

**ISGC 2025, 17-21 March 2025,
Academia Sinica, Taiwan**

Updates on Fire Control and Management in Upper ASEAN

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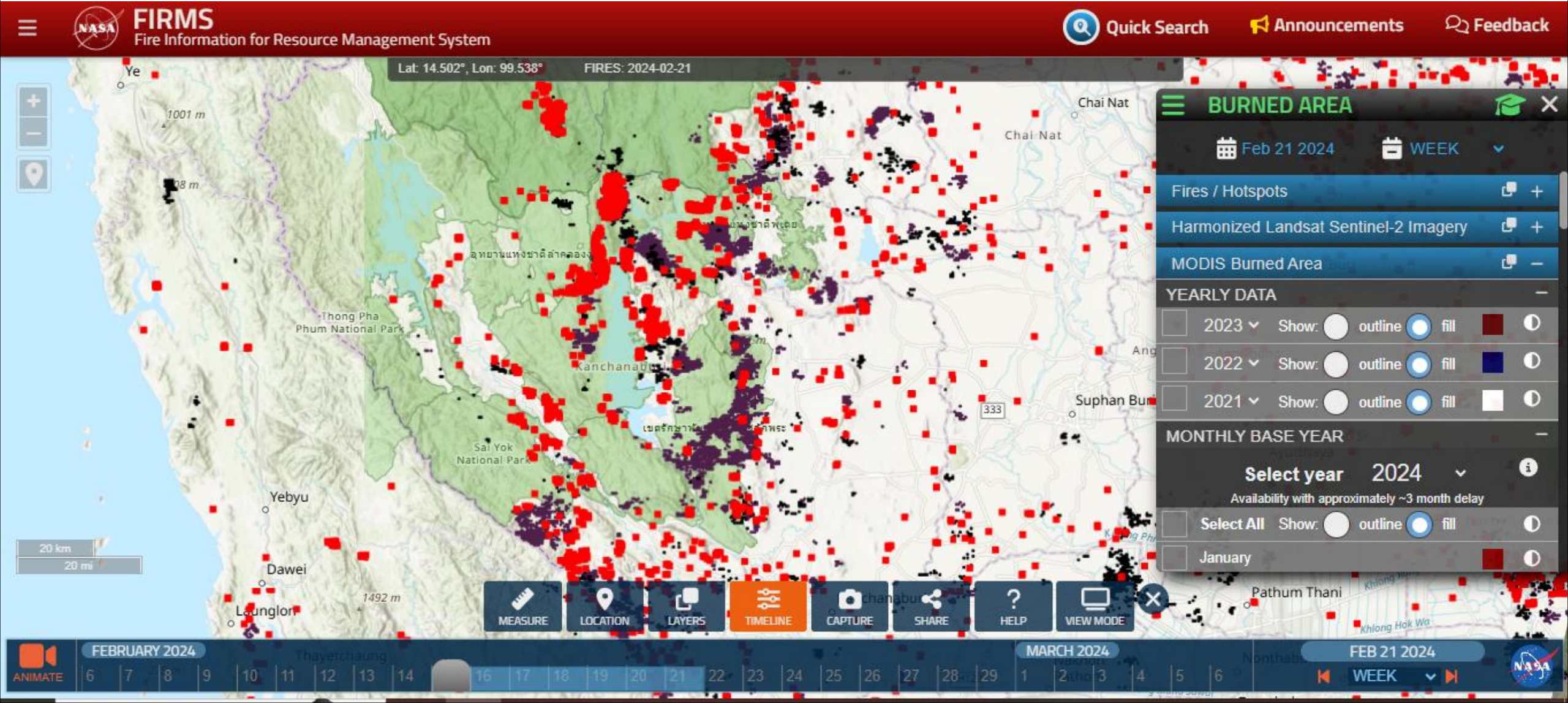


Contents

1. New NASA-FIRMS Burned Areas Overlay Tool
2. New Thresholds of FWI, FFMC, & ISI of the Upper ASEAN and Thailand Fire Danger Rating System
3. Newly Faster NOAA Satellite Fire Alerts Tool
4. NASA News and Peer Review Publication
5. The Mekong-Korea Forest Fire (MKFF) Symposium
6. International Fire Suppression Training
7. Global Fire Situation 2024-2025 in progress
8. Final Words

Newly overlay 3-year of burned areas by MODIS and any 31-day active fire products

Source: [https://firms.modaps.eosdis.nasa.gov/map2/#t:custom;m:burned_area;d:2024-02-15..2024-02-21,2024-02-15;l:fires_viirs_noaa20,fires_viirs_noaa21,fires_viirs_snpp,sentinel_hls_l30,modis_burned_area=\[fill|2024|2-4F204A\],modis_burned_area2=\[fill|2010|2-030303\],protected_areas,topo;@99.44,14.56,9.01z](https://firms.modaps.eosdis.nasa.gov/map2/#t:custom;m:burned_area;d:2024-02-15..2024-02-21,2024-02-15;l:fires_viirs_noaa20,fires_viirs_noaa21,fires_viirs_snpp,sentinel_hls_l30,modis_burned_area=[fill|2024|2-4F204A],modis_burned_area2=[fill|2010|2-030303],protected_areas,topo;@99.44,14.56,9.01z)



Recalibrate FDRS for Thailand and Upper ASEAN since 2022

with **Dr. Natasha Jurko**, Forest Fire Physical Scientist – Great Lakes Forestry Center, Natural Resources Canada – Government of Canada, Professor **Dr. Mike Wotton** - University of Toronto and their colleagues.

Currently,

- 1. Got two new set of thresholds of ISI, FFMC, FWI, and study report
13th April 2024**
- 2. STOP Daily Operation on the 27 Feb 2025 to upgrade to a new
website and reducing runing steps because the old thresholds were
wrong!**

Forecast Fire Danger Rating for Upper ASEAN and Thailand



Forest Fire Control

Forest Protection and Fire Control Bureau
Royal Forest Department

<https://wildfire.forest.go.th/fdrs/FDRS.php>

REF: Tanpipat et al. 2023

การพยากรณ์ระดับชั้นอันตรายของไฟที่ความละเอียดสูง

Fine-Resolution Forecast Products of Fire Danger Rating

ค่าดัชนีไฟป่าประจำวันเพื่อปรับป้าย

FDRS Table for Fire Risk Signs

เอเชียตะวันออกเฉียงใต้ตอนบน

Upper Southeast Asia

คณะทำงาน

Working Group

ข้อมูลประกอบ

Supplemental Info

ภาคเหนือตอนบนของประเทศไทย

Upper Northern Thailand

จังหวัดเชียงใหม่

Chiang Mai

เอกสารอ้างอิง

References

กิตติกรรมประกาศ

Acknowledgements

ประเทศลาว

Laos

ประเทศกัมพูชา

Cambodia

รวมลิงค์

Useful Links








ภาพเคลื่อนไหวรายปี

Motion Image

THAILAND FWI SYSTEM CLASSIFICATION

Historical Weather and Fire Data Analysis for FWI System classification

Figure 2 Examples of greenness (and curing) levels from field grass in Canada. These are arranged to roughly follow the growing season in Canada; a considerable amount of time during the growing season is spent at greenness levels above 50% in the typical Canadian environment. Percentage greenness and curing values reported are subjective and to be used only as relative indicators; visual greenness assessment and actual curing state of a grassland fuel complex can vary depending on its structure and composition.

 <p>0% Green (Fuel complex is 100% cured grass) Fully cured off and weathered grasses. No live moisture remains inside the stems. Typical post winter/pre-growing season state.</p>	>85% Green: Green grass dominates fuel complex." data-bbox="291 354 404 511"/> <p>>85% Green (Fuel complex mostly green, 10-15% cured fuels) Green grass dominates fuel complex. Older dried grasses are matted and below the new green growth.</p>
 <p>~20-25% Green (Fuel complex is ~75-80% cured grasses) New annual (green) growth is beginning to come into the fuel complex</p>	 <p>~60% Green (40% cured standing grass) Grasses are beginning to lose greenness (due to end of growing season or drought stress). Still considerable moisture inside stems.</p>
 <p>~40% Green (Fuel complex is still about 60% cured grasses on average) Significant new green growth throughout the fuel complex.</p>	 <p>40% Green (~60% cured) Standing seasonal growth is yellowing, though still some light greenness in parts. Stems have not lost their live moisture for the most part (despite initial yellowing).</p>
 <p>70% Green (Fuel complex is about 35% cured grasses).</p>	 <p>15% Green (The standing grass in the fuel complex is about 85% cured). The greenness is gone. The dry looking grassland still maintains a little moisture inside the grass stems. Grass leaf material has cured and is weathered.</p>

Natasha Jurko and Mike Wotton
April 9, 2024

Live Vegetation Adjustment to the
Canadian Fire Weather Index System
v1.0 (2023)



กระทรวงทรัพยากรธรรมชาติและสิ่งแวดล้อม

Ministry of Natural Resources and Environment

Developed by Royal Forest Department / Department of National Parks Wildlife and Plant Conservation, Thailand

Operation STOP!!!!

Upgrading it to the Ministry Level by mid-April 2025

การพยากรณ์ระดับชั้นอันตรายของไฟที่ความละเอียดสูง

Fine-Resolution Forecast Products of Fire Danger Rating

Data From Hydro-Informatics Institute (HII), Thailand

คำดัชนีไฟป่าประจำวันเพื่อปรับป้าย

FDRS Table for Fire Risk Signs

ภาคเหนือตอนบนของประเทศไทย

Upper Northern Thailand

ประเทศลาว

Laos

ประเทศพม่า

Myanmar

เอเชียตะวันออกเฉียงใต้ตอนบน

Upper Southeast Asia

จังหวัดเชียงใหม่

Chiang Mai

ประเทศกัมพูชา

Cambodia

คณะทำงาน

Working Group

เอกสารอ้างอิง

References

รวมลิงค์

Useful Links

ข้อมูลประกอบ

Supplemental Info

กิตติกรรมประกาศ

Acknowledgements

ภาพเคลื่อนไหวรายปี

Motion Image

Source: <https://wildfire.forest.go.th/fdrs/FDRS.php>

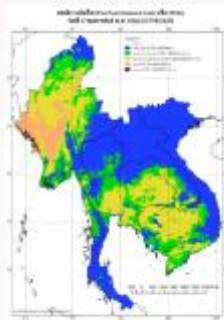
เอเชียตะวันออกเฉียงใต้ตอนบน
Upper Southeast Asia

27 กุมภาพันธ์ 2568

27 February 2025

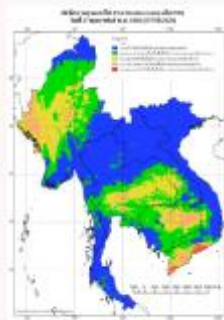
ความละเอียดกริด 3 กม.
3-km Grid Resolution

ดัชนีการติดไฟ
FFMC



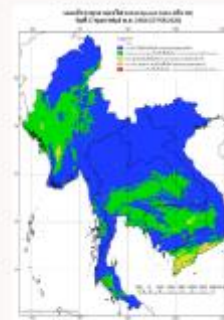
Google Earth KMZ

ดัชนีความรุนแรงไฟ
FWI



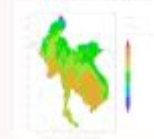
Google Earth KMZ

ดัชนีการลุกลามของไฟ
ISI

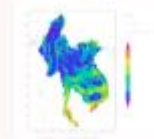


Google Earth KMZ

อุณหภูมิ
Temperature



ความเร็วลม
Wind Speed



ความชื้นสัมพัทธ์
Relative Humidity



ฝน
Precipitation

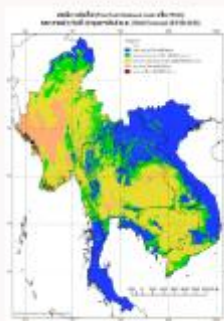


28 กุมภาพันธ์ 2568

28 February 2025

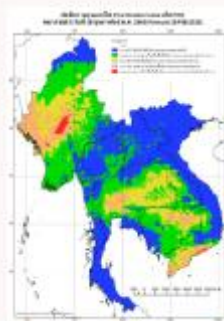
ความละเอียดกริด 3 กม.
3-km Grid Resolution

ดัชนีการติดไฟ
FFMC



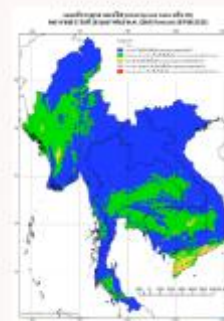
Google Earth KMZ

ดัชนีความรุนแรงไฟ
FWI



Google Earth KMZ

ดัชนีการลุกลามของไฟ
ISI

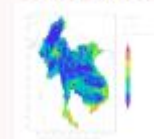


Google Earth KMZ

อุณหภูมิ
Temperature



ความเร็วลม
Wind Speed



ความชื้นสัมพัทธ์
Relative Humidity



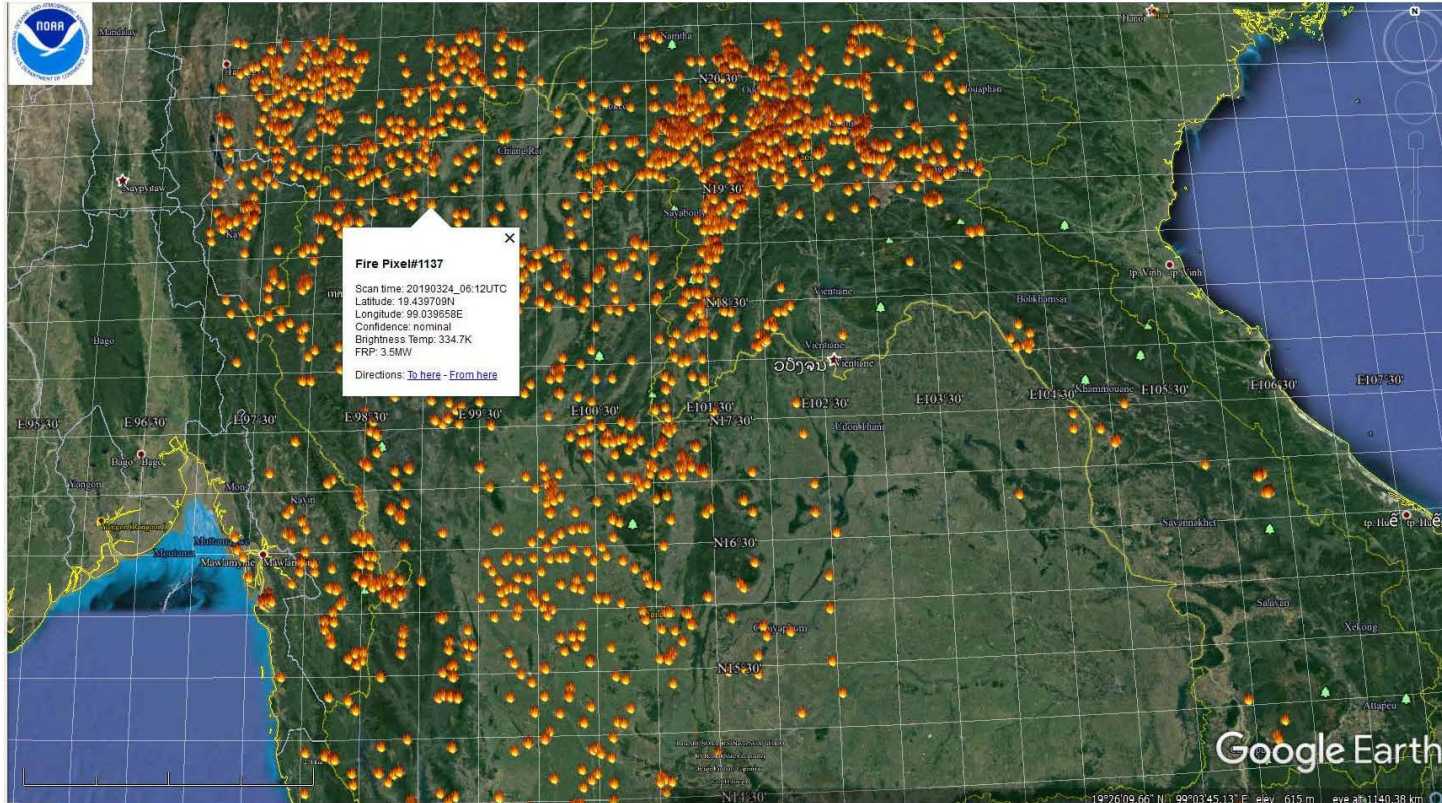
ฝน
Precipitation



On Going Expansion, **very welcome more Users**

NOAA-National Environmental Satellite, Data, and Information Service,
NESDIS (<https://www.nesdis.noaa.gov/>)

**Including
NEPAL!**



Dr. Wilfrid Schroeder (wilfrid.schroeder@noaa.gov)

Dr. Davida Streett (davida.streett@noaa.gov)

**Reduce latency
time from NASA
3 hrs to 1 hr or
so for both
Suomi-NPP and
NOAA-20 as Dr.
Wilfrid
Schroeder is the
PI of Global VIIRS
Active Fire
Products began
14 Mar 19**

**VIIRS near real-time (NRT) data to AMAZONAWS within 60 minutes: <https://registry.opendata.aws/noaa-jpss/> ,
<https://noaa-jpss.s3.amazonaws.com/index.html>**

3 French Master students from the Computer Science Department Polytech Nantes - Nantes University Engineering School, Laboratoire des Sciences du Numérique de Nantes (UMR CNRS 6004) worked on the automatic forwarding code from NOAA & NASA-FIRMS active fire alert emails to the DNP's Forest Fire Response War Room LINE Group Chat (But, they do not use it) and a WEB Map Server which The Forest Fire Control Command Center of RFD (Royal Forest Department) uses it everyday, all day to its full capability!!!!



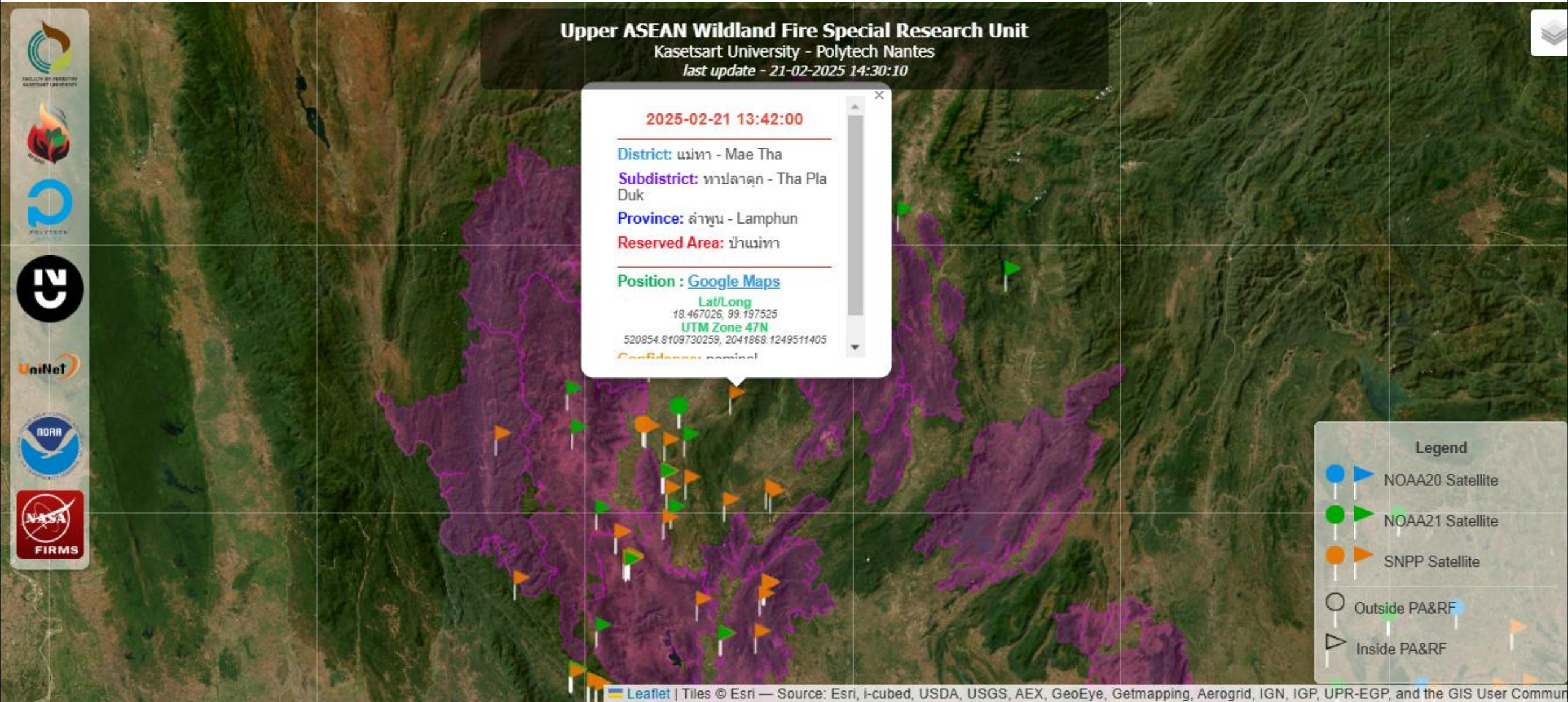
Click !

FIRE ALERTS MAP

Last update : 19/08/2024 - 02h49

[Old maps directory](#)





<https://wildlandfire.thairen.net.th/LandFireAlertsMap/>

About us

General Information

Land Fire Alerts - Thailand is a web application that provides near real-time fire alerts in Thailand.

The fire alerts are generated by :

- The National Oceanic and Atmospheric Administration (*NOAA*),
- The National Environmental Satellite, Data and Information Service (*NESDIS*),
- The National Aeronautics and Space Administration (*NASA*),
- The Fire Information for Resource Management System (*FIRMS*)

and are displayed on a map. The application is intended to help authorities and the public monitor and respond to forest fires in Thailand.

Collaboration & Development

The application is developed by The Upper ASEAN Wildland Fire Special Research Unit (WFSRU), the Forestry Research Center, Faculty of Forestry, Kasetsart University in collaboration with 3 Master students from The French Engineering School of Polytech Nantes and Nantes University.



Contact us

For any questions or suggestions, please contact us

WFSRU

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Developers

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Dorian MASSAMBA : dorian.massamba12@gmail.com

Childéric OLIET : oliet.childeric@gmail.com

It is so unfortunate that the system was built for DNP per DG request, but they do not use it! Only the RFD and NGOs use it. It will be expanded for Lao PDR and Cambodia. The same as the newly FDRS that Canadian Forest Service helped out, only the RFD uses it and that will be upgraded to the Ministry level!!!

🔊 <https://wildlandfire.thairen.net.th/LandFireAlert...>

🔊 <https://wildlandfire.thairen.net.th/LandFireAlert...>

🔊 <https://wildlandfire.thairen.net.th/LandFireAlert...>

🔊 <https://wildlandfire.thairen.net.th/LandFireAlert...>



พี่เบ๊ยาว กิตติ



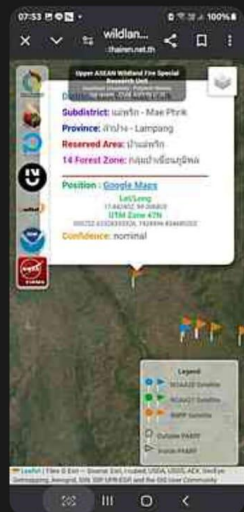
7:50 AM



พี่เบ๊ยาว กิตติ

เอาจกลุ่ม 1 กลุ่มเดียววันนี้

7:55 AM



7:55 AM



TOPEZ75



7:53 AM



TOPEZ75

พี่เบ๊ยาว กิตติ
ต้องเดินเก็บให้หมด ยัน
จุดบนสุดนะ

รับทราบครับ

7:54 AM



พี่เบ๊ยาว กิตติ



พี่เบ๊ยาว กิตติ

ต้องเดินเก็บให้หมด ยัน
จุดบนสุดนะ

7:51 AM



TOPEZ75

พี่เบ๊ยาว กิตติ
เอาจกลุ่ม 1 กลุ่มเดียววันนี้

ครับ ผอ.

7:56 AM



พี่เบ๊ยาว กิตติ



พี่เบ๊ยาว กิตติ

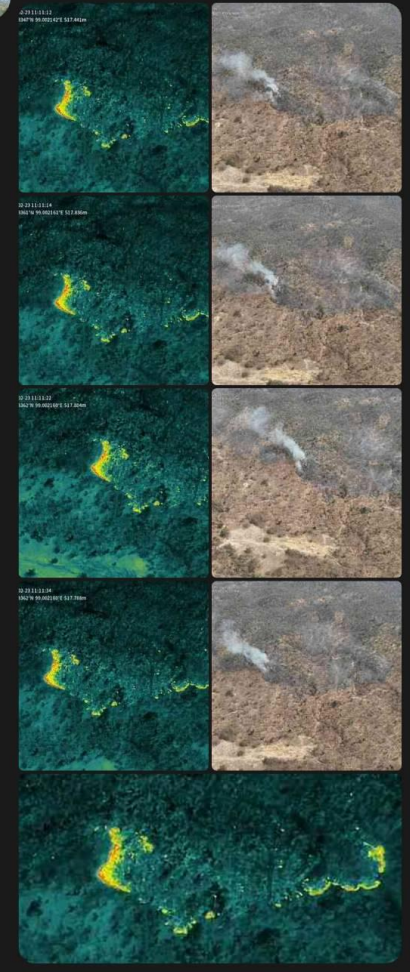
ไม่ใช่เห็นไฟไม่มี แล้ว
ไม่เดินไปดู

7:52 AM

เสียเวลา ดีกว่าสเข้ามา



Pattarain.



11:41 AM



Pattarain.

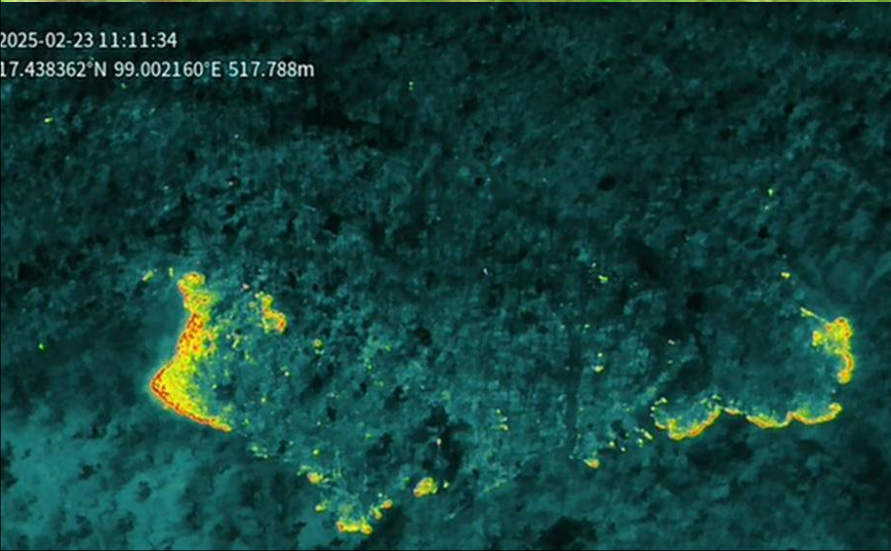
อิศเรศ 4A-477:@สนง.ทสจ.ลำปาง รับแจ้งจาก กำนันเจน สิมบอกไ...

อิศเรศ 4A-477:@สนง.ทสจ.ลำปาง รับแจ้งจาก กำนันเจน สิมบอกไ...

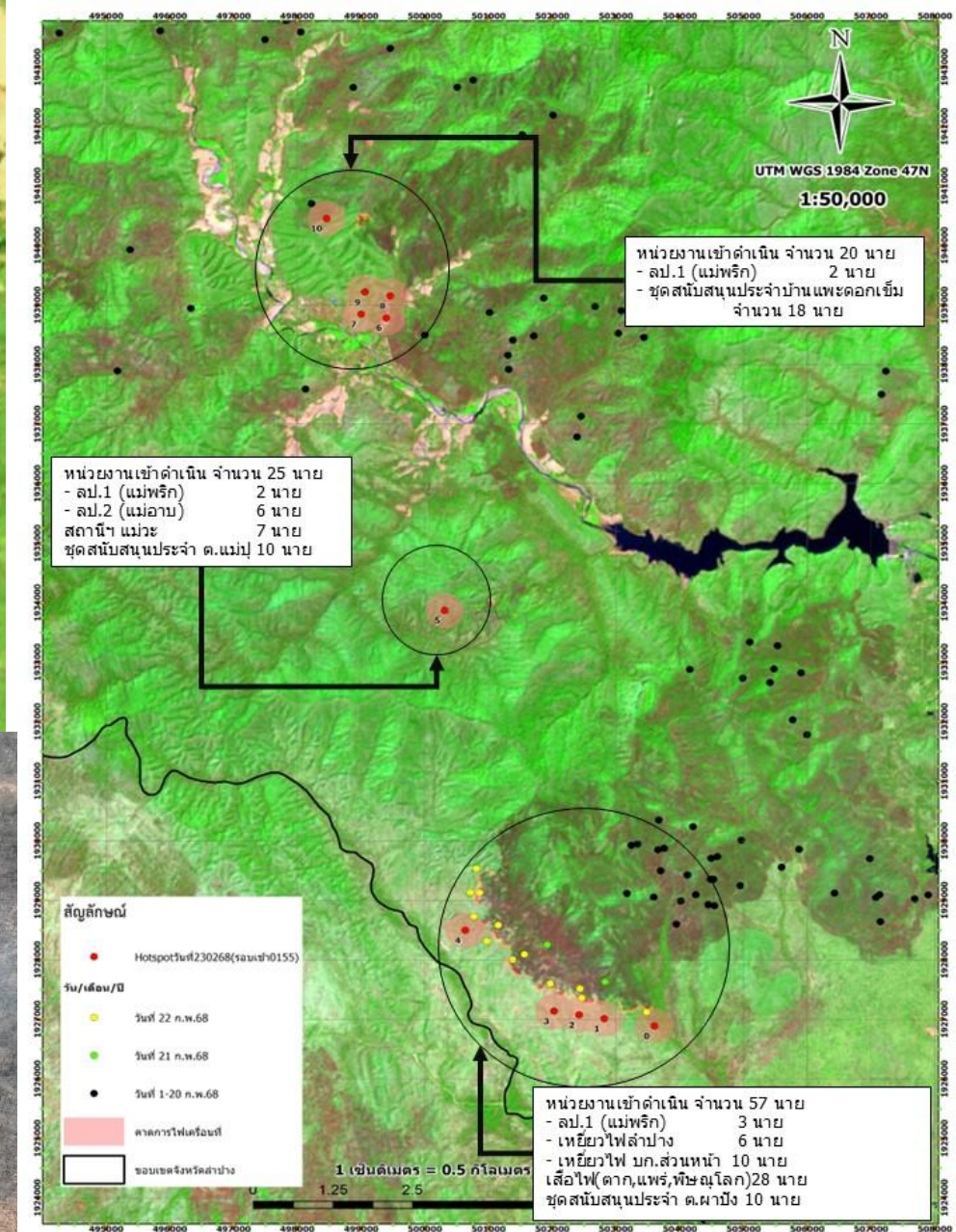
อิศเรศ 4A-477:@สนง.ทสจ.ลำปาง รับแจ้งจาก กำนันเจน สิมบอกไ...



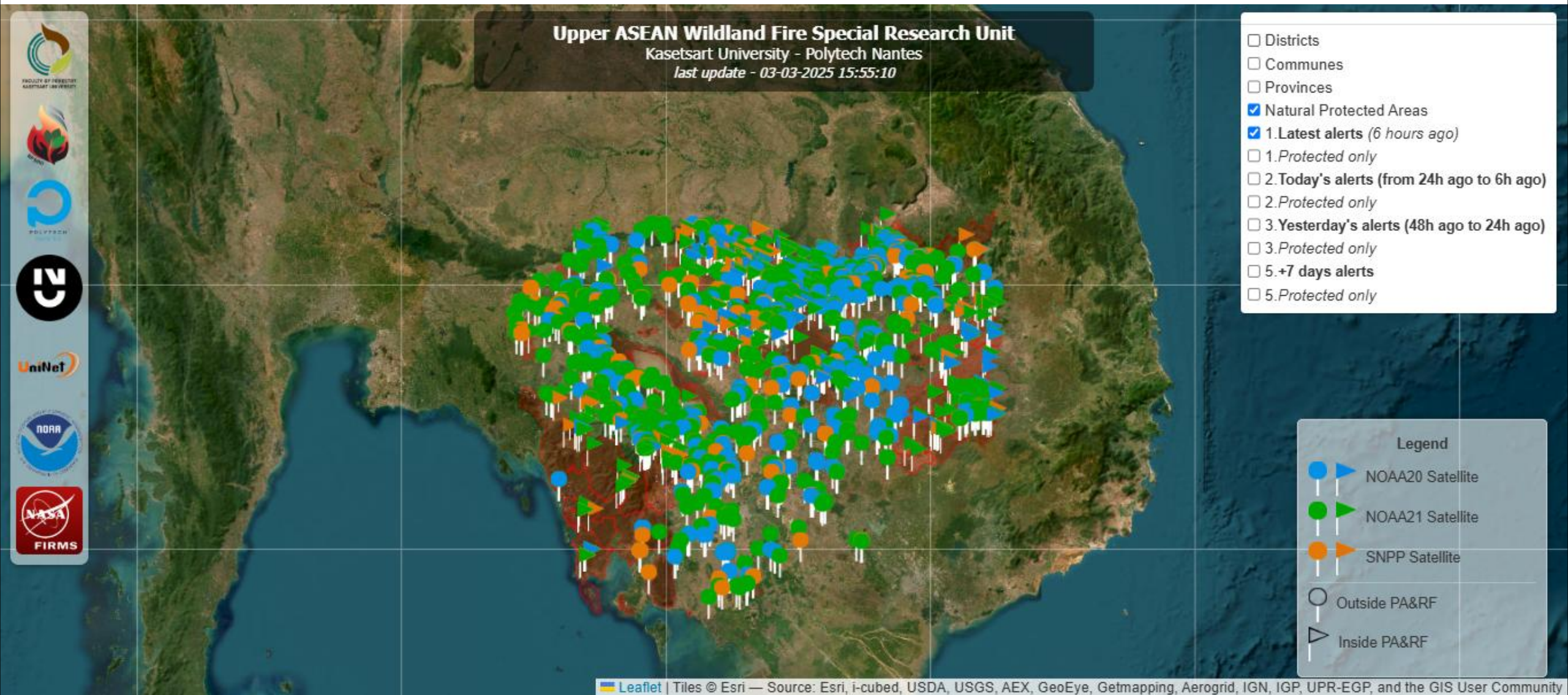
2025-02-23 11:11:34
17.438362°N 99.002160°E 517.788m



แผนที่แสดงแผนการปฏิบัติงานเข้าดับไฟ บริเวณป่าสงวนแห่งชาติป่าแม่พริก
ในพื้นที่กลุ่มป่าที่ 9 กลุ่มป่าเขื่อนภูมิพล (จ.ตาก,จ.เชียงใหม่,จ.ลำพูน,จ.ลำปาง)

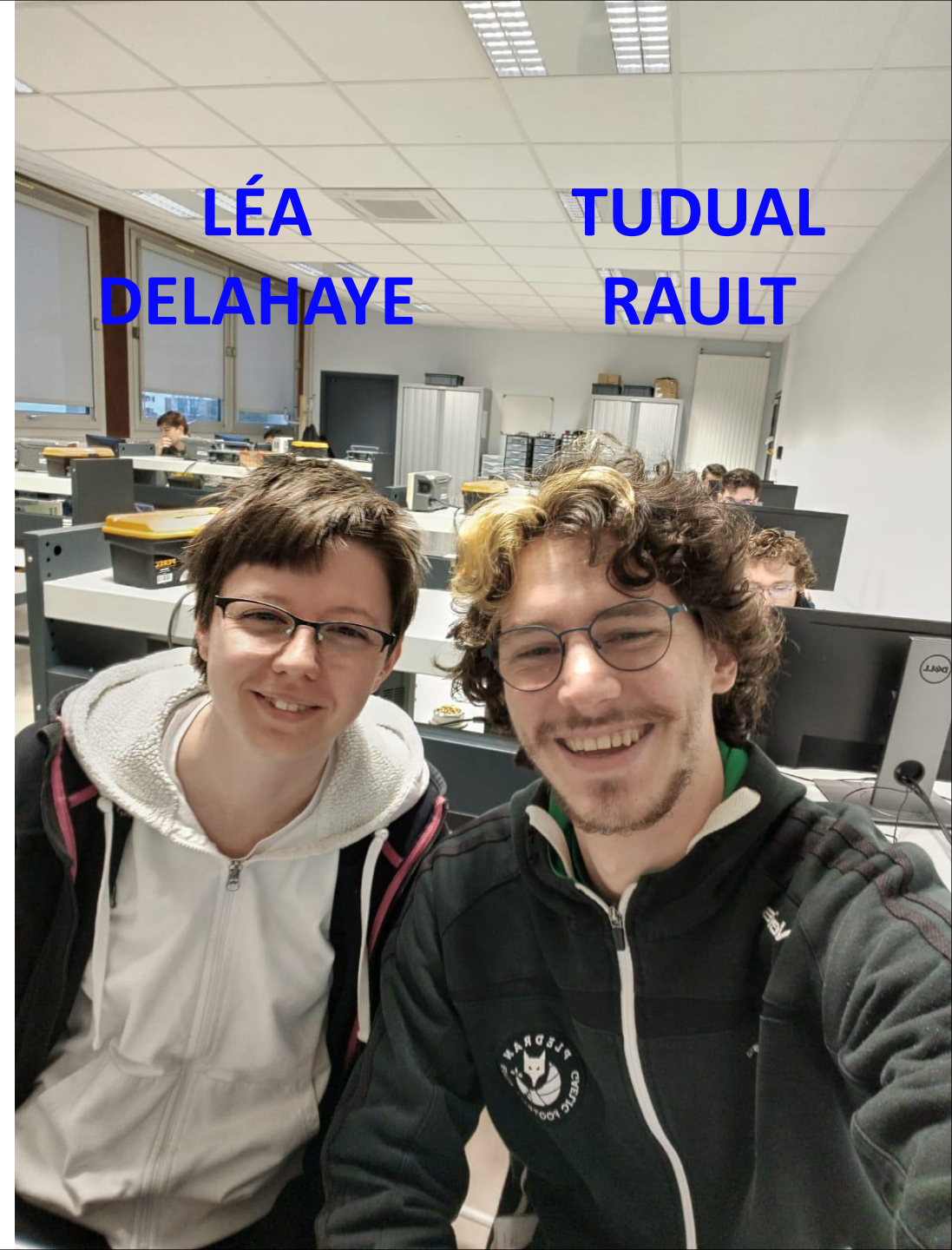


Expanding for Cambodia and later for Lao PDR



https://wildlandfire.thairen.net.th/LandFireAlertsMap_cambodia/

Two French interns from The Embedded Systems and Telecommunications at INSA Rennes will come to Thailand from 16 June - 17 September 2025 to hopefully improve the current system for next forest fire season.



**LÉA
DELAHAYE**

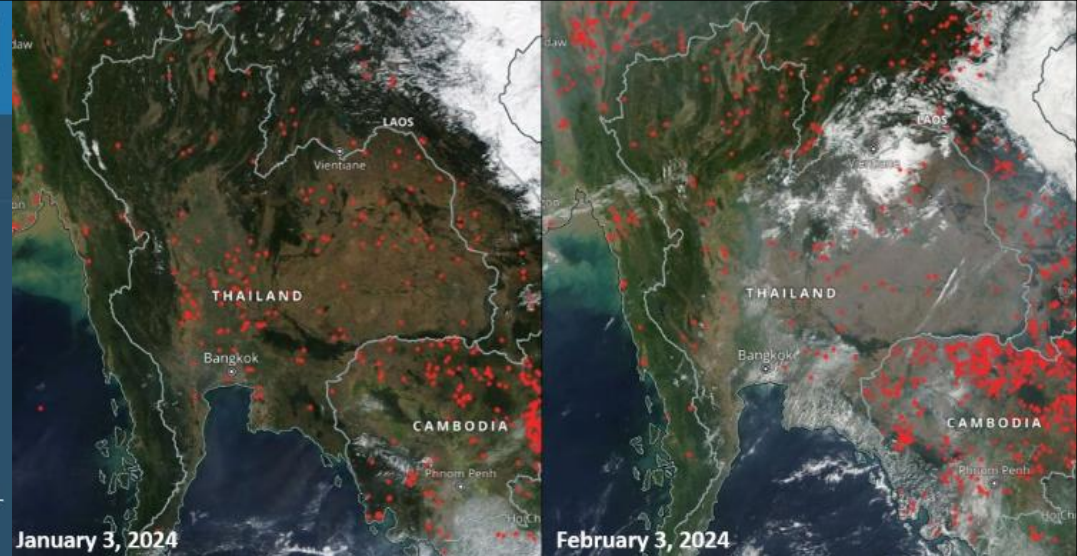
**TUDUAL
RAULT**



By Joseph M. Smith, Aug 20, 2024

FIRMS Helps Thai Officials Manage Fire and Smoke Haze

Geographer Veerachai Tanpipat promotes the use of NASA's Fire Information for Resource Management System (FIRMS) throughout the Lower Mekong River Region.



<https://www.earthdata.nasa.gov/learn/articles/firms-helps-thai-officials-manage-fire-smoke>



This graphic shows how information from FIRMS is used and redistributed by different levels of government in Thailand.

Credit: NASA FIRMS.



Vol. 15 No. 03 (2024): Jurnal Silviculture Tropika



MENU UTAMA

[Submit Manuskrip](#)

[Tim Editorial](#)

[Mitra Bestari](#)

[Ruang Lingkup](#)

[Sistem Penerbitan](#)



Jurnal Silviculture Tropika
Journal of Tropical Silviculture

Vol. 15 No.03, December 2024, Page 300-310
p-ISSN: 2086-8277
e-ISSN: 2807-3282

COMMUNITY-BASED WATER MANAGEMENT IN THAILAND TOWARD WILDLAND FIRE AND SMOKE HAZE ISSUE IN THE UPPER ASEAN

**Pengelolaan Air Berbasis Masyarakat di Thailand dalam Mengatasi Masalah
Kebakaran Lahan dan Kabut Asap di Kawasan ASEAN Bagian Utara**

Veerachai Tanpipat^{*,1,2}, Royboon Rassameethes¹, Jittiporn Chantarojsiri¹,
Pakarat Danusatianpong¹, Sarawadee Phattharakijkulthorn¹, Royol Chitrdon¹, and
Sutat Weesakul¹

(Received 11 October 2024 / Accepted 19 December 2024)

DOI:
<https://doi.org/10.29244/j-siltrop.15.03>

Mekong-Korea Forest Fire Symposium: Policy and Regional Cooperation for Forest Fire Management in Southeast Asia 5-7 November 2024, Cambodia



Cambodia Forest Fire Suppression Training, 20-27 Jan 2025, Thailand



The 3rd Forest Fire Suppression Training, 25 January - 6 February 2025, Thailand

Next training is in Bogor and Kalimantan Indonesia 21 April - 2 May 2025



NEWS TRAINING HIGHLIGHTS
Beyond Training: Sustaining Regional Cooperation in Forest Fire Management
FEBRUARY 7, 2025

Global Fire Situation 2024-2025 In Progress

<https://doi.org/10.5194/essd-2024-218>
 Preprint. Discussion started: 13 June 2024
 © Author(s) 2024. CC BY 4.0 License.

Open Access
 Earth System
 Science
 Data
 Discussions

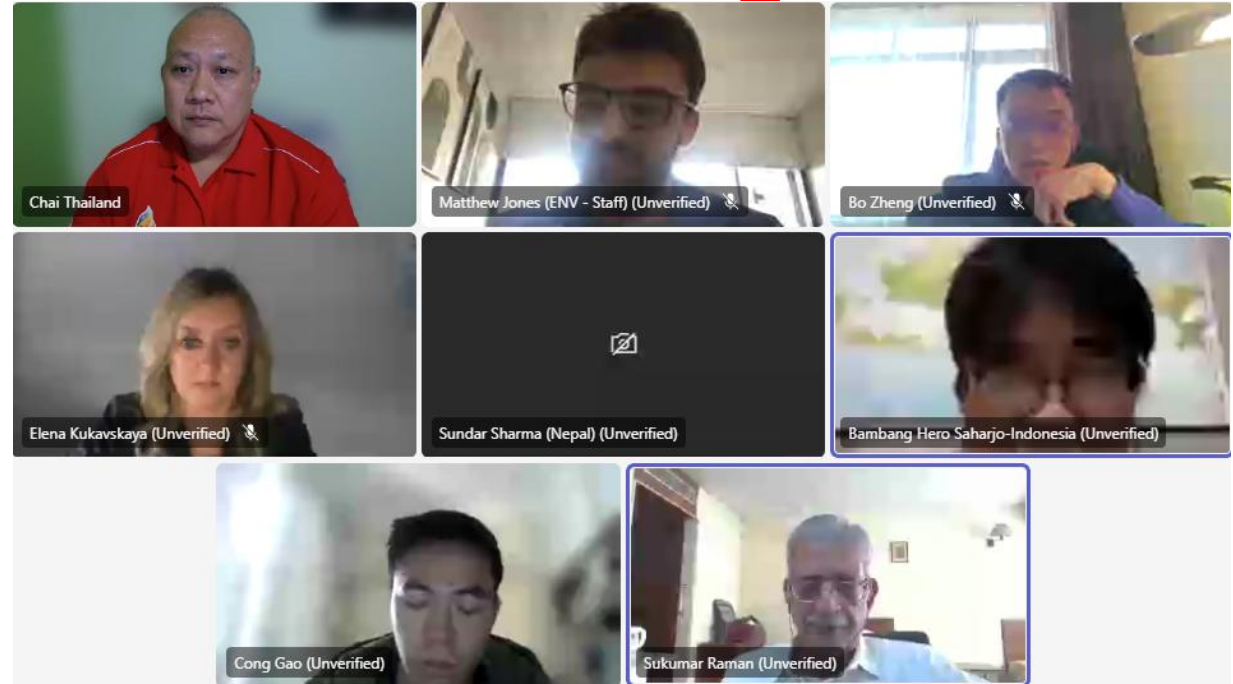
Selected Russia and HK to be Co-Authors this year

State of Wildfires 2023-24

1
2
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12
13
14

Authors:

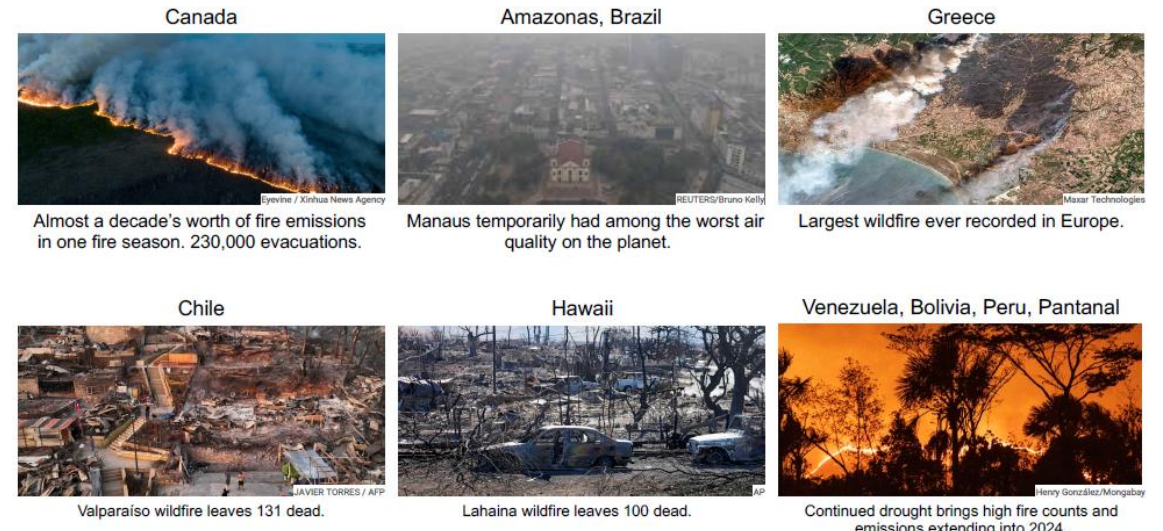
Matthew W. Jones^{1,*}, Douglas I. Kelley^{2,*}, Chantelle A. Burton^{3,*}, Francesca Di Giuseppe^{4,*}, Maria Lucia F. Barbosa^{5,6}, Esther Brambleby¹, Andrew J. Hartley³, Anna Lombardi⁷, Guilherme Matalvelo^{8,1}, Joe R. McNorton⁴, Fiona R. Spuler⁹, Jakob B. Wessel^{10,11}, John T. Abatzoglou¹², Liana O. Anderson¹³, Niels Andela¹⁴, Sally Archibald¹⁵, Dolores Armenteras¹⁶, Eleanor Burke³, Rachel Carmenta¹⁷, Emilio Chuvieco¹⁸, Hamish Clarke¹⁹, Stefan H. Doerr²⁰, Paulo M. Fernandes²¹, Louis Giglio²², Douglas S. Hamilton²³, Stijn Hantson²⁴, Sarah Harris²⁵, Piyush Jain²⁶, Crystal A. Kolden²⁷, Tiina Kurvits²⁸, Seppe Lampe²⁹, Sarah Meier³⁰, Stacey New³, Mark Parrington³¹, Morgane M. G. Perron³², Yuquan Qu^{33,34}, Natasha S. Ribeiro³⁵, Bambang H. Saharjo³⁶, Jesus San-Miguel-Ayanz³⁷, Jacquelyn K. Shuman³⁸, Veerachai Tanpipat³⁹, Guido R. van der Werf⁴⁰, Sander Veraverbeke^{33,1}, Gavriil Xanthopoulos⁴¹



International Partnership



Key Extremes of the 2023-24 Fire Season



Lackings and Challenges

- Need to develop and calibrate fire & smoke management system (IFTDSS/AirNow/WRF-FIRE) to use during prescribed burn planning, smoke management, and fire control.
- Need to utilise the newly established Sentinel Hub at PhilSA to prevent and response to disasters to the most beneficial for all ASEAN member countries.
- Need to study and understand more on “Fire Weather, Fire Behavior, Smoke Haze Behavior & Human Behavior” to manage and control wildland fire more efficient!
- Creating free access to digital regional wildland fires and smoke haze knowledge/information/data digital library for all interested parties.
- How to collaborat project or else within ISGC/APAN to support forest fire and smoke haze monitoring, control and management better and more efficient?

Final Words

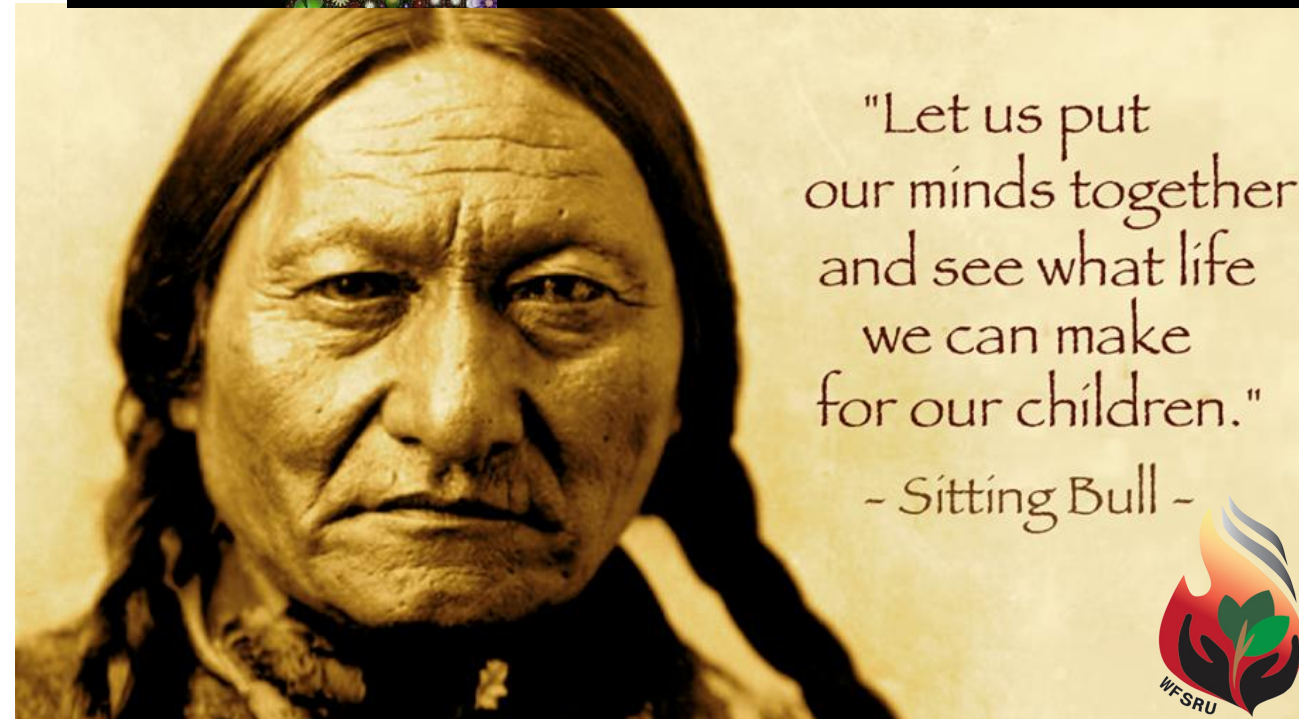
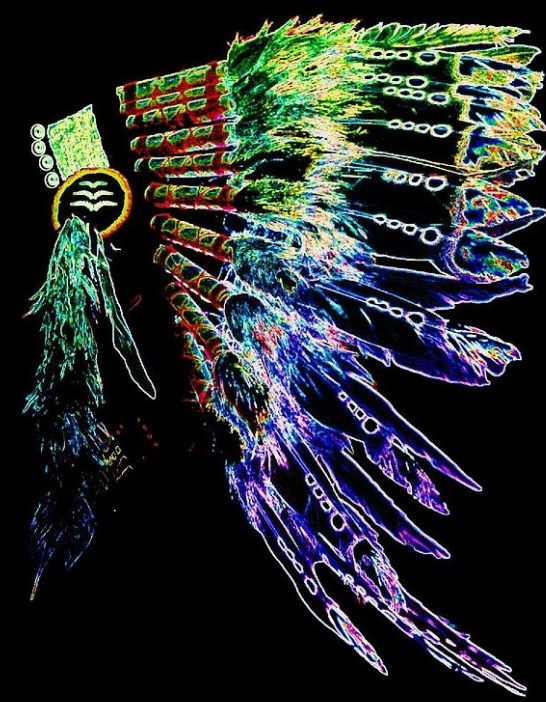
Climate Crisis!, severe disasters are inevitable. Building resilience and sustainability is the way to cope with future extreme uncertainties -

We are in different boats, but we are in the same **STORM!!** Imagine what we can achieve when we work together and support each other.

Stronger Together!!



Earth
is my
Church.
Nature
is my
Religion.



"Let us put
our minds together
and see what life
we can make
for our children."
- Sitting Bull -





QUESTION?

