**NPS**

**PROJECT SUMMARY )**

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| **Cooperative Ecosystem Studies Unit****Cooperative Agreement Modification** |
| FUNDING AGENCY:**NATIONAL PARK SERVICE** |
|  MODIFICATION NO.: **[ insert # ]** | COOPERATIVE AGREEMENT NO.:**1200-99-009** | FUNDING AMOUNT: $182,186 |
| INVESTIGATORS:Peter Fule |
| PROJECT TITLE:**[ insert title ]****Multi Century Fire Modeling** |
| EFFECTIVE DATES:August 1, 1999 – August 1, 2001 |
| PROJECT ABSTRACT:**[ insert short description of project ]****We propose to calibrate the landscape fire behavior model Farsite to accurately simulate multi-century fire regimes using long-term fire history and forest structure data, then apply the reliable model to evaluation of alternative future fuel treatments. Historic fire regime, vegetation, and climate data will be used to calibrate Farsite to stimulate multi-century fire occurrence under natural conditions (prior to grazing and fire suppression) on a pilot area in Grand Canyon National Park, supporting understanding of fire disturbance processes as an ecological reference point for management. The pilot area is an elevational transect covering multiple fuel types with both frequent surface fire and infrequent stand-replacing fire regimes. These fuels represent the major wildland fire hazards in western North America. Fuels data includes existing and new studies of forest structure and fire regime, based on standard fire monitoring plot protocols and dendroecological reconstruction, as well as landscape vegetation mapping. Through the calibration process, we will carry out sensitivity analyses of the variables influencing predisruption fire regimes to isolate the most important factors. Then using the calibrated model, we will assess fire behavior under current fuel conditions and compare the effects of possible fuel treatments including a range of prescribed burning and thinning activities. Realistic simulations of probable and extreme effects of treatments will support integration of fuels management across landscapes, Task 3 of the Joint Fire Science Program’s request for proposals. Because the proposed research is strong in both field measurements and computer simulation, it will be a useful advance toward several key national issues identified by the program, including development of cross-scale fuel inventory data, selection of treatment methods and scheduling, and providing for monitoring and evaluation.** |
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| ***List of Key Words: [Insert key words]*** |
| ***Agency Manager @ Specific Park****:**Grand Canyon National Park* |
| *Annual Report Received:**Final Report Received:**Publications on File:* |
| *This Modification is subject to all the provisions included in the Cooperative Agreement,****dated 6/22/99.*** |

*Attach any supporting material as necessary.*

[*Back to Project Summaries*](file:///Z%3A%5CNTProfile%5CPersonal%5CProjsummaries.html)