A NATURAL RESOURCE CONDITION ASSESSMENT FOR SEQUOIA AND KINGS CANYON NATIONAL PARKS: A POSTER DESCRIBING A FORTHCOMING <u>PUBLICATION (41)</u> Eric M. Winford¹, Charisse Sydoriak¹, Koren Nydick¹, and John Battles² ¹Sequoia and Kings Canyon National Parks ²University of California, Berkeley

Sequoia and Kings Canyon National Parks hosts a diversity of landscapes and climates that give rise to a rich diversity of plants, animals and ecosystems that interact as functional and regionally-important systems. The parks protect 865,964 acres of wilderness land in one of 25 globally-recognized hotspots of endemic biodiversity. The parks also have been designated as a unit of the International Man and the Biosphere Program. High elevations within the parks capture precipitation that is used downstream by one of the largest agricultural regions of the U.S. Thus, the ecosystems SEKI protects are of regional and global ecological and economic significance. The Natural Resources Condition Assessment (NRCA) is a spatial analysis of the condition of multiple resources/stressors across the parks' landscape. The NRCA provides a scientifically credible assessment that informs management strategies like the Resource Stewardship Strategy. While it is designed to meet internal park needs, the NRCA follows national NPS guide lines/standards for study design and reporting products common to each of the ~270 parks. Six human stressors impinge on resource condition in the Sierra Nevada in general, and SEKI specifically: 1) Human-use/fragmentation, 2) Climatic change, 3) Air pollution, 4) Altered fire regime, 5) Invasive plants/animals, 6) Exotic pests/pathogens. The focal resources selected for analysis include, within ecological groupings: Landscape Dimension (Landscape Context), Chemical/Physical (Air Quality, Water Quality, Water Quantity, Glaciers, Soils, Erosion/Mass Wasting), Biological-Plants (Foothills Vegetation, Intact Forest, Giant Sequoias, Five-needle Pine, Meadows, Sensitive Plants, Alpine Ecosystems), Biological-Animals (Birds, Cave Invertebrates, Bats, Sensitive Animals), Biological-Comprehensive (Biodiversity). The condition of resources in SEKI is mixed. In general, the most remote and/or the highest elevation areas of the parks have the highest ecological integrity. These are the farthest away from the human stressors of air pollution, plant invasion, and pests/pathogens. The area of lowest integrity is the Kaweah River basin. Here, air pollution is the highest, snowmelt and streamflow timing are most accelerated by warming temperatures, human visitation is highest, invasive plants, pests and pathogen impacts are highest, and here is where fire frequency is furthest from its historic frequency. The Kaweah River basin is the parks' hotspot of biodiversity, particularly for animals. Here, sequoia groves and caves are abundant, and the largest tract of protected Sierra Nevada foothill vegetation lies. The combination of high stressor impact and high biodiversity found in the Kaweah River basin highlight the importance of the NRCA in providing the basis for planning efforts.

Key words: resource condition assessment, Sequoia and Kings Canyon National Parks, Stressors