



Frames

2011 Annual Report

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Fire Research And Management Exchange System (FRAMES)

April 2012

All Photography by Karen Wattenmaker



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“Half the battle of providing the best science is accumulating it under one roof.”

- Tim Swedberg, JFSP Communications Director



Figure 1. Information at Work



Introduction

The close of 2011 marks the ninth anniversary of the Fire Research And Management Exchange System (FRAMES). The construction of FRAMES began in 2002 at the University of Idaho (UI) with funding support from the US Forest Service's Missoula Fire Lab in response to the need for cataloging and organizing wildland fire tools, data, and documents into a single system. Following the 1999 Joint Fire Science Program's (JFSP) conference and workshop entitled, "Crossing the Millennium: Integrating Spatial Technologies and Ecological Principles for a New Age in Fire Management" there was a clear need for managing what was described as a "deluge of data" and other information that would become increasingly available in the 21st century to wildland fire and other natural resource managers. FRAMES was proposed as a mechanism for ongoing information exchange and technology transfer between the wildland fire management and research communities. In 2003, a partnership with what is now the US Geological Survey's Core Science Analytics and Synthesis (CSAS) Program (USGS / CSAS; which includes the former National Biological Information Infrastructure [NBII] Program, and the former Biological Informatics Program [BIP]) provided the technical foundation and federal legitimacy for meeting security and legislative requirements. In addition to providing a federal technological home for FRAMES, the USGS / CSAS and FRAMES collaboration has advanced the mission of each and has provided a valuable service to the natural resource and wildland fire management communities.

In 2006, an interagency interim steering committee made up of representatives who had invested in FRAMES formed to determine next steps. With support from the US Forest Service and USGS / CSAS, the Keystone Center facilitated the development of the FRAMES Strategic Plan (2007-2012), which emerged from over 100 telephone interviews and an online survey of fire and natural resource professionals.

The broad vision described in the strategic plan focuses on developing a national wildland fire informatics system and clearinghouse that organizes, synthesizes, evaluates, distributes, tracks use, and measures the efficacy of wildland fire and fire-related information and technological resources¹. To implement this vision, the FRAMES mission is to support wildland fire and natural resource professionals and policymakers by promoting and facilitating information and technology sharing, exchange, collaboration, and development through a state-of-the-art clearinghouse and web portal. The use of FRAMES portal informatics technologies² is used to help eliminate redundancy, reduce costs, and promote increased productivity and efficiency for the professionals responsible for wildland fire and fire-related research and management.

In 2008, along with continued support from USGS / CSAS, the Wildland Fire Science Partnership (WFSP) was formed among the US Forest Service's Rocky Mountain Research Station (RMRS), the UI, and the University of Montana (UM). The WFSP brings together programs established at each of the three partner institutions including FRAMES and Wildland Fire Science Program (UI); National Center for Landscape Fire Analysis (UM); and Missoula Fire Science Lab's Fire, Fuels & Smoke Science Program, and the RMRS Wildland Fire Management Research, Development, & Application (RD&A) Program. This University - Forest Service partnership was created to "improve the management of wildland fire by integrating science, technology, education, and practical experience³." The stated goals of the partnership are to:

- Increase core fire and fuel science and measurement capabilities for the improvement of resource management and fire planning.
- Produce timely, reliable, and consistent fire and fuel information for resource managers to assess and implement decisions at a landscape scale.
- Increase access to critical data and applications to support documentation, implementation, and review of decisions and accomplishments.

1 Text is from the FRAMES Strategic Plan 2007-2012.

2 The term "informatics" includes the collecting, linking, storage, organization, integration, analysis, synthesis, delivery, and application of data and information (Center for Biological Informatics, <http://biology.usgs.gov/cbi/about.html>).

3 Quote is from the Wildland Fire Science Partnership Charter 2009.

Introduction

- Develop the skills and capabilities of future fire managers by providing experiential education, research opportunities, access to relevant science data and applications and training⁴.

The WFSP merges capabilities and capacities across state and federal agencies and unites them in a common cause. FRAMES contributes to the partnership by providing the technological capacity and resources for the WFSP to web-deliver the products that are stated in the WFSP Charter. FRAMES benefits from the collective knowledge, content, and stability that the partnership provides. Another significant milestone for FRAMES has been the move to integrate FRAMES with the National Interagency Fuels, Fire, and Vegetation Technology Transfer (NIFTT) program. NIFTT's mission is to assist land managers in the implementation of effective fuels, fire, and vegetation management technology for addressing risks to severe fire behavior & fire effects to restore healthy ecological systems. Much work is left to be done to integrate FRAMES and NIFTT. The current focus is upon online training. FRAMES and the UI Wildland Fire Program are uniquely qualified to expand online training for wildland fire and other natural resource professionals. The long-term plan will be to further integrate FRAMES and NIFTT under the umbrella of the RMRS Wildland Fire Management RD&A Program. Together with the RMRS Wildland Fire Management RD&A Program, FRAMES and NIFTT can further help provide a bridge between wildland fire research and management communities and make sure that the best science is available for managers to make decisions.

During 2010, in conjunction with USGS / CSAS, FRAMES began an upgrade of the portal technology software that is the platform that FRAMES is built upon. The FRAMES portal is delivered through a licensing agreement between USGS and Oracle. The Oracle portal serves USGS / CSAS, FRAMES, and others. The upgrade to a new version of the portal software was completed during March 2011, and dominated FRAMES and NIFTT activities and operations during the months prior. Due to the shutdown of the NBII domain on January 15, 2012 (detailed in the Infrastructure section later in this report) and the expiration of the Oracle license at the end of 2012, during late 2011 FRAMES began the migration from the Oracle portal platform to the concrete5 content management system implemented on servers located at UI. The concrete5 content management system is a powerful, flexible, easy to use, object oriented open source system with a number of add-ons available for customized design. For example, web site usage down to individual downloads is much easier to implement on concrete5, which allows us to provide better services to FRAMES partners and customers.

A significant hurdle befell FRAMES during 2011 when the USGS / CSAS Program announced that it was terminating the NBII program. NBII had been responsible for approximately 90 percent of the support of the FRAMES architecture. Although FRAMES already intended to begin to rely on Information Technology resources and support from UI through the new Northwest Knowledge Network (NKN) program, FRAMES and UI were taken by surprise by the immediate dissolution of NBII (detailed in the Infrastructure section later in this report). FRAMES staff notified Forest Service Project Leads in the WFSP of the event and began to work with NKN staff to facilitate a migration from USGS servers at the Federal Center in Denver to new hardware purchased by UI and the Idaho National Laboratory (INL) in November. The transition to NKN is expected to take most if not all of 2012. USGS will continue to provide limited support for FRAMES until the end of the 2012 calendar year.

In 2012 FRAMES began to charter the future in a new strategic plan, covering the time period 2013-2017. Until further integration within existing wildland fire federal programs occurs, FRAMES development and management is guided by the FRAMES Strategic Plan (2007-2012). The Plan identifies programmatic and organizational goals that emphasize six principal areas of effort including:

⁴ Goals are taken from Wildland Fire Science Partnership Charter 2009.

Goals

Programmatic Goals

1. Provide Content and Increase Content Utility. Develop a rich and usable base of content that is useful to wildland fire and natural resource professionals and policymakers.
2. Expand Services and Increase User Base. Identify opportunities to work with wildland fire and natural resource professionals (i.e., managers, practitioners, and researchers) to develop customized services that are complementary with the FRAMES informatics architecture and that target their common technology transfer and science delivery needs.
3. Increase Name Recognition and Program Awareness: Develop marketing materials for outreach and cultivate relationships with agencies and potential FRAMES users and contributors.
4. Maintain and Upgrade the Infrastructure. Build a technological infrastructure that can support wildland fire and fire-related informatics.

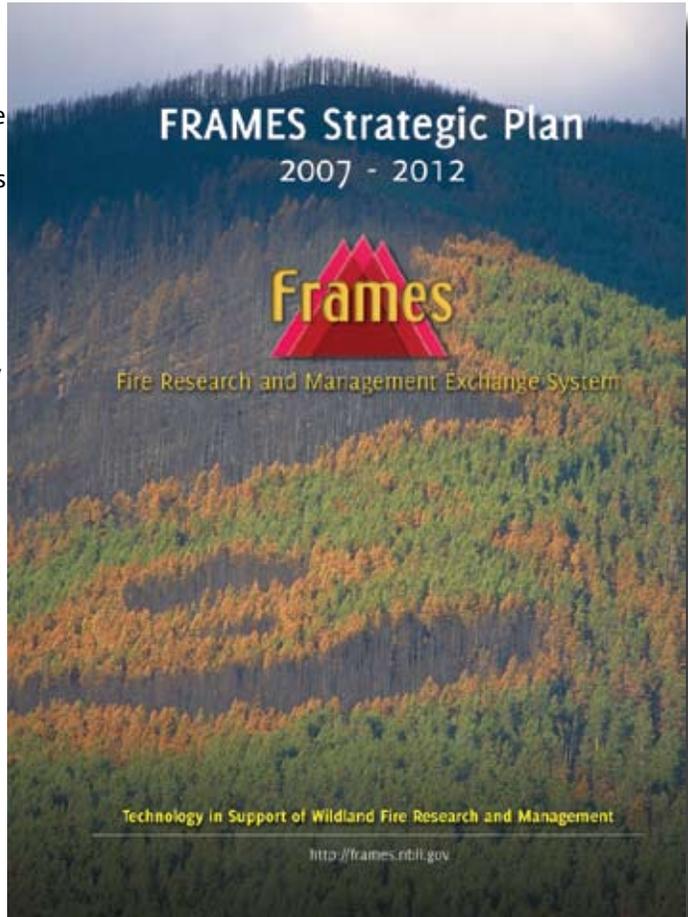


Figure 2. Strategic Plan

Organizational Goals

5. Ensure Financial Support. Determine staffing requirements and develop a sustainable system of financial support to ensure that FRAMES remains viable.
6. Provide Responsive Governance and Management. Establish a long-term plan for governance and accountability for the management and implementation of FRAMES.

This report summarizes activities and accomplishments for the calendar year of 2011. Additional details about FRAMES can be found at www.frames.gov.



CONTENT: Resource Cataloging System (RCS)

Overview

FRAMES continues to expand and provide content to managers and researchers with the goal of making the content easier to find, access, distribute, compare and use. Over the years FRAMES has made a significant investment in developing a comprehensive standards-based system of cataloging called the Resource Cataloging System (RCS). Version 2.0 (RCS v2) has been in operation since 2008. Its use is currently limited to FRAMES staff, as it was developed for “in-house” use rather than for release to other content providers. FRAMES staff continue to work with researchers and managers to make sure that 1) new content is properly cataloged and 2) appropriate edits are made to existing content. During 2010, FRAMES contracted with the Science Applications International Corporation (SAIC), then proceeded to work with SAIC during 2011 to develop the specifications for Version 3.0 (RCS v3). Currently, the development of RCS v3 is scheduled to be performed “in-house” at UI beginning in 2013. RCS v3 will enable all FRAMES partners to directly contribute content to the system. They will be able to create and edit records. Online help and tutorials will be available for partners to get answers to their questions and learn at their own pace how the catalog system works.

System Overview

The FRAMES RCS is a tool for wildland fire and other natural resource professionals to access information cataloged about wildland-fire related resources, and also to enter/catalog resources. Currently the catalog entry interface (RCS v2) is restricted to FRAMES Staff, but partners may request access to the system and once trained, select individuals may use the RCS v2. In the RCS there are six resource groups: Projects, Tools (including models), Documents, Web Pages, Data, and Programs (organizations). We have also started to catalog recorded webinars, which will form the foundation of a 7th “Media” resource group in RCS v3, which will include webinars, videos, podcasts, etc. The RCS, particularly the information about documents and data, is based upon established metadata standards, and in the next version (RCS v3), users will have the ability to export records in formats following metadata standards such as Dublin Core (web metadata standard), Federal Geographic Data Committee (FGDC, spatial metadata standard), and Machine-Readable Cataloging (MARC, a bibliographic standard). Additional “data” metadata standards are under consideration for inclusion. By developing a cataloging system that integrates information about multiple types of resources (e.g., broader than just publications or datasets), we are able to provide information about relationships between resources, such as when a project produces a tool, is described by a document, and its associated dataset, etc. Each of these records can be related to one another.

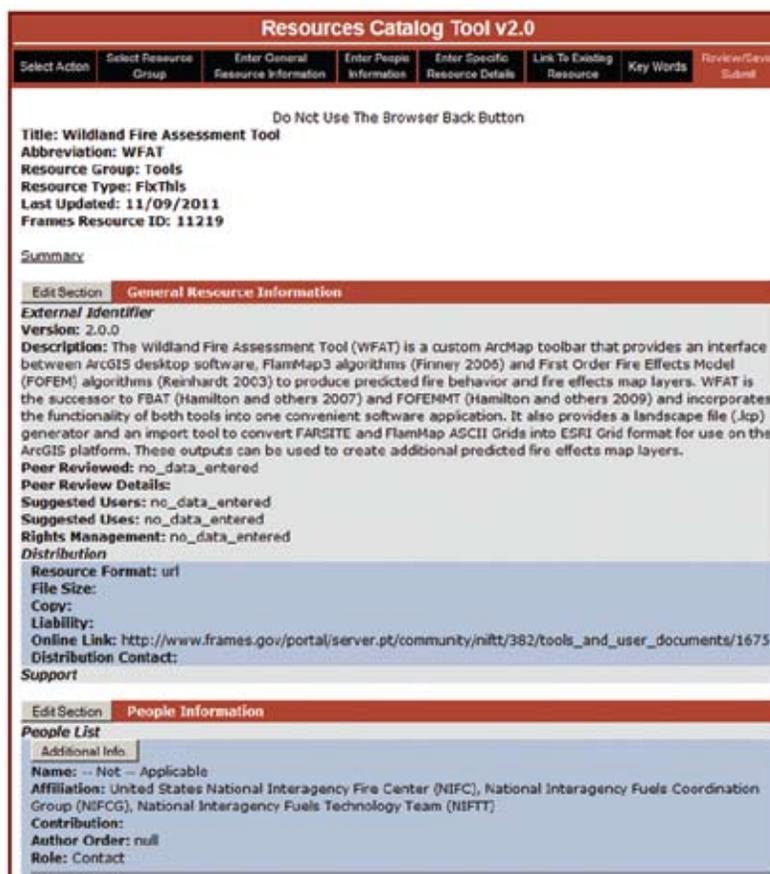


Figure 3. Online cataloging record review screen

CONTENT: Resource Cataloging System (RCS)



FRAMES Resource Cataloging System (RCS) <http://www.frames.gov>

TOOL

Title: Wildland Fire Assessment Tool (WFAT)

Version: 2.0.0

Contact(s): National Interagency Fuels Technology Team (NIFFT)

Description:
The Wildland Fire Assessment Tool (WFAT) is a custom ArcMap toolbar that provides an interface between ArcGIS desktop software, FlamMap3 algorithms (Finney 2006) and First Order Fire Effects Model (FOFEM) algorithms (Reinhardt 2003) to produce predicted fire behavior and fire effects map layers. WFAT is the successor to FBAT (Hamilton and others 2007) and FOFEMMT (Hamilton and others 2009) and incorporates the functionality of both tools into one convenient software application. It also provides a landscape file (.lcp) generator and an import tool to convert FARSITE and FlamMap ASCII Grids into ESRI Grid format for use on the ArcGIS platform. These outputs can be used to create additional predicted fire effects map layers.

Online Link(s): [Link to this tool](#)

Related Record(s) on FRAMES:
Is documented by:
Document: [Wildland fire assessment tool users guide](#)

Cataloging Information:

Keyword(s):
ArcGIS; ArcMap; FBAT - Fire Behavior Assessment Tool; FlamMap; FOFEM - First Order Fire Effects Model; WFAT - Wildland Fire Assessment Tool

FRAMES Subject Area(s): [Fire Behavior](#) ; [Fire Effects](#) ; [Fuels](#) ; [Mapping](#) ; [Models](#)

FRAMES Geographic Area(s): [National](#)

FRAMES Partner Site(s): [NIFFT](#)

Record Maintained By: FRAMES, catalog@frames.gov

Record Last Updated: Nov 9, 2011

FRAMES Record Number: 11219

Figure 5. Example of a tool record display page



CONTENT: Resource Cataloging System (RCS)

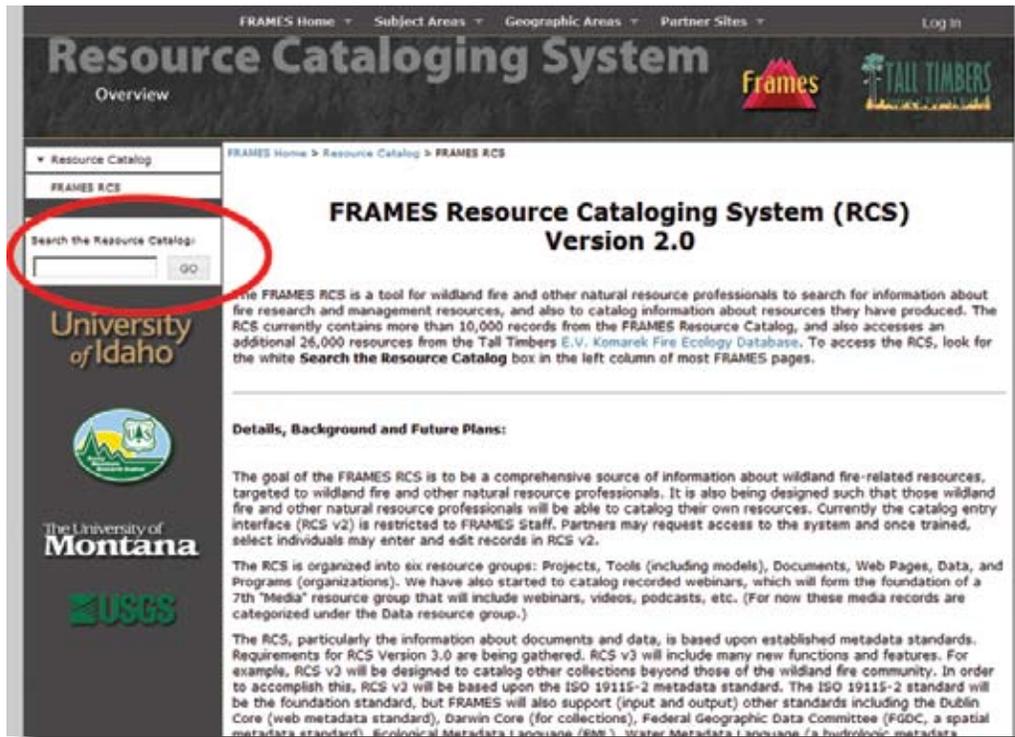


Figure 6. Where to find the search box on most FRAMES pages

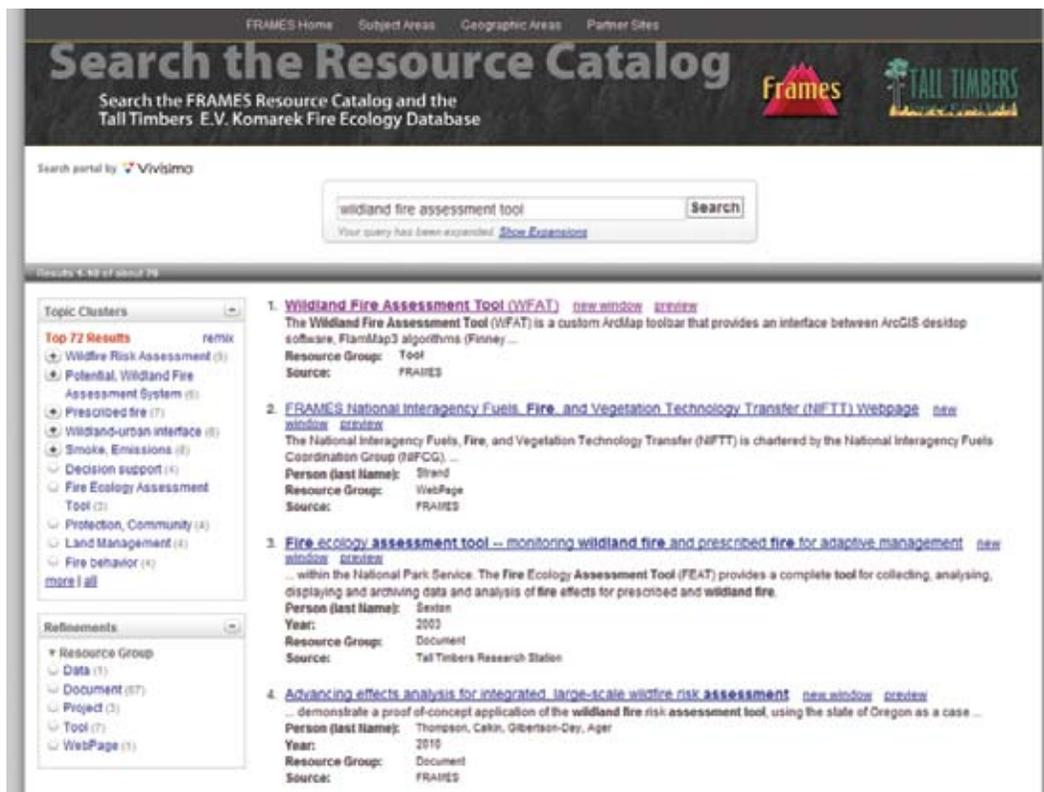


Figure 7. Search results screen for "wildland fire assessment tool"

CONTENT: Resource Cataloging System (RCS)

Update and Status

The structure and display of RCS v2 remained stable throughout 2011, although it was necessary to make ongoing adjustments to the Vivisimo search index and display interface (originally implemented during the March 2011 Oracle portal software upgrade). As during other years, much of the effort dedicated to the RCS during 2011 was related to the ongoing cataloging of resources suggested by FRAMES partners and users, and also resources identified by FRAMES staff, which included scanning numerous journals and a variety of agency and university fire research websites. Additionally, a more comprehensive effort was initiated to periodically review the JFSP website and catalog project deliverables as they come online.



Aside from these ongoing cataloging and system maintenance efforts, three substantial RCS-related projects were either initiated or completed during 2011:

1. The Tall Timbers Research Station (TTRS) E.V. Komarek Fire Ecology Database records were crawled, indexed and displayed through the RCS, providing FRAMES users the ability to search, browse and view over 26,000 records maintained in the E.V. Komarek Fire Ecology Database side by side with FRAMES records stored in the RCS. FRAMES is also providing TTRS with a standalone search page for them to provide access only to E.V. Komarek Fire Ecology Database records (www.frames.gov/ttrs).
2. The FRAMES staff worked with SAIC contractors to inform and review a formal specifications document for RCS v3. More details about the upcoming RCS v3 are provided below, in the "RCS Next Steps" section.
3. The FRAMES staff coordinated with staff from the Wildland Fire Lessons Learned Center (LLC) and various JFSP regional fire consortia to post, catalog and display archived recordings from various webinar series.

RCS Metrics

During 2011, roughly 1000 records were added to the FRAMES Resource Catalog Database. At the time of this report, the database contains a total of 10,810 publicly accessible records about 209 projects, 159 tools, 10,141 documents, 58 videos/webinars, 151 web pages, 88 datasets, and 4 programs.

CONTENT: Resource Cataloging System (RCS)

RCS Next Steps

Fundamental RCS v2 infrastructure changes will occur during 2012. First, a new search and query interface will be developed and implemented in conjunction with the overall FRAMES website move to the concrete5 content management system on UI servers during the spring of 2012. Then by the end of June 2012 (i.e., the expiration of the NACSE agreement), the NACSE components of RCS v2 (the online Resource Cataloging Tool, the Resource Catalog Database, and the record display pages) will be transferred to UI, where they will be served from local servers and supported by onsite staff. Additional plans for 2012 include developing a map search interface for RCS v2.

As described earlier, specifications for RCS v3 were developed through a contract with SAIC. RCS v2 has been reasonably dependable and we expect to continue to use it to catalog resources until RCS v3 is constructed. Construction of RCS v3 is expected to begin sometime during 2013. RCS v3 will be very different than RCS v2 and will include the capability to catalog resources not related to wildland fire. In particular, RCS v3 will first be used to catalog climate science research. Construction of RCS v3 will be a project of NKN staff and will be supported by NKN. Intended new users of RCS v3 will be researchers in multiple disciplines at UI, but potentially at multiple institutions. In addition to other improvements, the online cataloging tool in RCS v3 will be more user-friendly and will incorporate a cataloging management hierarchy and workflow that will allow a topic, partner or geographic content manager to designate a number of catalogers that would submit records to them for review. The content manager would then either determine whether the record will be published, returned for improvement, clarification, etc. All of the cataloger access permissions would be administered through an integrative user account management system that will be used by FRAMES and others.



CONTENT: FRAMES Homepage

Overview

The FRAMES Home page provides an overview of content and collaboration services provided through FRAMES. Specifically, it describes how content display is structured (by accessing geographic area, subject area, and partner site portals). It also provides access to notices regarding current job postings, upcoming conferences, training opportunities, other general activities that are of interest to wildland fire and natural resource professionals. From the home page users can log-in and access a suite of collaboration services. The home page is also used to highlight new partner activities, resources, and provide access to their websites. Additionally, the homepage provides access to content in the FRAMES RCS. Content can either be browsed or searched from below the banner on the top left hand corner of the site.

Homepage Revisions

The FRAMES Home page was redesigned following the March 2011 portal software update, which included embedding a slideshow of highlighted features and sites. Additionally, the About FRAMES and Contact FRAMES pages were revised, and an additional page describing the RCS was developed.

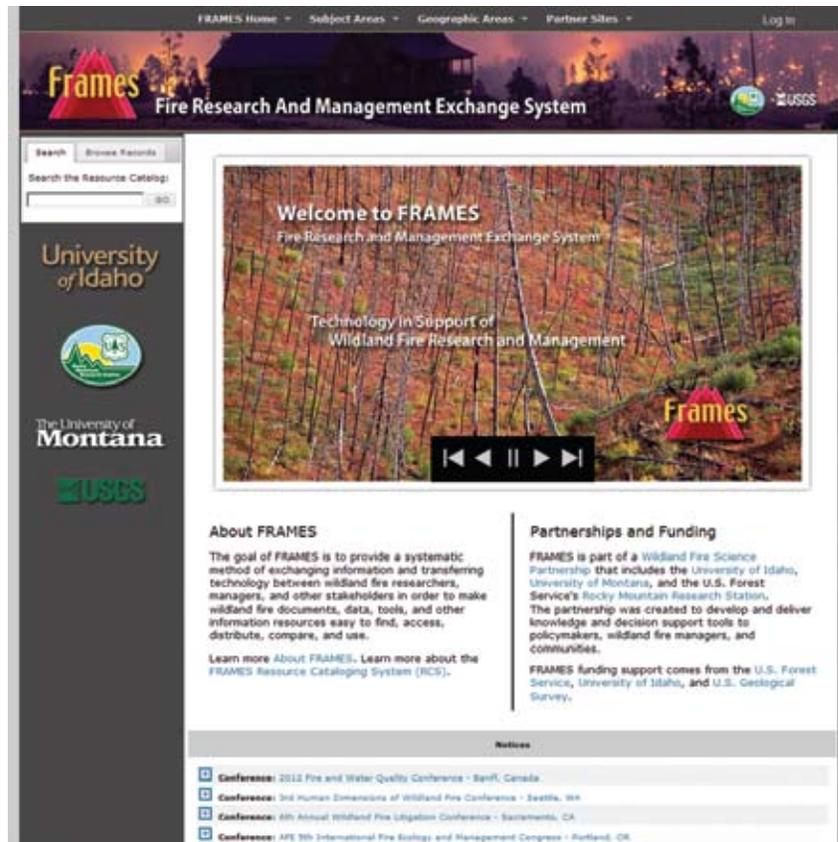


Figure 8. The FRAMES Home page

Homepage Next Steps

Once FRAMES moves to concrete5 on UI servers during spring 2012, there will be much more flexibility regarding webpage layout and design. However, the current plan is to leave the layout fairly consistent with the current page, in order to help smooth the transition to the new software.



CONTENT: Subject Areas

Overview

FRAMES subject area portals contain information relevant to topics of interest within the wildland fire community. Currently, FRAMES identifies 26 subject areas reflecting categories proposed by wildland fire researchers and as part of a draft of the National Wildland Fire Enterprise Architecture developed by the National Wildland Fire Coordinating Group (NWCG). The goal of FRAMES is to have the subject areas be collaborative spaces, managed by experts in the subject area for other content providers and content users. Two subject areas are currently being managed by subject experts (emissions and smoke, fire history), and two subject areas receive occasional content input directly from partners (fire behavior, fuels). The remaining subject area portals remain in the prototype phase; most don't highlight a significant amount of content, but they allow a user to access notices and browse RCS records related to the subject area.

The current subject areas are:

administration, aviation, climate, communications, economics, emissions & smoke, fire behavior, fire ecology, fire effects, fire history, fire occurrence, fire prevention, fuels, hazard & risk, intelligence, logistics, mapping, models, monitoring & inventory, outreach, planning, prescribed fire, regulations & legislation, restoration & rehabilitation, safety, and weather

Proposed subject areas include: aquatic, and social sciences.



Figure 9. Emissions and Smoke Portal subject area home page

Subject Areas Next Steps

As with the FRAMES Home page, once the FRAMES website moves into the concrete5 software during spring 2012, there will be much more flexibility regarding webpage layout and design. The subject area pages that are not managed by partners will continue to provide targeted access to event and announcement information, and will provide much more user-friendly access to the RCS. Additionally, relationships between partner site pages and postings will be much easier to display, allowing improved integration of content across subject areas, geographic areas and partner sites, and providing users a substantially improved browsing experience. Efforts are ongoing to partner with subject area experts willing to assume the role of content manager for each subject area portal.

Update

The major accomplishment related to the FRAMES subject area portals during 2011 was the incorporation of the NWCG Smoke Committee (SmoC) website into the emissions and smoke subject area portal (www.frames.gov/smoke), including the Smokepedia interactive glossary. Representatives of the NWCG Smoke Committee now actively manage the emissions and smoke subject area pages and content. Aside from the overhaul of the Smoke Portal, ongoing activities related to the subject areas included the addition of content, notices and catalog records.

CONTENT: Geographic Areas

Overview

Within the FRAMES Geographic Areas, wildland fire content is aggregated at a geographic level relevant to wildland fire management. The FRAMES Geographic Areas correspond to the boundaries of the 11 Geographic Area Coordinating Centers (GACC) designated by the National Interagency Fire Center (NIFC). FRAMES has combined the California North Ops GACC and the California South Ops GACC into the California Fire Portal, and combined the West Basin GACC and the East Basin GACC into the Great Basin Fire Portal (resulting in 9 geographic area fire portals). Therefore the nine fire portals on FRAMES are:

Alaska, California, Eastern, Great Basin, Northern Rockies, Northwest, Rocky Mountain, Southern, and Southwest. Each FRAMES geographic area fire portal provides an opportunity for collaboration between researchers and managers located within that particular region. FRAMES is working with regional researchers and managers (including some of the JFSP-funded Regional Fire Science Delivery Consortia) to provide access to geographically-based and nationally relevant data, documents, and tools.

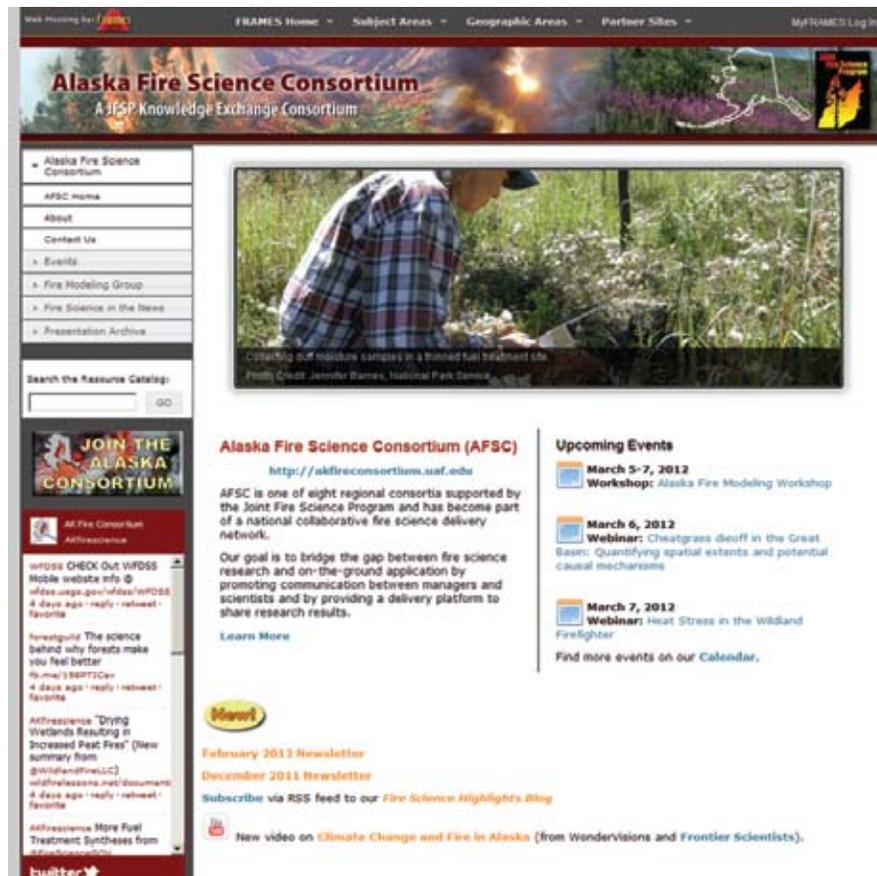


Figure 10. Alaska Fire Science Consortium home page

Update

Following the portal software upgrade in March 2011, all of the geographic portal pages were redesigned in order to take advantage of the “cleaner” layout options. During 2011, FRAMES continued to provide web support for the JFSP-funded Alaska Fire Science Consortium (AFSC; <http://akfireconsortium.uaf.edu>) and Southern Rockies Fire Science Network (SRFSN; www.srmeconsortium.org), and provided the Southwest Fire Science Consortium (SWFSC) with customized access to the RCS (www.frames.gov/swfsc_searches). FRAMES is also archiving (i.e., posting and cataloging) some of the webinars hosted by the consortia. Both the Lake States Fire Science Consortium (LSFSC) and the Southern Fire Exchange (SFE) moved to independent websites during 2011, however the LSFSC is still partnering with FRAMES to archive its webinars, and FRAMES expanded its partnership with TTRS, a key SFE partner, by providing access to the E.V. Komarek Fire Ecology Database (www.frames.gov/ttrs). Ongoing activities related to the geographic areas included the addition of content, notices and catalog records.

CONTENT: Geographic Areas

Geographic Areas Next Steps

As mentioned earlier, moving FRAMES into the concrete5 software will provide more flexibility with web page layout and design. Those geographic areas not actively managed by partners will continue to provide targeted access to event and announcement information, and will improved access to the RCS and better integration of content across subject areas, geographic areas and partner sites. Additionally, FRAMES will work with managers from the JFSP's Northern Rockies Fire Science Network, Great Basin Science Delivery Project, and possibly Northwest Fire Science Consortium, to provide customized access to the RCS. Efforts are ongoing to partner with geographic area experts willing to assume the role of content manager for each subject area portal.

Figure 11. Southern Rockies Fire Science Network home page

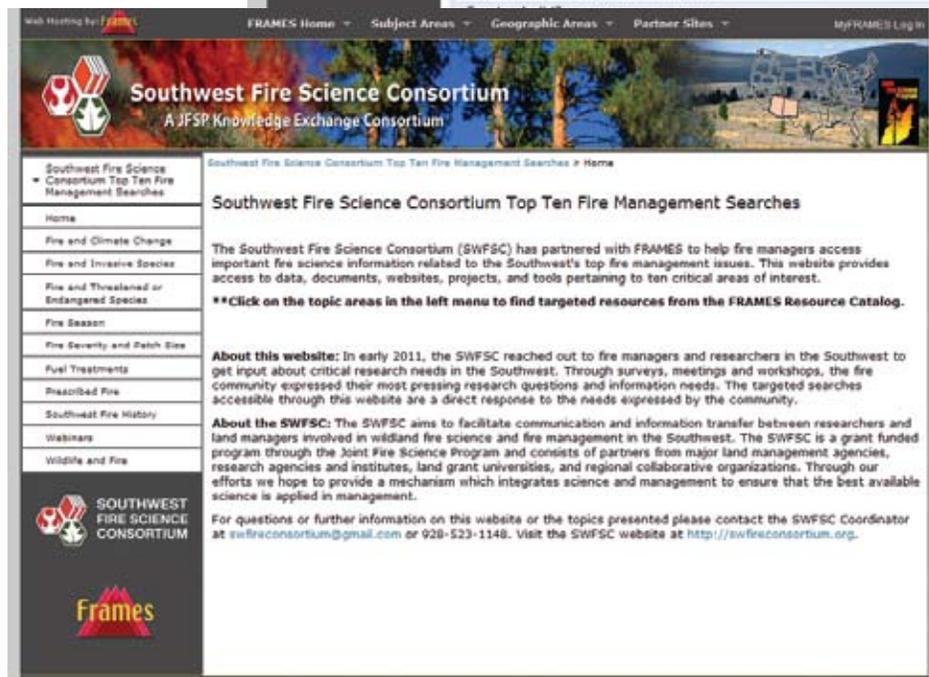
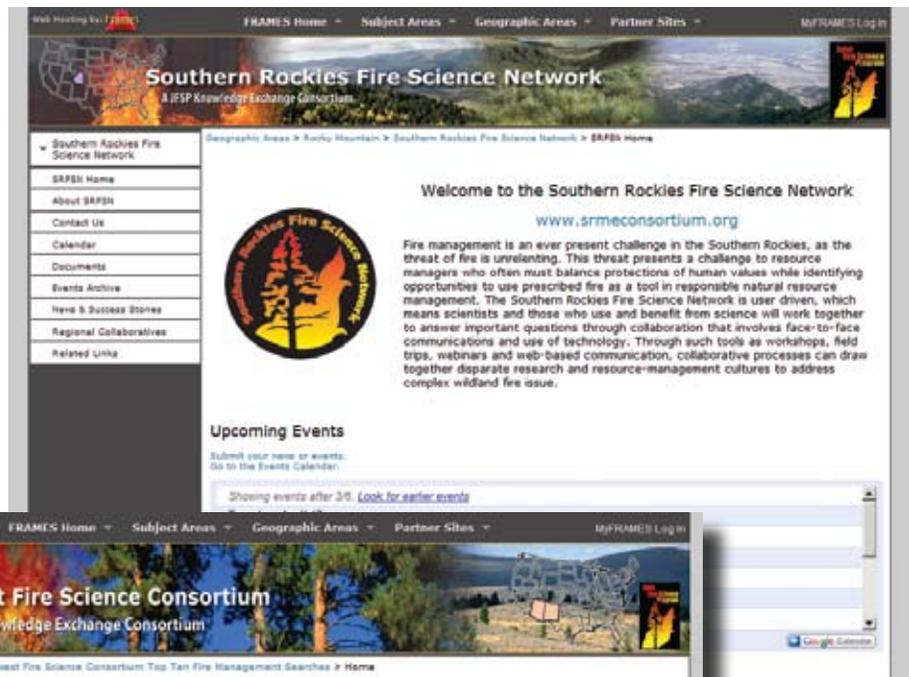


Figure 12. SWFSC Top Ten Fire Management Science Searches home page

CONTENT: Partner Sites

Ongoing Partnerships

FRAMES provides web hosting and other services to several partners in an ongoing relationship. These services may include one or any combination of the following: 1) hosting a public site, 2) hosting an online collaboration community (login required), 3) hosting an application, database, tool, data, or other text based document, and 4) metadata management for partner resources. FRAMES also provides consultation, portal support, web design, marketing support, and online training services for partners. The following list describes 15 partners (in addition to the two JFSP consortia) using FRAMES to host their public websites.

Assessing Burn Severity (ABS) Project - JFSP funded the Rapid Response project “Assessing the Causes, Consequences and Spatial Variability of Burn Severity” to be conducted during and after active fire incidents. The project’s goal was to investigate the spatial variability in fire effects and to explore relationships between burn severity and fuels, fire behavior, local weather, and topography.

Fire and Fire Surrogates (FFS) Study - www.frames.gov/ffs - FFS was a national JFSP study to assess the effects of fire and fire surrogate fuel treatments. The goal was to quantify the costs and ecological consequences of alternative fire and fire surrogate restorative treatments in a number of forest types and conditions in the United States. Priority was given to forests with low to moderate severity natural fire regimes.



Figure 13. FIREMON partner page

Fire Effects Monitoring and Inventory Protocol (FIREMON) - www.frames.gov/firemon - FIREMON is an agency independent plot level sampling system designed to characterize changes in ecosystem attributes over time. FIREMON has been integrated with the National Park Service Fire Ecology Assessment Tool into a new monitoring tool called FFI. FIREMON will still be supported but further development and updates may be suspended.

CONTENT: Partner Sites

Fire Ecology Assessment Tool (FEAT) and FIREMON Integrated (FFI) - www.frames.gov/ffi - FFI is a monitoring software tool designed to assist managers with collection, storage, and analysis of ecological information. It was constructed through a complementary integration of FEAT and FIREMON.

Fire History Analysis and Exploration System (FHAES) - www.frames.gov/fhaes - FHAES is the result of an effort to redevelop and enhance components of the FHX2 computer program, originally a DOS-based program considered to be the standard for fire history analysis. FHAES is a web-based design that is user-friendly and easily accessible to a broad range of users.



Figure 14. FHAES partner page

Fire Regime Condition Class (FRCC) - www.frcc.gov - FRCC is an interagency, standardized tool for determining the degree of departure from reference condition vegetation, fuels, and disturbance regimes. Assessing FRCC can help guide management objectives and set priorities for treatments.

First Order Fire Effects Model (FOFEM) - FOFEM is a computer program developed to meet the needs of resource managers, planners, and analysts in predicting and planning for fire effects. FOFEM provides quantitative fire effects information for tree mortality, fuel consumption, mineral soil exposure, smoke and soil heating.

Human Dimensions and Fire Social Sciences (HDFSS) - www.frames.gov/hdfss - The goal of HDFSS is to provide social science fire managers can use. Teams of scientists and fire managers find and synthesize the best available social science and apply it to fire management. The teams then deliver the results in applications and tools designed by fire science users and researchers working together to create useful knowledge in forms that make sense to fire managers.

Interagency Fuels Treatment Decision Support System (IFTDSS) Project Information - www.frames.gov/iftdss - The interagency JFSP, in concert with the National Interagency Fuels Coordination Group (NIFCG), funded a multi-phased study to assess existing wildland fire management software tools and systems, the Software Tools and Systems (STS) Study. This study resulted in the development of the Interagency Fuels Treatment Decision Support System (IFTDSS). IFTDSS is a framework that organizes and makes available a large number of pre-existing software models. It provides access through the Internet and provides users with a single user interface to multiple software tools.

CONTENT: Partner Sites

JFSP Biomass Review - www.frames.gov/jfsp/biomass_review - This site was developed to showcase the results of the JFSP-funded project "A Review of Available Economic and Financial Biomass Information and Tools for Federal Land Managers in the West." The Review provides a synthesis of information products available to federal land managers to enhance their ability to understand and deal with the economic and financial aspects of woody biomass removal as a component of fire hazard reduction treatments.

LLC-IAWF-JFSP Webinars Archive – www.frames.gov/llc - FRAMES is cataloging and archiving webinars produced by the Connecting Fire Science and Resource Management Monthly Webinar Series, co-hosted by the Wildland Fire Lessons Learned Center, the International Association of Wildland Fire, and the JFSP. This webinar series is designed to increase dialogue between researchers, managers and practitioners by covering topics that are of concern to all. Upon request, FRAMES is also cataloging and archiving webinars produced by some of the regional JFSP Knowledge Exchange Consortia.

National Interagency Fuels, Fire, and Vegetation Technology Transfer (NIFTT) – www.niftt.gov - NIFTT is chartered by NIFCG. NIFTT assists NIFCG in fulfilling its purpose of developing and implementing an effective interagency fuels management program to address risks related to severe fires in wildland-urban interface communities and to restore healthy ecological systems in other wildland areas. NIFTT and FRAMES continue to work closely together and leverage staff from each program with the goal that NIFTT-FRAMES are one in the same from the point of view of USFS upper management, and especially with regards to the RMRS Wildland Fire Management RD&A Program and the USFS Rocky Mountain Research Station Science Application and Integration Program (SA&I).

Northern Rockies Climate and Fire (NRCF) Project - JFSP funded this 3-year research project to identify the climate drivers of regional fire and fuel dynamics in the Northern Rockies in the past, present, and future. Regional fire years were identified from two sources: multicentury tree-ring reconstructions and multidecadal fire atlases.

SERDP Biomass Emission Factor Database - www.frames.gov/serdp-befd - In conjunction with research projects developing detailed new emissions data and meteorological tools to assist prescribed fire managers, the Strategic Environmental Research and Development Program (SERDP) is supporting the RMRS and the USFS Pacific Southwest Research Station (PSW) in the development of a database that contains emissions information related to prescribed burning. The database currently contains emissions information from over 300 burns of different wildland vegetation types, including grasslands, shrublands, woodlands, forests, and tundra.

Wildland Fire Decision Support System (WFDSS) - www.frames.gov/wfdss - For much of 2011, this site provided access to WFDSS GA Editor information and WFDSS spatial data downloads for individuals who did not have WFDSS user accounts. WFDSS now provides this information directly through its own website.



CONTENT: Partner Sites

FRAMES-NIFTT Partnership

NIFTT was chartered in 2005 by NIFCG to assist land managers with the assessment of fire behavior, fire effects, fire regimes, and vegetation dynamics. In July 2009, the staff of FRAMES was approached by the US Forest Service and asked to assume administration of NIFTT through an agreement between the RMRS and UI. Since October 2010, NIFTT has been operating under the umbrella of the RMRS Wildland Fire Management RD&A Program, and is currently sponsored by NIFCG and LANDFIRE.

NIFTT's mission is to provide land managers with science-based analysis tools and training (e.g., online courses, webinars, tutorials, guidebooks, and workshops) focused on the assessment of fire behavior, fire effects, fire regimes, and vegetation dynamics. NIFTT provides customer support via its web pages (www.niftt.gov and www.frcc.gov) and its Help Desk (helpdesk@niftt.gov). NIFTT also offers classroom workshops that can be tailored to local needs. Details of UI's portion of NIFTT's 2011 accomplishments are detailed later in the Infrastructure section.

The FRAMES infrastructure and the Wildland Fire Program at the UI's College of Natural Resources have benefited NIFTT specifically by 1) hosting several websites that are under NIFTT's purview; 2) providing secure logged in space for staff and stakeholders of NIFTT to collaborate on tool and training development; 3) providing tools for registering, managing, and delivering on-line courses; and 4) providing expertise in the development of on-line training courses. The purpose of the agreement is to develop comprehensive curricula of courses, workshops, help aids, and skill development tools for current fuel, fire and vegetation management applications.



The screenshot displays the NIFTT website interface. At the top, there is a navigation bar with links for 'FRAMES Home', 'Subject Areas', 'Geographic Areas', and 'Partner Sites'. The main header features the NIFTT logo and the text 'National Interagency Fuels, Fire, and Vegetation Technology Transfer (NIFTT)'. A left sidebar contains a 'Partner Sites' menu with options like 'Home', 'About NIFTT', 'Training Registration', and 'Contact Us'. The main content area is titled 'Welcome to NIFTT!' and includes a large logo of a mountain landscape. Below the logo, there is a detailed mission statement and contact information. A 'Check It Out:' section highlights recent updates, such as a new course on the Fuel Loading Model, the release of the LANDFIRE Data Access Tool (LFDAT) version 2.3, and the availability of the FRCC Guidebook version 3.0 and the FRCC Software Application (FRCCSA) version 3.0.3.0. A small image of a fire is shown next to the text.

Figure 15. NIFTT partner page

CONTENT: Website Analytics

As outlined in the FRAMES Strategic Plan, metrics are an important part of tracking the growth and utility of FRAMES. Content metrics are perhaps the most valuable metrics that FRAMES can gather. Due to the instability of the Oracle portal's analytics console over the past few years, and further complications experienced following the portal software upgrade early in 2011, Google Analytics were implemented mid-2011, and therefore reliable metrics are only available beginning July 2011. Separate analytics profiles were set up for each partner site, and for subject areas and geographic areas where content is hosted by partners. This allows partners to have direct access to the analytics relevant to their site, without having to sift through the rest of the FRAMES site analytics. FRAMES RCS and TTRS search metrics were only collected for the last three months of 2011, because the Vivisimo search interface was not fully implemented until September 2011. Below are definitions⁵ for Visitors, Visits and Pageviews, some disclaimers, and then website and search metrics.

Visitors: A user that visits the site. The initial session by a user during any given date range is considered to be an additional visit and an additional visitor. Any future sessions from the same user during the selected time period are counted as additional visits, but not as additional visitors.

Visits: The number of times visitors have been to [the] site (unique sessions initiated by all visitors). If a user is inactive on the site for 30 minutes or more, any future activity will be attributed to a new session. Users that leave the site and return within 30 minutes will be counted as part of the original session.

Pageviews: This field indicates the total number of pageviews for the site when applied over the selected [time period].

For FRAMES, the only additive metric is Pageviews (as a Visitor and their Visits may span multiple profiles within FRAMES). The metrics for Visitors and Visits are also complicated by the fact that some organizations (such as the Forest Service) pass many computer internet connections through just a few gateways, resulting in far fewer external internet protocol (IP) addresses than individual users within the organization's internal networks. This results in an underestimation of Visitors and Visits. However, Pageview metrics should not be affected by the reduced number of IP addresses.



⁵ Definitions modified from Google Analytics Help (<https://support.google.com/analytics/bin/answer.py?hl=en&answer=1033060&topic=1012046&ctx=topic>)

CONTENT: Website Analytics

Figure 16 displays FRAMES website metrics for July 1 - Dec. 31, 2011, split by individual partner profiles (and by subject area and geographic area profiles where content is hosted by partners). Please note metrics only represent the second half of 2011, and that two of the following analytics profiles were not split from the generic FRAMES profile until after July 1st.

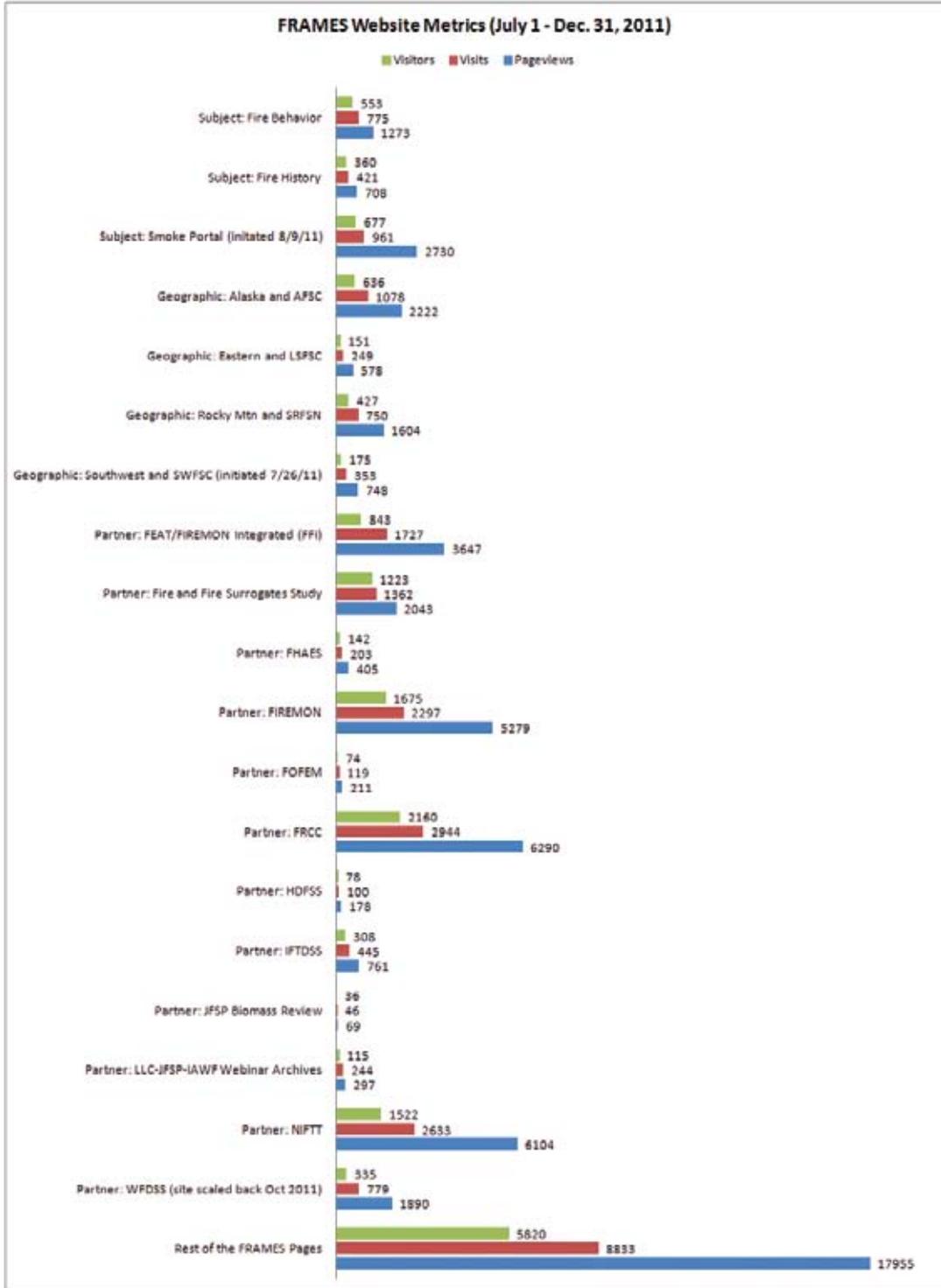


Figure 16. FRAMES website metrics (July 1 - Dec. 31, 2011)

CONTENT: Website Analytics

Figure 17 displays FRAMES RCS and TTRS search metrics for the Oct. 1 - Dec. 31, 2011 time period. Please note the metrics only represent the last quarter of 2011, due to delays related to the full implementation of the Vivisimo search. Also note the differences between the metrics for the FRAMES RCS and TTRS search interface/results pages, compared to their corresponding record display page metrics. This could be indicative of a few different search behaviors: 1) users are browsing multiple records from a search return, 2) users are clicking on the relationships between records (from the individual record display pages), and/or 3) users are reaching record display pages from external (non-FRAMES) search engines such as Google, i.e., users are accessing FRAMES content from multiple pathways.

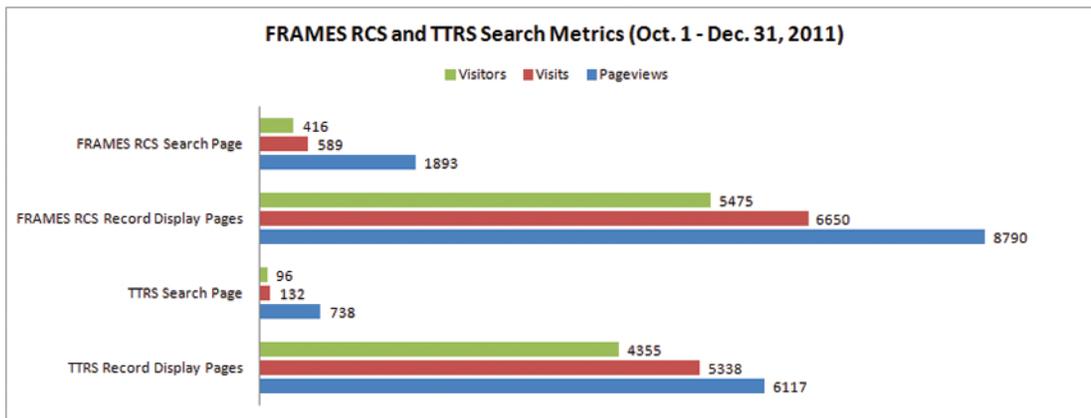


Figure 17. FRAMES RCS and TTRS search metrics (Oct. 1 - Dec. 31, 2011)



SERVICES: Communities, Logins, and Notices

Communities

One of the valuable features of the portal technology involves the ability to create collaboration communities. These communities provide users with an opportunity to work in a collaborative environment to share documents, calendars, hold discussion threads, develop tasks and timelines, and other features. FRAMES offers this service to any groups involved in fire-related projects that need a secure login environment that enables a distributed team of people to work collaboratively in an efficient manner. Some of the communities have relationships with partner sites, subject areas, or geographic areas, while others simply serve groups of individuals as secure places to work together. During 2011, initially in conjunction with the portal software upgrade, and later in preparation for the upcoming website transfer out of the portal, many collaboration communities were decommissioned and archived.

The following communities remained active throughout 2011:

Alaska Fire Science Consortium Community – This community was developed for the Alaska Fire Science Consortium (a member of the JFSP-funded national network Knowledge Exchange Consortia), and is primarily used to transfer files between the consortium manager and FRAMES staff.

Anaktuvuk River Fire Community – This community was developed to share document and data files related to ongoing monitoring of the 2007 Anaktuvuk River Fire (on the north slope of the Brooks Range in Alaska). Community members reside across multiple agencies or are retired and need a common, easily accessed platform to share information. Eleven user accounts are associated with this community.

Fire History Analysis and Exploration System (FHAES) Working Group – The goal of the FHAES project is to enhance and / or redevelop components of the FHX2 software program, developed by Henri Grissino-Mayer, so that they are web-based, user friendly, and easily accessible to a broad range of users on the Internet. An advisory group guides the direction of these efforts and staff from NOAA's National Climatic Data Center, Paleoclimatology Branch is responsible for implementing projects. This community was developed to help coordinate these activities.

FRAMES Cataloging Community – This community serves FRAMES staff involved in the cataloging of resources in the FRAMES RCS.

FRAMES Development Community – This community serves FRAMES staff and all partners who are developing or maintaining websites that are hosted by FRAMES. This community is a means of communicating to all who are a part of the FRAMES development network.

Lake States Fire Science Consortium Community - This community was developed for the Lake States Fire Science Consortium (a member of the JFSP-funded national network Knowledge Exchange Consortia), and is primarily used to transfer files between the consortium manager and FRAMES staff.

LLC Webinar Archives Staging Area - This community was developed for use by Wildland Fire Lessons Learned Center (LLC) staff, as part of a webinar archiving agreement between the LLC and FRAMES. It is primarily used to transfer files between the LLC staff and FRAMES staff.

National Interagency Fuels, Fire, and Vegetation Technology Team (NIFTT) Working Group – NIFTT is chartered by the NIFCG and was set up to help NIFCG develop and implement an effective interagency fuels management program to address risks related to severe fires in wildland-urban interface communities and to restore healthy ecological systems in other wildland areas. Specifically, NIFTT coordinates, develops, and transfers consistent, efficient, science-based fuel and fire ecology assessment tools and trainings. This community was set up to help the staff of NIFTT coordinate these efforts. Sixteen user accounts are associated with this community.

SERVICES: Communities, Logins, and Notices

NWCG Smoke Community – This community was developed for document sharing between members of the NWCG Smoke Committee.

Partners File Sharing – This community was developed for use by new FRAMES partners, so that they can share documents before they have a community of their own set up.

Portal Training Community – The Portal Training Community is accessible by anyone with a MyFRAMES account. It provides access to self-contained training materials relevant to portal collaboration features.

SA&I Program Collaboration Community – This community was developed for calendar-sharing between members of the RMRS SA&I (Science Application and Integration) Program team. Eleven user accounts are associated with this community.

Wildland Fire Management RD&A Community – This community was developed for document sharing between members of the RMRS Wildland Fire Management RD&A Program team. The team is based out of Boise, Idaho, but most members telecommute from other locations, and are frequently traveling to support team activities. Therefore a centralized, web-based platform for file sharing supports day-to-day team activities. Twenty-five user accounts are associated with this community.

The screenshot displays the Wildland Fire Management RD&A Community web interface. At the top, there is a navigation bar with links for 'My Home', 'Welcome, Diana Olson', 'My Account', and 'Log Off'. Below this is a secondary navigation bar with 'My Pages', 'My Communities', 'Directory', and 'Administration'. The main header features the 'frames' logo and the 'nbi' logo. The page content is organized into several sections:

- PLEASE NOTE!** A prominent message stating: "FRAMES has a new URL: www.frames.gov. Due to a reorganization of programs at USGS, urls that contain <http://frames.nbi.gov> no longer work, so if you have bookmarked FRAMES, or shared FRAMES urls with others, please update them. We apologize for the inconvenience."
- Community Announcements:** A recent announcement from Diana Olson on 9/23/09 3:49:10 PM in the 'RD&A Collaboration' project. The announcement describes the new community's features, including document check-in/out and access to previous versions.
- Community Documents:** A table listing various documents and their metadata. The table has columns for Name, Project, Date Modified, and Checked In By.
- Community Calendar:** A calendar view for March 2012, showing dates from 26 to 31.

Name	Project	Date Modified	Checked In By
Program_Charter_10_2011_signed.docx	RD&A Collaboration	3/22/12 2:02 PM	Leticia Shindelar
03-12-12_RD&A_Weekly_Call.docx	RD&A Collaboration	3/16/12 10:28 AM	Leticia Shindelar
03-05-12_RD&A_Weekly_Call.docx	RD&A Collaboration	3/5/12 3:48 PM	Leticia Shindelar
2012-02-13_12_02_WFDSS_RD&A_Group_Conference_Mondays_@1300.wmv	RD&A Collaboration	2/27/12 2:45 PM	Diana Olson
02-27-2_RD&A_Weekly_Call.docx	RD&A Collaboration	2/27/12 2:37 PM	Leticia Shindelar
2012-02-27_12_07_WFDSS_RD&A_Group_Conference_Mondays_@1300.wmv	RD&A Collaboration	2/27/12 2:10 PM	Diana Olson
2-21-12_RD&AWeeklyCall_2.docx	RD&A Collaboration	2/24/12 3:19 PM	Leticia Shindelar
RD&A_Call_Notes_2-6-12.docx	RD&A Collaboration	2/21/12 9:05 AM	Leticia Shindelar
RD&A_Call_Notes_2-13-12.docx	RD&A Collaboration	2/15/12 10:13 AM	Leticia Shindelar
RD&A_Call_Notes_2-6-12.docx	RD&A Collaboration	2/6/12 11:33 AM	Leticia Shindelar

Figure 18. Wildland Fire Management RD&A Community

SERVICES: Communities, Logins, and Notices

The following communities were active during 2011, but were also decommissioned and archived during 2011 because the collaborative effort (necessitating the community) was completed:

Boreal Fire History Community – This community was developed for community members to share files and information relating to the JFSP project “Compiling, Synthesizing and Analyzing Existing Boreal Forest Fire History Data in Alaska.”



Pacific Northwest Fire Knowledge Exchange Consortium Community – This community was developed for the Pacific Northwest Fire Knowledge Exchange Consortium (the precursor to the JFSP-funded Northwest Fire Science Consortium). It was designed primarily to share documents and calendars, in order to facilitate the management of the consortium.

RxCADRE Community - This community was developed for use by the Combustion-Atmospheric Dynamics Research Experiments (RxCADRE) team. It was designed primarily to provide access to meeting presentations, shared files, and other online collaboration features.

And finally, the following communities had been inactive for a while (or never completely implemented), and were therefore decommissioned and archived during 2011:

Idaho EPSCoR Collaboration Community – The Experimental Program to Stimulate Competitive Research or EPSCoR is funded by the National Science Foundation (NSF). Idaho has several funded grants that connect climate researchers at UI, Boise State University, Idaho State University as well as the University of New Mexico and the University of Nevada-Reno. This collaboration community was developed to help coordinate research activities across the three funded projects, allowing researchers to share data and documents through this community.

SERVICES: Communities, Logins, and Notices

Idaho National Fire Plan Community – Idaho developed an extensive network of individuals and groups actively working on wildfire mitigation. Included are county emergency staff, planning and zoning officials, county commissioners, rural fire chiefs, state, federal, and tribal fire managers, interest groups, community leaders, and citizens. This community had been inactive for a few years, but interest in renewing it had been expressed by the current National Fire Plan Coordinator for Idaho (Craig Glazier), therefore it had been maintained until fall 2011.

Northern Rockies Fire Science Network Community - This community was developed for the Northern Rockies Fire Science Network (a member of the JFSP-funded national network Knowledge Exchange Consortia). It was designed primarily to share documents and calendars, in order to facilitate the management of the consortium.

SRME Fire Consortium Community – This community was developed for the Southern Rocky Mountain Ecoregion Fire Consortium (a member of the JFSP-funded national network Knowledge Exchange Consortia). It was designed primarily to share documents and calendars, in order to facilitate the management of the consortium.

Southwest Fire Science Consortium Community – This community was developed for the Southwest Fire Science Consortium (a member of the JFSP-funded national network Knowledge Exchange Consortia). It was designed primarily to share documents and calendars, in order to facilitate the management of the consortium. Nine user accounts are associated with this community.

UI Cyberinfrastructure Community – This community was set up to address UI's Research Office initiative to develop research data management capacity. Now called the Northwest Knowledge Network (NKN), this community supported collaboration and facilitation of the activities associated with the development of NKN.

Wildland Fire Science Partnership (WFSP) Community – This community was developed for the WFSP, including the members of the Executive Board, Program Managers, and the program's coordinators that are from UI, UM, and RMRS, as well as USGS / CSAS staff involved in FRAMES development.

Logins

At the end of 2011, 95 MyFRAMES accounts remain and 811 have been archived due to inactivity, project completion, etc. FRAMES partners and staff have login accounts that are used to 1) manage partner website content, 2) manage the FRAMES home page, 3) manage projects, 4) communicate, collaborate, and share information, and 5) beta test tools.

Notices

As a service to FRAMES partners and others in the wildland fire and natural resources communities, FRAMES offers notice posting. Notices can be about upcoming conferences, jobs, and other events. As with cataloged records, notices may also be categorized and sorted by subject and geographic areas, and by partner site. The Notices tool did not operate properly during the first two months of 2011, therefore new Notices could not be created and posted. In March of 2011, the notice creation and posting system was updated and simplified at the same time FRAMES went through the Oracle portal software upgrade. Ultimately there were 52 notices created and posted on FRAMES during 2011. These notices were broken down into the following types: 18 webinars, 9 jobs, 8 conferences, 7 general, 5 calls for papers, and 5 trainings or workshops.

MARKETING: Materials and Presentations

FRAMES maintains a 10' x 7' conference booth display structure and two 48" x 24" tabletop displays for workshops and other smaller meetings. Display content is tailored according to the target event.



Figure 19. FRAMES Table Top Display



Figure 20. FRAMES 10' Floor Display

MARKETING: Materials and Presentations



Figure 21. FRAMES and Partner Brochures

MARKETING: Materials and Presentations

During 2011, FRAMES staff worked with partners and promoted FRAMES in meetings, workshops, and conferences throughout the year. The following is a list of events that were attended by staff.

Table 1. Events attended by FRAMES Staff in 2011

2011 Date	Venue	Description
Feb. 1-2	Moscow, ID	WFSP biannual meeting
Feb. 23-25	Lakewood, CO	USGS annual FRAMES planning meeting
March 7-10	Flagstaff, AZ	SW Interagency Fuels Workshop
July 26-28	Whitefish, MT	FRAMES - NIFTT strategic planning meeting with USFS
August 2	Portland, OR	Northwest Fire Science Consortium Workshop
August 10	Moscow, ID	FRAMES presentation to Idaho congressional staffers
Sept. 5-9	Albuquerque, NM	Geospatial Metadata Workshop
Sept. 25-30	Anchorage, AK	USGS / CSS meeting included discussing the implementation of the FRAMES RCS in a pilot project funded by USGS in the Northwest
Oct. 6-7	Fairbanks, AK	Alaska Fire Science Consortium Workshop
Oct. 10-11	Seattle, WA	FRAMES and NIFTT Staff Meeting
Nov. 8-10	Missoula, MT	WFSP Program Managers annual meeting



MARKETING: Partnerships

The list below shows the diversity of partners directly involved with FRAMES. Numerous additional agencies and organizations (not listed here) are indirectly involved with FRAMES through partner websites and/or online collaboration communities hosted by FRAMES.

Alaska Fire Science Consortium
Bureau of Indian Affairs
Bureau of Land Management
CSIRO Bushfire Dynamics and Applications
FEAT/FIREMON Integrated (FFI) Project
Fire and Fire Surrogates (FFS) Study
Fire Effects Monitoring and Inventory Protocol (FIREMON)
Fire History Analysis and Exploration System (FHAES)
Great Basin Science Delivery Project
Idaho National Fire Plan
Interagency Fuels Treatment Decision Support System (IFTDSS)
Joint Fire Science Program (JFSP)
Lake States Fire Science Consortium
Landscape Fire and Resource Management Planning Tools (LANDFIRE)
Montana State University Big Sky Institute
National Interagency Fuels Coordination Group (NIFCG)
National Interagency Fuels Technology Team (NIFTT)
National Park Service
National Wildland Fire Coordinating Group (NWCG) Smoke Committee (SmoC)
NOAA Paleoclimatology Branch
Northern Rockies Fire Science Consortium
Northwest Fire Science Consortium
Northwest Knowledge Network (NKN)
Oregon State University Northwest Alliance for Computational Science & Engineering (NACSE)
RxCADRE (Combustion-Atmospheric Dynamics Research Experiments) Team
Science Applications International Corporation (SAIC)
Southern Fire Exchange
Southern Rockies Fire Science Network
Southwest Fire Science Consortium
Systems for Environmental Management (SEM)
Tall Timbers Research Station (TTRS)
The Nature Conservancy (TNC)
University of Alberta
University of Idaho
University of Montana National Center for Landscape Fire Analysis
University of Washington
US Fish and Wildlife Service
US Forest Service
USFS Missoula Fire Sciences Laboratory
USFS Northern Research Station
USFS Pacific Southwest Research Station
USFS Pacific Wildland Fire Sciences Laboratory
USFS Rocky Mountain Research Station (RMRS)
USFS Science Application & Integration (SA&I) Program
USFS Southern Research Station
USFS Wildland Fire Management Research, Development & Application (RD&A) Program
US Geological Survey Core Science Analytics and Synthesis Program (USGS / CSAS)
Wildland Fire Decision Support System (WFDSS)
Wildland Fire Lessons Learned Center (LLC)
Wildland Fire Science Partnership (WFSP)



MARKETING: Partnerships



Figure 22. FRAMES Partners

INFRASTRUCTURE: Overview

Overview

FRAMES infrastructure encompasses the underlying technological foundation and personnel that supports the management and movement of information, communication, and tools. FRAMES hardware infrastructure is hosted and maintained by the USGS / CSAS in Denver, CO. The hardware infrastructure for RCS v2 is hosted and maintained by NACSE. Responsibility to maintain FRAMES technology and content reside with USGS / CSAS personnel as well as the FRAMES Staff. FRAMES is a work in progress. The total build-out of FRAMES will include: 1) a data, document, and tool repository, 2) consolidation, visualization, and web-based analytical capabilities of spatial data in a Geographic Information Systems (GIS) framework, 3) linked spatial and non-spatial databases, 4) a framework for managing and accessing remote sensing data, 5) a model management system, 6) web-enabled communications and collaboration, and all of this 7) in a platform that provides for customization based upon user, community, and agency needs.

USGS Component

The USGS will continue to support FRAMES through December 2012 as outlined in the Interagency Agreement with the US Forest Service, however, several unanticipated changes occurred in the USGS during 2011 that affect long term support for the program. In June 2011, Kevin Gallagher, the Associate Director for the USGS Core Science Systems



Figure 23. NBII termination page

announced that the Fiscal Year 2012 President's budget www.gpo.gov/fdsys/pkg/BUDGET-2012-BUD/pdf/BUDGET-2012-BUD.pdf slated the National Biological Information Infrastructure (NBII) Program for termination and by September 30, 2012, the program will end. For more information about the termination, see www.nbio.gov. Since NBII provides a significant aspect of the technical infrastructure supporting FRAMES, discussions started in 2011 to identify an alternate hosting solution for FRAMES and the organizations established a broad transition phase at that time.

In October 2011, the USGS underwent an internal bureau wide reorganization. As part of this activity, the former Biological Informatics Program (BIP) merged with Core Science Informatics (CSI) to establish the Core Science Analytics and Synthesis (CSAS) Program. The USGS / CSAS Program now hosts the FRAMES site www.frames.gov and supports many aspects of the FRAMES program related to information technology needs in four main areas that include system administration, customer support, FRAMES project implementation, and internal FRAMES projects. The following paragraphs summarize the 2011 accomplishments.

For system administration, the USGS / CSAS provides technical support for the overall system components that include Linux based servers, Oracle portal servers, portal licensing, and GIS servers plus the security, network, and documentation required by federal policies and regulations. Most of this work occurs at the CSAS facility in Denver, Colorado with contributions by staff in Reston, Virginia. CSAS hosts and maintains approximately 90 servers (Linux and Windows servers), 8 network devices, and 20



INFRASTRUCTURE: Overview

workstations with an estimated 72 TB raw storage capacity, 60 slot tape library, and about 102 websites with approximately 3300 named users. The system receives about 40 million hits including crawlers and more than 1 TB bandwidth consumed. FRAMES represents an integral part of this architecture and system. Due to the NBII termination, much of this infrastructure will be scaled back or eliminated in 2012. For 2011, approximately 525 hours were spent on FRAMES related system administration activities that ensured that FRAMES was online with up to date hardware and software and met all federal security requirements. Many of the security requirements have been incorporated into the USGS / CSAS business process, which includes staff time contributed to FRAMES each year.

In early 2011, one of the significant accomplishments in the area of system administration was the completion of the FRAMES portal software upgrade. This enormous effort undertaken by CSAS staff with assistance from FRAMES staff was successfully launched with minimal issues encountered by users. Much of the follow up efforts involved addressing support issues related to the upgrade such as implementing the Vivisimo search and issues related to the document server and staging area that allows users to upload documents to their web pages. In addition, part of the system administration effort during 2011 focused on the requirements for the planned FRAMES transition from USGS / CSAS to UI and NKN in 2012.

In September 2011, the CSAS Program announced the NBII website and any applications residing on the nbii.gov domain would be shut down on January 15, 2012 as part of the ongoing NBII Termination process. This affected several aspects of the FRAMES Program such as changing the FRAMES URL; ensuring tools, applications, documents, and web pages worked after the domain change, and other activities noted below.

The customer support area addresses a variety of requests that must be resolved by USGS / CSAS staff such as addressing upgrade issues, releasing new communities on FRAMES, updating header files, investigating navigation/user interface issues, and many other tasks. Many support requests in early 2011 involved questions stemming from the portal upgrade. Toward the end of the year, the support requests were mainly associated with the transition from frames.nbii.gov to www.frames.gov, making sure applications, tools, documents, and other information links were maintained once the FRAMES domain changed. In 2011, approximately 120 requests were submitted to support@nbii.gov, the mechanism for reporting support questions related to FRAMES.

The FRAMES project implementation area focuses on specific activities that are needed to ensure continuity of tools as required by hardware or software changes. Once the website shut down was announced, this effort focused on the migration of the Fire Enhanced Runoff and Gully Initiation Model (FERGI) Tool, the Fire Effects Monitoring and Inventory System (FIREMON) user database and the First Order Fire Effects Model (FOFEM) to a server and associated URL that did not include the nbii.gov domain. Ultimately, FERGI had to be taken offline because ArcIMS is no longer software supported in the CSAS infrastructure. Discussions with key staff are working on how this application might get put back into production. Also, a significant effort was conducted to identify and fix potential broken links to applications, tools, documents, and websites prior to the shut down. The FRAMES Notices and file upload tool applications continue to be hosted at CSAS, but will not be able to transition to the new FRAMES infrastructure and so other solutions are being pursued by technical staff members from both organizations.

The FRAMES internal projects include activities identified in the annual planning process that will streamline workflow processes or enhance the user experience. In 2011, the FRAMES staff participated in several training sessions related to the portal upgrade and the CSAS staff provided information about potential collaboration systems to review as part of the FRAMES transition. The current FRAMES collaboration system will go offline in December 2012.

INFRASTRUCTURE: Overview

Overall, the early efforts to better prepare FRAMES for the portal upgrade such as the notice reengineering; substantial clean-up within the collaboration and project management space on FRAMES; review of existing user accounts; and standardizing the partner sites infrastructure ensured that old, unused content was cleared out and greatly improved the efficiency of transferring content to the upgraded portal. This effort now benefits the FRAMES program as it works toward transitioning infrastructure and technical support to UI and NKN.

Looking toward 2012, USGS / CSAS plans to continue the maintenance and support of FRAMES website as it transitions to another hosting organization and USGS / CSAS will also help facilitate the smooth transition of FRAMES to the new technical environment.

OSU / NACSE Component

NACSE hosts and maintains RCS v2 on NACSE servers in Corvallis, Oregon. NACSE working files, database, and web services are maintained on NACSE's server farm of multi-processor SunFire and Dell PowerEdge servers. All servers are connected directly to the campus backbone and NERo. NACSE maintains separate machine environments for development, test, and production servers, allowing the development and testing of new software components without affecting the performance or stability of production-level services. The primary relational database management systems employed are PostgreSQL, MySQL, Oracle, and Sybase. A major portion of NACSE research is in support of distributed and federated

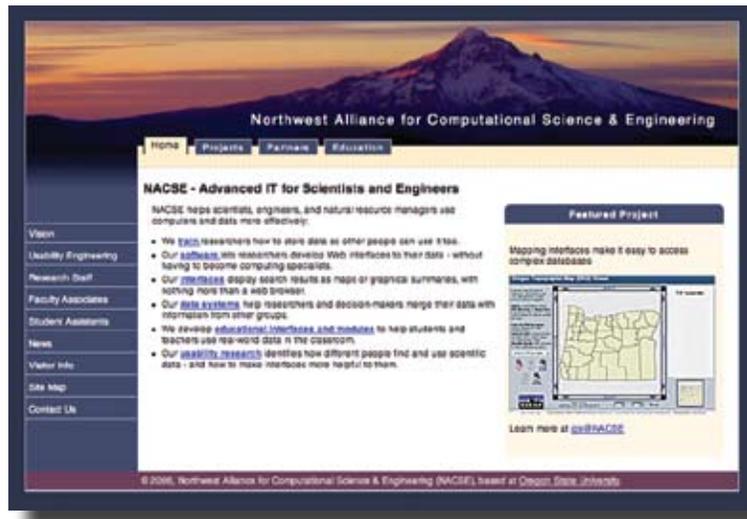


Figure 24. NACSE Home page

databases that are integrated virtually to present the appearance of a single, homogeneous database. Additionally, NACSE is a participant in one of several shared computational clusters supported by the College of Engineering for specific research groups in colleges across the OSU campus. The system is built on Sun's Grid Engine with commodity hardware and freely available software. Over 160 CPUs operate within a heterogeneous mix of dual-processor servers including Dell PowerEdge 1850, Dell PowerEdge 2650, HP Proliant DL145, and most recently Sun X4100 units. Software is based on Redhat Enterprise Linux, with MPI to support message-passing parallelism. Each system is connected to the public network via gigabit Ethernet, and a second MPI communication network is built on dedicated gigabit hardware.

NACSE staff are highly experienced in the design and implementation of complex web-based applications, particularly those that involve querying and display of scientific data. In the past several years, NACSE staff have successfully developed several web-based applications specifically for USGS / CSAS, with features such as data entry capability for model runs, data analysis, text-based and GIS-based display of query results, and various visualizations of output data.

INFRASTRUCTURE: Portal Software/Personnel

Portal Software Update

At the beginning of 2011, FRAMES (through USGS / CSAS) was using the Oracle Web Suite portal software for its online presence. During 2009 and 2010, USGS / CSAS began the process of upgrading the Oracle software for all NBII sites as well as FRAMES. The Oracle portal upgrade for FRAMES (including reengineering the Notices tool) was completed in March 2011. Substantial clean-up within the collaboration and project management space on FRAMES also occurred during 2010 and 2011 in preparation for the Oracle portal upgrade, as well as a review of existing user accounts (including archiving old accounts). Additionally, the partner sites infrastructure was standardized and old, unused content cleared out, in order to improve the efficiency of transferring content to the upgraded portal.

Due to the termination of the NBII Program at the end of September 2012 (fiscally, and its online termination in January 2012), and the expiration of the Oracle license at the end of 2012, in late 2011 FRAMES began the migration from the Oracle portal platform to the concrete5 content management system. The concrete5 content management system has been implemented on servers located at UI and is a powerful, flexible, easy to use, customizable object oriented open source system. FRAMES is scheduled to move to concrete5 during spring 2012, and concurrent with the transfer, the home page, subject area pages, geographic area pages, and partner site pages are being redesigned. As with the previous Oracle upgrade effort, continued clean-up and updating of content is occurring, along with further decommissioning and archiving of unused collaboration communities.

Personnel

Personnel: University of Idaho

Penny Morgan, UI College of Natural Resources, Department of Forest, Rangeland, and Fire Sciences is the lead faculty member of FRAMES.

All FRAMES positions are contingent on continued federal funding. State Board of Education (SBOE) positions include the FRAMES Program Manager (Greg Gollberg), FRAMES Project Manager (Diana Olson), FRAMES Content Manager (Lynn Wells) and the Fire Research Scientist and Outreach Program Manager (Eva Strand). The Fire Research Scientist and Outreach Program Manager is primarily responsible for the development, management, and oversight of all aspects of NIFTT and its relationship with FRAMES. Besides these four SBOE positions, there are four additional FRAMES staff positions. They are a full-time FRAMES Graphics & Interface Design Specialist (John Black) and three part-time FRAMES Content Support Specialist positions (Jennifer Lagadinos, Michael Tjoelker and Wayne Buck).

Additional UI personnel that have helped with moving FRAMES from USGS to UI are Luke Sheneman and David Vollmer. They along with Kelly Lotts (listed below), have been primarily responsible for the move.

Personnel: USGS / CSAS

Other support exists with USGS - CSAS personnel including Mike Frame, Jennifer Carlino, Janice Gordon, Julie Recker, Tim Mancuso, Tim Woods, Jeff Falgout, Brad Williams, and Mary Macleod.

Personnel: OSU / NACSE

Contracts for support and maintenance of the RCS Version 2.0, plus the FOFEM project, included staff from Oregon State University, NACSE. NACSE support staff includes Dylan Keon and Ben Steinberg.

Personnel: MSU / BSI

Additional portal support was provided by Kelly Lotts at the Big Sky Institute, Montana State University. Funding for Kelly was arranged through USGS / CSAS.

INFRASTRUCTURE: Dollars & Sense/Projects & Initiatives

Dollars and Sense

FRAMES continues to be funded through line item funding for the Wildland Fire Science Partnership (WFSP). This is the primary funding source for FRAMES. New funding to assume administration of the NIFTT program began at the end of 2009 and continued through 2011. With these two sources of dollars FRAMES annual funding approaches a million dollars. FRAMES will continue to look to diversify its funding through efforts to provide custom services to new partners. FRAMES will also work with WFSP partners to increase funding to the partnership including the RMRS, UM, and UI. Also, in kind support from many organizations helps FRAMES fulfill its mission each year.

FRAMES Projects & Initiatives - 2012 and Beyond

Once the transfer to the new concrete5 content management system is complete, much of the work during 2012 will focus on improving the look and feel of the FRAMES partner sites, and developing additional partnerships with fire research and management content providers. An improved collaboration platform for partners will be developed with improved upload and download capabilities and will continue to provide features for document sharing, storage, and archiving, and calendar sharing.

Primary activities for FRAMES in 2012 will be to:

1. Redesign FRAMES site during the migration to the concrete5 content management platform, including the home page, subject area pages, geographic area pages, and partner site pages.
2. Launch FRAMES on the new concrete5 content management system (at UI).
3. Transfer RCS v2 from NACSE to UI. FRAMES Staff will continue to increase the content holdings in the RCS by working with content providers including researchers and managers.
4. Provide a map search interface for RCS v2.
5. Complete specifications for RCS v3, award the RCS v3 contract, and prepare for the development of RCS v3.
6. Better integrate the activities of FRAMES and NIFTT.
7. Seek a stable administrative home for FRAMES within the RMRS Wildland Fire Management RD&A Program.
8. Continue to support existing partners and seek new partners to complement the existing architecture of FRAMES, including subject areas, geographic areas, and partners sites.



NIFTT

2011 NIFTT Accomplishment Highlights

During FY2011, NIFTT released a new online course on Fuel Loading Models; developed a Vegetation Dynamics Learning Pathway; completed the first six of nine chapters in the Introduction to Fire Behavior Modeling learning material; and created Mediasite recordings of five technical workshops. NIFTT delivered ten classroom workshops on the Wildland Fire Assessment Tool (WFAT), FRCC, and the LANDFIRE Total Fuels Change Tool (LFTFC); six oral or poster presentations at national meetings; and produced one proceedings publication. Marketing materials such as brochures and posters were developed for these workshops and conferences. All but two NIFTT online courses have been migrated from the Blackboard learning system to the eLeaP learning system. The migration to eLeaP has substantially reduced student-registration issues.



Several NIFTT tools were released, including WFAT, LFTFC, a new version of the FRCC Software Application (FRCCSA), and a new version of the LANDFIRE Data Access Tool (LFDAT). Development also progressed on the FRCC Mapping Tool (FRCCMT) and FuelCalc.

NIFTT conducted a survey of students that registered for NIFTT online courses to help monitor the effectiveness of courses.

Contracts and Agreements

NIFTT's program of work is largely accomplished through cooperative agreements with UI, and contracts with independent vendors. One new agreement and two new contracts were initiated in 2011.

Current Agreements:

1. Joint Venture Agreement between RMRS and UI (09-JV-11221637-312). Title: Developing Comprehensive Curricula for Teach and Applying Fuels, Fire, and Vegetation Management Technology.
2. Cooperative Reimbursable Agreement between RMRS and UI (10-CR-11221637-077). Title: Developing Comprehensive Curricula for Teach and Applying Fuels, Fire, and Vegetation Management Technology.
3. Cooperative Reimbursable Agreement between RMRS Wildland Fire Management RD&A Program and UI (11-CR-11221611-214). Title: Developing Comprehensive Curricula for Assessing Fire Behavior, Fire Effects, Fire Regimes, and Vegetation Dynamics.

Online Courses and Course Material

- Chapters 1-6 of the Introduction to Fire Behavior learning material are completed and under final review.
- Recording and online publication of five technical presentations at the Southwest Interagency Fuels Workshop in Flagstaff, AZ, March 7-11, 2011, see the www.nifftt.gov Presentation Library
 - o Miriam Rorig, US Forest Service, Title: Wildland Fire Air Quality Tools
 - o Josh Hall, Santa Fe National Forest & Ron Sherron, US Forest Service, AZ NFs & AZ Department of Environmental Quality, Title: Smoke Management Techniques (Hall) and Creating a Successful Burn Window (Sherron)
 - o Sam Amato, National Fire Decision Support Center, Title: The Wildland Fire Decision Support System (WFDSS)
 - o Tim Swedberg, Joint Fire Science Program, Title: The Interagency Fuels Treatment Decision Support System (IFT-DSS)
 - o Jeff Jones, US Forest Service, Title: NIFTT Curricula for assessment of fire behavior, fire effects, and ecological departure
- Developed overview lesson on LANDFIRE, FRCC, and WFAT (Wildland Fire Assessment Tool) in online course REM407 – GIS in Fire Ecology and Management at UI (1cr).
- Development of course material for using WFAT to identify fire fighter safety zones for a workshop at the IAWF International Wildland Fire Safety Summit, Missoula, MT.
- Development of WFAT course material for Technical Fire Management (TFM) workshop in Bothell, WA. The material includes an overview presentation, tutorial, and exercise.
- An online course on Fuel Loading Models (FLM) has been developed and online registration is available via the FRAMES web site. The course was made available to students in August.
- The final draft of the online course 'Predicting Vegetation Change', which is part of the Vegetation Dynamics Learning Pathway, has been reviewed by external reviewers.
- Hosting NWCG course S-491 on the eLeap learning management system during the spring 2011 (100 students).
- Initial review of existing learning material for WFDSS has started.
- NWCG course S-491 has been posted on the eLeaP online learning management platform and students are now registering to complete the required pre-work for the course.
- A proposal for collaboration with the Southwest Fire Science Consortium (SWFSC) was submitted to Barb Wolfson at SWFSC. As a result of the proposal NIFTT will delivery of a series of

NIFTT

six webinars on NIFTT tools and analysis techniques and two FRCC workshops in February-July 2012 hosted by SWFSC.

- NIFTT provided training opportunities using a variety of media including: Online courses, Classroom workshops, Videos, Guides, tutorials, and other reference material. In FY2011, 221 students registered for 417 NIFTT online courses (Table 2).
- The anonymous NIFTT course evaluations conveyed an overwhelmingly positive response from the students who completed the courses. Several students said that the courses were useful and would help them better communicate and understand data/information needs on the job.

Table 2. Online student registrations for FY 2011

Course	DOI	Other	Private	State	TNC	University	USFS	Total
FCCS	13	11	1	5	0	3	14	47
FRCC Version 1.3	20	3	2	3	1	2	22	53
FBFM40	22	18	1	28	1	6	36	112
FLM	1	1	0	0	0	1	2	5
LANDFIRE	20	3	4	3	1	3	17	51
NOMOGRAPHYS	8	8	1	4	0	0	9	30
ACT	12	5	1	2	0	1	14	35
FOFEMMT	11	9	1	2	0	2	17	42
FRCCMT	12	8	1	2	1	2	16	42
Total	119	66	12	49	4	20	147	417

Learning Tools and Documentation

- Fire Regime Condition Class (FRCC) Guidebook version 3.0 released.
- Fire Regime Condition Class Software Application (FRCCSA) version 3.0.3.0.
- The LANDFIRE Total Fuel Change Tool v.1.0 is released for ArcGIS v. 9.3 and 10. This includes a User's Guide, Tutorial, and help utility.
- Wildland Fire Assessment Tool (WFAT) Beta-version is released (www.fire.org). The final version of the WFAT User's Guide has been completed and is available at www.nifft.gov.
- Completed development of Fire Regime Condition Class Mapping Tool. The tool is undergoing BLM Testing and a User's Guide is being prepared.
- LANDFIRE Data Access Tool for ArcGIS 10.
- Review of the Wildland Fire Assessment Tool Tutorial.
- Review of the online course "Working with LANDFIRE Vegetation Models", a course in the Vegetation Dynamics Pathway.

Workshops

- LANDFIRE and Area Change Tool (ACT) Workshop. Hann W, Strand EK. University of Idaho Landscape Ecology course REM429, April 29, 2011 (30 students).
- Fire Regime Condition Class Short Course. Havlina D., Barrett S. US Forest Service/Bureau of Land Management/State of Utah DNR. May 12-13, 2011, Salt Lake City, UT.

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- Fire Regime Condition Class – Technical Fire Management, Bothell, WA, October 12, 2010.
- Wildland Fire Assessment Tool. Jones JJ, Strand EK. Technical Fire Management, Washington Institute, October 11, 2011, Bothell, WA.
- Wildland Fire Assessment Tool. Jones JJ, Strand EK. Interior West Fire Ecology Conference, Nov 14, 2011, Snowbird, UT.

Publications and Reports

- Results of Questionnaire to Federal Users of NIFTT Tools and Courses. Unpublished report distributed to sponsors.



- Strand EK (2011). Proceedings paper: Aspen Landscape composition in aspen woodlands under various modeled fire regimes. Submitted to be published as part of a GTR originating from the State-and-Transition Modeling Conference in Portland, OR, June 15-17, 2011.

Presentations

- Strand EK, Schon KH, Jones J (2011). NIFTT, Poster presentation, Society for Range Management National Meeting, February 7-11, 2011, Billings, MT.
- Strand EK (2011). Lecture and lab titled “Fuel Loading Models” in FOR451 Fuels Inventory and Management at the University of Idaho, February 14, 2011.
- Strand EK (2011). Lecture titled “Mapping Wildland Fire Fuels and LANDFIRE Overview” in FOR451 Fuels Inventory and Management at the University of Idaho, March 11, 2011.
- Ryan C and EK Strand (2011). Learning to Predict Vegetation Change: a Step-wise Progression for Acquiring State and Transition Modeling Skills; State-and-Transition Landscape Modeling Conference, Poster presentation, Portland, OR, June 15-17, 2011.
- Strand EK (2011). Landscape Dynamics in Aspen Woodlands on the Owyhee Plateau, Idaho; Oral pres., State-and-Transition Landscape Modeling Conference Portland, OR. June 15-17, 2011.
- Strand EK (2011). Vegetation Dynamics Learning Pathway oral presentation, Western Regional Coordinating Committee on Rangeland WERA040, October 28, Tooele, UT.

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- Strand EK and Ryan C (2011). Learning to Predict Vegetation Change: a Step-wise Progression for Acquiring State and Transition Modeling Skills State-and-Transition Landscape Modeling Conference, Poster presentation, Interior West Fire Ecology Conference, Nov 14-17, 2011, Snowbird, UT.

Meetings

- Meeting with FRAMES staff at PNW, Seattle, WA, October 11, 2011, Jones J, Strand EK, Wells L.
- Wildland Fire Science Partnership meeting, Missoula, MT, November 9-10, 2011, Strand EK.

Marketing Material

- NIFTT brochure. 400 copies printed and distributed at conferences/ meetings.
- NIFTT poster presentations at six national conferences and meetings.
- Flyers for advertising online courses and learning tools (100 copies printed and distributed).
- A letter describing NIFTT's services has been drafted and will be sent to the US Forest Service Regions and BLM regional offices, including brochures, after the 2011 fire season.
- Advertising of NIFTT courses on the Great Basin Science Delivery web page: http://greatbasin.wr.usgs.gov/gbrmp/SD_courses.aspx

Customer Support

- Updates and maintenance of three web sites: nifft.gov, frcc.gov, and landfire.gov
- Installation of Google Analytics web traffic tracking on the NIFTT and FRCC web sites.
- Customer support via three helpdesks: helpdesk@nifft.gov, helpdesk@frcc.gov, and helpdesk@landfire.gov (538 helpdesk inquiries were responded to in FY2011).
- NIFTT provides user support by managing two websites (nifft.gov and frcc.gov) and a HelpDesk that responds to question pertaining to NIFTT tools and curricula, FRCC, and LANDFIRE.
- During the time period June 1 – September 30, the NIFTT and FRCC web pages were visited 1409 times (352 hits/month) and 1571 times (393 hits/month), respectively.
- Google Analytics web site tracking for the time period Oct 1 – Dec 31 show the NIFTT web site was visited 1,521 times with 3,217 page views and the FRCC web site was visited 1,787 times with 3,370 page views.

Table 3. NIFTT Helpdesk requests for FY2011

Helpdesk Categories	# requests	% requests
LF Data Download Questions	39	7.3
LF Data Questions	30	5.6
LF Data Requests	9	1.7
LF Misc	77	14.3
LF Refresh	5	0.9
NIFTT Tools	117	21.7
NIFTT Training	35	6.5
NIFTT Courses - registration/certification	220	40.9
FRCC	6	1.1
Total	538	100

APPENDIX A: FRAMES Strategic Plan 2007-2012

FRAMES: Technology in Support of Wildland Fire Research and Management

The Fire Research and Management Exchange System (FRAMES) supports wildland fire and natural resource professionals and policymakers through an on-line informatics system. FRAMES utilizes enterprise portal technology to promote science delivery and technology transfer at a national level. Resources including data, documents, tools, notices, and web pages are publicly available through www.frames.gov. FRAMES can host resources, link to them through its cataloging system, or provide a common view of resources (e.g., databases) that are remotely distributed. Access to these resources and other content can be customized for logged in users. Logged in users create and edit content that may or may not be publicly available. A suite of collaborative services including document management and sharing, threaded discussions, project and task management, and calendars are available to content developers and other logged in users. FRAMES is a collaborative effort to produce an integrative system for connecting the tools, information, and people who are part of the enterprise of wildland fire research and management.

The University of Idaho and the US Geological Survey's CSAS program (which includes the former NBII Program) have led the development of FRAMES with guidance and support USDA Forest Service (FS), Joint Fire Science Program (JFSP), Bureau of Land Management (BLM), National Park Service (NPS) and other federal, state, and private agencies and organizations. Since 2003, FRAMES has received funding and in-kind support from many including the FS, USGS / CSAS, JFSP, BLM, NPS, NIFTT, FRCC Working Group, National, US Fish and Wildlife Service, TTRS, The Nature Conservancy (TNC), and congressional earmarks. Funding has supported three areas of development: content, infrastructure, and services. Infrastructure and content development has been emphasized with some effort spent on developing services. In 2006 there was a dramatic increase in portal traffic, logged in users, content added, partners sites hosted by FRAMES, and the use of available services. Today, FRAMES is at a crossroads between prototype and an operational system for fire informatics. This transition presents new opportunities and challenges that require additional guidance and planning.

Beginning in 2007 and for each subsequent fiscal year, a FRAMES Project Management Plan will be developed by FRAMES staff, partners, and USGS / CSAS personnel that will be reviewed by members of the FRAMES Interim Steering Committee (FISC). The FISC will continue to fill this role until such time as a permanent governance structure is established for FRAMES. Each annual plan will seek to further five year goals established in the FRAMES Strategic Plan.

FRAMES Five Year Strategic Goals

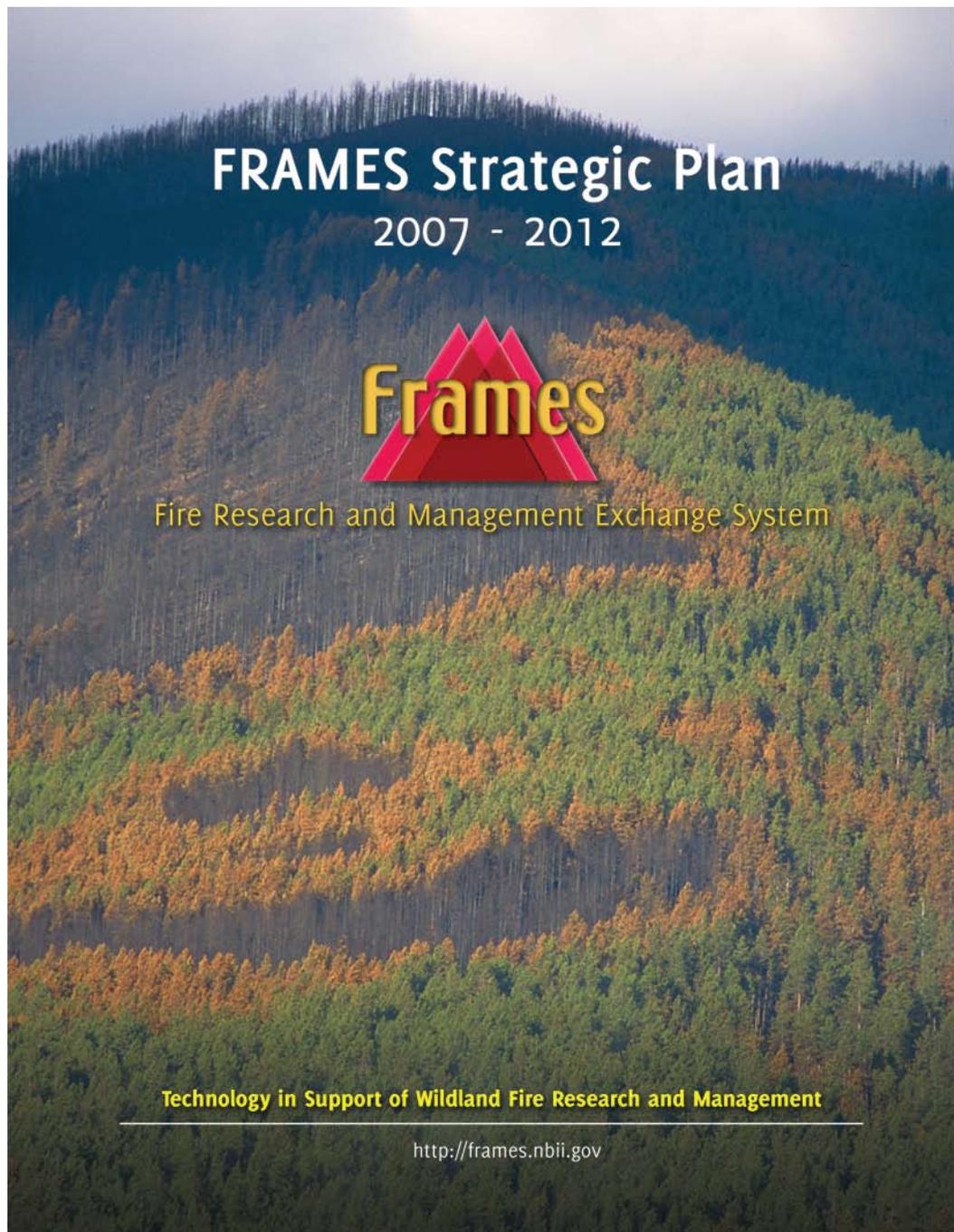
1. Provide Content and Increase Content Utility. Develop a rich and usable base of content that is useful to wildland fire and natural resource professionals and policymakers.
2. Expand Services and Increase User Base. Identify opportunities to work with wildland fire and natural resource professionals (i.e., managers, practitioners, and researchers) to develop customized services that are complementary with FRAMES informatics architecture and that target their common technology transfer and science delivery needs.
3. Increase Name Recognition and Program Awareness: Develop marketing materials for outreach and cultivate relationships with agencies and potential FRAMES users and contributors.
4. Maintain and Upgrade the Infrastructure. Build a technological infrastructure that can support wildland fire and fire-related informatics.
5. Ensure Financial Support. Determine staffing requirements and develop a sustainable system of financial support to ensure that FRAMES remains viable.



APPENDIX A: FRAMES Strategic Plan 2007-2012

6. Provide Responsive Governance and Management. Establish a long-term plan for governance and accountability for the management and implementation of FRAMES.

FRAMES makes the following commitments to the larger community of fire policymakers, managers, researchers, and practitioners. We will be mission centered. We will continuously stay focused on our core mission, goals, and strategic actions. We will focus on excellence and undertake all activities at the highest levels of distinction. We will stay current on developments in the fire community and informatics. We will be strategic in our partnerships. We will seek to measure our progress and work with sound metrics, learn from the results, and seek improvement as a result.



APPENDIX B: NIFTT

NIFTT Online Course Statistics FY2011

To date, NIFTT has developed nine online courses and over ten computer-based learning tools focusing on technology transfer relating to stand- and landscape-level assessments of fuels, fire, and vegetation dynamics. Courses include:

- Introduction to the Fuel Characteristic Classification System (FCCS)
- Fire Regime Condition Class 1.3 (FRCC)
- Introduction to the 40 Fire Behavior Fuel Models (FBFM40)
- Using Fire Behavior Nomographs (NOMOGRAPHS)
- Fuel Loading Models (FLM, released in August 2011)
- LANDFIRE: Concepts, Data & Methods (LANDFIRE)
- Area Change Tool (ACT)
- First Order Fire Effects Model Mapping Tool (FOFEMMT)
- Fire Regime Condition Class Mapping Tool (FRCCMT)

The NWCG course S-495, Geospatial Analysis, Interpretation & Application, was developed in collaboration with the S-495 steering committee and NWCG faculty and is hosted by NIFTT. Results from S-495 are not reported in this document.

Two NIFTT online courses (LANDFIRE and FRCC) are currently hosted through Blackboard learning management system, while the remaining courses were offered via Blackboard until mid January and then transferred to the eLeaP learning management system accessed on the FRAMES web site (www.frames.gov). Course information and registration will remain on the NIFTT website (www.nifft.gov). In the future, all courses will be transferred to the eLeaP system because of its simplified registration approach in which students need fewer passwords and can request a replacement password that is effective immediately.

Students registering for NIFTT courses come from a variety of sectors but are predominantly from the USDA Forest Service (USFS) and the Department of Interior (DOI). In 2011, 221 students registered for one or more NIFTT online courses. The USDA Forest Service contributed 38% of the registering students and DOI contributed 27%, while the remaining 35% of the students came from the private sector, state government, The Nature Conservancy (TNC), universities, and other (Figure B1). Students that fall in the category "other" include students from municipal and county fire protection districts and can also include federal employees using their personal email address. Registering students came from several of the agencies within DOI: Bureau of Indian Affairs (BIA), Bureau of Land Management (BLM), US Fish and Wildlife Service (USFWS), and US Geological Survey (USGS); see Figure B2.

The courses receiving the highest registration numbers in FY 2011 are Introduction to the FBFM40 (112 students) and FRCC (53 students). In 2011, FCCS received 47 registrations, LANDFIRE received 51 registrations, Nomographs received 30 registrations (Figure B3). The GIS tools course ACT received 35 registrations, FOFEMMT and FRCCMT received 42 registrations each. The new FLM course that was released in August 2011 received 5 registrations. Overall, NIFTT online courses received 417 course registrations from 221 individuals; i.e., many students registered for more than one course.



APPENDIX B: NIFTT

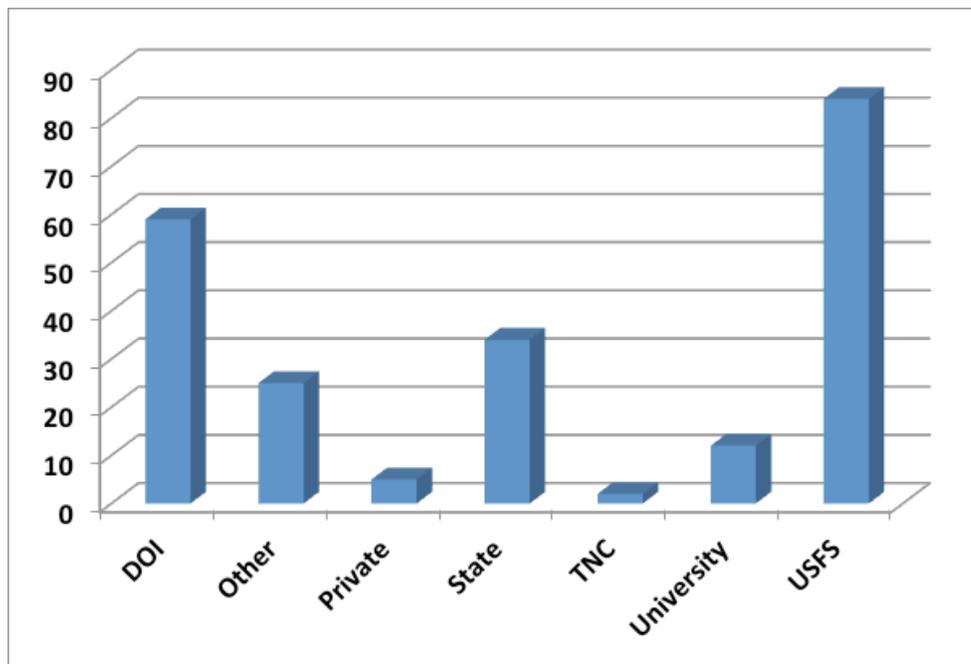


Figure B1. Number of individuals registering for NIFTT courses in FY2011 by agency. This graph does not reflect the frequent instance in which one individual has signed up for more than one course. DOI – Department of Interior, TNC – The Nature Conservancy, USFS – USDA Forest Service. Students in the category “other” include students from municipal and county fire protection districts and can also include federal employees using their personal email address.

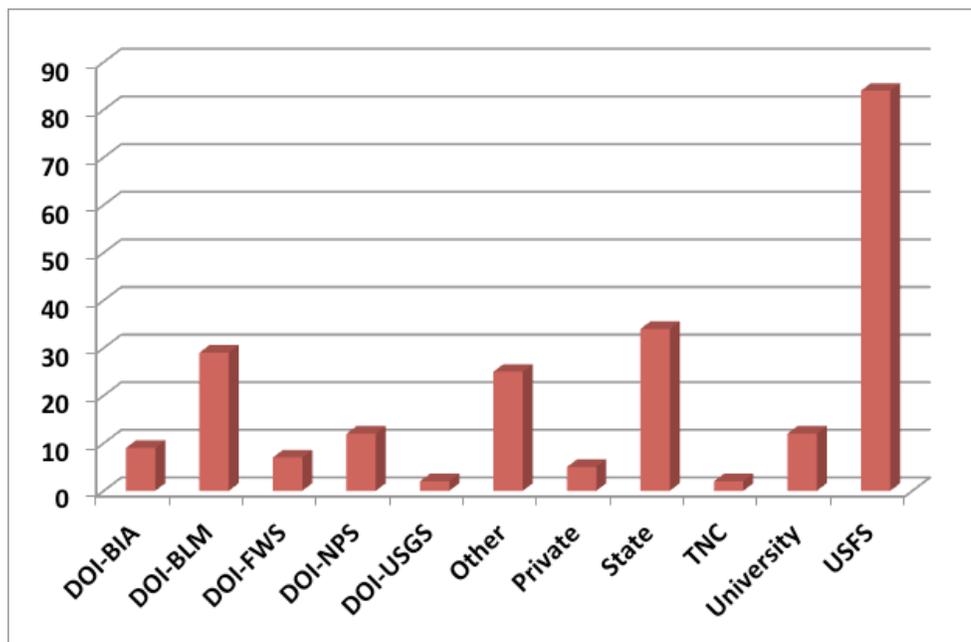


Figure B2. Number of individuals registering for NIFTT courses in FY2011 by agency. This graph does not reflect the frequent instance in which one individual has signed up for more than one course. The individual agencies within the Department of Interior are listed: BIA – Bureau of Indian Affairs, BLM – Bureau of Land Management, USFWS – US Fish and Wildlife Service, NPS – National Park Service, USGS – US Geological Survey.

APPENDIX B: NIFTT

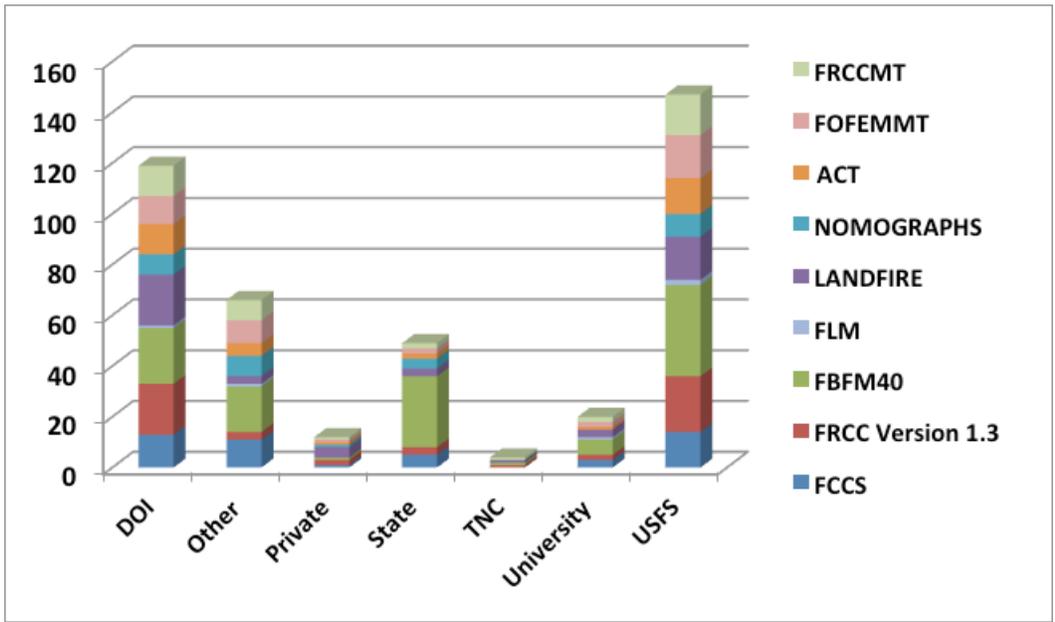


Figure B3. Number of NIFTT course registrations by course and agency for FY 2011. (Notice that the FLM course has only been available since August 2011)







Frames