



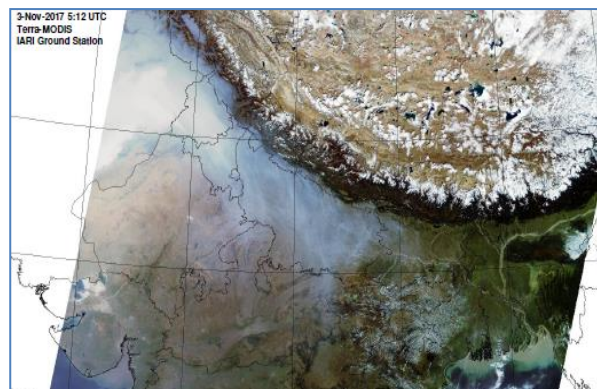
Bulletin No. 01

Events Date:
15-Sep-2022

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15-Sep-2022



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



Prepared by:

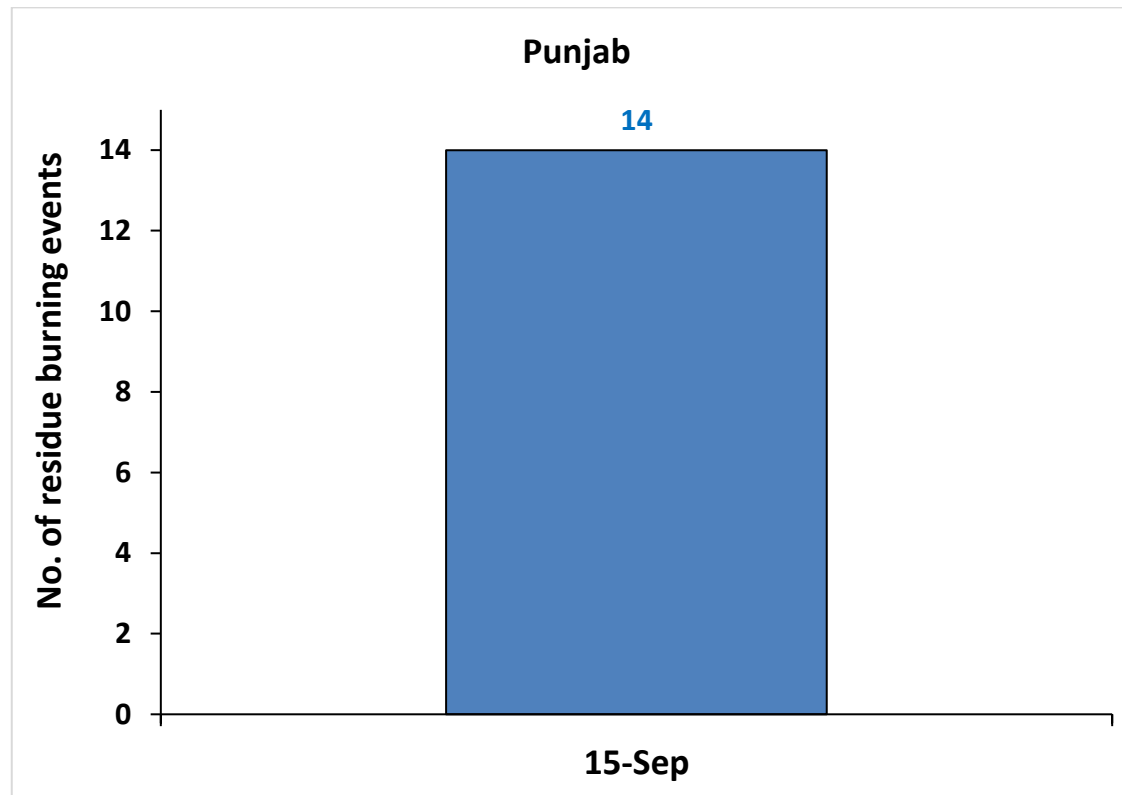
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Division of Agricultural Physics, ICAR – Indian Agricultural Research Institute, New Delhi – 110012

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

Highlights for 15-Sep-2022

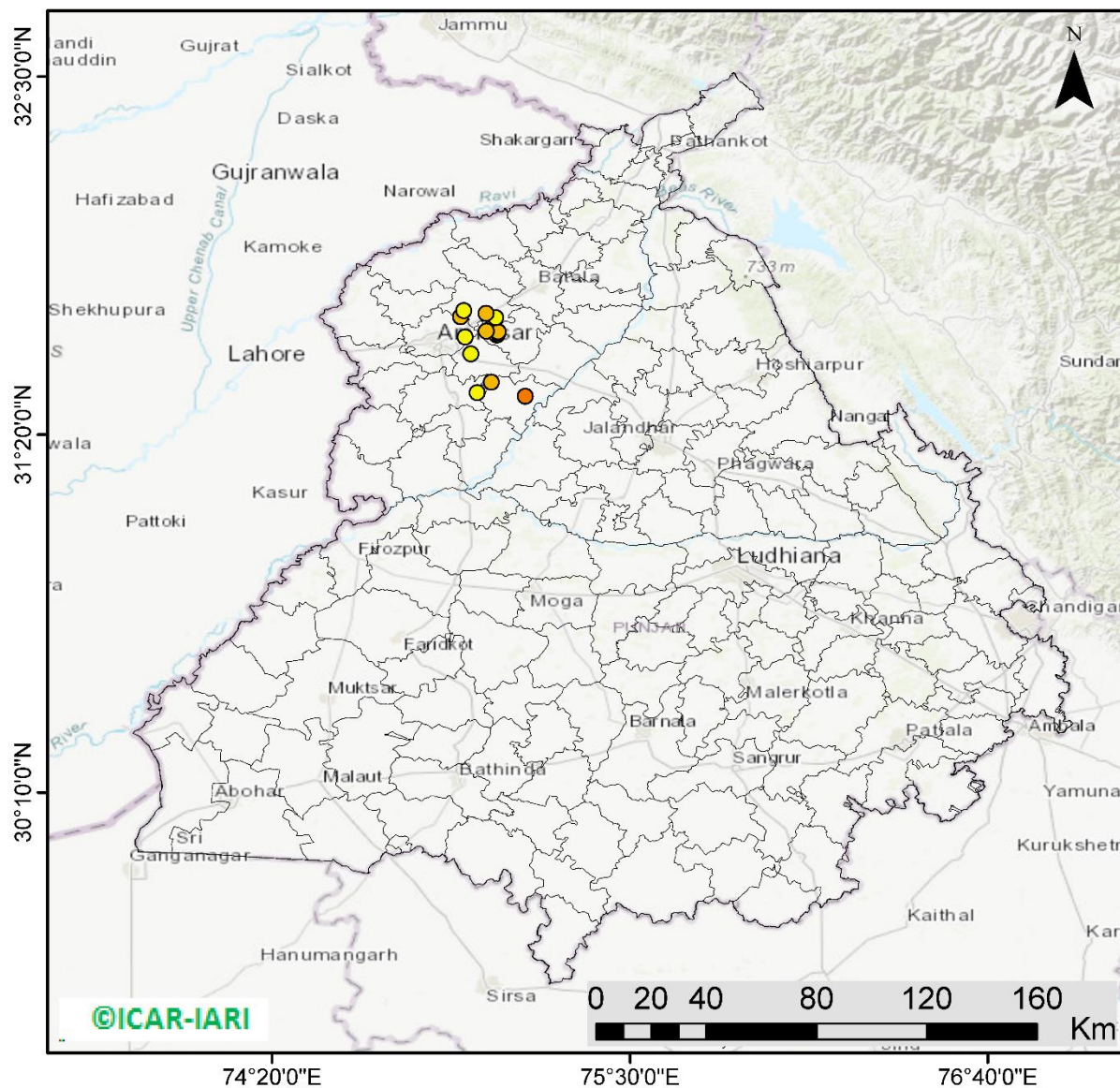
- The active fire events due to rice residue burning were monitored using satellite remote sensing, following the "Standard Protocol for Estimation of Crop Residue Burning Fire Events using Satellite Data".
- Satellites detected **14** residue burning events in the six study States on 15-Sep-2022.
- The state wise events detected on 15-Sep-2022 were **14** in Punjab, **0** in Haryana, **0** in UP, **0** in Delhi, **0** in Rajasthan and **0** in MP.
- Detection of residue burning events was hampered by the presence of clouds over all the six study states.

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



Punjab

RICE RESIDUE BURNING IN PUNJAB



14 burning events detected in Punjab during (15th Sep 2022)

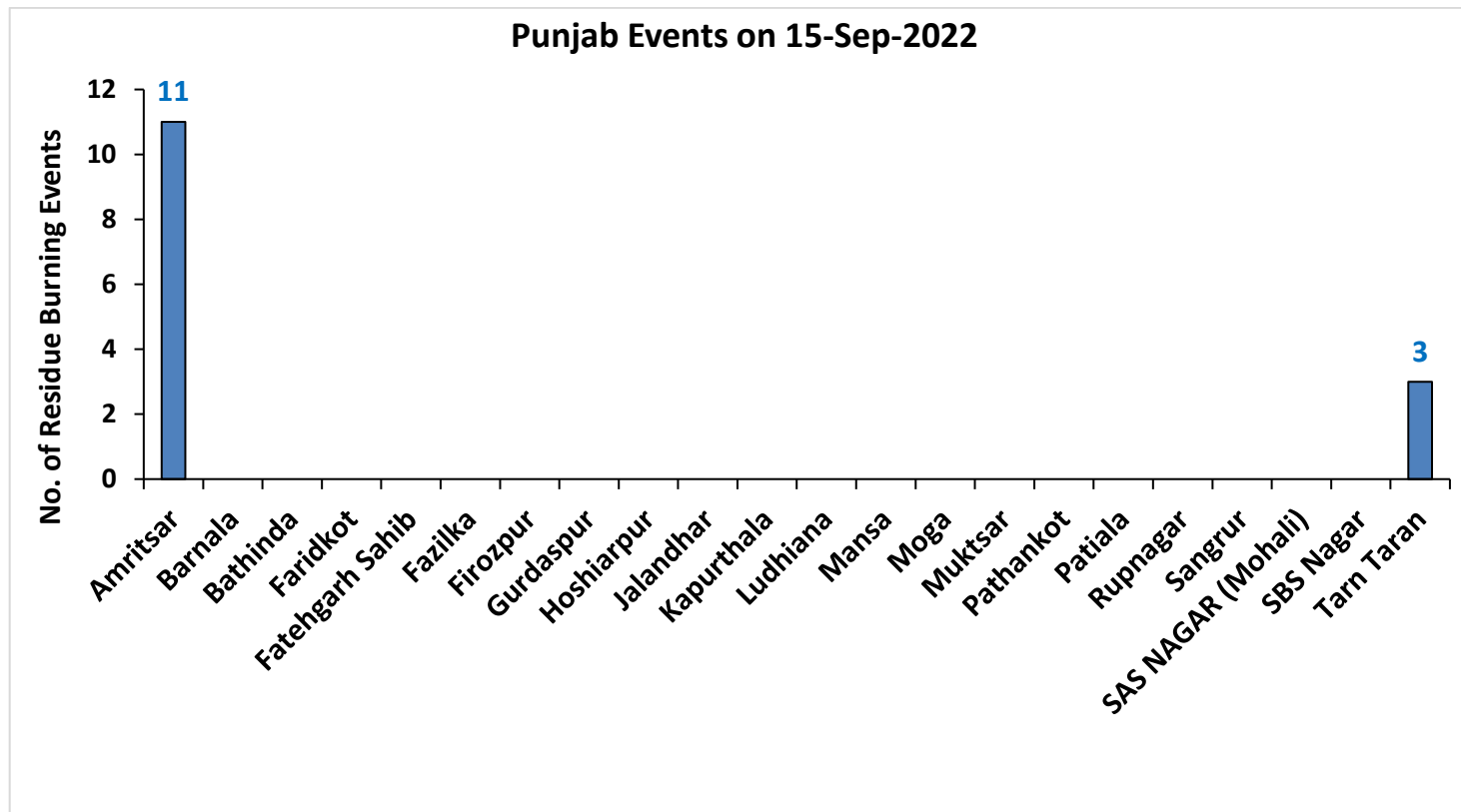
Fire Intensity (W/m²)

- 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 Punjab (15-Sep-2022)



District-wise cumulative number of residues burning events detected in 2020 ,2021 and 2022

(Period: 15 September)

(a) Punjab

District	15 Sep 2022		
	2020	2021	2022
Amritsar	5	0	11
Barnala	0	0	0
Bathinda	0	0	0
Faridkot	0	0	0
Fatehgarh Sahib	0	0	0
Fazilka	0	0	0
Firozpur	0	0	0
Gurdaspur	0	0	0
Hoshiarpur	0	0	0
Jalandhar	0	0	0
Kapurthala	0	0	0
Ludhiana	0	0	0
Mansa	0	0	0
Moga	0	0	0
Muktsar	0	0	0
Pathankot	0	0	0
Patiala	0	0	0
Rupnagar	0	0	0
Sangrur	0	0	0
SAS NAGAR (Mohali)	0	0	0
SBS Nagar	0	0	0
Tarn Taran	0	0	3
Total	5	0	14

(b) Haryana

District	15 Sep 2022		
	2020	2021	2022
AMBALA	0	0	0
BHIWANI	0	0	0
CHARKHI DADRI	0	0	0
FARIDABAD	0	0	0
FATEHABAD	0	0	0
GURGAON	0	0	0
HISAR	0	0	0
JHAJJAR	0	0	0
JIND	0	0	0
KAITHAL	0	0	0
KARNAL	1	0	0
KURUKSHETRA	0	0	0
MAHENDRAGARH	0	0	0
MEWAT	0	0	0
PALWAL	0	0	0
PANCHKULA	0	0	0
PANIPAT	0	0	0
REWARI	0	0	0
ROHTAK	0	0	0
SIRSA	1	0	0
SONIPAT	0	0	0
YAMUNANAGAR	0	0	0
Total	2	0	0

(c) Uttar Pradesh

District	15 Sep 2022										
	2020	2021	2022	GAUTAMBUDHNAGAR	0	0	0	MUZAFARNAGAR	0	0	0
AGRA	0	0	0	GAZIPUR	0	0	0	PILHIBHIT	0	0	0
ALIGARH	0	0	0	GHAZIABAD	0	0	0	PRATAPGARH	0	0	0
ALLAHABAD	0	0	0	GONDA	0	0	0	RAIBEARELI	1	0	0
AMBEDKARNAGAR	0	0	0	GORAKHPUR	0	0	0	RAMPUR	0	0	0
AMETHI	0	0	0	HAMIRPUR	0	0	0	SAMBHAL	0	0	0
AMROHA	0	0	0	HAPUR	0	0	0	SANTKABIRNAGAR	0	0	0
AURAIYA	0	0	0	HARDOI	0	0	0	SANTRAVIDASNAGAR	0	0	0
AZAMGARH	0	0	0	HATHRAS	0	0	0	SHAHJAHANPUR	0	0	0
BADAUN	0	0	0	JALAUN	0	0	0	SHAMLI	0	0	0
BAGHPAT	0	0	0	JAUNPUR	0	0	0	SHARANPUR	0	0	0
BAHRAICH	0	0	0	JHANSI	0	0	0	SHRAWASTI	0	0	0
BALLIA	0	0	0	KANNAUJ	0	0	0	SIDDHARTHANAGAR	0	0	0
BALRAMPUR	0	0	0	KANPUR	0	0	0	SITAPUR	0	0	0
BANDA	0	0	0	KANPUR DEHAT	0	0	0	SONBHADRA	0	0	0
BARABANKI	0	0	0	KASGANJ	0	0	0	SULTANPUR	0	0	0
BAREILLY	0	0	0	KAUSHAMBI	0	0	0	UNNAO	0	0	0
BASTI	0	0	0	KHERI	0	0	0	VARANASI	0	0	0
BIJNOR	0	0	0	KUSHINAGAR	0	0	0	Total	1	0	0
BULANDSAHAR	0	0	0	LALITPUR	0	0	0				
CHANDAULI	0	0	0	LUCKNOW	0	0	0				
CHITRAKOOT	0	0	0	MAHARAJGANJ	0	0	0				
DEORIA	0	0	0	MAHOBA	0	0	0				
ETAH	0	0	0	MAINPURI	0	0	0				
ETAWAH	0	0	0	MATHURA	0	0	0				
FAIZABAD	0	0	0	MAU	0	0	0				
FARRUKHABAD	0	0	0	MEERUT	0	0	0				
FATEHPUR	0	0	0	MIRZAPUR	0	0	0				
FIROZABAD	0	0	0	MORADABAD	0	0	0				

(d) Delhi

District	15 Sep 2022		
	2020	2021	2022
CENTRAL	0	0	0
EAST	0	0	0
NEW DELHI	0	0	0
NORTH	0	0	0
NORTH EAST	0	0	0
NORTH WEST DELHI	0	0	0
SHAHADRA	0	0	0
SOUTH	0	0	0
SOUTH EAST	0	0	0
SOUTH WEST DELHI	0	0	0
WEST DELHI	0	0	0
Total	0	0	0

(e) Rajasthan

District	15 Sep 2022		
	2020	2021	2022
AJMER	0	0	0
ALWAR	0	0	0
BANSWARA	0	0	0
BARAN	0	0	0
BARMER	0	0	0
BHARATPUR	0	0	0
BHILWARA	1	0	0
BIKANER	0	0	0
BUNDI	0	0	0
CHITTAURGARH	0	0	0
CHURU	0	0	0
DAUSA	0	0	0
DHOLPUR	0	0	0
DUNGARPUR	0	0	0
GANGANAGAR	0	0	0
HANUMANGARH	0	0	0
JAIPUR	0	0	0
JAISELMER	0	0	0
JALOR	0	0	0
JHALAWAR	0	0	0
JHUNJHUNUN	0	0	0
JODHPUR	0	0	0
KARALI	0	0	0
KOTA	0	0	0
NAGPUR	0	0	0
PALI	0	0	0
PRATAPGARH	0	0	0
RAJSMAND	0	0	0
SIKAR	0	0	0
SIROHI	0	0	0
SWAIMADHOPUR	0	0	0
TONK	0	0	0
UDAIPUR	0	0	0
Total	1	0	0

(f) Madhya Pradesh

District	15 Sep 2022						
	2020	2021	2022	PANNA	0	0	0
ALIRAJPUR	0	0	0	RAISEN	0	0	0
ANUPPUR	0	0	0	RAJGARH	0	0	0
ASHOKNAGAR	0	0	0	RATLAM	0	0	0
BALAGHAT	0	0	0	REWA	0	0	0
BARWANI	0	0	0	SAGAR	0	0	0
BETUL	0	0	0	SATNA	0	0	0
BHIND	0	0	0	SEHORE	0	0	0
BHOPAL	0	0	0	SEONI	0	0	0
BURHANPUR	0	0	0	SHAHDOL	0	0	0
CHHATARPUR	0	0	0	SHAJAPUR	0	0	0
CHHINDWARA	0	0	0	SHEOPUR	0	0	0
DAMOH	0	0	0	SHIVPURI	0	0	0
DATIA	0	0	0	SIDHI	0	0	0
DEWAS	0	0	0	SINGRAULI	0	0	0
DHAR	0	0	0	TIKAMGARH	0	0	0
DINDORI	0	0	0	UJJAIN	0	0	0
EAST NIMAR	0	0	0	UMARIA	0	0	0
GUNA	0	0	0	VIDESHA	0	0	0
GWALIOR	0	0	0	WEST NIMAR	0	0	0
HARDA	2	0	0	Total	2	0	0
HOSHANGABAD	0	0	0				
INDORE	0	0	0				
JABALPUR	0	0	0				
JHABUA	0	0	0				
KATNI	0	0	0				
MANDLA	0	0	0				
MANDSAUR	0	0	0				
MORENA	0	0	0				
NARSHIMAPURA	0	0	0				
NIMACH	0	0	0				

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

Number of Paddy Residue Burning Events Detected																		
	Punjab			Haryana			Uttar Pradesh			Delhi			Rajasthan			Madhya Pradesh		
	2020	2021	2022	2020	2021	2022	2020	2021	2022	2020	2021	2022	2020	2021	2022	2020	2021	2022
15-Sep	5	0	14	2	0	0	1	0	0	0	0	0	1	0	0	2	0	0
Total	5	0	14	2	0	0	2	0	0	0	0	0	1	0	0	2	0	0

Details of residue burning events in Punjab on 15-Sep-2022

S. No.	District	Tehsil / Block	Satellite	Latitude	Longitude	ACQ_TIME	Day / Night	Fire Power (W/m2)
1	TARN TARAN	KHADUR SAHIB	S-NPP	31.45770	75.15850	13:42:00	D	14.10
2	TARN TARAN	TARN TARAN	S-NPP	31.46950	75.00230	13:42:00	D	2.80
3	TARN TARAN	KHADUR SAHIB	S-NPP	31.50430	75.04820	13:42:00	D	8.60
4	AMRITSAR	JANDIALA GURU	S-NPP	31.59590	74.98160	13:42:00	D	4.60
5	AMRITSAR	VERKA	S-NPP	31.65120	74.96250	13:42:00	D	3.60
6	AMRITSAR	TARSIKKA	S-NPP	31.65740	75.06590	13:42:00	D	2.80
7	AMRITSAR	TARSIKKA	S-NPP	31.66380	75.06000	13:42:00	D	6.70
8	AMRITSAR	TARSIKKA	S-NPP	31.66510	75.06930	13:42:00	D	12.40
9	AMRITSAR	TARSIKKA	S-NPP	31.66800	75.07050	13:42:00	D	6.90
10	AMRITSAR	TARSIKKA	S-NPP	31.67040	75.03200	13:42:00	D	7.90
11	AMRITSAR	MAJITHA	S-NPP	31.71400	75.06250	13:42:00	D	3.80
12	AMRITSAR	VERKA	S-NPP	31.71740	74.94780	13:42:00	D	5.10
13	AMRITSAR	MAJITHA	S-NPP	31.72820	75.03140	13:42:00	D	5.70
14	AMRITSAR	MAJITHA	S-NPP	31.73690	74.95860	13:42:00	D	4.40

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**

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)
