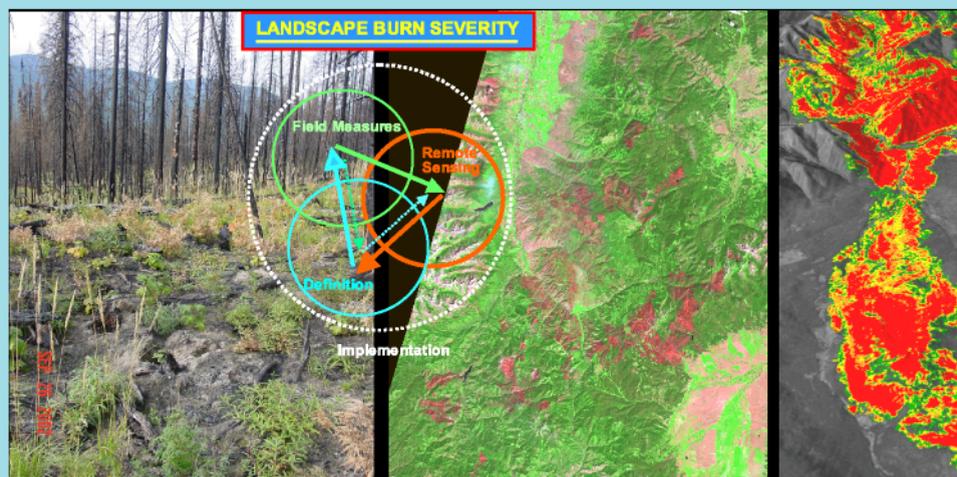


Abstract

In 1999, Key and Benson presented a new remote sensing measure called the Normalized Burn Ratio, and a field sampling protocol called the Composite Burn Index. These acted together as tools for landscape assessment of fire effects, quantifying burn severity over broad regions from 30-meter Landsat data. Various ecosystems were examined to make techniques as transportable as possible. By early 2001, and with support from national leadership in the NPS fire community, we began working with the USGS EROS Data Center on means to produce, archive, and distribute burn mapping and severity assessment for NPS fires across the country. Implementation on this national level ensued throughout the following two years. Lessons learned along that path may be relevant to other endeavors in fire science, as research is tested and put into practice.

Initial stages:

1) *Research precedes implementation, designing in portability and feasibility. A small working group with clearly defined purpose and buy-in from the field is critical. People need to be engaged who understand the problem and recognize the potential value and usefulness of products.*



For effective production, distribution, and validation of burn severity data, three key elements are important:

5) *field personnel geographically distributed to tap local and regional expertise;*
 For example, Fire Monitors, Fire Ecologists, Fire GIS Specialists.



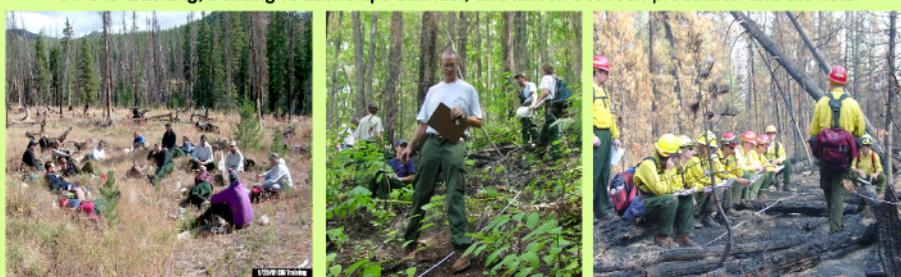
Burn Severity work is done by individuals around the Nation. These folks represent Montana, New Mexico, Colorado, Utah, Wyoming, California, Tennessee, Virginia, South Dakota, Florida. Most represent NPS, a few from USFS and USGS.

6) *a centralized facility capable of large-scale production; and*



7) *continued oversight, coordination and tech transfer from developers.*

On-site teaching, building relationships that last, and liaison between production and the field.

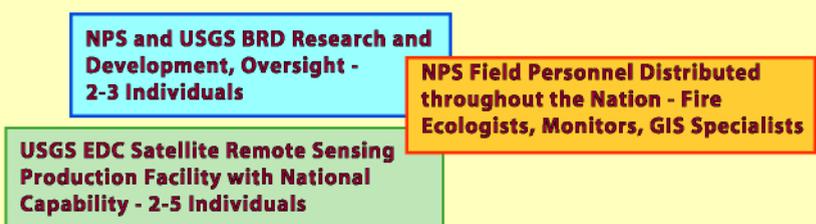


As research is implemented, other important principles emerge:

- 2) *build programs from the field up;*
- 3) *maintain relatively small close-knit core working groups; and*
- 4) *be responsive to needs of the field, encourage field participation in program development.*

Joint NPS/USGS National Burn Severity Project

Components Working Together

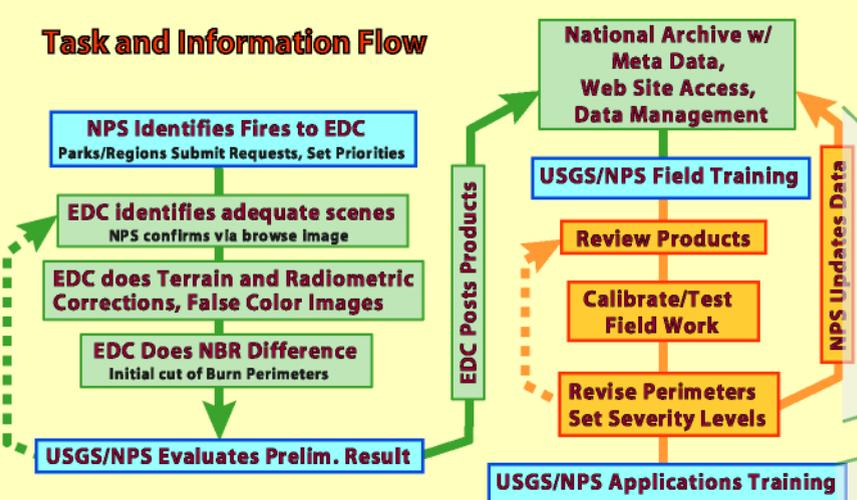


As a National program evolves, some final issues prove vital:

8) *digital archive and distribution of data and metadata with flexible web site design, and access tailored to needs of the field;*

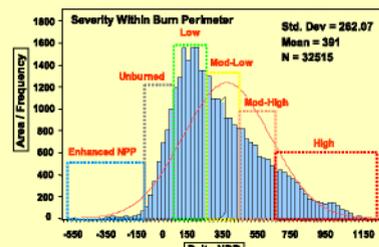
9) *institutionalized feed back between the users and program managers; and*
 10) *continued education about products, potential applications, and what can be gained from product use.*

Task and Information Flow



National Fire Plan Operations and Reporting System (NFPORS) Requirement:

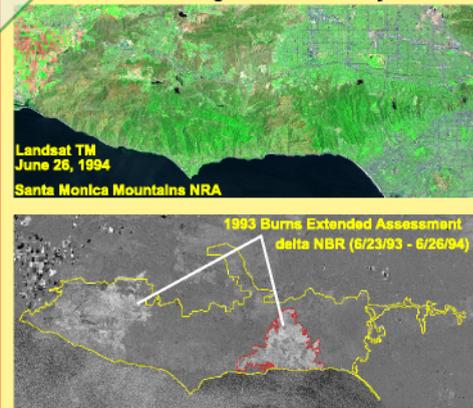
Report total and "footprint" areas actually treated through the federal hazardous fuels reduction program, and document resulting condition class changes.



Analysis and Reporting. NPS Uses Burn Severity Data for Management and Research

- Fire Atlas — past, present and future burns
- Summary reporting by fire year, R_x planning
- Update fuel models, evaluate risks (before fire)
- Hazard and ecological assessment (after fire)
- Research and modeling - Fire behavior
- Visualization

Reconstructing Past Burn Severity.



TWO APPLICATIONS, Relative to Time Since Fire.



Trans-Boundary, Multi-Fire, Regional Burn Severity.

