

WFSRU's, AHC's & UND's Updates

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March 2019



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ศูนย์วิจัยป่าไม้ คณะวนศาสตร์
Forestry Research Center

<http://frc.forest.ku.ac.th/sru/indexen.php>



<http://www.aseanwater.net/wp/>

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- WFSRU's Updates
- Lackings and Challenges of WFSRU
- ASEAN Hydro-Informatics Center (AHC)
- AHC's Updates
- Challenges of AHC
- APAN UND's Updates



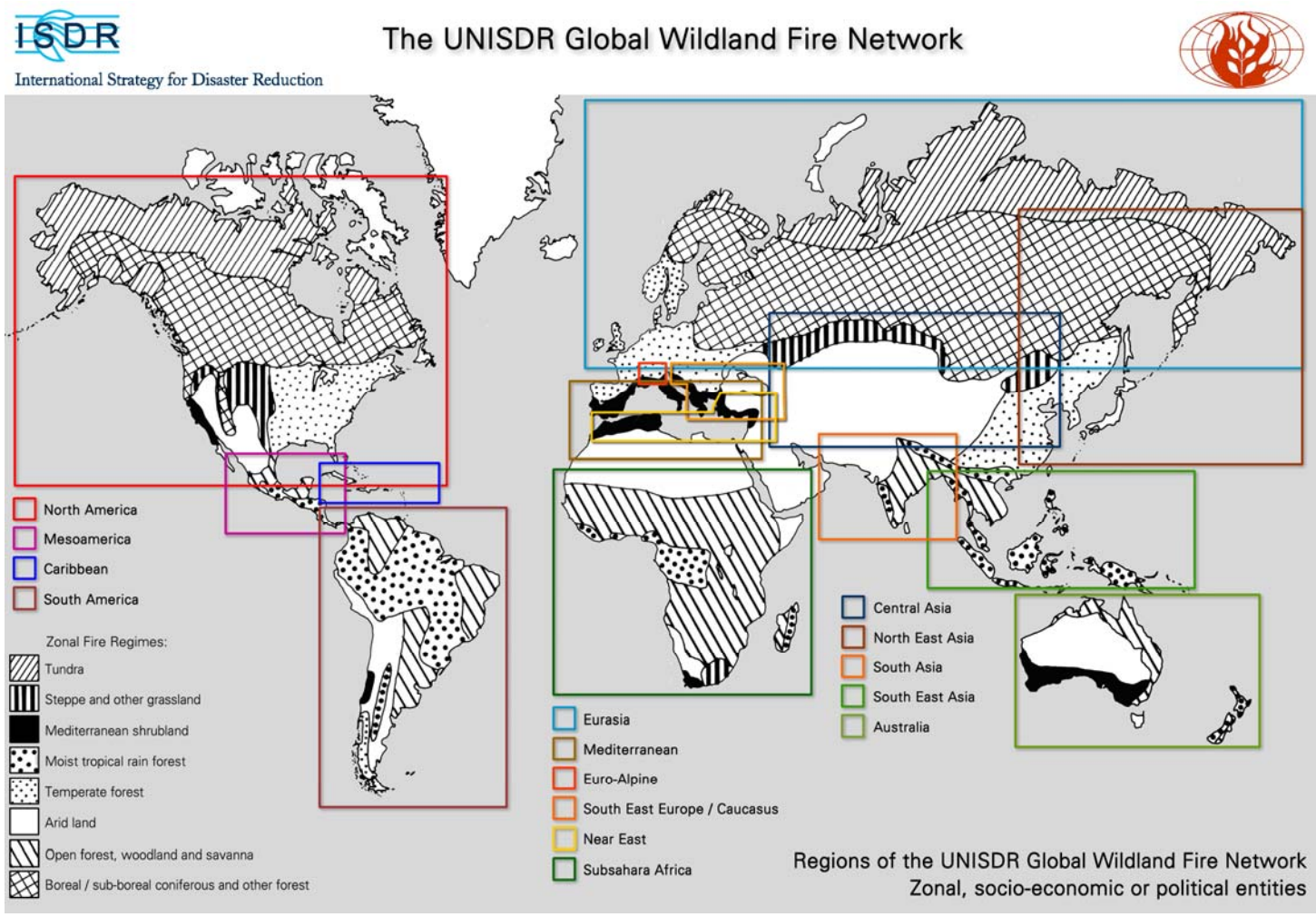
WFSRU's Objectives:

- 1. Fundamental fire research:** Fire ecology, Fire behavior, Fire emissions
- 2. Advanced tools for fire early warning, monitoring and impact assessment:** Fire early warning, Early fire detection, Satellite fire detection, monitoring and impact assessment
- 3. The human dimension of vegetation fires:** Socio-economics of fire, Impact of fires on human health, security and private & public assets, Community involvement and empowerment in fire management
- 4. Fire management:** Fire investigation and fire statistical databases, Fire management information systems and planning, Training



WFSRU is a part of Global Wildland Fire Network (GWFN) through the Global Fire Monitoring Center (GFMC) under UNISDR

<http://gfmc.online/globalnetworks/globalnet.html>



Regional Fire Management Resource Center – South East Asia (RFMRC-SEA) <https://rfmrc-sea.org/>



HOME

LOGIN

ABOUT RFMRC – SEA

CURRENT FIRE AND FIRE
WEATHER INFORMATION

FIRE SCIENCE PORTAL

RESOURCES

GLOBAL WILDLAND FIRE
NETWORK



Home » ABOUT RFMRC – SEA » Introduction to RFMRC-SEA

The Regional Fire Management Resource Center – Southeast Asia (RFMRC-SEA), functions as an independent regional center of competency and excellence for fire management and operates at the interface between science and informed policy development (Science-Policy Interface – SPI). The RFMRC-SEA was established by the Faculty of Forestry Sciences, University of Bogor Indonesia, with the assistance of the Global Fire Monitoring Center (GFMC). These two institutions have been working together in fire science and fire ma

Offline



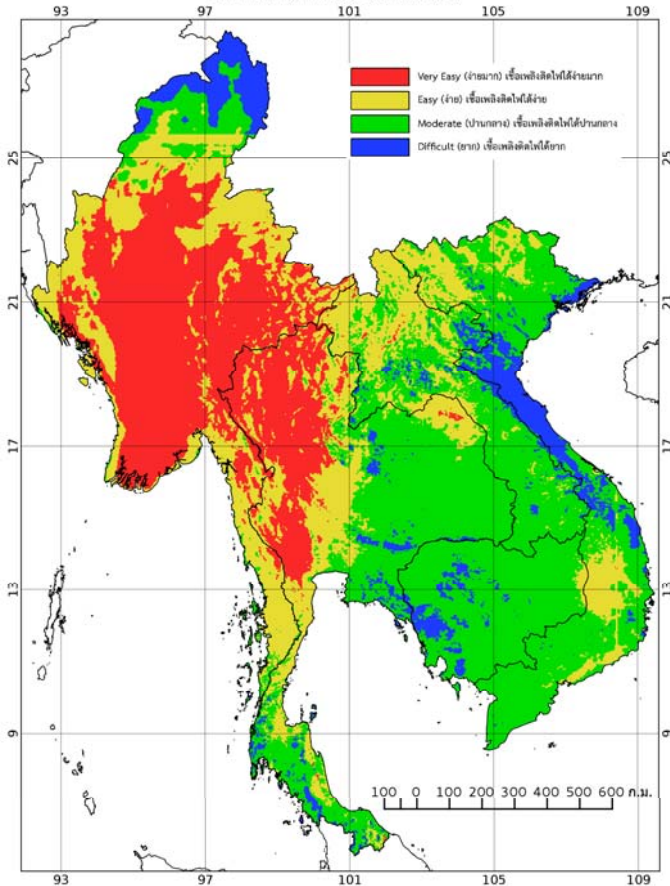
Regional Fire Management Resource Center – South East Asia (RFMRC-SEA) <https://rfmrc-sea.org/>



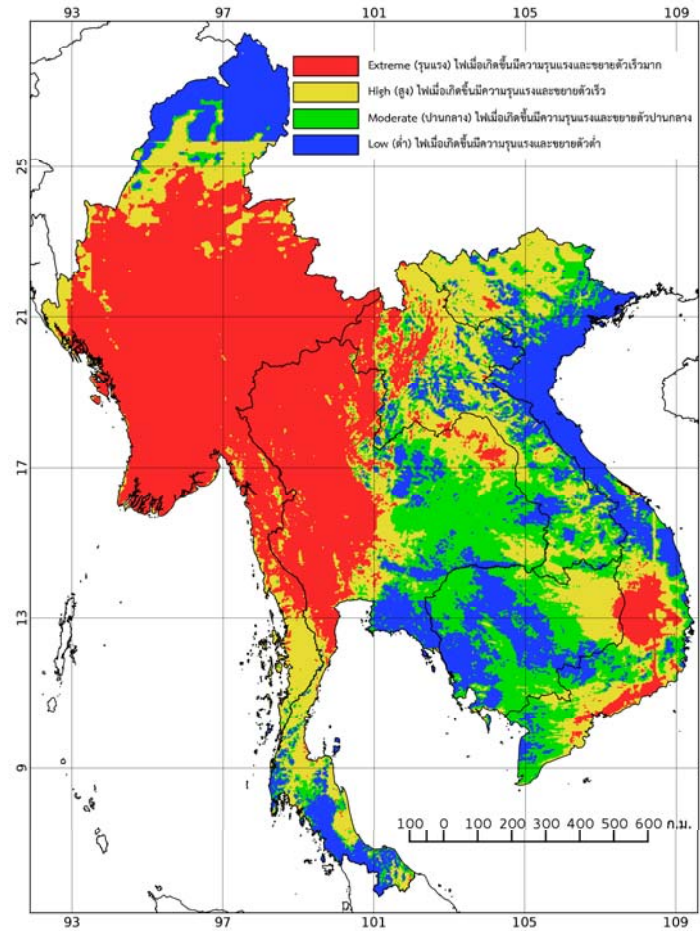
Upper ASEAN Forecast FDRS

<http://www2.dnp.go.th/gis/FDRS/FDRS.php>

ดัชนีการติดไฟ (Fine Fuel Moisture Code หรือ FFMC)
วันที่ 24 มีนาคม พ.ศ. 2562 (24 MAR 2019)

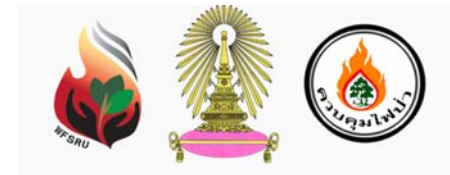


ดัชนีความรุนแรงไฟ (Fire Weather Index หรือ FWI)
วันที่ 24 มีนาคม พ.ศ. 2562 (24 MAR 2019)

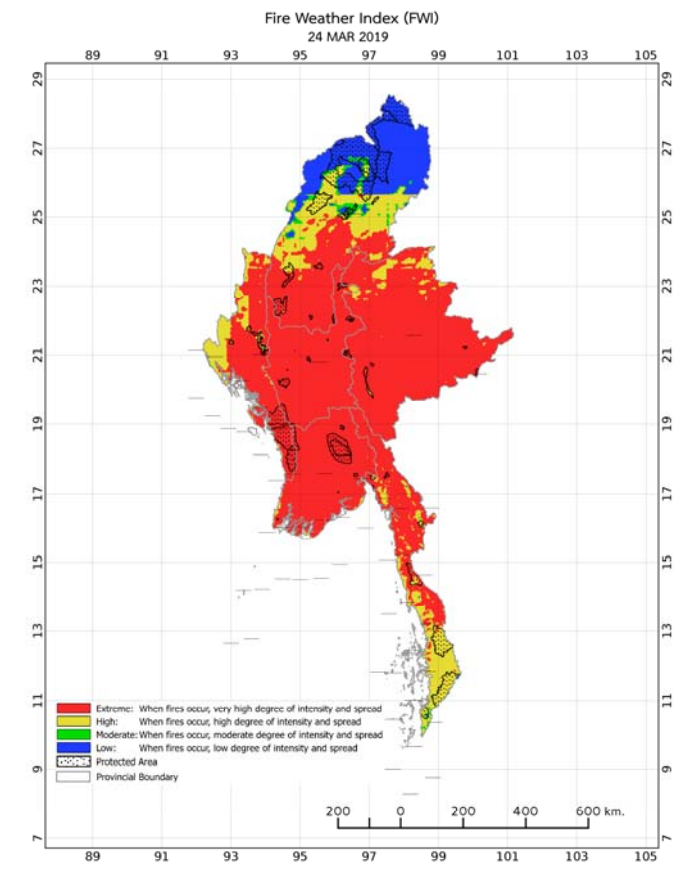
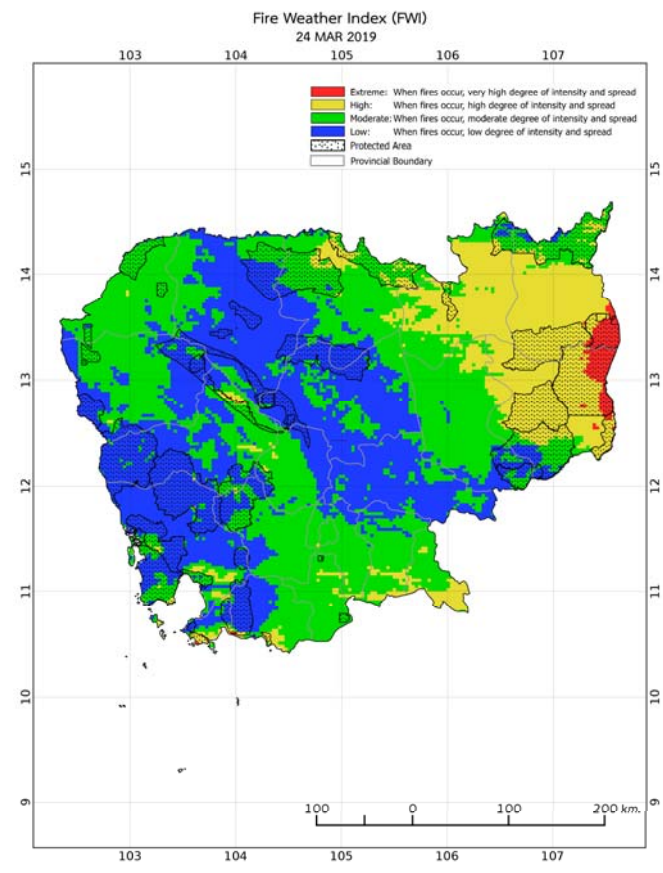
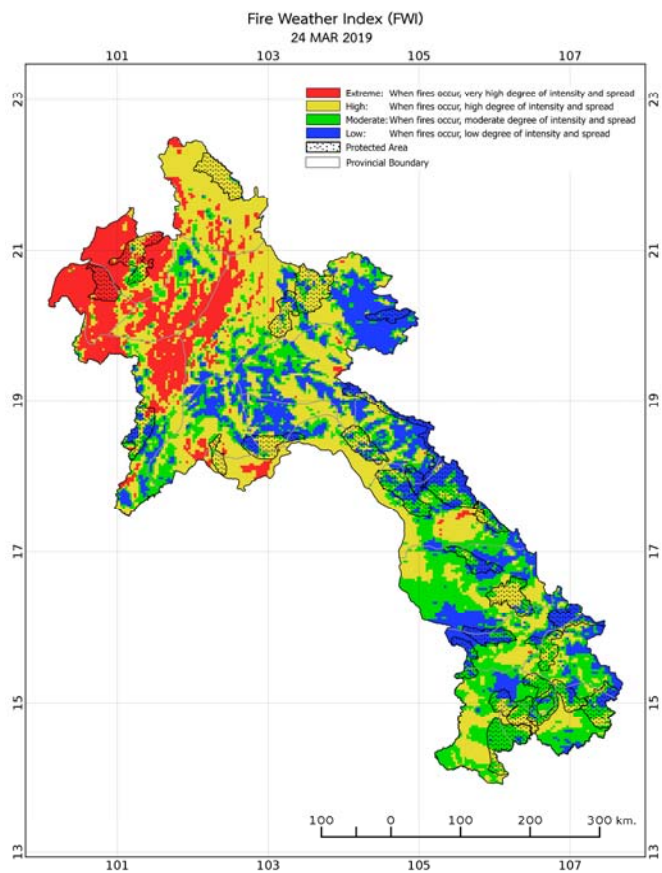


Provided new Upper ASEAN calibrated thresholds to Dr. Bill de Groot for Global Fire Early Warning System

(<http://canadawildfire.ualberta.ca/gfews/>)
!!!Still Need Further Calibration!!!



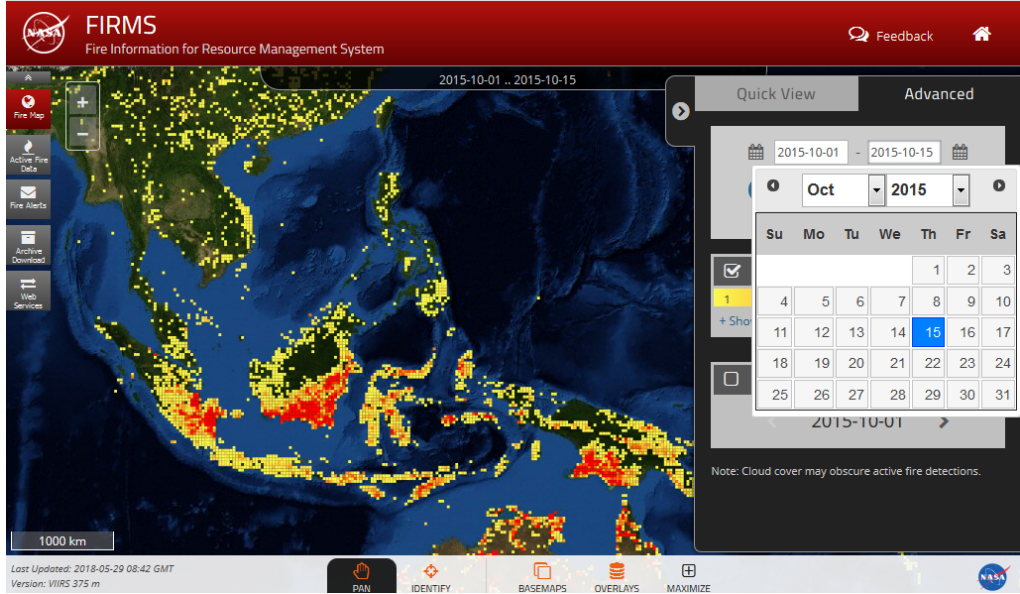
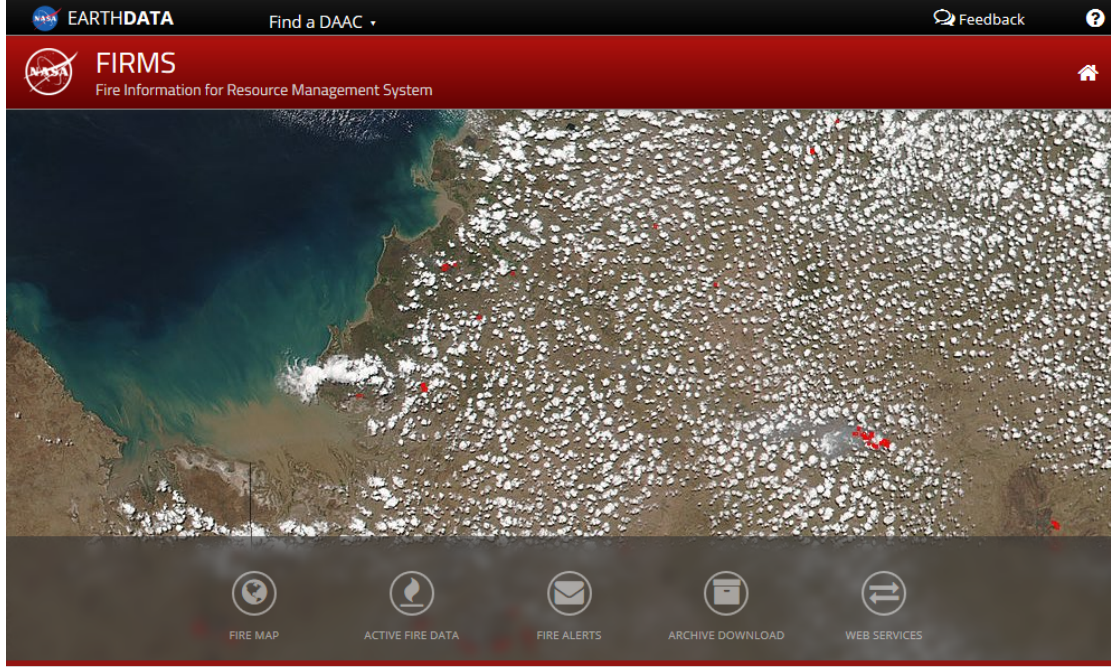
Upper ASEAN Forecast FDRS Co-ordinating with Met.Malaysia and ASEAN Secretary to combine the North and South ASEAN FWI products!!!!!!



<http://www2.dnp.go.th/gis/FDRS/FDRS.php>

NASA-Fire Information for Resource Management System (FIRMS)

<https://firms.modaps.eosdis.nasa.gov/>



NASA FIRMS: Fire Email Alert

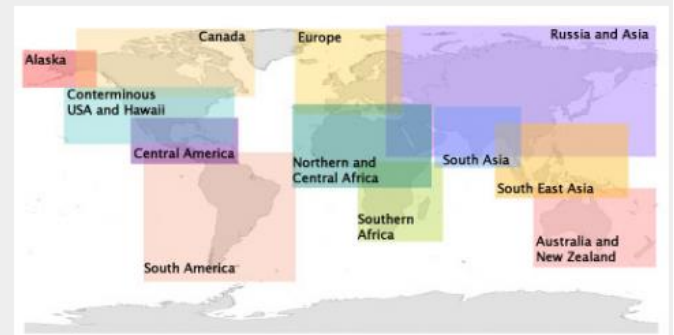
96 fires/hotspots detected during the most recently processed satellite overpass
(Country: Thailand)



View map image on NASA FIRMS server
NOTE: Cloud cover might obscure active fire detections.
This email was generated on 2018-04-05 09:02:19 UTC
NASA FIRMS Data Source: VIIRS 375m NRT

Active Fire Data

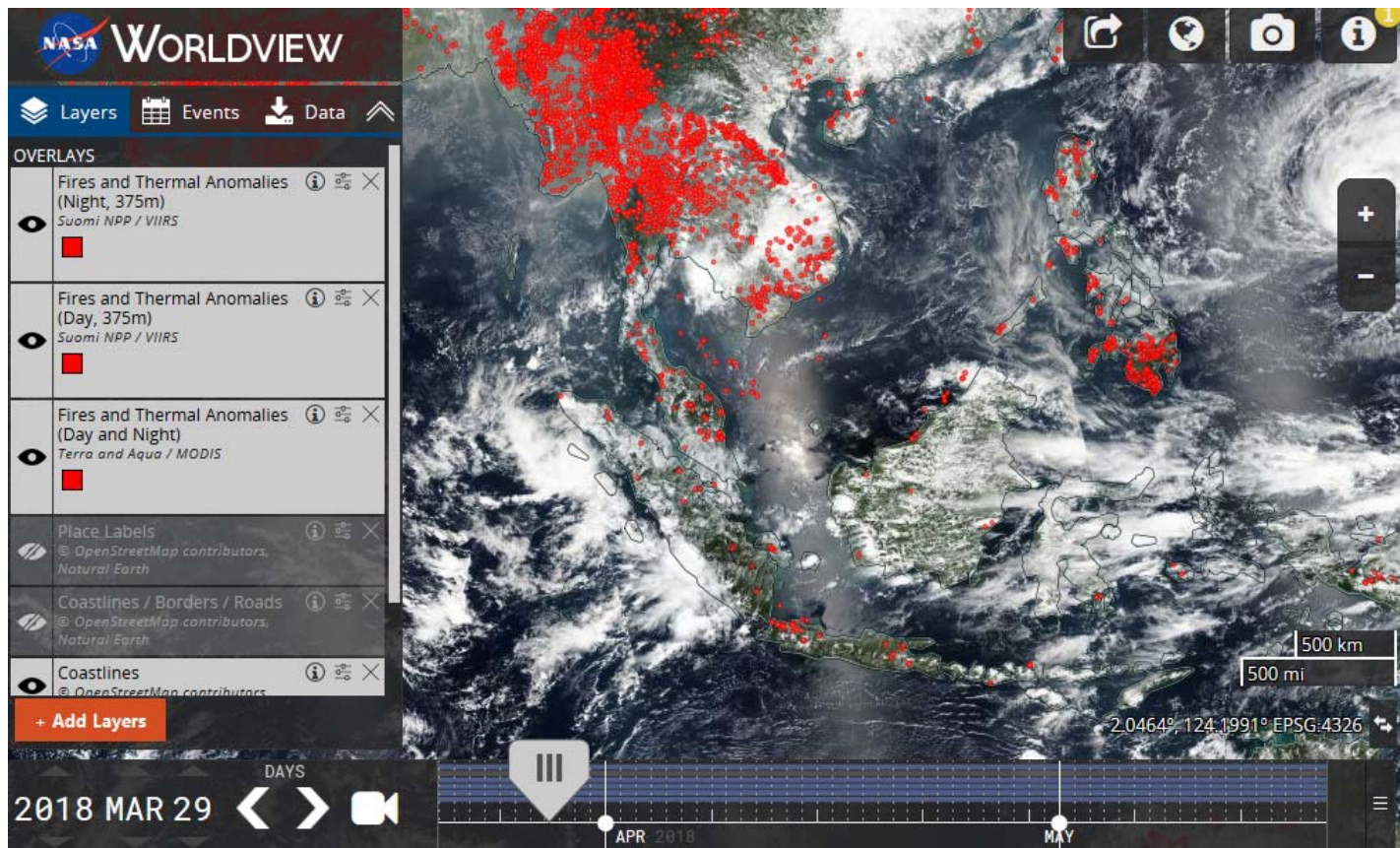
Download Near real-time MODIS (C6) and VIIRS (375 m) active fire data
For data older than seven days, use the Archive Download



Rapid Alert Email is the fastest!

**Diane Davies, NASA-LANCE
Operations Manager, USA,
(diane.k.davies@nasa.gov)**

Earth Data Rapid Response WorldView <https://worldview.earthdata.nasa.gov/>



Rapid Response

Worldview

Global Imagery Browse Services (GIBS)

MODIS Subsets

MODIS Near Real-Time Images

VIIRS/Suomi-NPP Near Real-Time Images

VIIRS/NOAA-20 Near Real-Time Images

Image Gallery

Hazards and Disasters

FAQ

Diane Davies,
NASA-LANCE
Operations
Manager, USA,
(diane.k.davies@nasa.gov)

Jeffrey E.
Schmaltz,
Earth Data
LANCE Rapid
Response
Team NASA
GSFC

(Jeff.Schmaltz@nasa.gov)



MODIS and VIIRS Fire Radiative Power Products will be added!

VIIRS Suomi NPP Night Fire Day/Night Band Detection

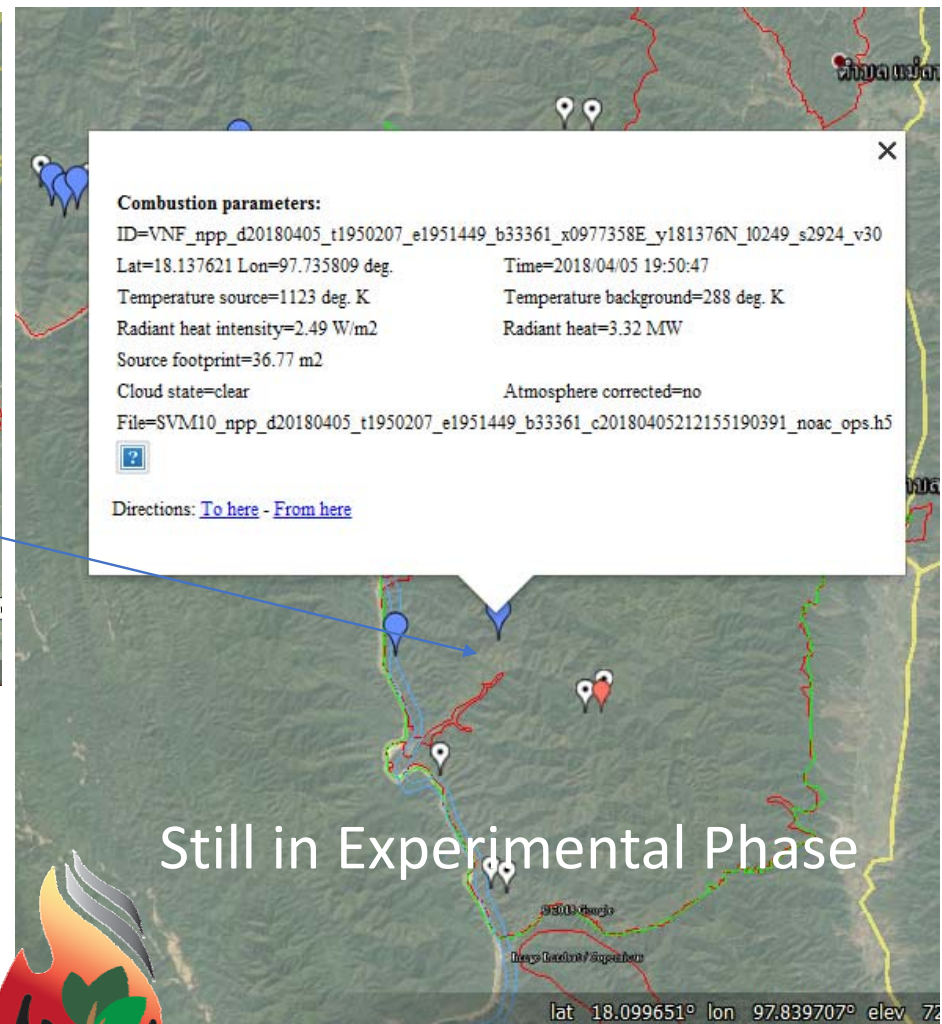
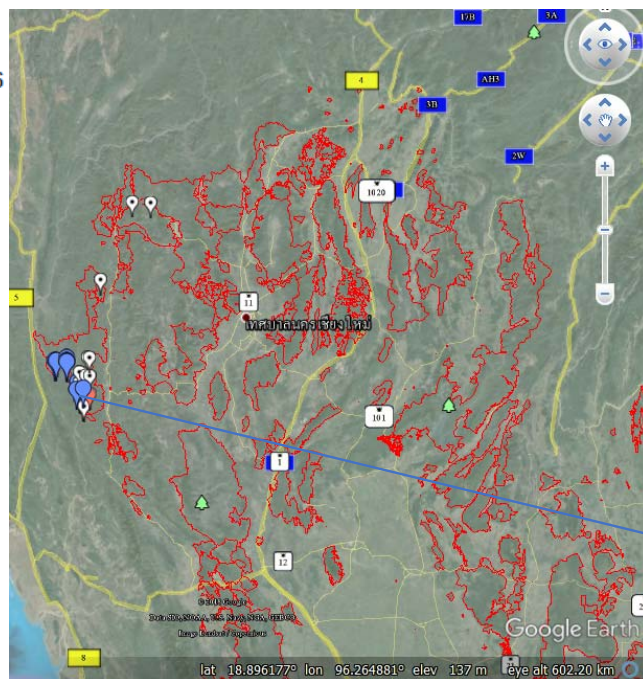
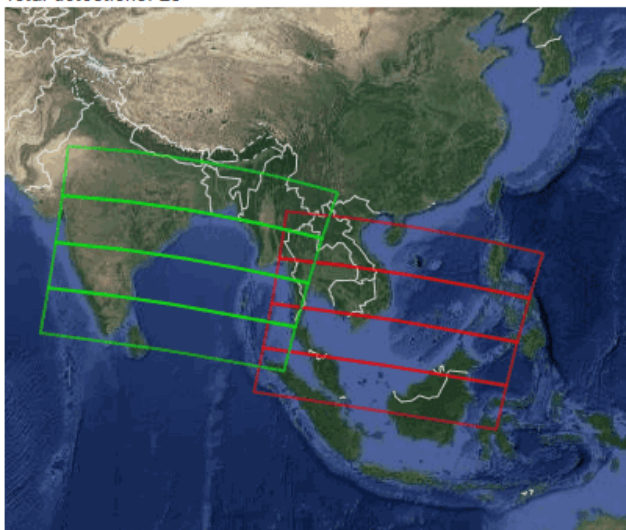
NCEI@jetsam.ngdc.noaa.gov

to Undisclosed_Re. ▾

VIIRS Nightfire Thailand National Parks Daily Summary 2018-04-06

[CSV][KML][ROI]

Total detections: 25

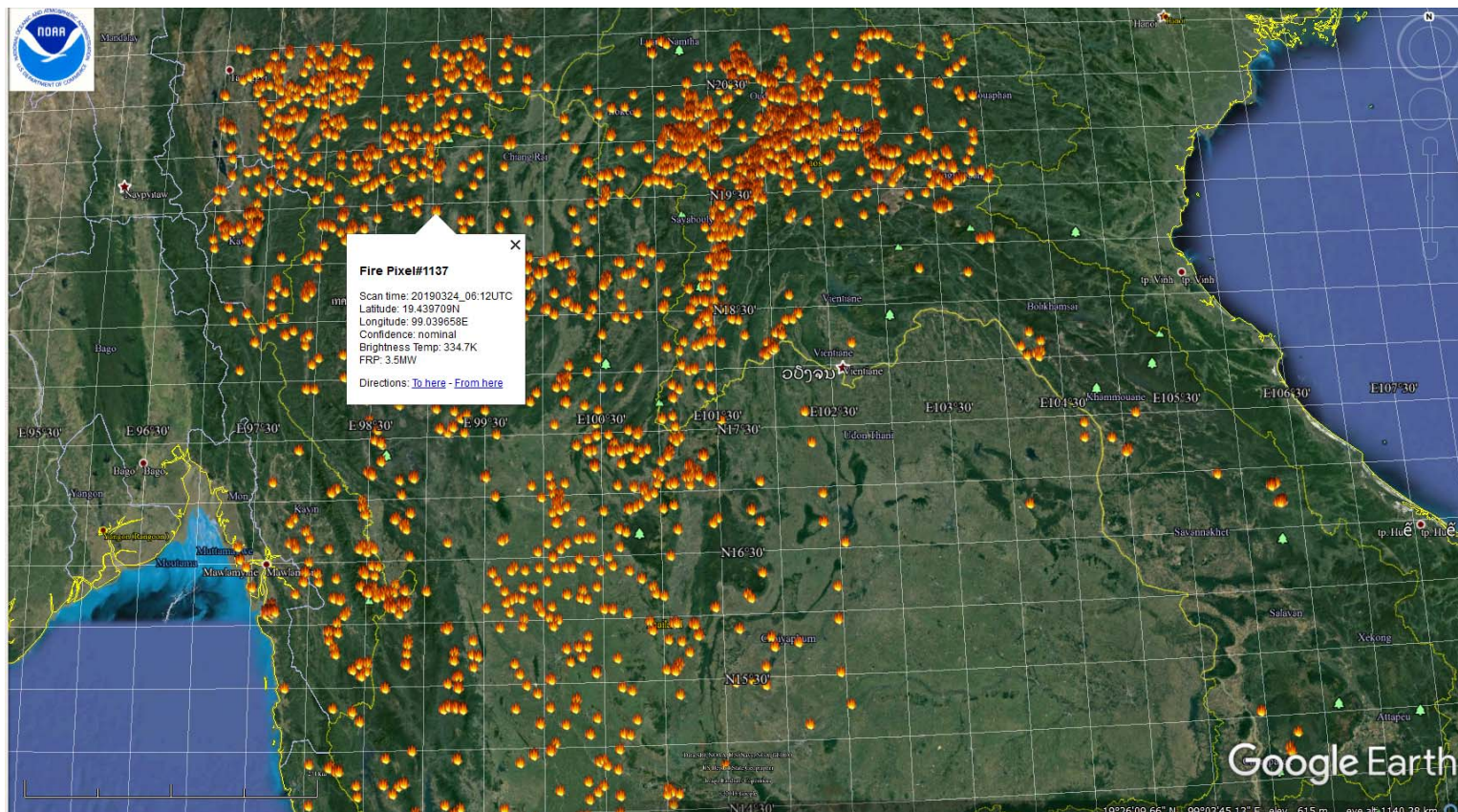


Still in Experimental Phase



Dr. Chris Elvidge (chris.elvidge@noaa.gov), Dr. Kim Baugh (kim.baugh@noaa.gov) and Dr. Feng Hsu (feng.c.hsu@noaa.gov)
Cooperative Institute for Research in Environmental Sciences (CIRES) -
NOAA <https://ngdc.noaa.gov/ngdc.html> & Earth Observation Group
Payne Institute, Colorado School of Mines;
<https://payneinstitute.mines.edu/eog/>

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

Dr. Wilfrid Schroeder (wilfrid.schroeder@noaa.gov)
Dr. Davida Streett (davida.streett@noaa.gov)





Atmosphere Monitoring

<http://atmosphere.copernicus.eu/>

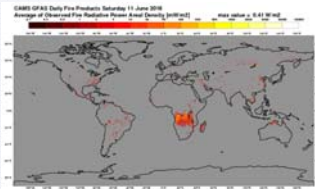
FULL – FREE – OPEN DATA

CAMS Services

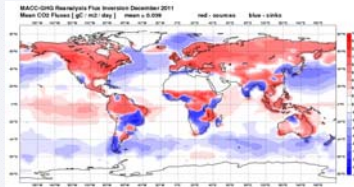
Space Agencies



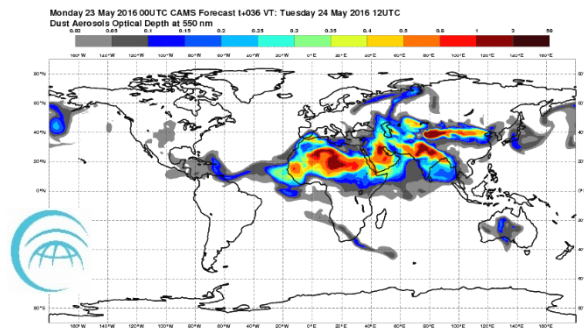
In situ observations



Fire emissions



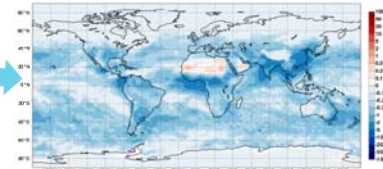
GHG fluxes



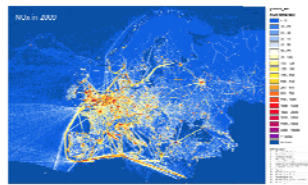
Global



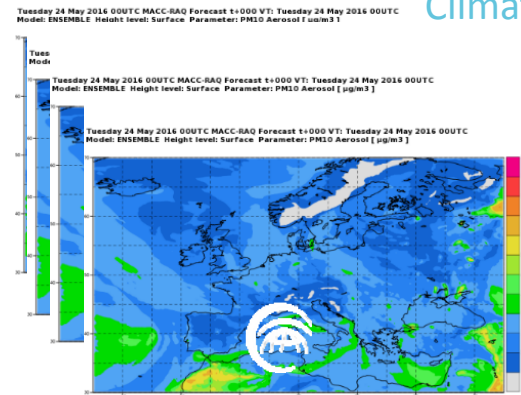
Solar radiation



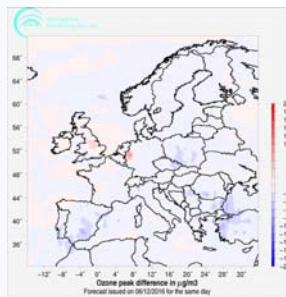
Climate forcing



Anthropogenic emissions



Policy

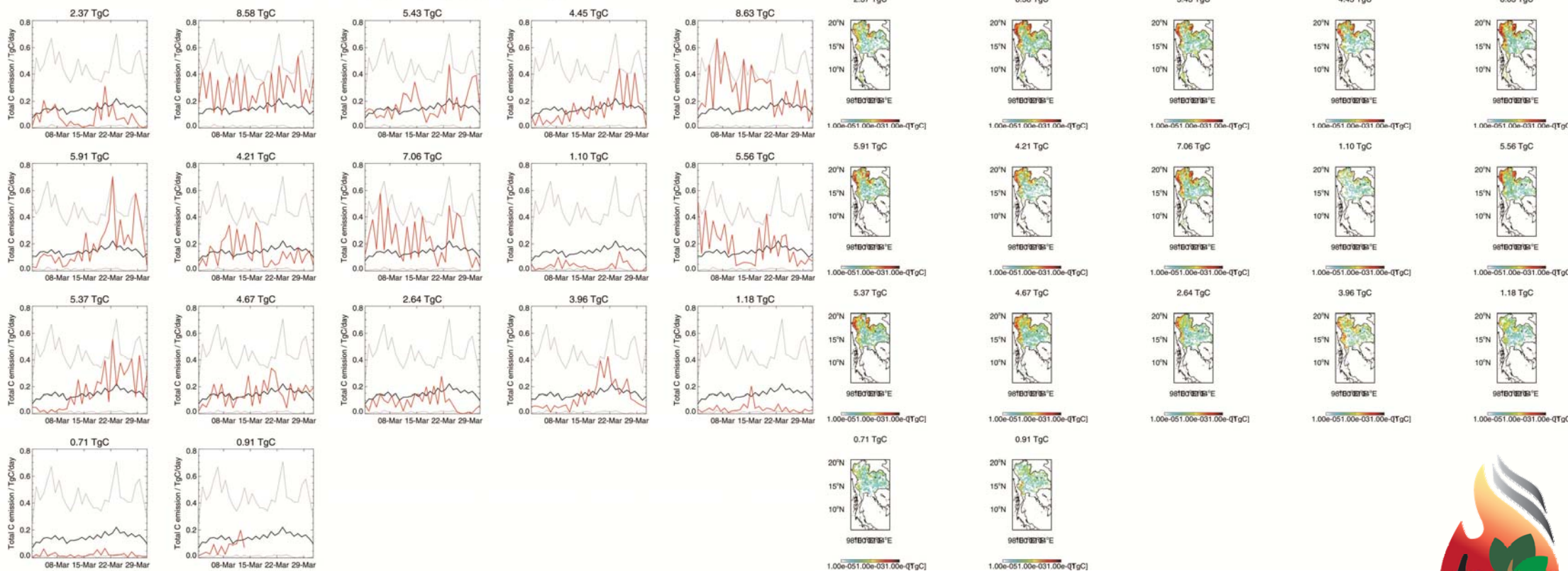


Regional



THAILAND: 2003-2019, 01/03 - 31/03

THAILAND: 2003-2019 month 03



By Dr. Mark Parrington, (mark.parrington@ecmwf.int) and Dr. Claudia Vitolo (claudia.vitolo@ecmwf.int),
R-Code for this matter is in the custom made process for Thailand and Upper ASEAN daily operation!!!!!!




Copernicus Atmosphere Monitoring Service (CAMS), Global Fire Assimilation System (GFAS), The European Centre for Medium-Range Weather Forecasts (ECMWF)

<http://atmosphere.copernicus.eu/about-cams>

Cooperated ince 2015 fire season! **More details at** <https://atmosphere.copernicus.eu/impact-wildfires-asia>.


The Seven SouthEast Asian Studies (7-SEAS)

https://www.nrlmry.navy.mil/aerosol_web/7seas/7seas.html



Welcome to the 7 SEAS Data Repository!

[7SEAS Main Page](#)
[Data Use Policy](#) [Privacy Policy](#)



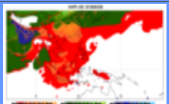
Images and data shown for **Latest** [Change the Day](#) Previous Day Next Day Reset

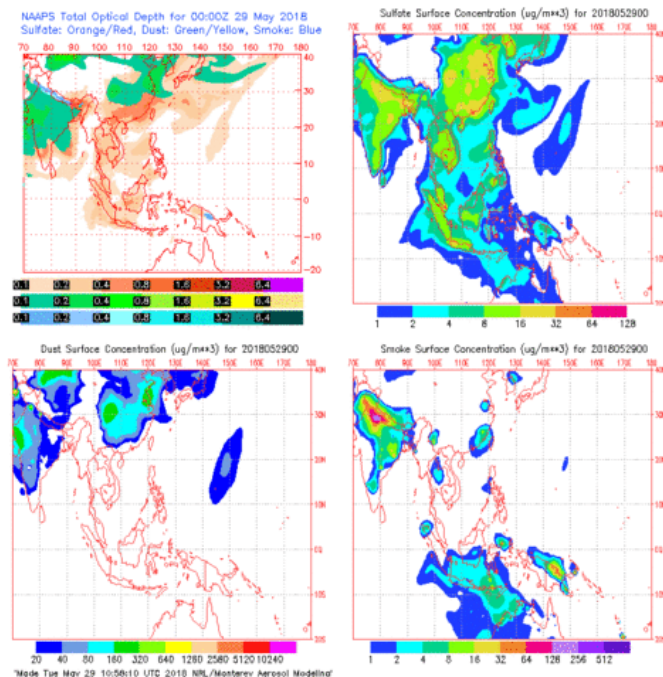
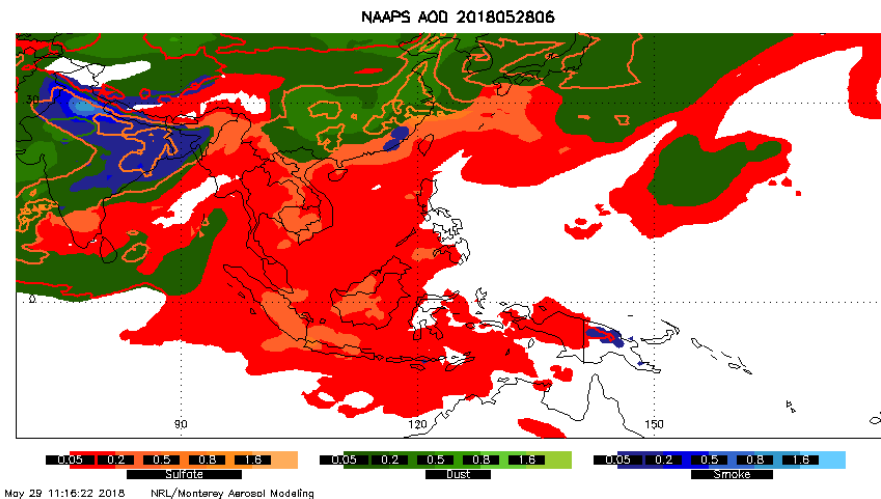
Related links:

<p>Aerosol Forecasting:</p> <ul style="list-style-type: none"> NAAPS COAMPS0-OS VE 	<p>Remote Sensing:</p> <ul style="list-style-type: none"> NEXSAT Satellite Imagery (7SEAS) AERONET (Sun photometry) AERONET BAMGOMAS (Synergy tool) MODIS RGB Near Rapid Response Sets (Imagery) NRL Remote Sensing (Imagery) MISR Data Collects for VBBE VBBE COAMPS Plots NASA LaRC FlashFlux NASA/NRL/CRISP MPLNET NASA Worldview (requires Firefox) CALIPSO Browse Imagery MODIS Southeast Asia subsets 	<p>Weather:</p> <ul style="list-style-type: none"> FNMOC NOGAPS Forecasts West Pacific NCEP/GFS Forecasts E Asia FNMOC NOGAPS Forecasts SW Asia NCEP/GFS Forecasts Indian Ocean FNMOC WW3 Forecasts SW Asia Malaysian Meteorological Department Environment Agency More Weather Links
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Forecast Products

To download data and graphics for these products see the [GODAE data portal](#).

<p>NAAPS AOD</p>		<p>Current Data:</p> <p style="text-align: center;"> 00 06 12 18 </p> <p>Forecast Graphic</p>	<p>Archived Data Archived Graphics</p>
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Dr. Edward Hyer Edward.Hyer@nrlmry.navy.mil

On going Cal/Val Navy Aerosol Analysis and Prediction System (**NAAPS**) products with northern Thailand PM10 hourly records in the past 10 years data or so!, **but no update in the past 6 months!**

Real-Time Haze Monitoring and Forest Fire Detection Information Centric Networks

(SEA HAZEMON@TEIN)

Thailand Research and Education Network (ThaiREN)

Co-PI (Corresponding): Dr. Adisorn Lertsinsruttavee

Internet Education and Research Laboratory
Asian Institute of Technology (AIT), Thailand
Email: adisorn@ait.ac.th

Tel: +662 524-6611 Fax: +662 524-6618

Mobile Phone: +6626647275

Co-PI: Associate Prof. Dr. Panjai Tantatsanawong

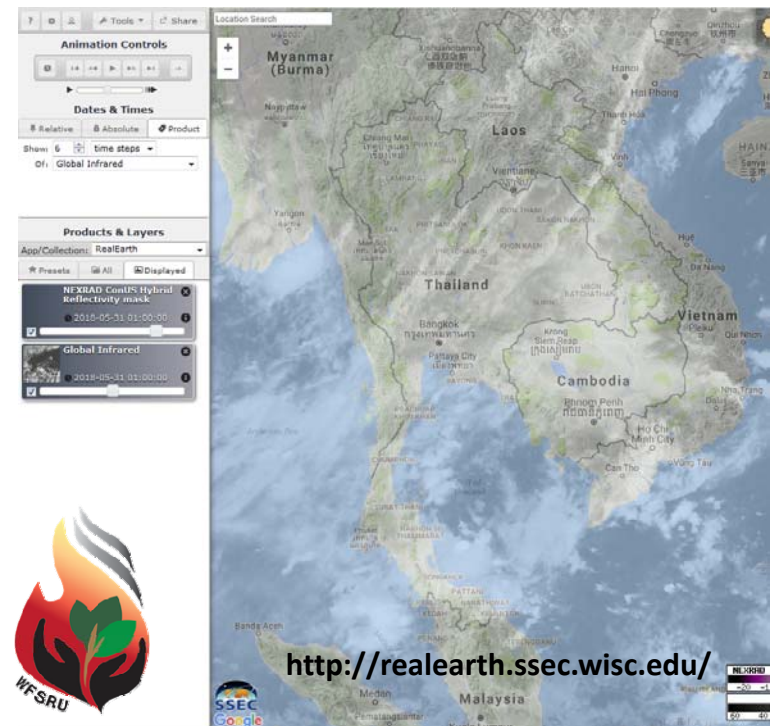
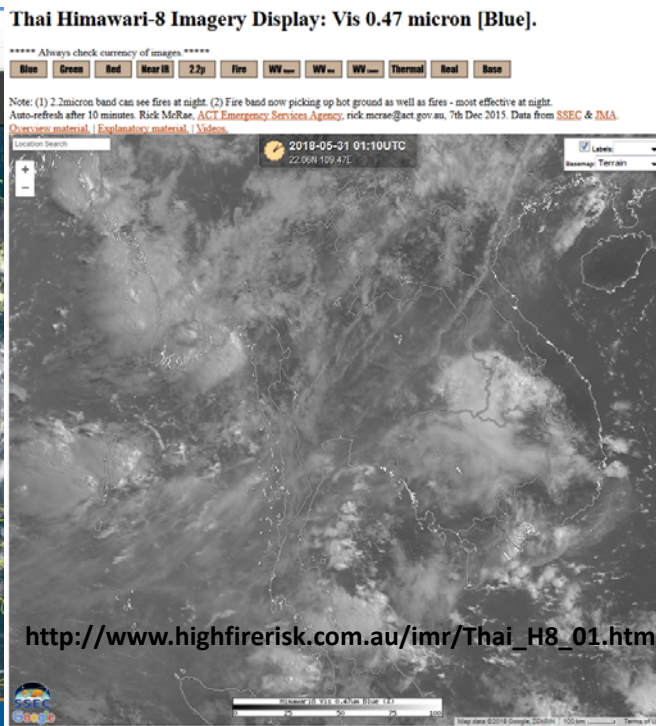
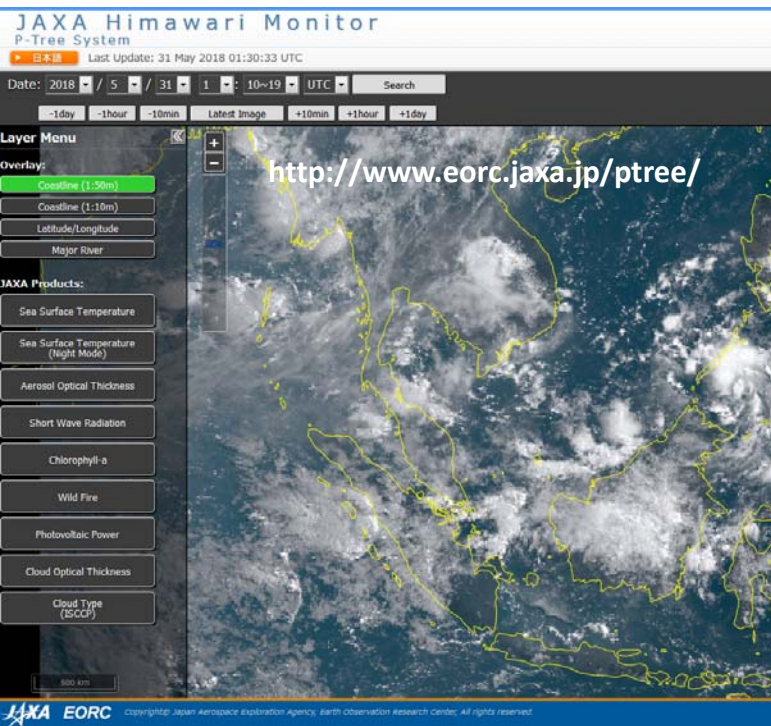
Chair of Thailand Research Education Network Association
Computing Department, Faculty of Science, Silpakorn University, Thailand
Email: panjai@gmail.com Tel: +6634-272923 Fax: +6634-272923

Mobile Phone: +66819218327

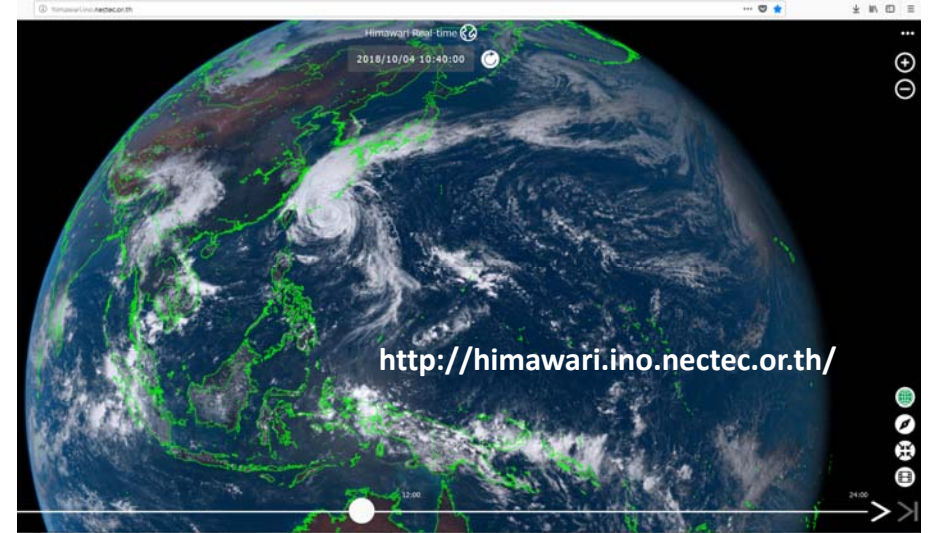
With InterLab, Asian Institute of Technology to deploy air quality sensors (IoT) in the field, so far one had been shipped to Bundung (Dr. Basuki Suhardiman, basuki@itb.ac.id) and 2 to Sumatra (Dir. Dr. Israr Albar, israralbar@gmail.com). The second phase of SEAS-HAZEMON Project is under Asi@Connect/TEIN will deploy 200 sensors in Lao PDR, Philippines, Indonesia and Thailand.

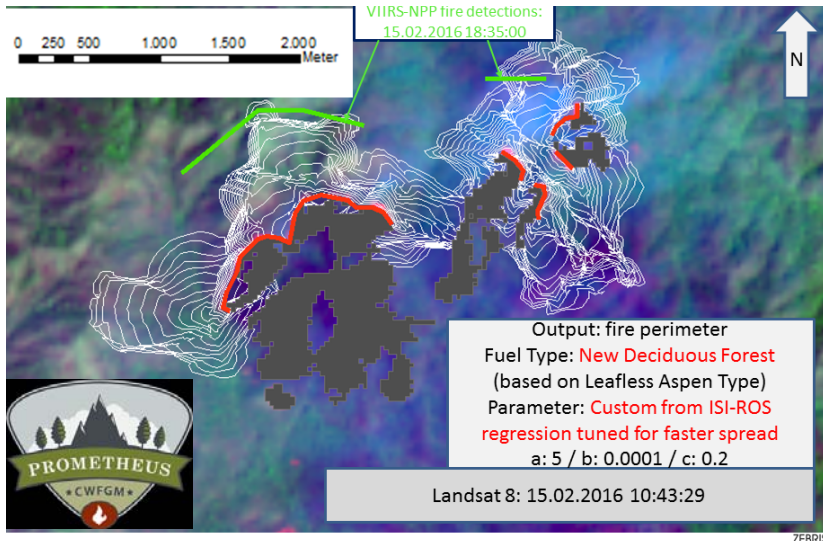
<https://canarin.net/seahazemon/v2/map.html>



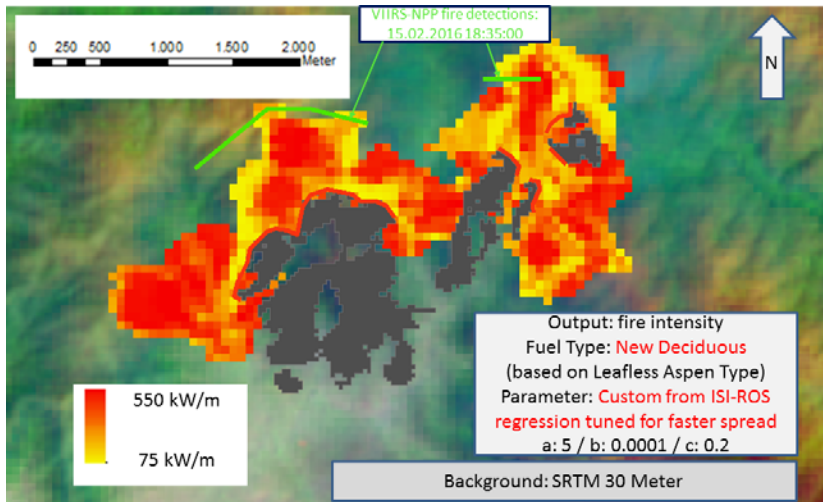


Have been trying to use Himawari-8 products from **HighFireRisk** and **SSEC** for fire, smoke and haze monitoring in the past 3 fire seasons, from **JAXA P-Tree** in the past 1 fire season for Upper ASEAN, but those fire products are not really good enough for Upper ASEAN yet! Lately, have been discussed with **NICT/Chiba U-NECTEC-HII-JAXA-RESTEC-JASTIP** to try to improve the daily monitoring operation!!!

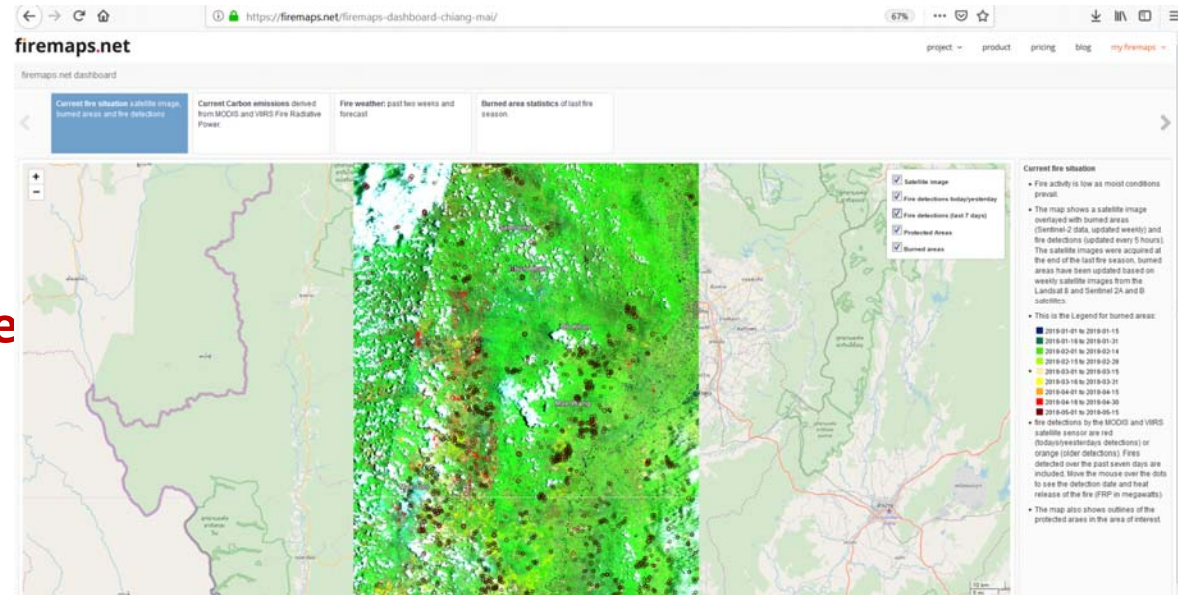




Calibrated Canadian Fire Behaviors Software with 10 years of Dry Depterocarp and Deciduous forest fire experiment data!!



Online burn scars, fire hotspot, fire weather and fire emission information!



<https://firemaps.net/firemaps-dashboard-chiang-mai/>

**Gernot Rucker; gruecker@zebris.com
Joachim Tiemann; jtiemann@zebris.com**

ZEBRIS GbR, Germany www.firemaps.net



On Going - APN Funded Project



CONTRACT DOCUMENTATION

Project Reference Number: CBA2018-01MY-Wanthongchai

Project Title: Integrated Highland Wildfire, Smoke and Haze
Management in the Upper Indochina Region

Contents:

Part 1. Contract of a Project/Activity Funded by APN

Part 2. The Proposal

Part 3. Regulations and Supplementary Documentation

Part 1. Contract of a Project/Activity Funded by APN

“Integrated Highland Wildfire, Smoke and Haze Management in the Upper Indochina Region”

Reference Number: CBA2018-01MY-Wanthongchai

The present Contract contains 9 clauses (I to IX).

I. Project/Activity, Contractor, Grantee and Term of the Contract

Under the present Contract between the Secretariat of the Asia-Pacific Network for Global Change Research (APN) (the "Contractor") and the Kasetsart University (the "Grantee") the Contractor will provide funds for *“Integrated Highland Wildfire, Smoke and Haze Management in the Upper Indochina Region”* (the "project/activity"). The official term of the Contract is from 1 September 2018 to 30 September 2020.



Lackings and Challenges of WFSRU

- Lacking utilization of suitable and effective fundamental existing knowledge of fire, smoke and haze (FSH) science including tools and advanced technologies based on scientific proves **as the part of** Control, Management and Planning (strengthen Science-Policy Interface – SPI).
- Need to **continue study** on FSH, specially smoke and haze behavior.
- FSH **do not** really recognize as a problem in the Upper ASEAN (only Thailand?), so the real commitment to really implement what have been agreed on the table at ASEAN level is not rolling (critical **to have solid POCs**, members who really want to solve problems with authority in hand, etc.)
- Ongoing process to **get fire emissions from CAMS Services ready for Upper ASEAN**
- **Not enough air quality measurement stations** to reflect the real smoke and haze situation, but it will be well supported through **SEAS-HAZEMON 2nd Phase Project**
- Often times, main players who know the problems do not act or get appointed as a driving force within the problem solving team.



Lackings and Challenges Of WFSRU

- Not sure, but may be ONLY Thailand has direct government forest fire control structure and offices in Upper ASEAN since it is a transboundary issue the related countries need to really agree to work together but as always a bit too difficult. Lao PDR shows interest of getting start, but they still need further internal discussion!
- **No really continuous efforts**, usually will pay more attention when bad incidents or episodes occur or get worse, they simply just do their routine works which is not good enough.
- Need to **expand the working network** through all possible collaborations.
- Will work closely with GFMC/RFMRC-SEA. What done in Lower ASEAN have to expand to cover Upper ASEAN as well!! Even problems up here is smaller.
- Not much of knowledge sharing/exchange, lesson learnt or problems solving **NEED effective communicate channel! Better Establish** a SEA Fire, Smoke and Haze WG e.g. “global-flood-working-group@googlegroups.com”.
- **“Fire Prevention”** is still the main key!!! **As indeed, it is a socio-economic issue!!!**





ASEAN Hydroinformatics Data Center (AHC)

for Water and Disaster Risk Management

MORE



www.aseanwater.net/wp/



We aim

- ASEAN Center of hydroinformatics and related technologies for water and disaster risk management
- A platform for Information and knowledge sharing and collaboration in collecting, integrating and sharing relevant information among ASEAN
- A networking of partners determining to strengthen ASEAN capacity in water and disaster risk management, and climate change adaptation

<http://www.aseanwater.net/wp/>



We do

- To promote the implementation of hydroinformatics and related technologies for efficient water management and disaster risk reduction within ASEAN
- To share and broaden country's learnings, experiences and good practices through active networking and collaboration
- To strengthen capacity in applying hydroinformatics among ASEAN member states

<http://www.aseanwater.net/wp/>

AHC



Beneficial to all ASEAN

- **Economic:** cost-effective method to reduce losses in water and disaster recovery
- **Social:** community-based organization and learning network
- **Environmental:** solve the future water scarcity and ensure sustainability

<http://www.aseanwater.net/wp/>

AHC



Chair and Vice Chair Elected

The logo for AHC (Asian Health Care) is located in the top right corner. It consists of the letters "AHC" in a bold, black, sans-serif font, with a blue wavy line underneath. The logo is set against a white oval background with a red vertical bar to its left.

Chairman

- **Sutat Weesakul**
Thailand

**Vice
Chairman**

- **Ng Wun Jern**
Singapore



HAII Officially Changed to Hydro-Informatics Institute (HII) on 21 March 2019

เล่ม ๑๓๖ ตอนที่ ๓๖ ก หน้า ๗
ราชกิจจานุเบกษา ๒๑ มีนาคม ๒๕๖๒



พระราชกฤษฎีกา

จัดตั้งสถาบันสารสนเทศทรัพยากรน้ำ (องค์การมหาชน)

พ.ศ. ๒๕๖๒

สมเด็จพระเจ้าอยู่หัวมหาวชิราลงกรณ บดินทรเทพยวรางกูร

ให้ไว้ ณ วันที่ ๑๗ มีนาคม พ.ศ. ๒๕๖๒

เป็นปีที่ ๔ ในรัชกาลปัจจุบัน

หมวด ๑
การจัดตั้ง วัตถุประสงค์ หน้าที่และอำนาจ

มาตรา ๖ ให้สถาบันสารสนเทศทรัพยากรน้ำและการเกษตร (องค์การมหาชน) ตามพระราชกฤษฎีกาจัดตั้งสถาบันสารสนเทศทรัพยากรน้ำและการเกษตร (องค์การมหาชน) พ.ศ. ๒๕๕๑ เป็นสถาบันสารสนเทศทรัพยากรน้ำ (องค์การมหาชน) ตามพระราชกฤษฎีกานี้ เรียกโดยย่อว่า “สสน.” และให้ใช้ชื่อเป็นภาษาอังกฤษว่า “Hydro - Informatics Institute (Public Organization)” เรียกโดยย่อว่า “HII”

AHC



http://www.ratchakitcha.soc.go.th/DATA/PDF/2562/A/036/T_0007.PDF

Challenges of AHC

- **HAI Changed to Hydro-Informatics Institute (HII)**
- **ASEAN Hydroinformatics Center (AHC)** needs to work in all aspects to make it happen for real which is a very difficult task!!!!
- **PoCs** of each country needs to coordinate within own country well.
- **PoCs** need to follow “Contributions from Member Countries” as agreed on the 18th March 2019 in Bangkok ASEAN NEXT 2019 in: Knowledge Sharing, Technology Matching and Capacity Building
- **Meeting Format:** Twice a year, One Video conference and One face-to-face meeting and Communication via e-mail are highly appreciated
- **Next:** Circulate meeting outcome to all ASEAN delegates for further revision and Set up next meeting via Videoconference
- Consistency and efficient **two-way communication**

AHC



APAN Disaster Mitigation WG, Disaster Mitigation Competence Center Plus (DMCC + Task of the EOSC-hub H2020 Project, <https://wiki.egi.eu/wiki/DMCC%2B>) and Deeper Understanding of Natural Disaster – Instrumental for Disaster Mitigation (UND) under Asi@Connect-TEIN <http://www.tein.asia/main/?mc=0>

4 topics:

- 1. Tsunami; Prof. Dr. Tso-Ren WU and Mei-Hui Chuang**
- 2. Storm Surge; Prof. Dr. Tso-Ren Wu, Yu-Lin TSAI, Dr. Chuan-Yao LIN and Dr. Eric Yen**
- 3. Smoke and Haze; Prof. Dr. Chuan-Yao LIN ASGC and Dr. Eric Yen**
- 4. Flood; Prof. Dr. Chuan-Yao LIN and Dr. Eric Yen**



UND - Update

- **Tsunami:** Palu, Sep 2018, Indonesia, on going
- **Storm Surge:** Pabuk, Jan 2019, Southern Thailand, on going
- **Smoke and haze:** Northern Thailand, March 2018, on going
- **Flood:** Sonca, July 2017, Sakonnakorn Province, Northeastern Thailand, Do not know the status

AHC

