

MOVING BEYOND MODIS: VIIRS, Sentinel-2, VHR

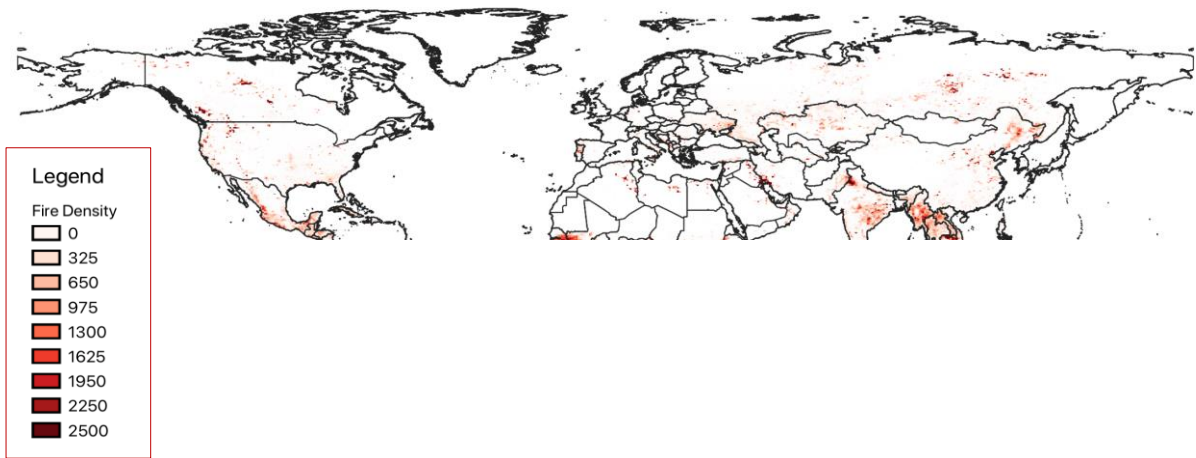
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<https://www.gov.mb.ca/agriculture/crops/crop-residue-burning-program/why-do-farmers-burn.html>

1

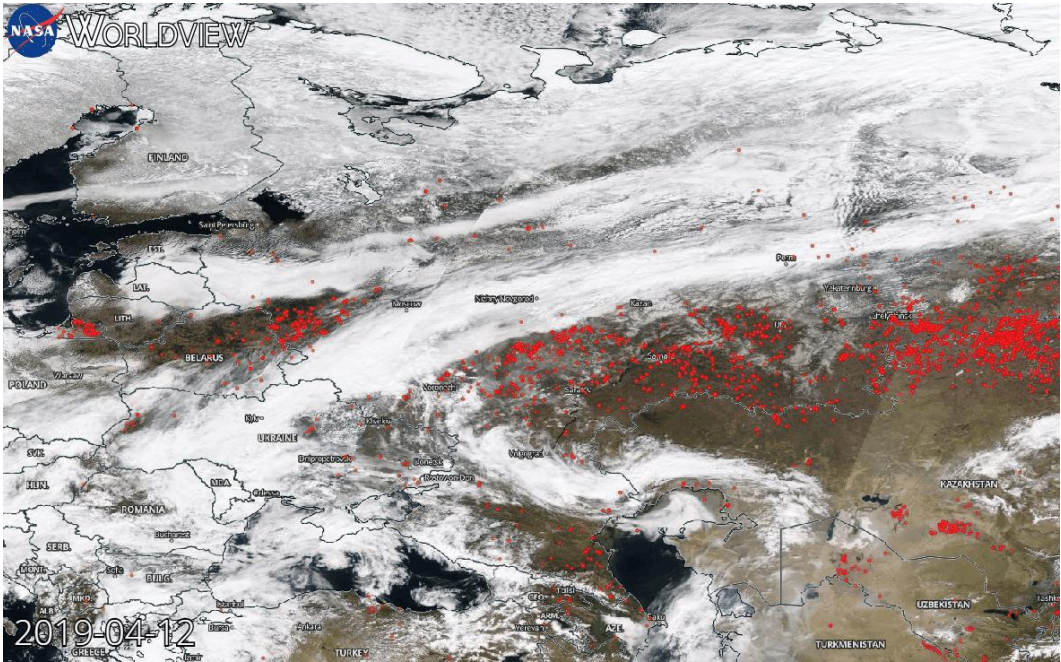
Density of 2017 Open Burning in Cropland-Dominated Landscapes;
375 m VIIRS in a 0.5° grid



2

VIIRS and MODIS active fires mid-April 2019.

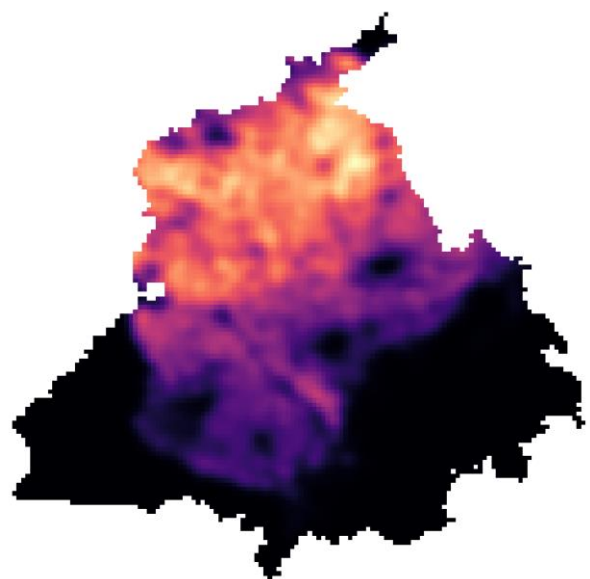
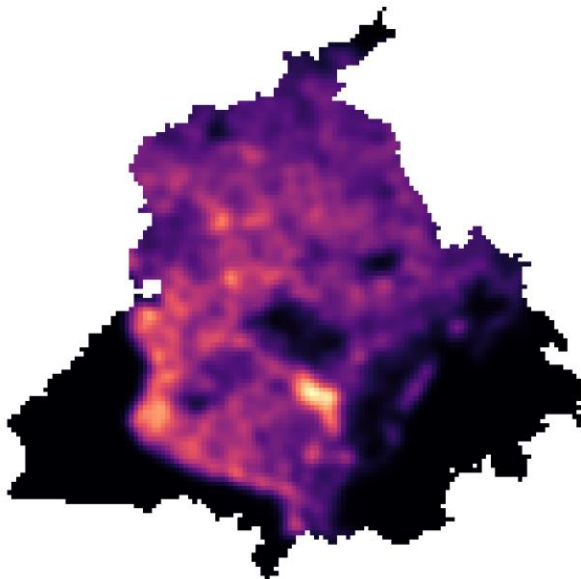
Note Kaliningrad.



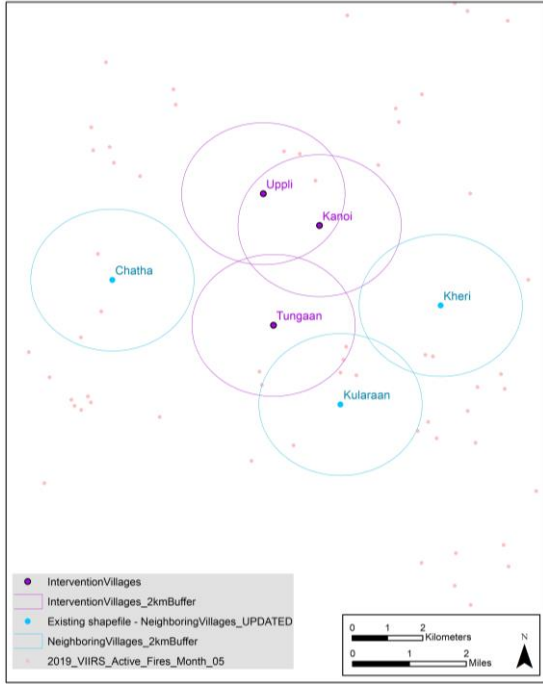
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Spring Fire Density 2015-2018

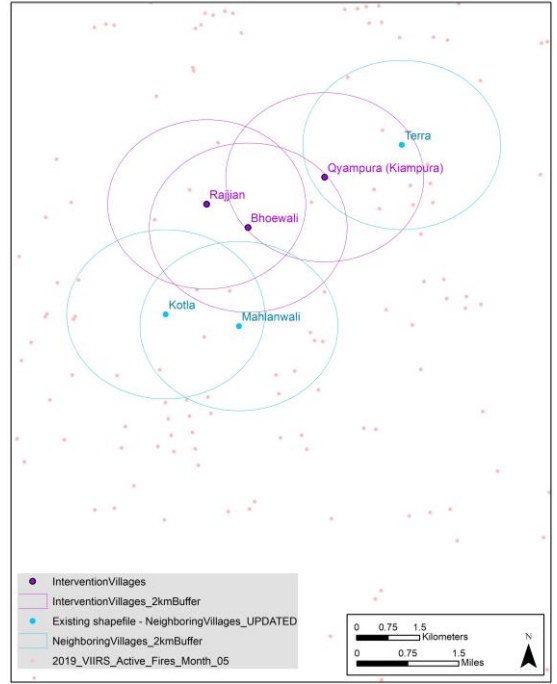
Fall Fire Density 2015-2018



4



MAY 2019



5

Fire activity and black carbon emissions increased in all of India and Punjab:

Black Carbon Emissions (in metric tonnes) for Punjab State, India from VIIRS Open Burning

	2013	2014	2015	2016	2017	2018	2019
JAN	22	14	13	5	12	19	8
FEB	18	21	21	38	37	25	10
MAR	37	14	20	18	24	28	22
APR	33	13	22	192	50	50	18
MAY	1,172	1,323	974	849	933	1,079	1,432

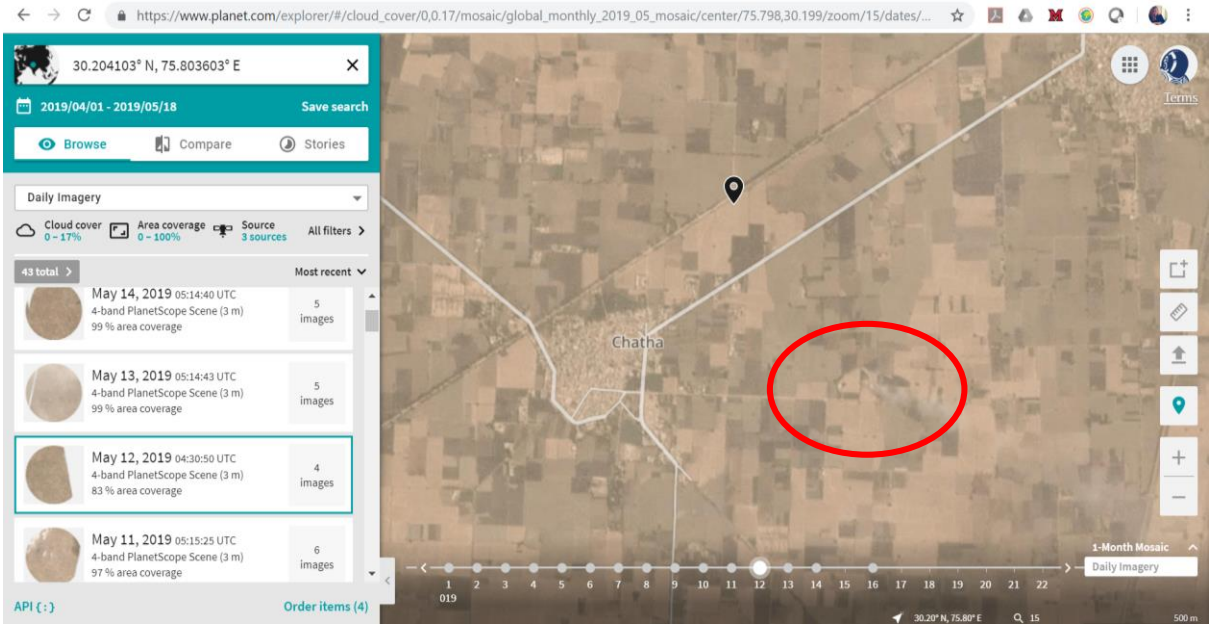
Black Carbon Emissions (in metric tonnes) for India from VIIRS Open Burning

	2013	2014	2015	2016	2017	2018	2019
JAN	337	318	345	315	371	509	494
FEB	343	396	481	504	490	571	472
MAR	634	605	636	744	610	1,067	635
APR	821	977	800	1,248	1,223	1,085	1,211
MAY	1,779	1,909	1,559	1,206	1,527	1,728	2,579

Photo by [Richard Saunders](#) on [Unsplash](#)

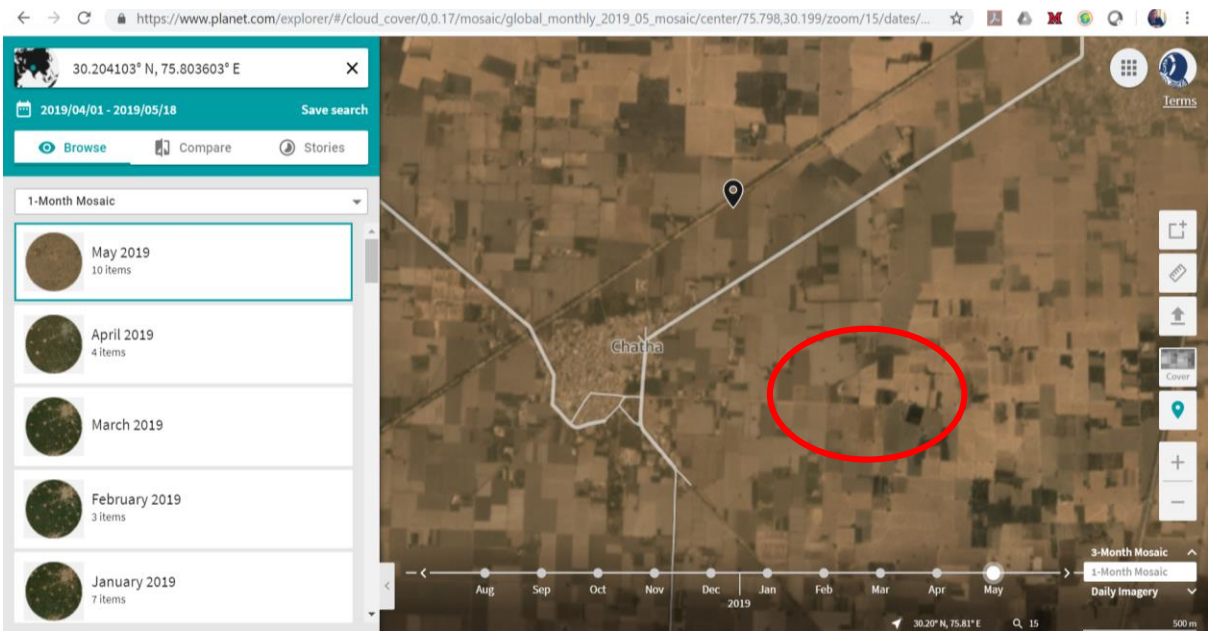
6

Punjab Sangrur Chatha 30.204103 N 75.803603 E



7

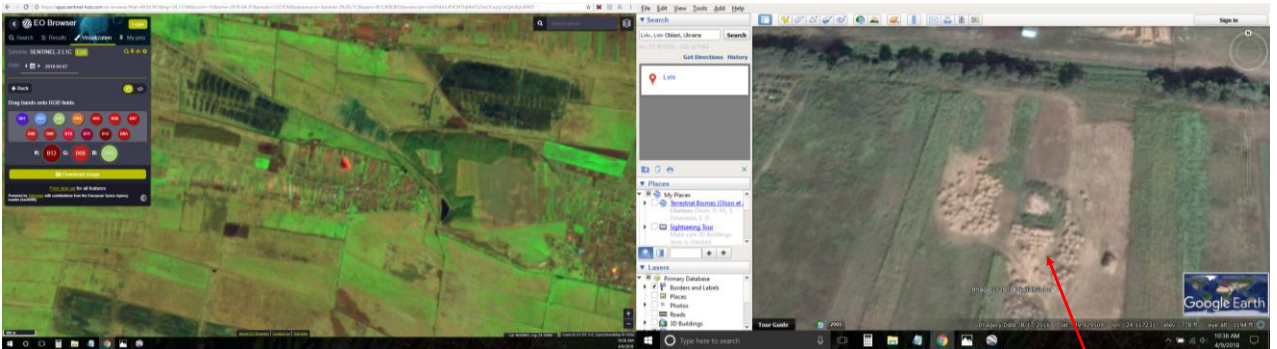
Punjab Sangrur Chatha 30.204103 N 75.803603 E



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8 April 2018

Normalized Burn Ratio:
Bright red indicates flaming
fire front.

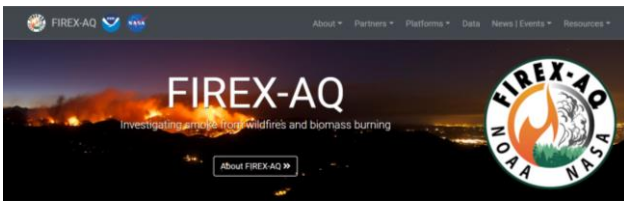


Location: 49.929435° N, 24.117343° E

Sytykhiv village, Zhovkivskiy Rayon, Lviv Oblast, Ukraine

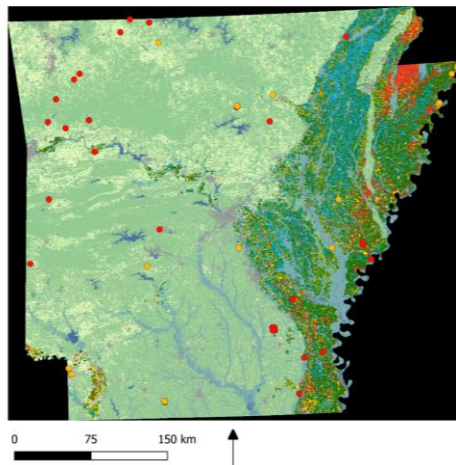
Piles (windrows) of straw
seen in Google Earth Pro
at the fire location.

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Fire Influence on Regional to Global Environments and Air Quality (FIREX-AQ), a joint venture led by NOAA and NASA, provides comprehensive observations to investigate the impact on air quality and climate from wildfires and agricultural fires across the continental United States.

Arkansas Fire Detections - August 18th 2019



Satellite

- VIIRS
- GOES

Type of Fires Detected

GOES:
13 agricultural fires
15 forest fires

VIIRS:
3 agricultural fires
14 forest fires
2 structural fires

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