

3.5 - Data Coordinator

- Anthony Caprio, Science and Natural Resources Management, SEKI

The data coordinator has made contacts with and organized meetings with a number of graduate students about possible research locations and topics for graduate research projects. Three graduate students began research projects within the East Fork watershed during 1996. One new graduate student project was initiated in the watershed during the summer of 1997.

Analysis of Red Fir Forest Regeneration and Fire: D. Newburn, UC Berkeley. Masters thesis project.

The data coordinator provided coordination between FMO, PIO, and field crews. Help was also provided to field crews when needed and suggestions on sampling locations or procedures were made. A continuing effort is being made to locate and document past resource or research information, data, or plots sites within the East Fork drainage and obtain or document the location of the data for these sites. Considerable time has been spent in reviewing and analyzing data from various MKRRP projects, summarizing activities of all projects, and producing an annual report. Information and graphics have been developed and provided to the Public Information Office, Superintendents Office, Interpretive Division, and Fire Management Office about resource and research studies or results that are applicable to the MKRRP and public information.

Talks and presentations were given to a number of groups on subjects related to the MKRRP. These include: USDA Forest Service Eldorado National Forest meeting on timber and ecosystem management; Society of American Foresters - Northern California Chapter field trip, presentation to a meeting by Sequoia National Forest and Assistant Regional Foresters on giant sequoia management, and a presentation at the Conference on Fire in California Ecosystem. Joint interpretive walks and evening talks with the Mineral King/Silver City interpretive staff were also given during the summer. These provided information to the public about fire ecology and fire regimes in East Fork ecosystems and how these interrelate with the park's burn program and its fuel and smoke issues. Field trips to the MKRRP area have also been given to numerous park staff (interpreters, visiting personnel, and researchers), the Forest Service, environmental groups, and representatives of the local timber industry interested in learning about the burn project and seeing the MKRRP area.

FIRE/GIS MODEL

Additionally, the data coordinator was involved with input of ideas and data into the GIS/Fire modeling effort were made during the past year. This involved the development of an "ecological needs" model (with MaryBeth Keifer - NPS and Linda Mutch - BRD) to provide a quantitative rating scheme for the need to burn specific vegetation types based on time-since-last burn and pre-Euroamerican fire frequency. Fire history knowledge was summarized from within park locations and non-park areas (data were obtained from the literature and recent sampling within the MKRRP area) for the various park vegetation types. Quality of these data were also rated to provide some measure of reliability. This GIS effort has produced some extremely useful maps for management and resource planning within the Parks (Caprio et al. 1997)

Using the same fire history information a fire regime map for all portions of the parks was also

developed and evaluated for quality (Caprio and Lineback in prep). This provided estimates of pre-Euroamerican fire frequencies within the major vegetation classes within the parks based on our current knowledge. The evaluations considered criteria such as the quality of our knowledge from within each of the parks major vegetation classes, by aspects, and by location within the parks. Broad fire frequency regime classes were: very high (<6 yr), high (6-15 yr), moderate (16-25 yr), low (26-100), and very low (>100 yr). These estimates of fire return intervals are being utilized by fire managers to look at and plan burn schedules for locations within the park over long periods. It has provided information on where current and future effort and plans need to be made and where no effort is needed resulting in more efficient resource use.

EAST FORK PLOT BURN CRITERIA DATABASE

To facilitate the burn planning and field operations an information database on known study plots in the East Fork watershed was developed. The database contains “burn criteria” (specifications by principle investigators on desired burn conditions or type for their study plots) for all the plots. The purpose is to make this data available during burn planning and field operations to help alleviate problems in how and when plots are burned. This data was developed within a GIS frame to provide both maps and linked information database. This GIS/database information could be used as an extension to the GIS plot location database that has been developed for the parks by Pat Lineback (SEKI GIS coordinator) and MaryBeth Keifer (SEKI Ecologist).

An ARCVIEW project was developed that displayed all known plots in the East Fork watershed that have precise UTM coordinates and current “burn criteria”. When the project is opened it will bring up a map of the watershed showing plots listed in the current database (**Fig. 3.5-1**). It will also show burn segments, roads, trails, and hydrology (optional). Using the "information" tool within ARCVIEW any plot point on the map can be opened and a window listing information about that plot accessed. This information includes study type, investigator, who to contact about the plot, phone number, UTM coordinates, and a summary of the burn criteria (or lack there of). The criteria are given as "preferred burn conditions", "suitable burn conditions", and "undesirable burn conditions". The burn condition criteria are summarized and grouped into four categories which are also color coded on the ARCVIEW map. Red (BURN_KEY=4 in the database) are plots with the most specific criteria, cyan (light blue) (BURN_KEY=3) are plots with limited burn criteria, green (BURN_KEY=2) are plots without burn criteria but disturbance (line construction etc.) needs to be avoided, and dark blue (BURN_KEY=1) are plots without burn criteria and which will not be adversely affected by disturbance.

Criteria Class & Map Color	Criteria
BURN_KEY=1 (dark blue)	- no criteria, sample sites will not be revisited
BURN_KEY=2 (green)	- disturbance of plots should be avoided
BURN_KEY=3 (cyan)	- <i>limited</i> burn criteria plus disturbance of plots should be avoided
BURN_KEY=4 (red)	- <i>specific</i> burn criteria plus disturbance of plots should be avoided

There have been some questions about what the differences in specific versus limited criteria? The main difference are that the former are usually plots where intense sampling has been undertaken with the result that only a few plots can be installed or sampled. Thus, the “value” of a plot is greater and there is more concern on how the plot area burns. Adding new plots if one is burned under poor

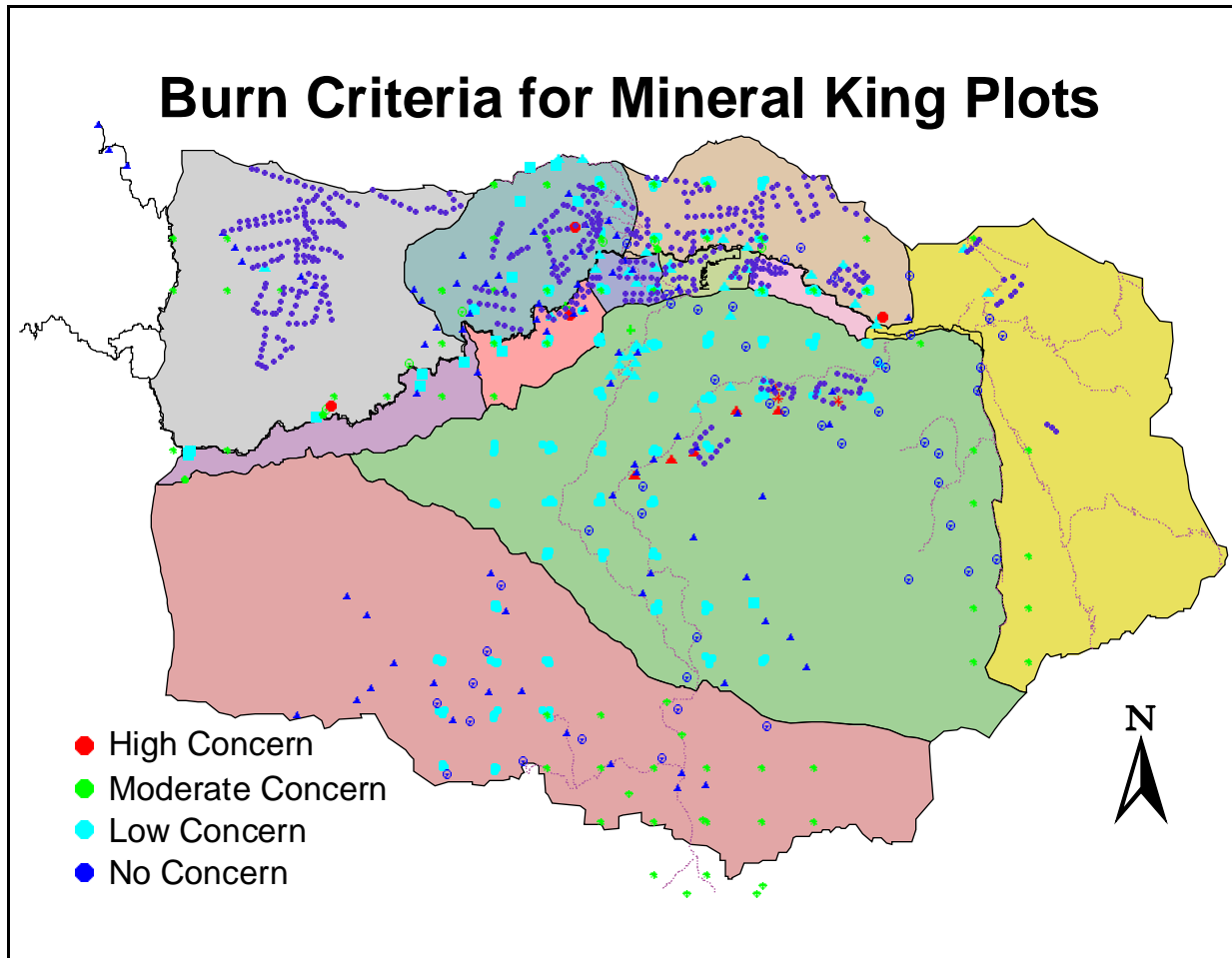


Figure 3.5-1. Map of all plots installed in the East Fork drainage and the burn criteria specified for each plot by the principle investigators. Plots are color coded depending on the degree of concern over how they are burned. Burn segments are shown color coded in the background.

conditions is not an option. These include the small mammal plots, David Newburn's red fir plots, and the Pitcher plots.

Information on plot size, how they are marked (rebar etc.), and if trees are tagged within the plot are also included in the database. This information could be used if a plot needs to be located.

The most common burn criteria specification for the plots is to not be disturbed. The number of plots in the red class (*specific burn criteria*) is actually quite small with 2/3 of these in the Tar Gap Segment (segment #10) above the Tar Gap Trail (Dave Newburn may be adding several more in the area early this summer).