**NPS**

**PROJECT SUMMARY**

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| **Cooperative Ecosystem Studies Unit****Cooperative Agreement Modification** |
|  FUNDING AGENCY: **National Park Service** |
|  MODIFICATION NO.: | COOPERATIVE AGREEMENT NO.:**1200-99-009** |  FUNDING AMOUNT: $ **40,000** |
| INVESTIGATORS Contact Information: Dr. Abe Springer (Northern Arizona University), Drs. Mike Scott and Patrick Shafroth (USGS), John Rihs (NPS-GRCA) |
| PROJECT TITLE:**Grand Canyon Springs/Ecosystems Coupled Models**  |
|  EFFECTIVE DATES**: 12/02-1/05**  |
| PROJECT ABSTRACT:The NPS has solicted this study to better the understanding of the effects of diminished spring discharge may have on associated spring-dependent ecosystems on the South Rim. This study proposes to address this issue through a coupling of existing groundwater flow models with new surface-water routing models and conceptual ecosystem process models. This study will be a pilot study to develop the techniques and methods to predict the impacts of diminished spring discharge on the ecosystems associated with at least two minor springs on the South Rim.  |
| **Agency Representative:**Ron Hiebert, NPSResearch CoordinatorCPCESUNorthern Arizona UniversityP.O. Box 5765Flagstaff, AZ 86011-5765Tel: (928) 523-0877Fax: (928) 520-8223Ron.Hiebert@nau.edu  | **Agency Administration Representative**Mary EstepBudget AssistantIntermountain Support OfficeDenver, CO 80225-0287Tel: (303) 969-2750Mary\_Estep@nps.gov | **Investigator:**Abe Springer, Ph.D.Associate Professor, Department of Geology, Northern Arizona UniversityP.O. Box 4099Flagstaff, AZ 86011ph (928) 523-7198fax (928) 523-9220  | **Partner Admin. Contact:**Claudette PiperGrant and Contract AdministratorNorthern Arizona UniversityBox 4130Babbitt Administration Building #51Knoles DriveFlagstaff, AZ 86011Tel: 928-523-1656FAX: 928-523-1075  |
| ***List of Key Words: Grand Canyon, Groundwater, Surface Water, Tributary, Model, Hydrology***  |
| ***Agency Manager/Technical Representative from National Park �****The Senior Scientist or Park Hydrologist,*John Robert RihsPark Hydrologist & Cave Resource LeadGrand Canyon National ParkP.O. Box 129Grand Canyon, AZ., 86023Phone: 928.638.7905, Fax: 928.638.7755http://www.nps.gov/grca/water |
| *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.***  |
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*Attach any supporting material as necessary.*