Committee on Earth Observation Satellites

WildFire Pilot

Joshua Johnston, NRCan
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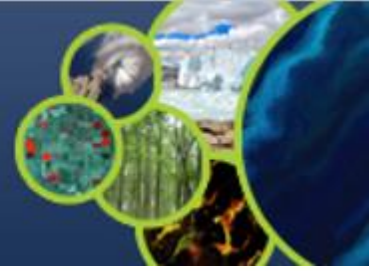
Peter Moore, UN FAO
Doug Morton, NASA

CEOS WG Disasters Telecon #29
June 03, 2021

WildFire Pilot Scope

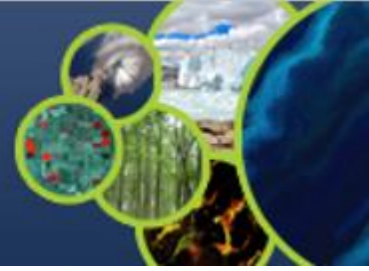


Aim: to provide a comprehensive gap analysis for active-fire earth observation

Four specific Objectives:

1. Conduct a detailed inventory and gap analysis of existing and proposed EO systems suitable for global active-fire monitoring;
   - *Considering climate change driven fire regime changes and projected mission life spans*
2. Conduct a detailed analysis of global stakeholders and end-users of near-real-time active-fire EO data;
3. Define targeted user requirements for active-fire remote sensing systems for the disaster mitigation applications;
4. Propose a way forward in coordinating global wildfire monitoring activities.

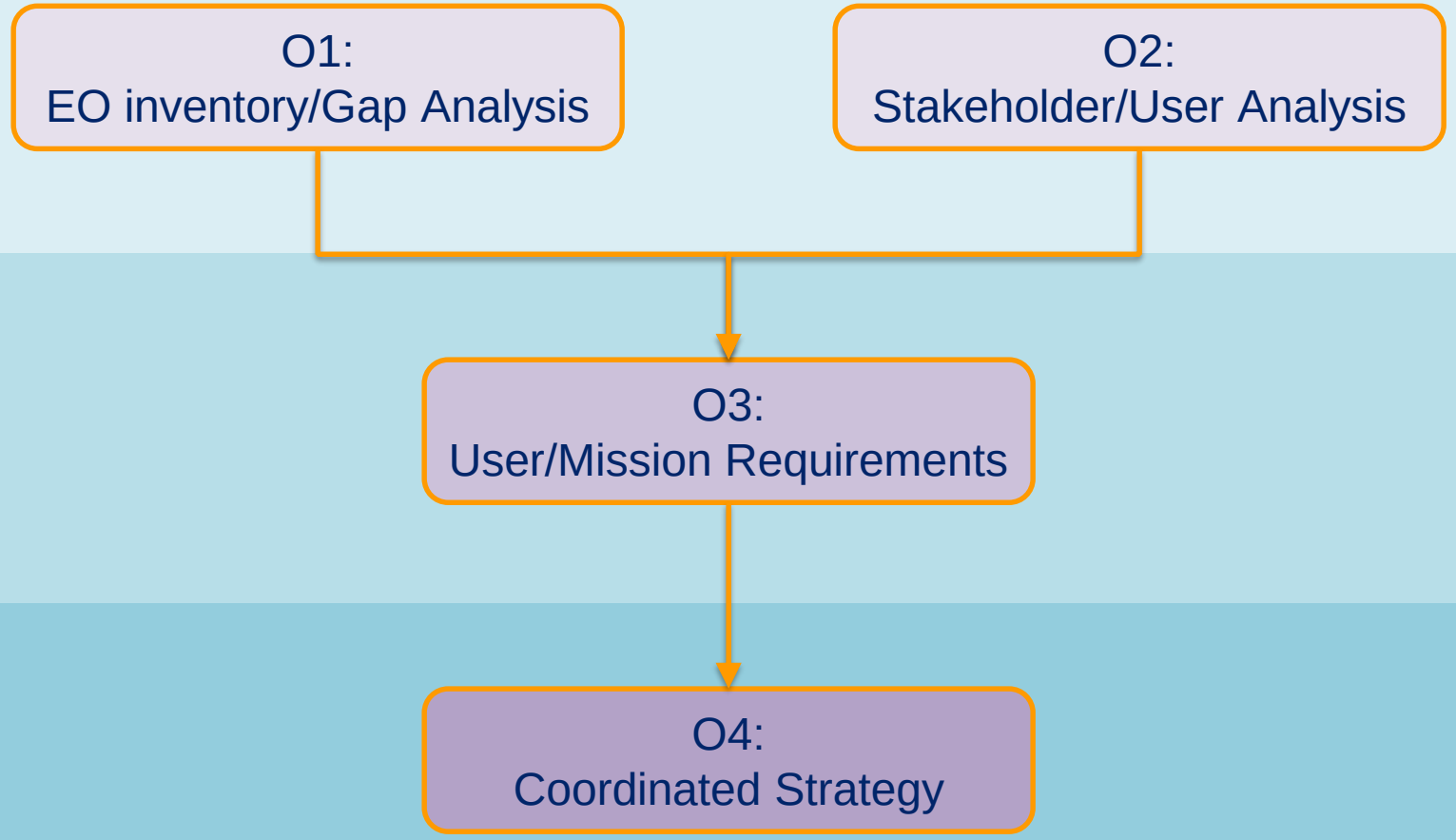
Implementation Overview



Phase 1

Phase 2

Phase 3

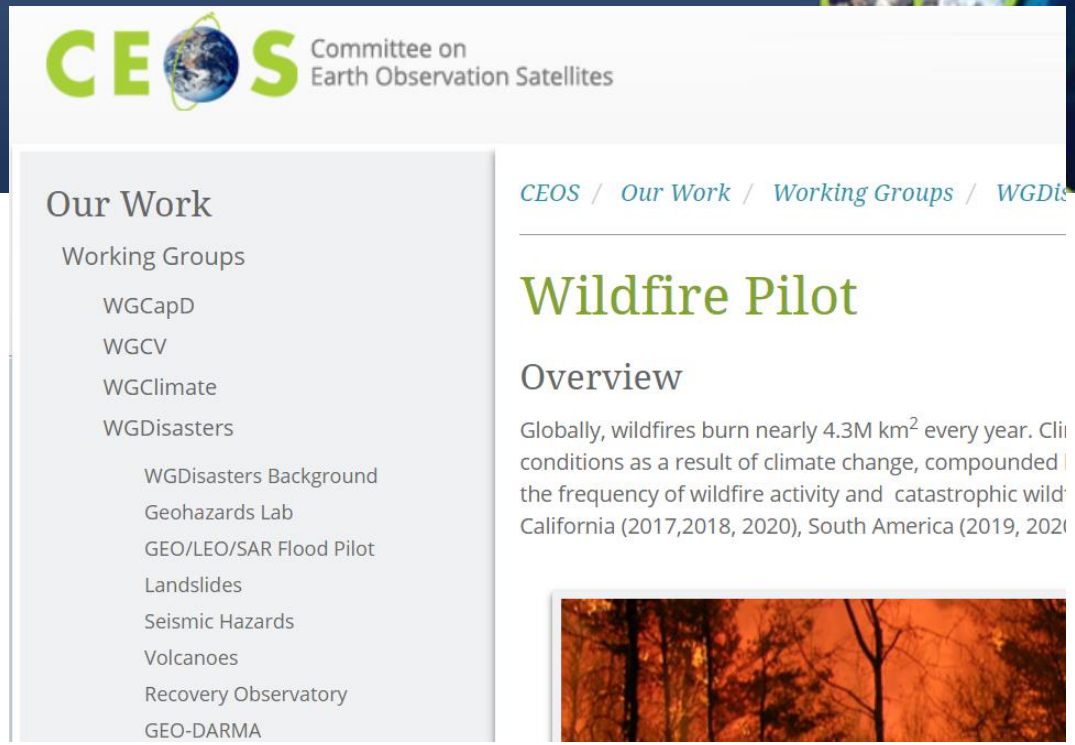


Status

- Sept 3rd, 2020: CEOS WG Disasters Meeting #14
  - Received support to move forward with the Pilot
- Oct 14th, 2020: Scoping meeting
  - 44 members with broad global representation:
  - Australia, Canada, China, France, Germany, Greece, India, Italy, Jamaica, Mexico, Russia, UK, USA
  - Numerous state and international agencies represented
- March 9th, 2021: CEOS WG Disasters Meeting #15
  - Provided status update

First Name	Last Name	Organization	Country
Vince	Ambrosia	NASA	United States
Stefania	Amici	INGV	Italy
Olivier	Arino	ESA	
Philippe	Bally	ESA	
Bimal	Bhattacharya	ISRO	India
Reece	Biddiscombe	ASA	Australia
David	Borges	NASA	United States
Alan	Cantin	NRCan	Canada
Allison	Craddock	NASA JPL	United States
Ivan	Csiszar	NOAA	United States
Didier	Davignon	NRCan	Canada
Pierric	Ferrier	CNES	France
Christian	Fischer	DLR	Germany
Louis	Giglio	UMD	United States
Adrian	Guzman Gonzalez	AEM	Mexico
Alex	Held	CSIRO	Australia
Everett	Hinkley	USDA	United States
David	Hodgson	Ordinal Survey	United Kingdom
Ken	Holmlund	WMO	
Dan	Johnston	NRCan	Canada
Joshua	Johnston	NRCan	Canada
Sebastian	Kleim	DLR	Germany
Haris	Kontoes	National Observatory Athens (NOA)	Greece
Andrey	Kuklin	Roscosmos	Russia
Agnes	Lane	AU BOM	Australia
Simone	Lloyd	UN GGIM WG-Disasters	Jamaica
Antonio	Montuori	ASI	Italy
Peter	Moore	Forestry Officer, FAO	Italy
Doug	Morton	NASA	United States
Norman	Muller	GA	Australia
Dorella	Papadopoulou	ARGANS (ESA)	France
Amy	Parker	CSIRO	Australia
Mike	Pavolonis	NOAA	United States
Stuart	Phinn	UQ	Australia
Ellen	Ramirez	NOAA	United States
GS	Rao	ISRO	India
Arijit	Roy	ISRO	India
Wilfrid	Schroeder	NOAA	United States
Daniel	Thompson	CFS	Canada
Helena	van Mierlo	CSA	Canada
Jean Paul	Vernier	NASA	United States
Martin	Wooster	King's College London	United Kingdom
Weiyuan	Yao	Chinese Academy of Sciences (CAS)	China
Marta	Yebra	Australian National University	Australia
Robert	Ziehl	UAF	United States

Status (cont'd)



- April 2021: set up of new MS Teams environment
  - 50 members invited to connect

- May 2021: Official Wildfire Pilot CEOS page set up:

  Wildfire Pilot | CEOS | Committee on Earth Observation Satellites

- May 28th, 2021: Wildfire Pilot Stakeholders meeting
  - 20 members joined (investigating reason for lower number):
  - Australia, Canada, Germany, Greece, Italy, Netherlands, UK, India, USA (including Alaska)
  - Interest expressed as well for Pre-Fire domain

Implementation 2021-2022

Objective 1:

a) Assemble datasets to form a spatial and temporal global fire regime dataset with climate change projections on 5 year intervals (2020-2050)

b) Identify existing and future active fire EO capabilities and coverage areas

c) Map existing EO coverage and future projections on 5 year intervals

d) Develop metrics for analysing fire regime and EO capability change correlations

Objective 2:

a) Outreach to regional networks and partners to identify stakeholders and end-user communities

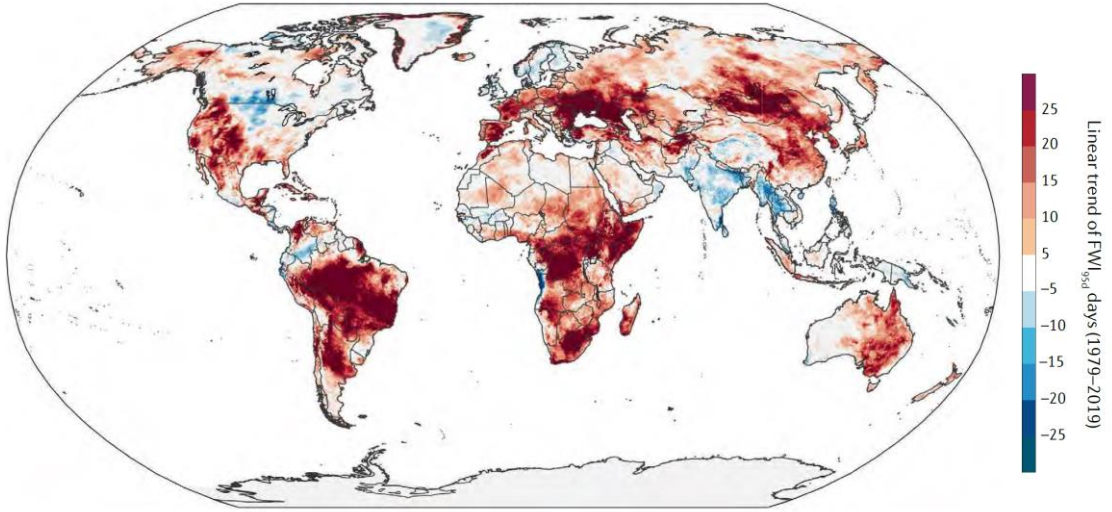
b) Engage end-users (directly or through regional partners) to identify:

- Agency responsibilities, priorities and perceive challenges in the future
- User sophistication level (i.e. level of training, agency capacity/policy)
- Current level of use and use cases

Objective 1-a

(Objective 1-a) “Assemble datasets to form a spatial and temporal global fire regime dataset with climate change projections on 5 year intervals (2020-2050)”

- Scientific literature review of existing models and related fire regime scenarios:
- Literature review under way;
- Welcoming discussion/suggestions on preferred models

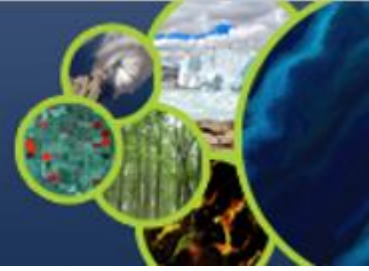


Objective 1-b

(Objective 1-b) “Identify existing and future active fire EO capabilities and coverage areas”

- Existing capabilities:
  - GOFC-GOLD active fire review paper (in review - RSE)
  - Review of active fire systems used in Charter activations (CEOS datasets)
  - IARPC Report (Ambrosia et al.)
- Future capabilities:
  - Known systems: Sentinel-3 (longterm), WildFireSat, C-FIRES, AOM
  - Survey existing and planned GEO systems: NOAA, EUMETSAT, etc
  - CEOS membership contributions essential….

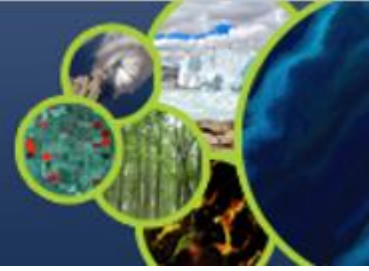
Objective 2 – Key Elements



(Objective 2) “Conduct a detailed analysis of global stakeholders and end-users of near-real-time active-fire EO data”

- Seeking to ensure meaningful input on either use of EO data and products and setting out needs from the fire management perspective
- Implement engagement to ensure that groups not regularly involved can contribute
- The data and information collected will likely revolve around a core set of questions to source input

Objective 2 – 2021-2022



(Objective 2) “Conduct a detailed analysis of global stakeholders and end-users of near-real-time active-fire EO data”

- Outreach to regional networks and partners to identify stakeholders and end-user communities. The potential sources and groups to be refined will include:
  - The Expert Group on Forest Fires (EGFF) convened by the European Commission
  - The Association of South East Asian Nations (ASEAN)
  - FAO country level fire management projects;
- End-user engagement initiated to identify:
  - Agency responsibilities, priorities and perceive challenges in the future;
  - User sophistication level;
  - Current level of use and use cases; and
  - Existing needs that have been identified

Overall Next Steps

- Stakeholders agreed to reconvene for further discussion at an appropriate time (June/July)
- Outreach to other CEOS Working Groups to broaden resources/support;
- For new people that would like to join, please contact Jennifer.zhu@Canada.ca