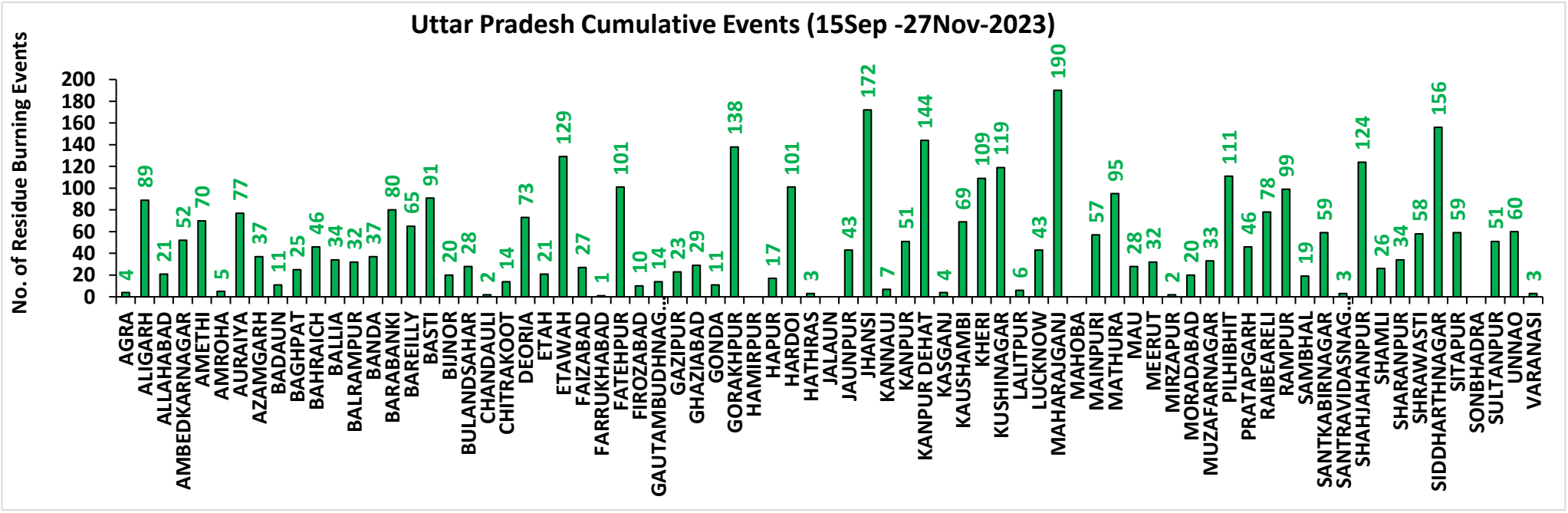
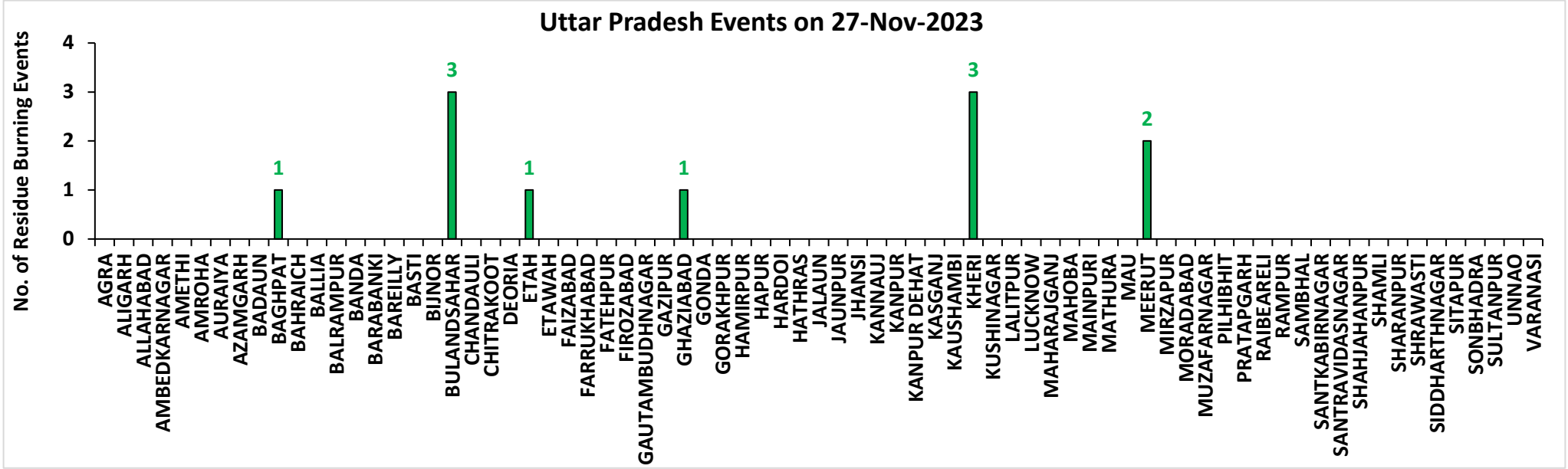
Fire Intensity (W/m2)

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



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

District-wise cumulative number of residues burning events in Uttar Pradesh (15Sep-27Nov -2023)



District-wise cumulative number of residues burning events detected in 2020, 2021, 2022 and 2023
(Period: 15 September-27 November)

(a) Punjab

District	15 Sep-27 Nov			
	2020	2021	2022	2023
Amritsar	3063	2174	1542	1573
Barnala	5338	4326	2910	2313
Bathinda	5229	4481	4591	2965
Faridkot	4732	3953	2693	2021
Fatehgarh Sahib	1536	1722	1148	887
Fazilka	2578	2388	2589	1839
Firozpur	8516	6289	4556	3398
Gurdaspur	2129	1393	845	389
Hoshiarpur	386	330	258	118
Jalandhar	1945	2547	1385	1193
Kapurthala	1883	1797	1278	1045
Ludhiana	5058	5814	2681	1798
Malerkotla*	--	--	--	413
Mansa	3780	3217	2814	2267
Moga	7405	6515	3609	2794
Muktsar	5028	4594	3876	1663
Pathankot	13	6	1	4
Patiala	6431	5425	3394	1878
Rupnagar	205	307	246	46
Sangrur#	11724	9389	5915	5618
SAS NAGAR	127	147	103	133
SBS Nagar	131	355	270	235
Tarn Taran	5605	4117	3184	2024
Total	82842	71286	49888	36614

(b) Haryana

District	15 Sep-27 Nov			
	2020	2021	2022	2023
AMBALA	346	305	224	188
BHIWANI	4	12	9	10
CHARKHI DADRI	0	0	1	2
FARIDABAD	1	3	1	6
FATEHABAD	859	1476	763	576
GURGAON	0	0	0	0
HISAR	53	240	113	111
JHAJJAR	6	7	8	20
JIND	343	911	529	343
KAITHAL	839	1154	641	262
KARNAL	581	954	300	125
KURUKSHETRA	406	538	300	154
MAHENDRAGARH	0	0	0	0
MEWAT	0	0	0	0
PALWAL	46	115	51	57
PANCHKULA	0	0	0	1
PANIPAT	50	249	82	25
REWARI	0	0	0	0
ROHTAK	48	75	62	71
SIRSA	268	545	301	160
SONIPAT	71	215	91	78
YAMUNANAGAR	142	147	153	96
Total	4063	6946	3629	2285

*Malerkotla events are included in Sangrur events in 2020, 2021, 2022.

Sangrur events in 2023 do not include Malerkotla events.

(c) Uttar Pradesh

District	15 Sep-27 Nov													
	2020	2021	2022	2023	GAUTAMBUDHNAGAR	15	19	11	14	MUZAFARNAGAR	51	31	26	33
AGRA	7	0	0	4	GAZIPUR	24	25	27	23	PILHIBHIT	23	219	149	111
ALIGARH	113	40	44	89	GHAZIABAD	26	15	9	29	PRATAPGARH	41	38	30	46
ALLAHABAD	39	27	17	21	GONDA	12	12	1	11	RAIBEARELI	41	93	51	78
AMBEDKARNAGAR	36	30	37	52	GORAKHPUR	46	29	40	138	RAMPUR	163	192	105	99
AMETHI	9	26	17	70	HAMIRPUR	6	0	0	0	SAMBHAL	19	20	14	19
AMROHA	12	8	8	5	HAPUR	32	18	11	17	SANTKABIRNAGAR	29	20	15	59
AURAIYA	91	80	60	77	HARDOI	102	116	80	101	SANTRAVIDASNAGAR	4	6	4	3
AZAMGARH	62	34	29	37	HATHRAS	0	0	2	3	SHAHJAHANPUR	144	421	319	124
BADAUN	14	19	6	11	JALAUN	43	0	0	0	SHAMLI	48	41	17	26
BAGHPAT	19	17	14	25	JAUNPUR	49	39	33	43	SHARANPUR	102	79	23	34
BAHRAICH	107	59	23	46	JHANSI	359	154	120	172	SHRAWASTI	47	45	18	58
BALLIA	143	68	51	34	KANNAUJ	33	6	7	7	SIDDHARTHANAGAR	76	128	43	156
BALRAMPUR	68	21	12	32	KANPUR	33	38	29	51	SITAPUR	73	51	35	59
BANDA	40	15	21	37	KANPUR DEHAT	87	53	60	144	SONBHADRA	0	2	0	0
BARABANKI	36	72	58	80	KASGANJ	3	2	3	4	SULTANPUR	9	34	30	51
BAREILLY	82	66	61	65	KAUSHAMBI	92	90	49	69	UNNAO	45	32	37	60
BASTI	58	51	20	91	KHERI	179	177	146	109	VARANASI	2	5	0	3
BIJNOR	42	48	14	20	KUSHINAGAR	80	40	49	119	Total	4060	3874	2677	3748
BULANDSAHAR	62	14	23	28	LALITPUR	3	6	3	6					
CHANDAULI	21	11	7	2	LUCKNOW	35	33	15	43					
CHITRAKOOT	12	9	12	14	MAHARAJGANJ	55	154	173	190					
DEORIA	83	31	41	73	MAHOBA	27	0	0	0					
ETAH	17	10	8	21	MAINPURI	63	51	40	57					
ETAWAH	75	106	65	129	MATHURA	160	240	30	95					
FAIZABAD	15	12	7	27	MAU	34	17	13	28					
FARRUKHABAD	7	4	1	1	MEERUT	81	54	33	32					
FATEHPUR	124	106	95	101	MIRZAPUR	11	14	7	2					
FIROZABAD	27	17	10	10	MORADABAD	32	14	9	20					

(d) Delhi

District	15 Sep-27 Nov			
	2020	2021	2022	2023
CENTRAL	0	0	0	0
EAST	0	0	0	0
NEW DELHI	0	0	0	0
NORTH	3	3	9	5
NORTH EAST	0	0	0	0
NORTH WEST DELHI	3	1	0	0
SHAHADRA	0	0	0	0
SOUTH	1	0	0	0
SOUTH EAST	0	0	0	0
SOUTH WEST DELHI	0	0	0	0
WEST DELHI	2	0	1	0
Total	9	4	10	5

(e) Rajasthan

District	15 Sep-27 Nov			
	2020	2021	2022	2023
AJMER	3	0	0	0
ALWAR	10	0	0	0
BANSWARA	0	0	1	1
BARAN	167	11	77	339
BARMER	4	0	0	0
BHARATPUR	2	3	1	3
BHILWARA	11	0	0	0
BIKANER	1	0	0	0
BUNDI	128	87	180	213
CHITTAURGARH	2	13	8	15
CHURU	0	0	0	0
DAUSA	1	0	0	0
DHOLPUR	0	0	0	0
DUNGARPUR	0	0	2	2
GANGANAGAR	214	142	103	153
HANUMANGARH	897	973	677	698
JAIPUR	4	0	0	0
JAISELMER	5	0	0	0
JALOR	2	0	0	0
JHALAWAR	10	1	12	12
JHUNJHUNUN	1	0	0	0
JODHPUR	5	0	0	0
KARAULI	1	0	0	0
KOTA	116	57	147	268
NAGAU	4	0	0	0
PALI	11	0	0	0
PRATAPGARH	8	0	0	0
RAJSMAND	1	0	0	0
SIKAR	0	0	0	0
SIROHI	2	0	0	0
SWAIMADHOPUR	65	34	55	57
TONK	5	0	0	0
UDAIPUR	2	1	3	8
Total	1682	1322	1266	1769

(f) Madhya Pradesh

District	15 Sep-27 Nov								
	2020	2021	2022	2023					
					PANNA	50	22	39	48
ALIRAJPUR	0	0	0	0	RAISEN	603	356	446	407
ANUPPUR	3	2	6	3	RAJGARH	11	3	5	11
ASHOKNAGAR	156	90	188	278	RATLAM	10	7	3	6
BALAGHAT	8	6	3	4	REWA	136	111	89	94
BARWANI	4	0	0	3	SAGAR	28	31	54	92
BETUL	36	16	25	44	SATNA	570	511	465	388
BHIND	265	158	209	270	SEHORE	162	151	218	193
BHOPAL	52	40	43	50	SEONI	1231	891	1122	1438
BURHANPUR	16	1	5	10	SHAHDOL	3	1	3	2
CHHATARPUR	9	0	2	3	SHAJAPUR	20	0	0	20
CHHINDWARA	135	59	101	178	SHEOPUR	1859	1008	1800	1859
DAMOH	75	53	70	100	SHIVPURI	386	101	285	301
DATIA	1185	494	858	912	SIDHI	4	6	2	2
DEWAS	8	0	0	14	SINGRAULI	0	7	3	18
DHAR	47	0	0	45	TIKAMGARH	4	0	1	6
DINDORI	0	0	1	3	UJJAIN	14	0	0	18
EAST NIMAR	23	7	11	56	UMARIA	8	9	14	11
GUNA	69	12	122	468	VIDESHA	144	122	91	152
GWALIOR	2048	787	1580	1066	WEST NIMAR	68	11	19	45
HARDA	14	21	11	31	Total	13986	7888	11403	12484
HOSHANGABAD	1059	1066	1097	1181					
INDORE	4	0	0	12					
JABALPUR	2619	1299	1793	1984					
JHABUA	0	0	0	0					
KATNI	325	115	206	274					
MANDLA	147	112	146	97					
MANDSAUR	14	0	0	6					
MORENA	62	37	25	48					
NARSHIMAPURA	290	165	242	232					
NIMACH	2	0	0	1					

State-wise and date-wise number of paddy residue burning events detected in 2020, 2021, 2022 and 2023
(Period: 15 September-27 November)

Number of Paddy Residue Burning Events Detected

Date	Punjab				Haryana				Uttar Pradesh			
	2020	2021	2022	2023	2020	2021	2022	2023	2020	2021	2022	2023
15-Sep	5	0	14	0	2	0	0	1	1	0	0	0
16-Sep	0	2	0	6	1	0	0	1	0	0	0	2
17-Sep	5	0	1	0	3	0	0	0	0	0	0	0
18-Sep	17	9	7	0	0	0	1	0	0	1	0	0
19-Sep	30	5	18	0	2	0	0	1	0	1	0	0
20-Sep	67	8	10	0	6	0	0	2	2	0	0	0
21-Sep	54	0	56	1	2	0	0	2	1	0	0	1
22-Sep	34	0	30	0	1	0	0	2	1	0	0	0
23-Sep	49	0	3	1	0	0	0	3	1	0	0	0
24-Sep	78	5	0	0	0	0	0	0	1	1	0	1
25-Sep	184	11	0	0	11	0	0	1	5	0	0	1
26-Sep	190	19	0	3	5	0	0	2	8	0	0	0
27-Sep	78	37	0	21	8	0	0	9	4	1	0	0
28-Sep	55	28	0	33	6	1	0	8	1	6	0	4
29-Sep	63	64	0	68	9	4	0	17	6	10	0	6
30-Sep	116	27	8	81	22	2	0	26	13	13	10	18
01-Oct	165	13	45	123	15	4	1	21	7	13	3	17
02-Oct	141	0	83	119	30	2	7	24	12	0	36	7
03-Oct	110	9	75	105	8	6	8	17	4	3	29	8
04-Oct	162	23	65	95	29	2	7	29	8	0	2	9
05-Oct	161	18	130	98	17	3	24	24	14	2	0	14
06-Oct	171	42	85	91	30	0	26	19	12	1	0	18
07-Oct	197	72	62	32	32	11	6	13	41	13	0	5
08-Oct	95	108	19	92	29	27	0	55	25	11	0	27
09-Oct	121	114	3	58	20	39	1	14	15	20	0	13
10-Oct	232	150	4	10	33	95	2	28	9	54	0	34
11-Oct	377	64	45	26	90	51	0	21	23	28	0	50

12-Oct	388	97	104	13	69	51	4	5	46	23	0	5
13-Oct	266	132	120	154	47	91	15	29	36	42	0	19
14-Oct	605	229	82	89	69	98	30	41	9	68	5	18
15-Oct	449	660	169	69	106	363	36	127	15	149	0	35
16-Oct	654	429	206	0	80	176	76	4	21	121	6	14
17-Oct	1172	14	403	1	143	0	86	0	38	39	7	0
18-Oct	938	57	342	18	166	1	134	8	76	0	30	2
19-Oct	1080	496	436	37	72	55	122	16	43	5	36	11
20-Oct	890	788	96	174	62	155	78	51	31	1	17	25
21-Oct	1392	597	393	146	101	131	107	68	25	5	23	59
22-Oct	1665	1111	582	30	128	140	122	25	32	3	18	117
23-Oct	1438	620	902	152	106	218	217	29	84	8	109	20
24-Oct	911	0	1019	360	57	38	250	70	63	11	212	38
25-Oct	1416	76	181	398	155	71	12	58	50	18	9	30
26-Oct	2126	329	1238	589	77	175	123	67	33	41	23	78
27-Oct	2563	279	1111	766	96	93	83	67	40	58	23	97
28-Oct	3232	906	2067	127	139	149	123	14	87	35	34	36
29-Oct	1624	1353	1898	1068	52	161	112	75	139	32	73	48
30-Oct	3946	1373	1761	1030	100	148	112	52	50	53	43	19
31-Oct	3531	2895	2131	1389	108	353	70	51	49	170	20	28
01-Nov	3835	1796	1842	1921	151	124	88	99	74	157	9	95
02-Nov	4098	3001	3634	1668	111	203	166	48	82	87	25	37
03-Nov	2818	2512	2666	1551	93	197	128	28	197	66	40	36
04-Nov	4584	3032	2437	1360	72	228	63	33	152	123	61	17
05-Nov	4529	5327	2817	3230	66	331	90	109	52	70	24	64
06-Nov	5382	3942	599	2060	151	219	46	65	43	208	28	87
07-Nov	5491	5199	2487	1515	150	182	37	26	86	46	8	169
08-Nov	3674	4397	604	2003	115	138	11	44	169	21	44	47
09-Nov	1718	5079	1778	639	21	217	69	27	115	51	58	17
10-Nov	3127	4008	1893	6	80	184	35	0	101	77	33	30
11-Nov	2822	4156	3916	104	93	126	152	27	71	151	36	35
12-Nov	1989	3403	2467	987	83	127	99	110	108	120	36	238
13-Nov	2441	3742	2175	1624	105	210	132	44	172	95	102	176

14-Nov	307	2541	4	1776	35	195	17	21	258	49	101	26
15-Nov	32	1761	141	2544	31	129	21	62	29	67	84	49
16-Nov	8	1757	1358	1271	0	269	84	46	15	138	48	56
17-Nov	248	523	966	1150	9	101	39	45	38	177	50	168
18-Nov	670	680	701	637	60	111	108	21	62	14	66	180
19-Nov	454	448	426	740	37	132	79	33	129	11	116	188
20-Nov	677	283	368	634	77	127	32	38	134	20	168	102
21-Nov	457	168	243	513	65	178	11	54	135	106	46	110
22-Nov	46	66	78	512	15	91	20	62	120	276	76	217
23-Nov	43	91	140	205	52	59	27	23	106	186	73	307
24-Nov	9	34	66	191	20	37	32	16	167	87	195	178
25-Nov	0	31	44	37	1	41	28	4	127	80	241	74
26-Nov	16	21	22	63	0	48	12	2	83	74	127	100
27-Nov	124	19	12	0	26	28	8	1	54	257	14	11
Total	82842	71286	49888	36614	4063	6946	3629	2285	4060	3874	2677	3748

Number of Paddy Residue Burning Events Detected

Date	Delhi				Rajasthan				Madhya Pradesh			
	2020	2021	2022	2023	2020	2021	2022	2023	2020	2021	2022	2023
15-Sep	0	0	0	0	1	0	0	0	2	0	0	0
16-Sep	0	0	0	0	0	0	0	0	0	0	0	0
17-Sep	0	0	0	0	0	0	0	0	0	0	0	0
18-Sep	0	0	0	0	0	0	0	0	0	0	0	0
19-Sep	0	0	0	0	0	0	0	0	0	0	0	1
20-Sep	0	0	0	0	0	0	0	0	0	0	0	1
21-Sep	0	0	0	0	1	0	1	0	2	0	0	0
22-Sep	0	0	0	0	0	0	0	0	0	0	0	0
23-Sep	0	0	0	0	1	0	0	0	0	0	0	0
24-Sep	0	0	0	0	0	0	0	0	0	0	0	0
25-Sep	0	0	0	0	1	0	0	0	0	0	0	1
26-Sep	0	0	0	1	1	0	0	0	2	0	0	0
27-Sep	0	0	0	0	0	0	0	0	1	0	0	0
28-Sep	0	0	0	0	0	0	0	0	1	1	0	2

29-Sep	0	0	0	0	3	0	0	6	0	4	0	5
30-Sep	1	0	0	0	1	0	0	4	5	0	0	11
01-Oct	0	0	0	0	4	1	1	4	13	0	1	8
02-Oct	1	0	0	0	7	0	3	4	12	0	1	1
03-Oct	0	0	0	0	9	0	2	5	5	1	5	5
04-Oct	0	0	0	0	15	0	0	22	4	2	0	12
05-Oct	0	0	2	0	14	0	1	11	13	1	0	18
06-Oct	1	0	0	0	16	0	0	9	37	1	0	7
07-Oct	0	0	0	0	14	1	1	7	31	1	0	9
08-Oct	0	0	0	0	11	0	0	9	17	2	0	18
09-Oct	0	0	0	0	12	0	0	17	15	4	0	24
10-Oct	0	0	0	0	14	1	0	26	18	10	0	52
11-Oct	0	0	0	1	21	7	1	21	32	2	0	24
12-Oct	0	0	0	0	24	1	2	1	44	1	1	1
13-Oct	0	0	0	0	7	5	2	28	21	2	7	32
14-Oct	0	0	0	0	16	1	1	15	15	11	1	26
15-Oct	0	0	0	0	9	8	2	34	8	27	2	66
16-Oct	1	0	0	0	12	2	4	18	23	13	2	51
17-Oct	0	0	0	0	26	0	4	12	63	1	11	31
18-Oct	0	0	1	0	37	2	12	11	88	0	15	13
19-Oct	0	0	0	0	27	5	12	31	49	1	12	65
20-Oct	0	0	0	0	26	4	4	57	9	21	7	131
21-Oct	2	0	0	0	32	2	6	34	112	30	18	147
22-Oct	0	0	0	0	29	5	12	57	183	29	31	119
23-Oct	1	0	0	0	23	7	20	29	204	32	70	89
24-Oct	0	0	2	0	20	4	7	38	150	34	26	132
25-Oct	1	0	0	0	18	2	4	47	144	60	0	159
26-Oct	0	0	0	0	34	3	21	59	178	55	57	320
27-Oct	0	0	0	0	42	1	21	73	294	62	38	256
28-Oct	0	0	0	0	45	4	46	12	537	110	143	202
29-Oct	0	0	0	0	29	23	37	73	349	97	151	372
30-Oct	0	0	0	0	17	20	55	37	428	168	119	224
31-Oct	0	0	0	0	37	15	36	33	455	299	112	360
01-Nov	0	0	1	0	51	5	27	60	709	198	142	509
02-Nov	0	0	0	0	55	19	63	40	820	214	284	401

03-Nov	1	0	1	0	34	20	54	38	771	148	323	552
04-Nov	0	0	2	0	46	19	34	21	618	123	348	408
05-Nov	0	0	0	0	46	45	91	59	474	320	319	698
06-Nov	0	0	0	0	40	32	27	47	678	248	392	655
07-Nov	0	0	0	1	57	38	80	23	848	199	383	497
08-Nov	0	0	0	1	33	44	5	29	981	170	783	417
09-Nov	0	1	0	0	34	48	22	3	495	330	570	251
10-Nov	0	0	0	0	48	40	34	27	346	380	282	508
11-Nov	0	1	0	0	75	55	95	29	418	506	482	488
12-Nov	0	0	0	0	31	40	84	33	422	185	421	300
13-Nov	0	2	0	0	54	78	63	60	670	171	773	144
14-Nov	0	0	0	0	16	88	1	53	294	346	633	164
15-Nov	0	0	0	0	6	51	2	84	35	353	507	326
16-Nov	0	0	0	0	16	81	78	27	145	660	316	423
17-Nov	0	0	0	1	60	38	48	45	191	261	416	465
18-Nov	0	0	0	0	75	77	55	25	352	126	524	363
19-Nov	0	0	0	0	27	73	19	37	124	16	625	187
20-Nov	0	0	0	0	59	53	15	40	106	6	556	208
21-Nov	0	0	0	0	57	72	12	51	159	95	196	267
22-Nov	0	0	0	0	9	21	4	52	165	188	170	510
23-Nov	0	0	0	0	66	61	10	24	150	262	259	263
24-Nov	0	0	1	0	13	26	14	2	258	224	299	253
25-Nov	0	0	0	0	2	30	7	16	106	343	315	228
26-Nov	0	0	0	0	0	11	2	0	48	318	198	4
27-Nov	0	0	0	0	16	33	2	0	39	416	57	0
Total	9	4	10	5	1682	1322	1266	1769	13986	7888	11403	12484

Details of residue burning events in Haryana on 27-Nov-2023

S. No.	District	Tehsil / Block	Satellite	Latitude	Longitude	ACQ_TIME	Day / Night	Fire Power (W/m2)
1	SONIPAT	KATHURA	S-NPP	29.12549	76.62820	13:29:20	D	2.40

Details of residue burning events in Uttar Pradesh on 27-Nov-2023

S. No.	District	Tehsil / Block	Satellite	Latitude	Longitude	ACQ_TIME	Day / Night	Fire Power (W/m2)
1	BAGHPAT	BAGHPAT	S-NPP	28.89680	77.34367	13:29:20	D	2.10
2	BULANSAHAR	BULANSHAHR	S-NPP	28.53962	77.93002	13:29:20	D	6.10
3	BULANSAHAR	SIKANDARABAD	S-NPP	28.34713	77.72308	13:29:20	D	11.80
4	BULANSAHAR	SIKANDARABAD	S-NPP	28.35177	77.78086	13:29:20	D	2.10
5	ETAH	JALESAR	S-NPP	27.45247	78.50243	13:29:20	D	2.20
6	GHAZIABAD	MODINAGAR	S-NPP	28.79753	77.47799	13:29:20	D	2.10
7	KHERI	LAKHIMPUR	S-NPP	28.01602	80.77243	02:19:20	N	0.90
8	KHERI	LAKHIMPUR	S-NPP	28.01736	80.77068	02:19:20	N	1.20
9	KHERI	LAKHIMPUR	S-NPP	28.02149	80.77177	02:19:20	N	1.20
10	MEERUT	MEERUT	S-NPP	28.85555	77.84692	13:29:20	D	3.50
11	MEERUT	SARDHANA	S-NPP	29.11362	77.52279	13:29:20	D	3.30

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 rice mask for the Punjab and Haryana were provided by MNCFC, MoA&FW, Govt of India
The kharif crop mask for Delhi, Uttar Pradesh, Rajasthan and Madhya Pradesh were provided by NRSC (ISRO)**

Study Team

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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)

The DASHBOARD for paddy residue burning events is available at weblink: [CREAMS Fire Dashboard](#)
