

# Updated Damage Assessment of Affected Villages in Maungdaw District

(Assessment based on satellite imagery recorded on 10, 17 and 18 November 2016)



## Summary of main findings:

Human Rights Watch identified a total of 820 destroyed buildings in five villages of Maungdaw District from an analysis of very high resolution satellite imagery recorded on 10, 17 and 18 November 2016. These damages are in addition to the 430 destroyed buildings Human Rights Watch identified earlier and represent a second, more destructive round of arson attacks occurring between 10 and 17 November 2016.

Of this new total, 255 buildings were destroyed in the village of Yae Khat Chaung Gwa Son (MMRo12009041); 265 buildings were destroyed in Dar Gyi Zar (MMRo12009042); 65 buildings were destroyed in Pwint Hpyu Chaung (MMRo12009039); 15 buildings were destroyed in Myaw Taung (MMRo12009044); and 220 buildings were destroyed in Wa Peik (MMRo12009051) in addition to the 100 buildings destroyed in the village earlier.

Human Rights Watch also reviewed thermal anomaly data collected by environmental satellite sensors that detected the presence of multiple active fires burning in the village of Pwint Hpyu Chaung on 12 November, in Dar Gyi Zar on 13 November and in Yae Khat Chaung Gwa Son on 13, 14 and 15 November 2016.

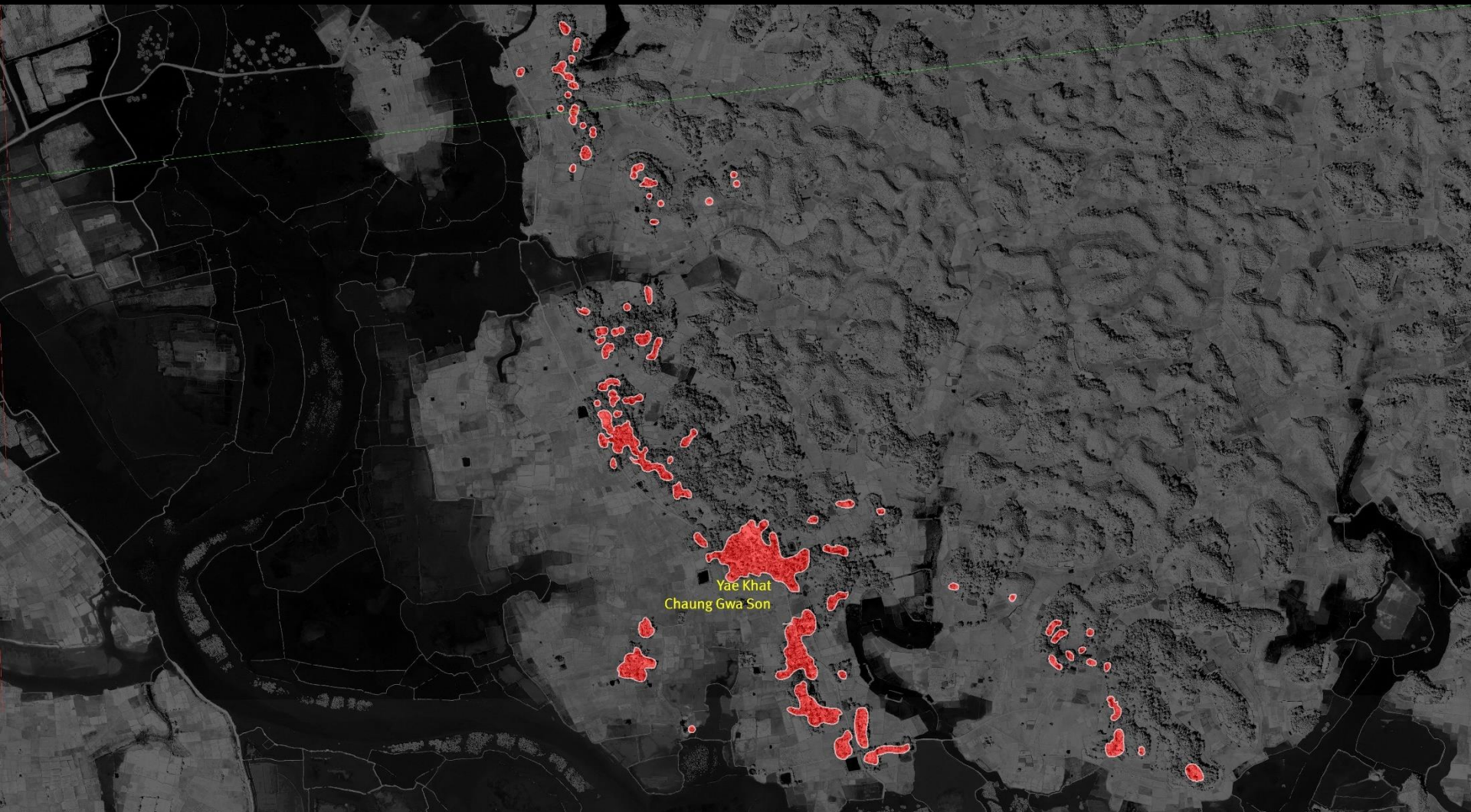
The discovery of both active fires and extensive burn scars in these villages is consistent with arson attacks occurring in Maungdaw District between 10 and 17 November 2016.

Because of dense tree cover it is possible that a limited number of fire-affected buildings were not detected. The actual number of building destruction in Maungdaw could be higher.

# Overview of Building destruction in the village of Yae Khat Chaung Gwa Son, Maungdaw District

## Village Assessment Summary:

A total of 255 buildings were destroyed in the village of Yae Khat Chaung Gwa Son (MMRo12009041) based on a change detection analysis of five very high resolution satellite images recorded 10, 17 and 18 November 2016. Active fires were detected in the village on 13, 14 and 15 November by an environmental satellite sensor. The discovery of active fires, extensive burn scars, and destroyed buildings and vegetation in this village is consistent with an arson attack occurring between 10 and 17 November 2016.



Village Center Coordinates:  
92°19'9.82"E 20°58'10.057"N; 46QD|2925018918 MGRS

## Assessment Notes:

Because of dense tree cover it is possible that a limited number of fire-affected buildings were not detected. The actual number of building destruction in could be higher.



# Overview of Building destruction in the village of Dar Gyi Zar, Maungdaw District

## Village Assessment Summary:

A total of 265 buildings were destroyed in the village of Dar Gyi Zar (MMR012009042) based on a change detection analysis of five very high resolution satellite images recorded 10, 17 and 18 November 2016. Active fires were detected in the village on 13 November by an environmental satellite sensor. The discovery of active fires, extensive burn scars, and destroyed buildings and vegetation in this village is consistent with an arson attack occurring between 10 and 17 November 2016.



Village Center Coordinates:  
92°19'41.421"E 20°57'2.92"N; 46QDJ3015416850 MGRS

## Assessment Notes:

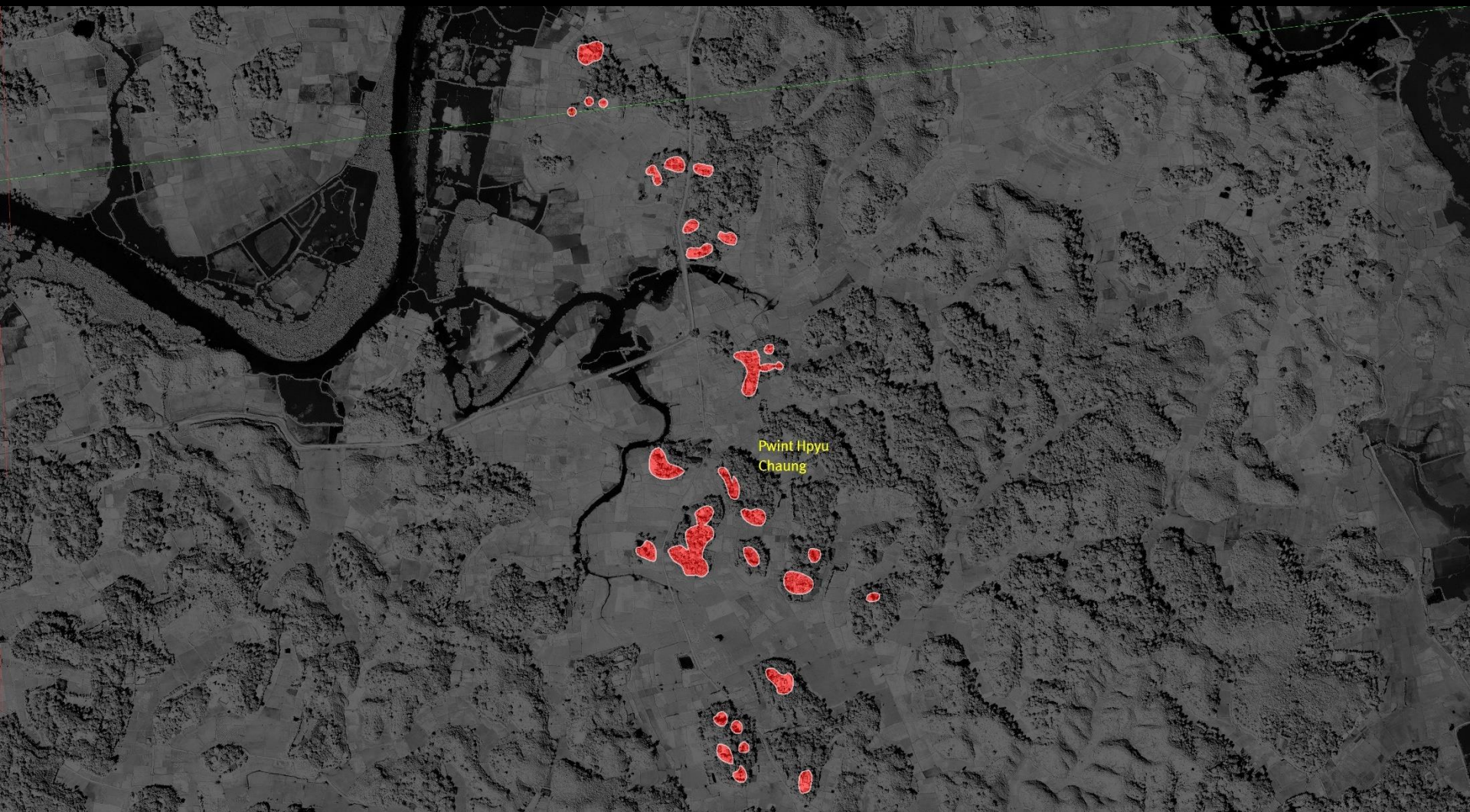
Because of dense tree cover it is possible that a limited number of fire-affected buildings were not detected. The actual number of building destruction in could be higher.



# Overview of Building destruction in the village of Pwint Hpyu Chaung, Maungdaw District

## Village Assessment Summary:

A total of 65 buildings were destroyed in the village of Pwint Hpyu Chaung (MMR012009039) based on a change detection analysis of five very high resolution satellite images recorded 10, 17 and 18 November 2016. Active fires were detected in the village on 12 November by an environmental satellite sensor. The discovery of active fires, burn scars, and destroyed buildings and vegetation in this village is consistent with an arson attack occurring between 10 and 17 November 2016.



## Village Center Coordinates:

92°19'48.2"E 20°59'23.512"N; 46QDJ3036821172 MGRS

Satellite Sensor: World View 01; Date: 18 November 2016; Satellite imagery © DigitalGlobe 2016 – NextView

## Assessment Notes:

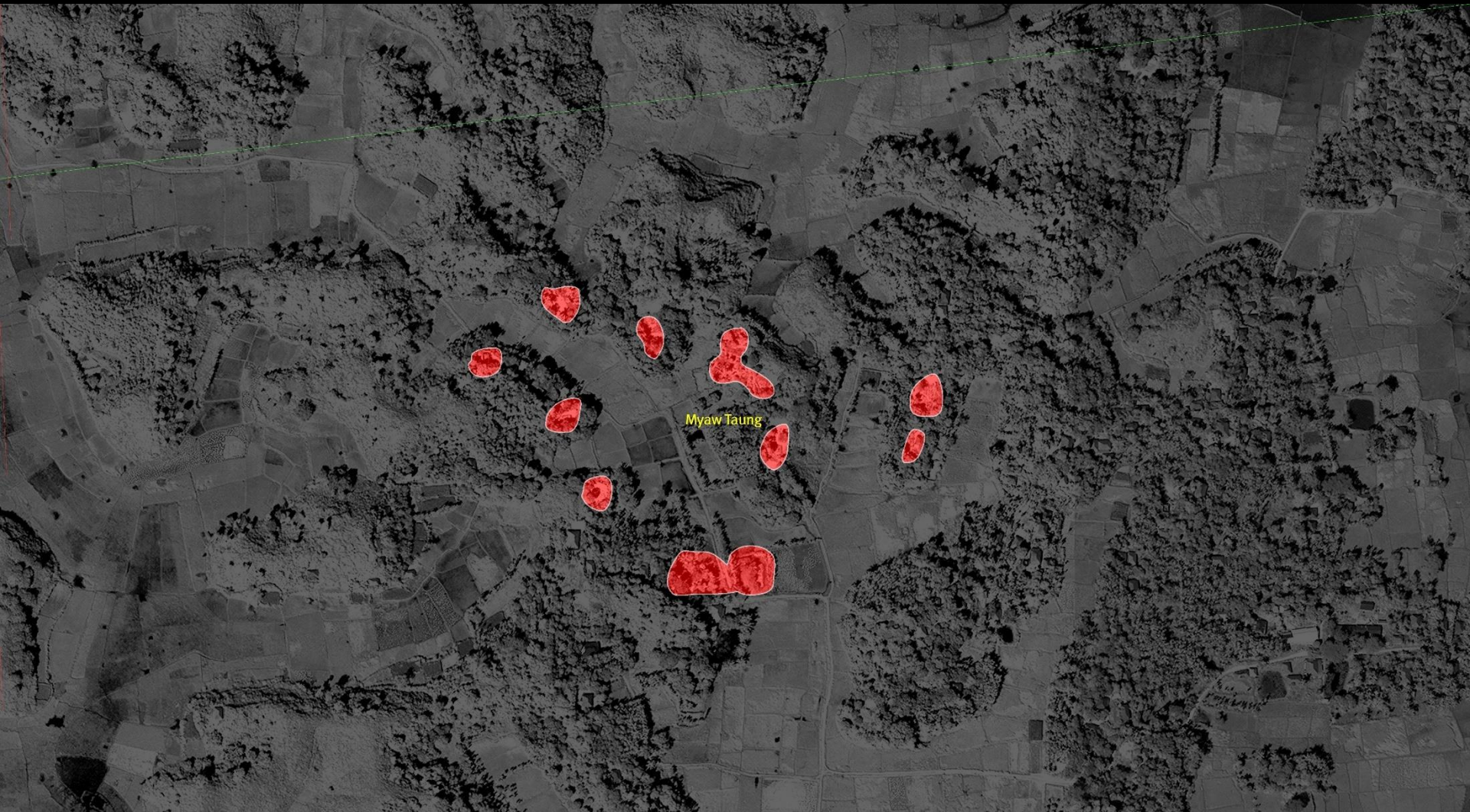
Because of dense tree cover it is possible that a limited number of fire-affected buildings were not detected. The actual number of building destruction in could be higher.



# Overview of Building destruction in the village of Myaw Taung, Maungdaw District

## Village Assessment Summary:

A total of 15 buildings were destroyed in the village of Myaw Taung (MMR012009044) based on a change detection analysis of five very high resolution satellite images recorded 10, 17 and 18 November 2016. The presence of fire burn scars and destroyed buildings and vegetation in this village is consistent with an arson attack occurring between 10 and 17 November 2016.



## Village Center Coordinates:

92°20'22.63"E 20°58'31.499"N; 46QD|3135519569 MGRS

Satellite Sensor: World View 01; Date: 18 November 2016; Satellite imagery © DigitalGlobe 2016 – NextView

## Assessment Notes:

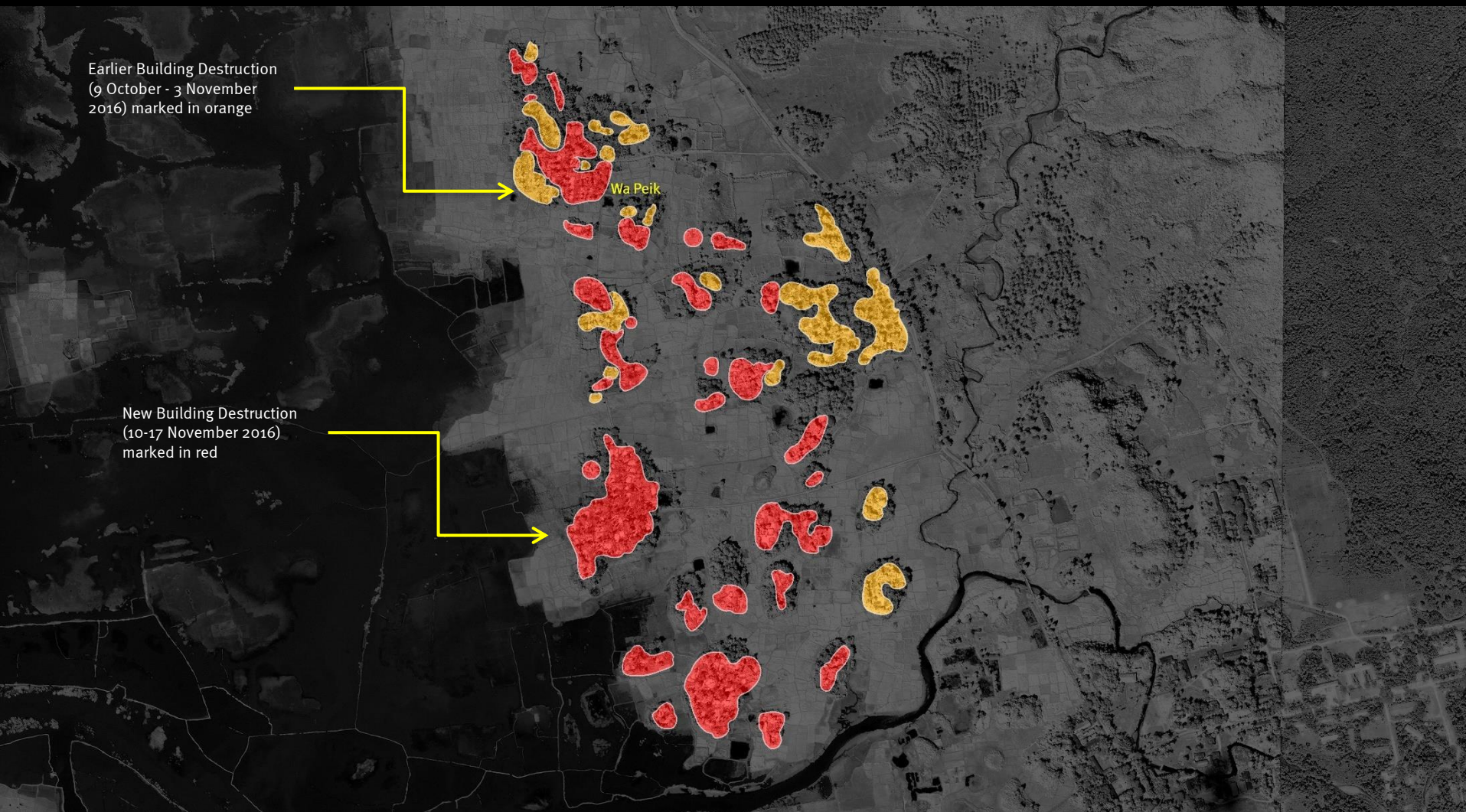
Because of dense tree cover it is possible that a limited number of fire-affected buildings were not detected. The actual number of building destruction in could be higher.



# Overview of new building destruction in the village of Wa Peik, Maungdaw District

## Village Assessment Summary:

A total of 220 buildings were destroyed in the village of Wa Peik (MMRo12009051) based on a change detection analysis of five very high resolution satellite images recorded 10, 17 and 18 November 2016. This destruction is in addition to the 100 buildings destroyed between 9 October and 3 November 2016. The presence of fire burn scars and destroyed buildings and vegetation in this village is consistent with a second arson attack occurring between 10 and 17 November 2016.



Village Center Coordinates:  
92°23'25.135"E 20°54'55.848"N; 46QDJ3660012918 MGRS

Satellite Sensor: World View 01; Date: 18 November 2016; Satellite imagery © DigitalGlobe 2016 – NextView

## Assessment Notes:

Because of dense tree cover it is possible that a limited number of fire-affected buildings were not detected. The actual number of building destruction in could be higher.



## Continuing building destruction in the village of Wa Peik, Maungdaw District Pre-destruction satellite image recorded on 10 November 2016 – before the second arson attack

Satellite imagery displayed in false-color, near-infrared to highlight areas of extensive fire-related damages and burn scars



Image Center Coordinates:  
92°23'20.395"E 20°54'50.912"N ; 46QDJ3646212767 MGRS

Satellite Sensor: Pléiades-1; image © CNES 2016 - Airbus DS 2016;



## Continuing building destruction in the village of Wa Peik, Maungdaw District Post-destruction satellite image recorded on 18 November 2016 – after the second arson attack

Satellite imagery displayed in false-color, near-infrared to highlight areas of extensive fire-related damages and burn scars



Image Center Coordinates:  
92°23'20.395"E 20°54'50.912"N ; 46QDJ3646212767 MGRS

Satellite Sensor: Deimos 2; Image © Deimos Imaging S.L.U. 2016.



## Building destruction in the village of Yae Khat Chaung Gwa Son (MMRo12009041), Maungdaw District Pre-destruction satellite image recorded on 3 November 2016 – before the arson attack

Satellite imagery displayed in false-color, near-infrared to highlight areas of extensive fire-related damages and burn scars



Image Center Coordinates:  
92°19'13.63"E 20°58'3.574"N ; 46QD|2935918718 MGRS

Satellite Sensor: Pléiades-1; image © CNES 2016 - Airbus DS 2016;



## Building destruction in the village of Yae Khat Chaung Gwa Son (MMRo12009041), Maungdaw District Post-destruction satellite image recorded on 18 November 2016 – after the arson attack

Satellite imagery displayed in false-color, near-infrared to highlight areas of extensive fire-related damages and burn scars



Image Center Coordinates:  
92°19'13.63"E 20°58'3.574"N ; 46QD|2935918718 MGRS

Satellite Sensor: Deimos 2; Image © Deimos Imaging S.L.U. 2016.