



National Park Service  
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Division of Fire & Aviation

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## Fire Management Program Center

*Versatility Promotes Multiple Monitoring Applications: NPS Fire Ecology Assessment Tool (FEAT) supports other natural resource monitoring applications.*

The National Park Service's Fire Ecology Program developed the Fire Ecology Assessment Tool (FEAT) to support the integration of fire effects monitoring with fire and land management planning objectives. Already in use within the Park Service, the tool also supports applications beyond the fire community. For example, the Shoshone-Bannock tribe is taking advantage of FEAT's built-in flexibility to develop an integrated wetlands monitoring system for the Duck Valley Reservation in Idaho. This project uses the capabilities of the Protocol Manager module to define and document wetlands field sampling methods that will be integrated with time-series Landsat imagery of the project area.

Other non-fire applications are underway as well. Working cooperatively with the Park Service, the Bureau of Reclamation employs FEAT's Protocol Manager to demonstrate the integrated documentation and reporting of Pacific salmon monitoring data collected from various federal and state agencies, including the U.S. Environmental Protection Agency, the U.S. Forest Service, and the Oregon Department of Environmental Quality. In this application, the Bureau uses the Protocol Manager to develop and manage protocol metadata and to support the conversion of data from different databases to a single common data structure.



## FEAT System Design

FEAT employs a modular architecture, consisting of a core desktop database module, field PDA module, spatial module, and Protocol Manager module. A significant feature is FEAT's ability to support new or modified field data collection protocols, which is essential in addressing the full range of ecological and sampling conditions present throughout the Park Service, and in developing new sampling methodologies.

FEAT's spatial capabilities support the integration of field data for sampling allocation and analysis with other information, such as land management planning objectives and fire history. The spatial module supports spatial stratified sampling and spatially based reporting and analysis of sampling results. The Protocol Manager, a dynamic data dictionary that describes the data structure, scientific basis, and metadata contained in a FEAT monitoring

database, builds the database attributes for each protocol or field method. The Protocol Manager automatically generates field data entry forms for both the FEAT desktop and PDA modules. It identifies the entity that developed the specific methodology and bibliographic references.

In combination, the Protocol Manager and the spatial module allow users to access and analyze field data based on location. Data access can be targeted to a specific field method or protocols, or the system can be used to review data that has been collected within a specified area. The inverse of the area search can be used to show where a specific set, or protocol, of data has been collected. The integration of spatial information with the dynamics of the Protocol Manager promotes both multidisciplinary and multi-agency use of monitoring data.



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## FEAT

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[forum.spatialdynamics.com/](http://forum.spatialdynamics.com/)

Developed for the National Park Service Fire Ecology Program, FEAT (Fire Ecology Assessment Tool) is an integrated tabular and spatial information system that supports data management and analysis for immediate and long-term monitoring and reporting of fire effects.

- ◆ Resident on desktop server; supports field data collection with PDAs
- ◆ Integrates comprehensive analytical tools
- ◆ Uses modular interface with ArcMap 9 desktop GIS
- ◆ Includes interactive Protocol Manager
- ◆ Supports FMH data collection protocols, Composite Burn Index, and others



## FIREMON

Contact: Duncan Lutes, Systems for Environmental Management, at [dlutes@fs.fed.us](mailto:dlutes@fs.fed.us)  
[www.fire.org/firemon](http://www.fire.org/firemon)

FIREMON (Fire Effects Monitoring and Inventory System) is a mature interagency fire effects monitoring system developed in cooperation with the USDA, USFS, Rocky Mountain Research Station, Missoula Fire Science Laboratory.

- ◆ Desktop application
- ◆ Includes components and instructions enabling field personnel to design monitoring projects
- ◆ Includes data summary and analysis tools

## Protocol Manager

Contact: Kim Johnson, Spatial Dynamics, at [kim@spatialdynamics.com](mailto:kim@spatialdynamics.com)  
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The Protocol Manager is an interactive database management tool that streamlines creation of new protocols and methods for data collection in the field.

- ◆ Works seamlessly with FEAT and FFI
- ◆ Uses MSDE to create and store protocol database
- ◆ Easy export to external database
- ◆ Automated forms generation for desktop PCs and PDAs
- ◆ Automated metadata support
- ◆ Currently in use for Pacific salmon recovery



For more information, visit [forum.spatialdynamics.com/](http://forum.spatialdynamics.com/) and [www.fire.org/firemon](http://www.fire.org/firemon)  
In the near future, the FFI site will be available at [frames.nbii.gov](http://frames.nbii.gov)

