



FINAL REPORT TO THE JOINT FIRE SCIENCE PROGRAM

February 9, 2007

Project Title: *Expanding FIREHouse (the Northwest Fire Research Clearinghouse) to Alaska*

JFSP Project No.: 05-4-2-03

Project Location: Seattle, Washington

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SYNOPSIS

FIREHouse (the Northwest and Alaska Fire Research Clearinghouse; <http://www.fs.fed.us/pnw/fera/firehouse>) is a website providing online access to information about fire science and technology relevant to Washington, Oregon, Idaho and Alaska. It's expansion in 2005 to include Alaska resulted in two additional products: 1) the Alaska Fire and Fuels Research Map (<http://afsmaps.blm.gov/imf/imf.jsp?site=firehouse>), an online map interface displaying Alaska fire and fuels research plot information; and 2) the Alaska Fire Effects Reference Database, an online searchable bibliographic database (<http://depts.washington.edu/nwfire/refs>) displaying references relevant to fire research in Alaska.

BACKGROUND

The Arctic Climate Impact Assessment report states that “climate change is projected to result in major impacts inside the Arctic, some of which are already underway” and “disturbances such as insect outbreaks and forest fires are very likely to increase in frequency, severity, and duration” (ACIA 2004). The report was substantiated by the fact that a record 6.7 million acres burned in Alaska during the 2004 wildfire season and an additional 4.6 million acres burned during the 2005 season. Both the report and the extreme wildfire seasons contribute to the growing recognition of the dominant role fire plays in many of Alaska’s ecosystems.

Fire research information in Alaska is spread across a number of organizations, including the National Park Service, the Bureau of Land Management - Alaska Fire Service, the US Fish and Wildlife Service, the University of Alaska, the USDA Forest Service, State and Private Forestry, the State of Alaska, the Kenai Peninsula Borough, and various Native Corporations. Varying amounts of information within these organizations are publicly accessible, but there has not been a single access point for the array of available fire research information.

In 2003, the Joint Fire Science Program (JFSP) funded a proposal to develop a Regional Information Node for Fire Science in the Pacific Northwest (JFSP Project No. 03-4-2-06). This resulted in the creation of the FIREHouse website (Figure 1). In 2005 the JFSP provided funding to expand FIREHouse to include Alaska (this project). The goal of FIREHouse is to provide "one-stop shopping" for resource managers, decision makers, scientists, students, and communities who want access to the results of efforts to understand and manage fire and fuels on public lands in these regions. It is designed to assist fire programs by facilitating access to fire research and associated information. In order to provide more extensive and comprehensive information about fire research, FIREHouse is coordinating efforts with the Fire Research and Management Exchange System (FRAMES; <http://frames.nbii.gov>) project team. Content on FIREHouse will provide substantial contributions to the Northwest and Alaska Fire Portals on FRAMES. FIREHouse is a collaboration between the Fire and Environmental Research Applications Team (FERA) of the USDA Forest Service, Pacific Northwest Research Station, Pacific Wildland Fire Sciences Laboratory;

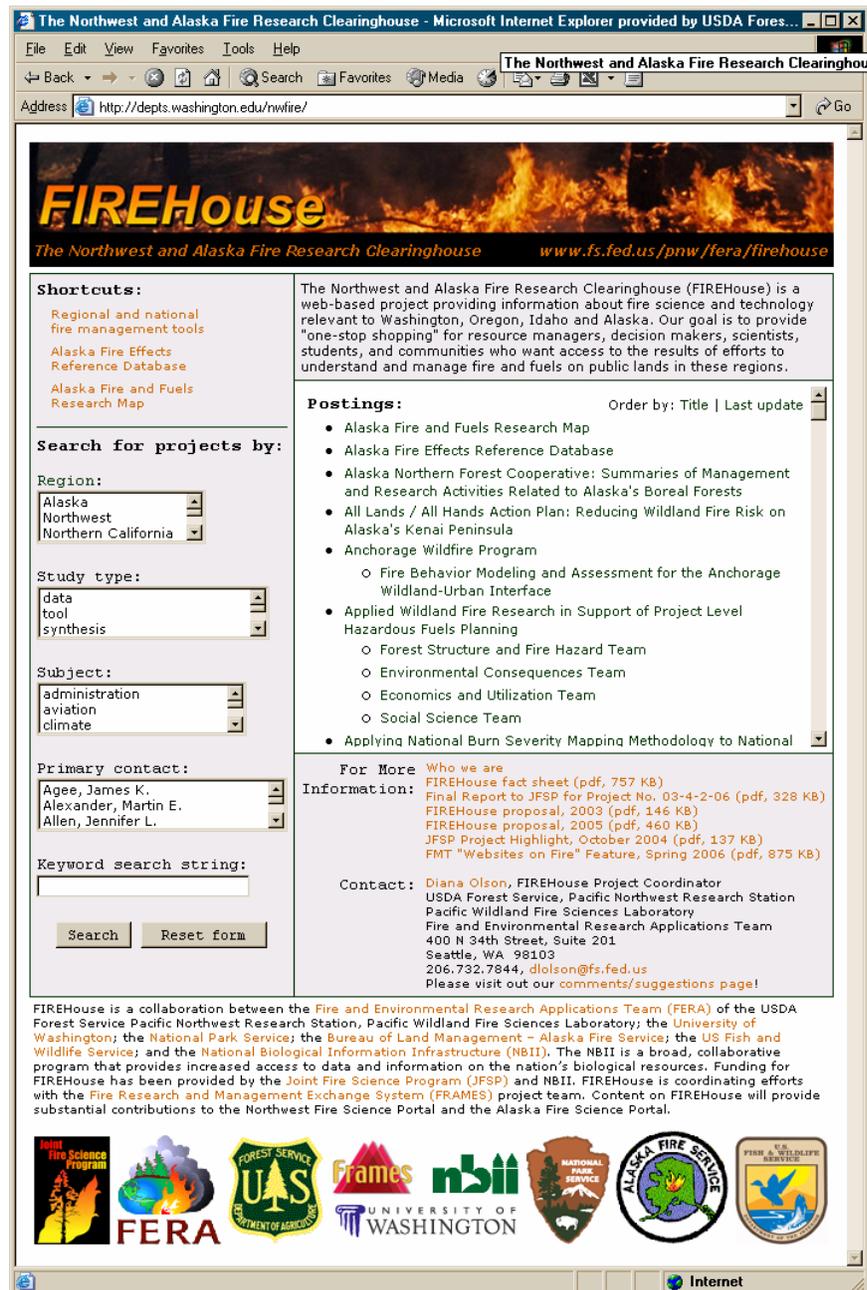


Figure 1. Screenshot of the FIREHouse website.

the University of Washington; the US Geological Survey, National Biological Information Infrastructure (NBII: <http://www.nbio.gov>); the National Park Service; the Bureau of Land Management – Alaska Fire Service; and the US Fish and Wildlife Service.

ACCOMPLISHMENTS

The proposal to expand FIREHouse to Alaska had 6 objectives: 1) develop and post online metadata records for all projects funded by JFSP, applicable National Fire Plan (NFP) funded projects, and other available fire research projects in Alaska; 2) post online publications, proposals and study plans from Alaska fire research projects; 3) provide online links to other sources of fire science and management information; 4) post online data, as available, from JFSP-funded projects (and NFP and other projects); 5) develop an online map interface displaying fire-effects plot metadata in Alaska; and 6) advance the Alaska Fire Reference Database by converting it into an online, searchable bibliographic database.

Objectives 1-4 were addressed by developing postings about Alaska-related fire research, or by adding Alaska-related sub-projects to existing postings. FIREHouse currently includes web postings describing 92 projects and 94 sub-projects. Of those postings, 60 projects and 57 sub-projects are relevant to Alaska, and 35 and 44, respectively, are specific to Alaska. Through these Alaska-related postings, FIREHouse provides links to 65 websites, 142 publications (and 1 publication list), 17 study proposals, and 26 fact sheets or comparable documents. Additionally, these postings provide links to 23 user's guides or metadata records, and links to 15 database or software download sites. Thirty of the 60 Alaska-related projects posted on FIREHouse have received funding from the JFSP, representing 41 JFSP-funded proposals (Appendix 1), 11 of which are specific to Alaska (highlighted in Appendix 1). These values include the two JFSP proposals that have provided funding to FIREHouse: No. 03-4-2-06 "A Regional Information Node for Fire Science in the Pacific Northwest" and this project, No. 05-4-2-03 "Expanding FIREHouse (the Northwest Fire Research Clearinghouse) to Alaska." The other 30 Alaska-related projects posted on FIREHouse (Appendix 2) were funded through other means, such as the NFP, the National Science Foundation, internal agency funding, etc.

Objective 5 (*develop an online map interface displaying fire-effects plot metadata in Alaska*) was addressed by creating the Alaska Fire and Fuels Research Map (Figure 2; <http://afsmaps.blm.gov/imf/imf.jsp?site=firehouse>). This map provides online site-level information and locations for fire and fuels-related studies through an ArcIMS™ map interface. The system allows users to click on a location and display information about fire and fuels research conducted in that area. Users are also able to search to specific studies and plots using the query building function. The map currently includes information about 30 studies (including 1198 plots) conducted by the National Park Service, the BLM-Alaska Fire Service, the US Fish and Wildlife Service, the Forest Service, the University of Alaska-Fairbanks, as well as other research entities. The

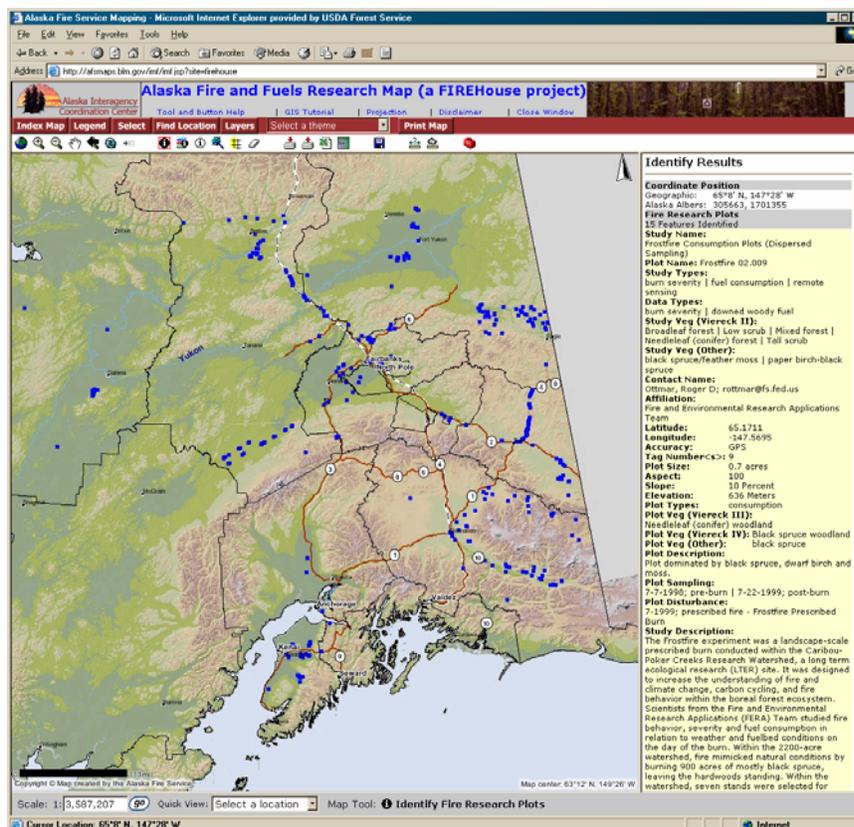


Figure 2. Screenshot of the Alaska Fire and Fuels Research Map.

map is hosted by the Alaska Fire Service and has been made available through the Alaska Interagency Coordination Center's Fire Information ArcIMS™ website. It is updated periodically with information from additional studies and new research.

Objective 6 (*advance the Alaska Fire Reference Database by converting it into an online, searchable bibliographic database*) was addressed by expanding (and cleaning) the Alaska Fire Reference Database (a ProCite® database originally developed by the Alaska Fire Effects Task Group, a subcommittee of the Alaska Wildfire Coordinating Group Fire Research Development and Applications Committee) and then converting it into the online, searchable Alaska Fire Effects Reference Database (Figure 3; <http://depts.washington.edu/nwfire/refs/>). The goal of the Alaska Fire Effects Reference Database is to provide a comprehensive listing of fire research publications relevant to Alaska, and also to provide a venue for sharing unpublished agency reports, graduate theses, and works in progress that are not normally found in the published literature. The database currently provides information for 2,669 references, including 321 that are considered “unpublished” (as described above). When available, links to digital versions of the publications are provided. Users can access the Alaska Fire Effects Reference Database in two ways, either by accessing it online or by downloading the database in Reference Manager® format.

The expansion of the database included the addition of references from a literature review of the effects of fire in Alaska and adjacent Canada (Viereck and Schandelmeier 1980), from a bibliography related to Alaska forest health protection from 1919-2001 (Zogas and Holsten 2002), and from the “Wildfire in the North” bibliography (UAF 2005). Unique citations from Alaska Fire Effects Task Group members’ individual reference databases were also included. The database is currently being updated with another bibliography titled “References on the American Indian Use of Fire in Ecosystems” (Williams 2005). Additionally, the results of a comprehensive search of bibliographic databases (available through University of Washington library subscriptions) were incorporated into the database. Similar periodic bibliographic database searches will be conducted in the future to keep the Alaska Fire Effects Reference Database current.

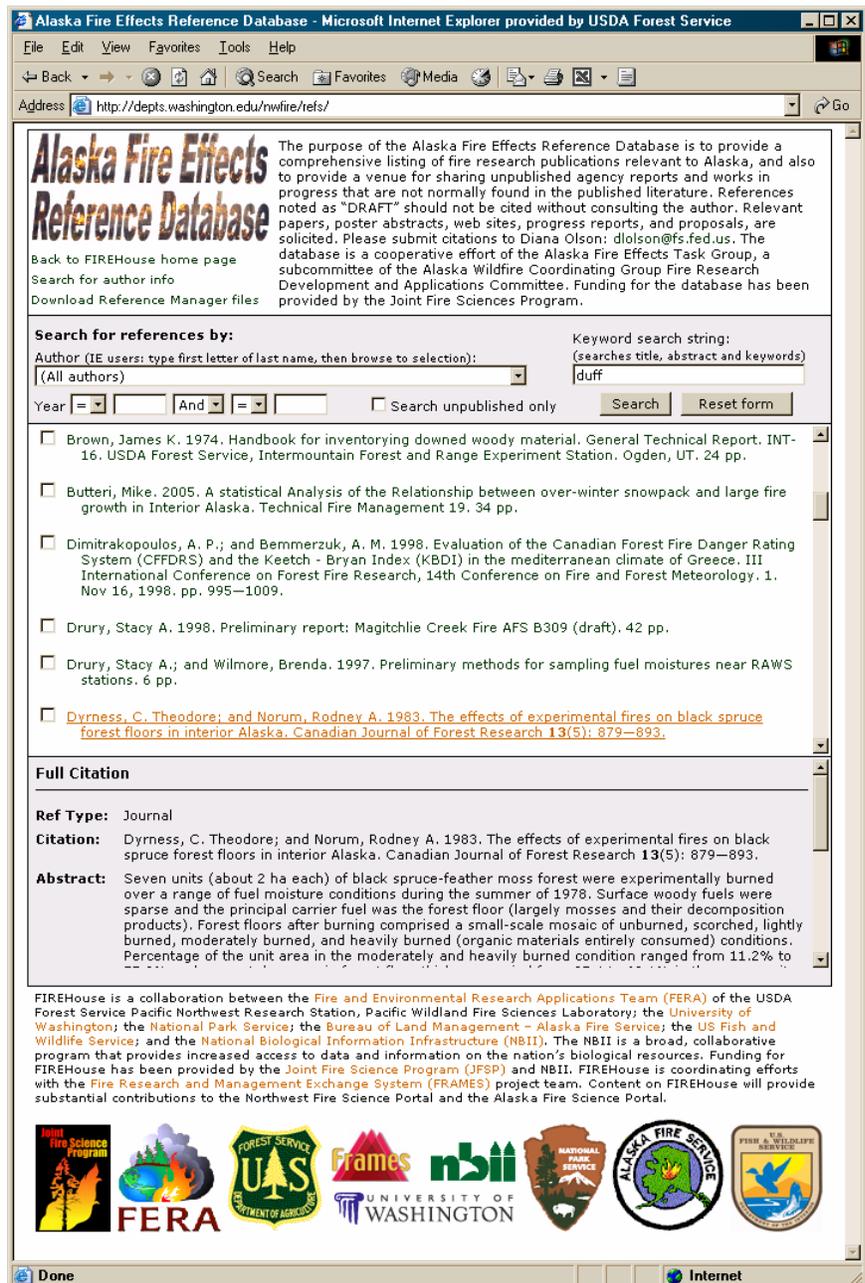


Figure 3. Screenshot of the Alaska Fire Effects Reference Database.

WEBSITE DESIGN AND DATABASE TECHNOLOGY

A Microsoft® Access database has been created to store the fire research project information (metadata) that is displayed on the FIREHouse website. Information has been entered for all JFSP projects (not just those relevant to the Northwest and Alaska), including projects funded in 2006. Once the accuracy of the information is confirmed, select records from the database are displayed through the FIREHouse website by converting the database from Access to MySQL. The website interfaces with the MySQL database using the PHP scripting language, resulting in an interactive web interface. A user can search for fire research project information by selecting a region, study type, subject, and/or a contact person from pull-down menus, or by typing in a keyword. Alternatively, a user can scroll through a listing of posted projects and sub-projects (ordered either alphabetically or by last update). The FIREHouse website currently resides on a University of Washington server (<http://depts.washington.edu/nwfire>), pending its integration with FRAMES. Please refer to “The Future of FIREHouse” section below for the discussion of the FIREHouse/FRAMES integration.

Study and plot information for the Alaska Fire and Fuels Research Map is entered into a Microsoft® Access database, which is subsequently imported into the Oracle® database that interfaces with the Alaska Interagency Coordination Center’s Fire Information ArcIMS™ website. Reference information for the Alaska Fire Effects Reference Database is entered and stored in a Reference Manager® database. The database is exported as RIS and tab-delimited text files, and then imported into a Microsoft® Access database that in turn is converted to MySQL. Similar to the main FIREHouse website, the Alaska Fire Effects Reference Database website interfaces with the MySQL database using the PHP scripting language.

SCIENCE DELIVERY AND APPLICATION ACTIVITIES

This project was funded specifically to expand a tool for fire science delivery and application to another region. Therefore the FIREHouse website (and the associated Alaska Fire Effects Reference Database website and the online Alaska Fire and Fuels Research Map) are our primary science delivery and application activities. Aside from the website, information about the FIREHouse project has been provided (and website content and improvement suggestions have been solicited) through the activities listed in Table 1.

Table 1. FIREHouse science delivery and application activity dates and descriptions.

Date	Venue	Presentation Type
Oct. 2005	Alaska Interagency Fall Fire Workshop and Fire Effects Task Group Meeting	Poster presentation (workshop); oral presentation and website demonstration (meeting)
March 2006	1st Fire Behavior and Fuels Conference	Poster presentation and hands-on website demonstrations
May 2006	Alaska Fire Effects Task Group Meeting	Oral presentation
Spring 2006	Fire Management Today publication	FIREHouse highlighted in the “Websites on Fire” section
Sept. 2006	RX310: Introduction to Fire Effects	Oral presentation and website demonstration
Sept. 2006	Alaska Fire Effects Task Group Meeting	Oral presentation and website demonstration
Oct. 2006	All Lands/All Hands Committee Meeting	Oral presentation and website demonstration
Nov. 2006	3rd Fire Ecology and Management Conference	Poster presentation and hands-on website demonstrations

DELIVERABLES

Table 2. Proposed and actual project deliverables.

Proposed Deliverable	Delivered	Status
Website	The FIREHouse website can be accessed through the following URL: http://www.fs.fed.us/pnw/fera/firehouse FIREHouse provides online, searchable access to the following resources (as applicable): 1) project and tool descriptions, contact information and links; 2) online publications; 3) proposals and study plans; and 4) metadata; for 60 research projects relevant to Alaska. Please refer to Appendix 1 for a detailed list of JFSP projects with information posted on FIREHouse.	Done*
Workshops with Alaska fire managers and researchers	We participated in a variety of meetings and workshops with Alaska fire managers and researchers, and also participated in a training (many of these are also listed in Table 1): <u>October 2005</u> : presented a poster at the Alaska Annual Fall Fire Reviewed and strategized the content and direction of the project’s expansion to Alaska with the Alaska Fire Effects Task Group (also gave a website demonstration) <u>May 2006</u> : gave update to the Alaska Fire Effects Task Group, specifically soliciting feedback and content for the plots map and the references database <u>September 2006</u> : presented FIREHouse (along with FEIS and FRAMES) as part of the curriculum for “RX310: Introduction to Fire Effects” in Fairbanks, Alaska <u>September 2006</u> : gave update to the Alaska Fire Effects Task Group <u>October 2006</u> : presented FIREHouse at the All Lands / All Hands committee meeting in Anchorage, Alaska	Done
FRAMES Alaska Fire Portal contributions	The FRAMES Alaska Fire Portal currently has a link redirecting users to FIREHouse. Once the FIREHouse/FRAMES integration occurs (currently targeted for the summer of 2007), the information posted through the main FIREHouse site and the Alaska Fire Effects Reference Database will be available directly through FRAMES.	In progress
Online fire-effects plot metadata map	Alaska Fire and Fuels Research Map: http://afsmaps.blm.gov/imf/imf.jsp?site=firehouse	Done*
Online posting of reference database	Alaska Fire Effects Reference Database: http://depts.washington.edu/nwfire/refs	Done*
Publication(s)	Olson, Diana L. 2006. Websites on Fire: FIREHouse. Fire Management Today 66(2):8. Available online at http://www.fs.fed.us/fire/fmt/fmt_pdfs/FMT66-2.pdf	Done
Final report to JFSP	This report will serve as the final report to the JFSP for Project No. 05-4-2-03: Expanding FIREHouse (the Northwest Fire Research Clearinghouse) to Alaska.	Done

* Please refer to the following section “The Future of FIREHouse” for a discussion of how future updates will be made to the FIREHouse website and to the Alaska Fire and Fuels Research Map and the Alaska Fire Effects Reference Database.

THE FUTURE OF FIREHOUSE

As already mentioned, we expect to crosswalk information provided through the FIREHouse website to the FRAMES website. A crosswalk between FIREHouse and FRAMES was expected to occur during the 2006 calendar year. However, that crosswalk is still pending due to delays in finalizing the FRAMES Resource Catalog Database structure and in the development of the FRAMES online cataloging tool (i.e., the metadata entry interface). The crosswalk is now expected to occur during the summer of 2007, and will be a precursor to the eventual merging of FIREHouse and FRAMES. FIREHouse will remain an independent website until the PIs are satisfied that the information stored in FIREHouse is displayed appropriately through FRAMES. Once we are satisfied that FIREHouse information is displayed well, we will release the FIREHouse website postings and the contents of the Alaska Fire Effects Reference Database to FRAMES, at which point these two products will exist solely through FRAMES. Interim updates and additions to the FIREHouse website and to the Alaska Fire Effects Reference Database will occur whenever time permits, as collateral duties by Diana Olson and Jennifer Hrobak. However, because FIREHouse is no longer funded, it is not expected that many updates will occur prior to its merging with FRAMES.

In the future, FRAMES expects to have the capacity to display spatial information. However, at present FRAMES is unable to support the Alaska Fire and Fuels Research Map. Regardless, the database developed for entering plot information is easy to use and easily transferable, and the system for uploading it to the Alaska Interagency Coordination Center's Fire Information ArcIMS™ website is in place and can be executed in a matter of minutes. Therefore, minimal effort is necessary to maintain the Alaska Fire and Fuels Research Map, and if Diana Olson is unable to continue coordinating the effort, responsibility for the map can easily be transferred to co-PI Jennifer Allen or collaborators Randi Jandt or Karen Murphy (all three belong to the Alaska Fire Effects Task Group, the logical owner of the Alaska Fire and Fuels Research Map). Once FRAMES has the ability to display spatial information, then discussions will be held regarding how to best transfer the Alaska Fire and Fuels Research Map to FRAMES.

REFERENCES

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- Viereck, L.A. and L.A. Schandelmeier. 1980. Effects of fire in Alaska and adjacent Canada: a literature review. BLM-Alaska Technical Report BLM/AK/TR-80/06. USDI Bureau of Land Management, Alaska State Office. Anchorage, Alaska. 124 p.
- Williams, G.W. (compiler). 2005. References on the American Indian use of fire in ecosystems. Report prepared for the USDA Forest Service, Washington, DC. 129 p.
- Zogas, K. and E.H. Holsten. 2002. Bibliography/Alaska Region Forest Health Protection 1919-2001. Technical Report R10-TP-107. USDA Forest Service, Forest Health Protection State and Private Forestry. Anchorage, Alaska. 136 p.

APPENDICES

Appendices 1 and 2 are attached below. Listed in the appendices are the Alaska-related projects (funded by the JFSP and by other sources, respectively) that have information posted on FIREHouse. Highlighted JFSP projects are specific to Alaska.

Appendix 1. Alaska-related JFSP projects with information posted on FIREHouse (highlighted projects are specific to Alaska).

Proposal ID	Proposal Title	FIREHouse Posting Title
03-4-2-06	A Regional Information Node for Fire Science in the Pacific Northwest	<i>(this funded the initial development of FIREHouse)</i>
05-4-2-03	Expanding FIREHouse (the Northwest Fire Research Clearinghouse) to Alaska	Alaska Fire and Fuels Research Map Alaska Fire Effects Reference Database
98-1-1-05	Photo Series for Major Natural Fuel Types of the United States – Phase II	Natural Fuels Photo Series and the Digital Photo Series
98-1-1-06	Application of a Fuel Characterization System for Major Fuel Types of the Contiguous U.S. and AK	Fuel Characteristic Classification System (FCCS)
98-1-4-14	Assessing values of air quality and visibility at risk from wildland fire	Ventilation Climate Information System (VCIS): A Management Tool for Smoke and Other Pollutants
98-1-8-01	Development, sensitivity testing, and retrospective application of the fire effects tradeoff model (FETM)	Fire Effects Tradeoff Model (FETM)
98-1-8-02	Fire Modeling for Fuel and Smoke Assessment	BehavePlus Fire Area Simulator (FARSITE) FlamMap
98-1-8-03	A national fire effect prediction model---revision of the first order fire effects prediction model (FOFEM)	First Order Fire Effects Model (FOFEM)
98-1-8-06	A risk-based comparison of potential fuel treatment trade-off models. (Amended to add a Kenai Borough site in Alaska.)	Fire Effects Tradeoff Model (FETM)
98-1-9-05	Implementation of an improved Emission Production Model (EPM)	Fire Emission Production Simulator (FEPS)
98-1-9-06	Modification and validation of fuel consumption models for shrub and forested lands in the SW, PNW, Rockies, Midwest, SE, and AK	CONSUME
98-S-1	Proposal for completion of the Rainbow Series, and Reprint Effects of Fire on Fauna volume of the Rainbow Series	The Rainbow Series
00-1-3-19	Monitoring fire effects at multiple scales: Integrating standardized field data collection with remote sensing to assess fire effects	Fire Effects Monitoring and Inventory Protocol (FIREMON)
00-2-34	Fuels treatment demonstration sites in the Boreal Forests of Interior Alaska	Fuels Treatment Demonstration Sites in the Boreal Forests of Interior Alaska
01-1-1-02	Development of a computer model for management of fuels, human-fire interactions, and wildland fire in the Boreal Forest of Alaska	Boreal ALFRESCO (Alaska Frame Based Ecosystem Code) Interactions Among Climate, Fire and Vegetation in the Alaskan Boreal Forest
01-1-3-21	Cumulative effects of fuel management on landscape-scale fire behavior and effects	Fire Area Simulator (FARSITE)
01-1-4-07	The Use of High Resolution Remotely Sensed Data in Estimating Crown Fire Behavior Variables	Using High Resolution Remotely Sensed Data to Estimate Crown Fire Behavior Variables, Pre-Fire Fuels Loading, and Burn Intensity
01-1-7-02	Photo Series for Major Natural Fuel Types of the United States – Phase III	Natural Fuels Photo Series and the Digital Photo Series
01-S-02	Symposia on Fire and Forest Meteorology	Symposia on Fire and Forest Meteorology
01-S-05	Publish the "Fire and Invasives" concurrent session from Fire Conference 2000: The First National Congress on Fire Ecology, Prevention, and Management	International Congresses on Fire Ecology and Management
03-1-3-08	Forest Floor Consumption and Smoke Characterization in Boreal Forested Fuelbed Types of Alaska	CONSUME
03-2-1-02	Assessing the Causes, Consequences and Spatial Variability of Burn Severity: A Rapid Response Proposal	Assessing the Causes, Consequences and Spatial Variability of Burn Severity
03-2-1-04	Modeling Surface Winds in Complex Terrain for Wildland Fire Incident Support	Fire Area Simulator (FARSITE)

Appendix 1 (continued). Alaska-related JFSP projects with information posted on FIREHouse (highlighted projects are specific to Alaska).

Proposal ID	Proposal Title	FIREHouse Posting Title
03-2-1-04	Modeling Surface Winds in Complex Terrain for Wildland Fire Incident Support	Fire Area Simulator (FARSITE)
03-4-2-05	Strengthening Application of the Ventilation Climate Information System (VCIS) for Multiple-Scale Planning, Documentation, and Risk Assessment	Ventilation Climate Information System (VCIS): A Management Tool for Smoke and Other Pollutants
03-4-2-16	Assessing the Risk of Decision Making Related to Uncharacteristic Wildfires: A 2003 Symposium	Conference on Risk Assessment for Decision-Making Related to Uncharacteristic Wildfire
04-1-2-02	Mapping and Analysis of Pre-Fire Fuels Loading and Burn Intensity Using Pre-Fire Interferometric Synthetic Aperture Radar Data	Using High Resolution Remotely Sensed Data to Estimate Crown Fire Behavior Variables, Pre-Fire Fuels Loading, and Burn Intensity
04-2-1-71	Quality assurance of weather data and the probability of favorable weather for prescribed fire in Alaska	Automated Alaska Weather Station Quality Assurance/WIMS Input Program
04-2-1-96	Refinement and development of fire management decision support models through field assessment of relationships between stand characteristics, fire behavior and burn severity	Refinement and Development of Fire Management Decision Support Models for Use in Alaska's Boreal Forest
04-4-1-02	Digital Photo Series	Natural Fuels Photo Series and the Digital Photo Series
04-4-1-08	Publication of literature synthesis entitled 'Effects of Fire on Nonnative Invasive Plants' as the 6th volume in the General Technical Report Series, 'Wildland Fire in Ecosystems'	The Rainbow Series
04-4-1-19	Training Package for Land Management Tools Sponsored by the JFSP: Photo Series, FCCS, Consume 3.0, and FEPS	CONSUME Fuel Characteristic Classification System (FCCS) Natural Fuels Photo Series and the Digital Photo Series
05-1-2-06	Managing Fire With Fire in Alaskan Black Spruce Forests: Impacts of Fire Severity on Successional Trajectory and Future Forest Flammability	Managing Fire with Fire in Alaskan Black Spruce Forests: Impacts of Fire Severity on Successional Trajectory and Future Forest Flammability
05-2-1-07	Post-Fire Studies Supporting Computer-Assisted Management of Fire and Fuels During a Regime of Changing Climate in the Alaskan Boreal Forest	Boreal ALFRESCO (Alaska Frame Based Ecosystem Code)
05-4-1-14	Field Training Workshops for Demonstrating the Use of the JFSP Sponsored Photo Series and Fuel Characteristics Classification System	CONSUME Fuel Characteristic Classification System (FCCS) Natural Fuels Photo Series and the Digital Photo Series
05-4-1-23	BehavePlus and FlamMap Technology Transfer	BehavePlus FlamMap
05-S-09	1st Fire Behavior and Fuels Conference	Fire Behavior and Fuels Conferences
06-2-1-39	Quantifying the Effects of Fuels Reduction Treatments on Fire Behavior and Post-fire Vegetation Dynamics	Quantifying the Effects of Fuels Reduction Treatments on Fire Behavior and Post-fire Vegetation Dynamics
06-3-1-23	Reconstructing Fire Regimes in Tundra Ecosystems to Inform a Management-Oriented Ecosystem Model	Reconstructing Fire Regimes in Tundra Ecosystems to Inform a Management-Oriented Ecosystem Model
06-3-1-26	Compiling, Synthesizing and Analyzing Existing Boreal Forest Fire History Data in Alaska	Compiling, Synthesizing and Analyzing Existing Boreal Forest Fire History Data in Alaska
06-S-05	Re-print Effects of Fire on Soil and Water volume of Rainbow Series	The Rainbow Series

Appendix 2. Other Alaska-related projects with information posted on FIREHouse.

FIREHouse Posting Title
Alaska Northern Forest Cooperative: Summaries of Management and Research Activities Related to Alaska's Boreal Forests
All Lands / All Hands Action Plan: Reducing Wildland Fire Risk on Alaska's Kenai Peninsula
Anchorage Wildfire Program
Applying National Burn Severity Mapping Methodology to National Wildlife Refuge Lands in Alaska
Applying the Canadian Forest Fire Danger Rating System (CFFDRS) to Alaskan Ecosystems
Climate, Fire and Forest Growth in Alaska
Comparison of Crown Fire Modeling Systems Used in Three Fire Management Applications
Crown Fire Initiation and Spread (CFIS) Software System
Fire History Disturbance Study of the Kenai Peninsula Mountainous Portion of the Chugach National Forest
Fire Succession Mapping and Moose Browse in Denali National Park and Preserve
Fire-Mediated Changes in the Arctic System: Interactions of Changing Climate and Human Activities
Forest Fire Effects Monitoring in Alaska's National Parks
Forest Floor Moisture Content and Fire Danger Indices in Alaska
FROSTFIRE Boreal Fire Experiment
Hazard Fuels Monitoring in Alaska's National Parks
Historical Fire Regimes of the Kenai Peninsula, Alaska
Individual Tree Volume Equations for Alaska Tree Species
International Crown Fire Modeling Experiment (ICFME)
Invasive Plant Monitoring on Five National Wildlife Refuges in Alaska Following the 2004 Wildfire Season
LANDFIRE
Late Glacial and Holocene Fire History in the Southcentral Brooks Range, Alaska: Direct and Indirect Impacts of Climatic Change on Fire Regimes
Native Village of Tanacross Hazard Fuel Reduction Project, 2001-2002
NEXUS: A Crown Fire Hazard Assessment System
Quantifying Charcoal Deposition in Lake Sediment Following the 2005 King County Creek Fire, Kenai National Wildlife Refuge, Alaska
Spruce Beetles and Forest Ecosystems of South-Central Alaska
Standard Fire Behavior Fuel Models: A Comprehensive Set for Use with Rothermel's Surface Fire Spread Model
Symposium on the Ecology and Management of Mixed Severity Fire Regimes
Tanana Chiefs Conference Fuels Reduction and Forest Inventory Projects
Treearch: USDA Forest Service Research Publications
Tundra Fire Effects Monitoring in Alaska's National Parks