



NASA Outlook and Focus

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New Fire Support Efforts at NASA



- ROSES 2011 A.35 Wildfires solicitation (Applied Science Program)
- 17 projects selected for Phase 1 “Feasibility” studies (1-year)
- New Positions as Associate Program Managers – Wildfires named in NASA Applied Sciences Program
 - Vince Ambrosia (NASA-Ames Research Center)
 - Amber Soja (Langley Flight Research Center)
- Interface with Fire Community / Sister Agencies; develop collaborations, possible joint solicitations; Manage project efforts and metrics
- Grow / Expand TFRSAC to include information sharing from NASA A.35 – Wildfire Projects



Solicitation (Section 2)

The objective of this solicitation is to select applications and applied research projects to improve decision-making activities and actions on topics related to wildland fires, such as wildfires, rangeland fires, and prescribed fires.

Successful projects will advance organizations' use and application of Earth observations in analysis and assessments, management strategies and actions, business practices, and policy analysis and decisions associated with wildland fires.



Solicitation (Section 2)

The solicitation expects strong involvement and partnership with the organization(s) that will ultimately adopt the application in their decision-making activities and/or in their products and services to end users.

The explicit, eventual goal in Stage 2 projects is transitioning feasible, beneficial applications to an operational status with the partner organization and/or end users.

ROSES-2011 A.35



Total Amount of NASA Funding (FY12-16)	\$6 M total (Stage 1: ~1.5M; Stage 2: ~4.5M)
Anticipated Number of Stage 1 Awards	9-13 projects
Expected Range of Stage 1 Award per project	\$120K - \$170K
Period of Performance (Stage 1)	1 year
Expected Project Start Date (Stage 1)	6 months after proposal due date.
Contributions from Partner Organizations (Stage 1)	Strongly encouraged. However, partner funding does not count toward funding level guidelines.
Anticipated Number of Stage 2 Awards	4-6 projects
Expected Range of Stage 2 Awards per project (NASA funding)	\$275K - \$450K (per annum funding scenarios depend on partnerships/cost sharing levels)
Period of Performance (Stage 2)	3 years
Expected Project Start Date (Stage 2)	18-20 months after proposal due date
Contributions from Partner Organizations (Stage 2)	Transition plan with resource commitments from partner organizations is expected



Feasibility-to-Decision Support Projects

A two-stage approach to identify more high-reward projects with strong commitment by partner organizations. **Start with multiple feasibility studies** of possible applications ideas. After a year, **the Program selects a subset** of successful studies to pursue as **in-depth applications projects**.

Approach generates numerous applications ideas and focuses investments on those with high-reward potential.

Approach prioritizes partners' "skin-in-the-game" to increase their involvement in project and commitment to adopting the project results.

Year	Stage	Activity	NASA Share		Partner Share	
Year 1	Feasibility	Prove out application potential		100%	Optional	
Year 2	Decision Support	Develop application		~80%	~20%	
Year 3	Decision Support	Continue development		~60-70%	~30-40%	
Year 4	Decision Support	Complete application and transition		~30-40%	~60-70%	

Selections: 17 Feasibility (Phase 1) Studies

RECOVER: Rehabilitation Capability Convergence for Ecosystem Recovery

Daily Forecasts of Wildland Fire Impacts on Air Quality in the Pacific Northwest: Enhancing the Air Indicator Report for Public Awareness and Community Tracking (AIRPACT) Decision Support System

Utilization of Multi-Sensor Active Fire Detections to Map Fires in the US. The Future of Monitoring Trends in Burn Severity

Enhanced Wildland Fire Management Decision Support Using Lidar-Infused LANDFIRE Data

Enhancing Wildland Fire Decision Support and Warning Systems

Applications of satellite measurements to improve prescribed fire management

Improving national shrub and grass fuel maps using remotely sensed data and biogeochemical modeling to support fire risk assessments

Improving agricultural and wildland fire source emission products and access to information for atmospheric science and smoke modeling applications

Linking remote sensing and process-based hydrological models to increase understanding of wildfire effects on watersheds and improve post-fire remediation efforts.

Classification of Whitebark Pine and Spruce-fir Forests to Improve Wildland Fire Decision Support Tools in the USFS Northern Region

A Prototype System for Predicting Insect and Climate-Induced Impacts On Fire Hazard in Complex Terrain

An integrated forest and fire monitoring and forecasting system for improved forest management in the tropics

Wildland Fire Behavior and Risk Prediction

Wildfire risk and treatment effectiveness of protecting highly valued resources and assets with fuels management

Development of New Geospatial Tools for Wildland Fire Management and Risk Reduction

AFTEERS: Automated Fuels Treatment Effectiveness Evaluation Using Remote-Sensing Information

Development and application of spatially refined remote sensing active fire data sets in support of fire monitoring, management and planning



The Program included the following factors in its determination of projects to continue:

- Applicability of Earth observations to address the fire-related topic
- Measurable, potential impact to decision-making activity
- Partner interest, involvement, and commitment
- Viability of necessary science and technology
- PI and team expertise, influence, and experience
- Quality of preliminary Stage 2 Plan, including a transition approach with clear objectives to develop and transfer the application into sustained use
- Viability of partnership agreements and financial plan

Key Questions for Evaluation

Is it feasible?

Is it valuable?

Is there commitment?

A successful project needs to be technically achievable, useful, and wanted.

A.35 Solicitation: Phase 1 to 2 Review



- August 6, 2013 – Telecon with PIs about review process and guidelines for Phase 1 Report
- November 7, 2013 – Phase 1 Reports due (delayed due to government shutdown)
- January 10, 2014 – Telecon with Panel Reviewers
- January 28-30, 2014 – Phase 1 Panel Review
- April XXX, 2014 - Presentation to ESD Steering Committee

Proposed:

- May 1, 2014 – Selections Announced (*approx.*)
- May 2014 – Proposals Negotiated
- Fall 2014 – Possible PI meeting

Applications Readiness Levels (ARL)

9. **Approved, Operational Deployment and Use in Decision Making**
8. **Application Completed and Qualified**
7. **Application Prototype in Partners' Decision Making**
6. **Demonstrate in Relevant Environment**
5. **Validation in Relevant Environment**
4. **Initial Integration and Verification**
3. **Proof of Application Concept**
2. **Application Concept**
1. **Basic Research**

*Partner
Demonstration and
Transition*

*Development, Test, and
Validation*

*Discovery
and
Feasibility*

ARL 9

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ARL 8

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ARL 7

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ARL 6

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ARL 5

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ARL 4

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ARL 3

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ARL 2

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ARL 1



Project Portfolio

ARL 1-3: 7 projects
 ARL 4-6: 10 projects
 ARL 7-9: 0 projects

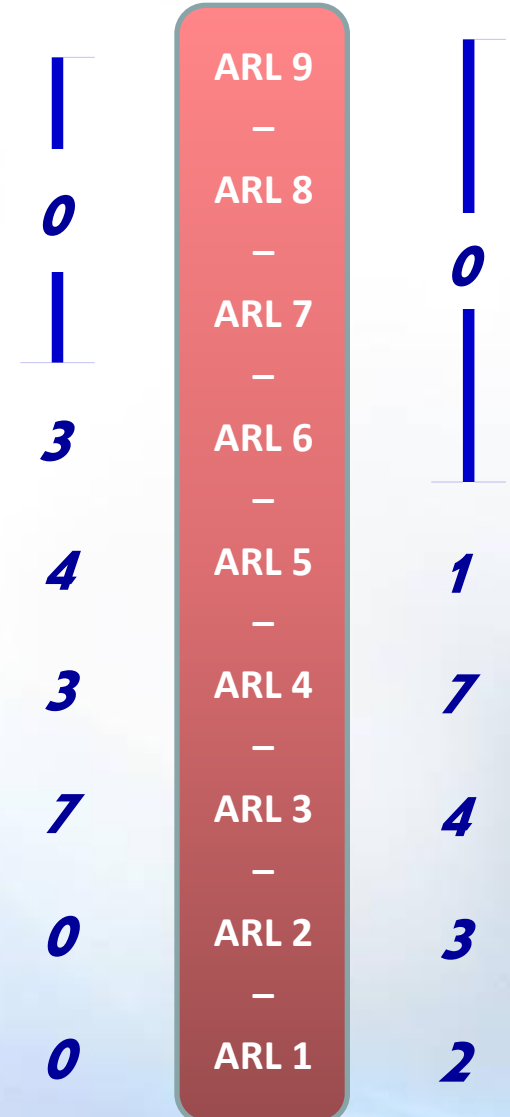
Mean: ARL 4.2 (*incr. from 3.75*)
 Median: ARL 4 (*prev. was 4*)
 Mode: ARL 3 (*7 projects*)

Performance since Nov. 2013

24% (4/17) have advanced 1+ ARL
6% (1/17) has advanced 2 or more ARL

Mar 2014

Sept 2013



Current & Upcoming Activities



- Develop program plans with A35 Phase II Project PIs / Teams, Plan Review / Workshop (possibly RSAC, Fall 2014)
- Briefed and participated in wildfire workshop with OSTP-WH on Wildfire Coordination and Technology improvements, NASA-Ames, 20 Sept 2013;
- Futurecasting Summit: The Future of Wildfires, AFA, Colorado Springs, 13-14 February. Develop trend analysis of technology and wildfire crossroads in 2024.
- Discussions with NRC (Drs Elizabeth Eide and Mark Lange, Director and Program Officer (respectively), Board on Earth Sciences and Resources) about “*potential NRC study to examine how science can help wildfire planning and management be more strategic, reduce costs, and increase the land’s resilience to wildfire*”;

Active & Upcoming Activities



- *Participate in JFSP National Fire Science Exchange Meeting, Tucson, AZ, 6-8 May. Develop ideas for joint solicitation of projects / campaigns; build closer relationships*
- *Participate in Large Wildland Fire Conference, Missoula, MT, 20-23 May. Expose community to NASA's growing portfolio in wildfire remote sensing applications*
- *Committee membership (rep NASA) on GEO 2012-2015 Work Plan, element DI-01--Disasters; Risk Reduction , Group C4: Global Wildfire Information System;*
- *Participate in JFSP National Fire Science Exchange Meeting, Tucson, AZ, 6-8 May. Develop ideas for joint solicitation of projects / campaigns; build closer relationships;*

Active & Upcoming Activities



- *Participate in Large Wildland Fire Conference, Missoula, MT, 20-23 May. Expose community to NASA's growing portfolio in wildfire remote sensing applications;*
- *Participate and address NASA's ASP-Wildfire program element at International Conference on Forest Fire Research, Coimbra, Portugal, November 2014. Possible NASA Conference support / display;*
- *ISRSE 2015 Berlin, Program Technical Committee; developing sessions on Wildfires as well as Airborne;*



Questions?

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