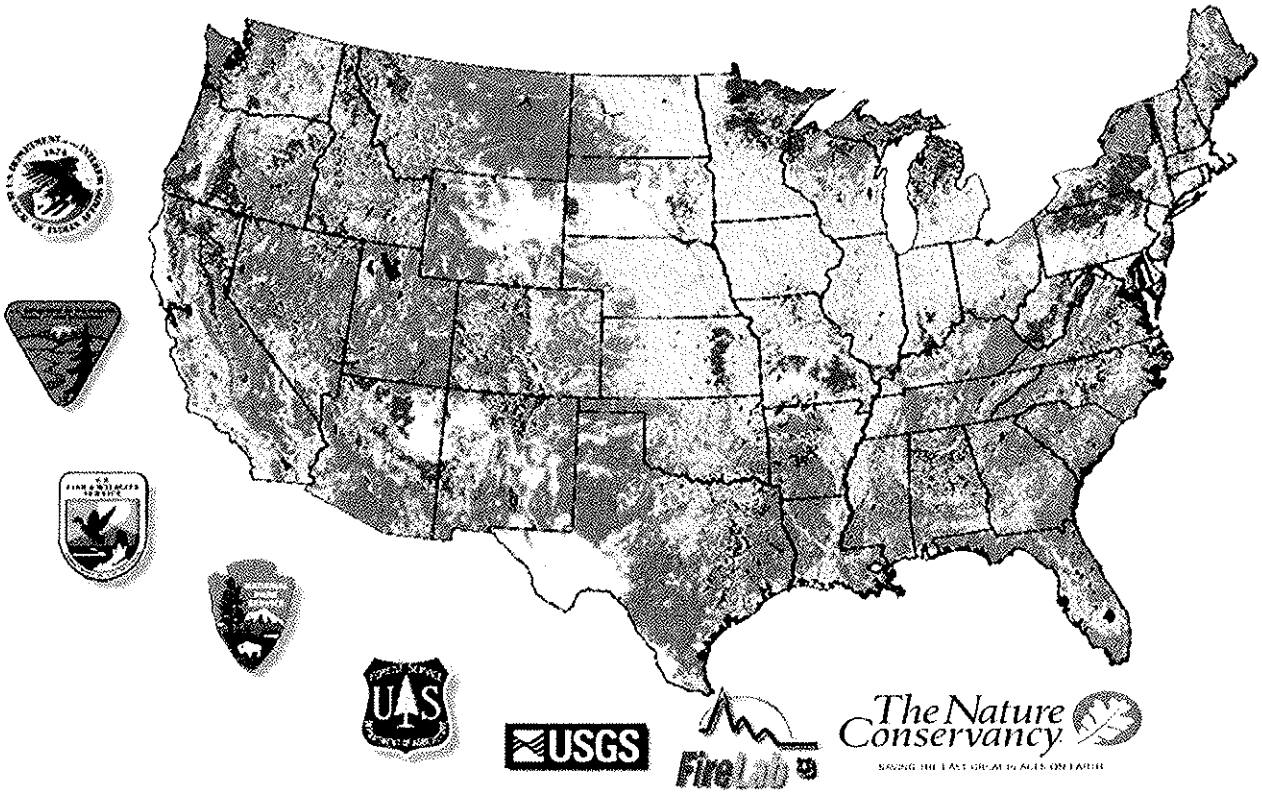
INTERAGENCY FIRE REGIME CONDITION CLASS GUIDEBOOK



VERSION 1.2

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Table 3-15 – Natural fire regime groups for assessment of departure from reference condition range and variability at the landscape scale.

Fire regime group	Fire frequency (MFI)	Severity	Description
I	0 – 35+ years, frequent	Surface/ mixed	Open park-like, savannah grassland, or mosaic forest, woodland, or shrub structures maintained by frequent surface or mixed severity fires; surface fires typically burn through a forest understory removing fire intolerant species and small size classes and removing < 25% of the upper layer, thus maintaining an open single layer overstory of relatively large trees; mosaic fires create a mosaic of different age post-fire savannah forest, woodlands, or open shrub patches by leaving > 25% of the upper layer (generally < 40 hectares (100 acres)). Interval can range up to 50 years in systems with high variation in ignition frequency.
II	0 – 35+ years, frequent	Replace-ment	Shrub or grasslands maintained or cycled by frequent fire that removes > 75% of the upper layer; fires kill non-sprouting shrubs such as sagebrush which typically regenerate and become dominant within 10-15 years; fires remove tops of sprouting shrubs and grass, such as mesquite, chaparral, or bunchgrass, which typically resprout and dominate within 5 years; fires typically kill most tree regeneration such as juniper, pinyon pine, ponderosa pine, Douglas-fir, or lodgepole pine. Interval can range up to 50 years in systems with high variation in ignition frequency.
III	35 – 100+ years-, infrequent	Mixed	Mosaic of different age post-fire open forest, early to mid-seral forest structural stages, and shrub or herb dominated patches (generally < 40 hectares (100 acres)) maintained or cycled by infrequent fire that removes 25-75% of the upper layer. Interval can range up to 200 in systems with high temporal variability.
IV	35 – 100+ years, less infrequent	Replace-ment	Large patches (generally > 40 hectares (100 acres)) of similar age post-fire shrub or herb dominated structures or early to mid-seral forest cycled by infrequent fire that removes >75% of the upper layer. Interval can range up to 200 in systems with high temporal variability.
V	> 100-200 years, rare	Replace-ment	Large patches (generally > 40 hectares (100 acres)) of similar age post-fire shrub or herb dominated structures or early to mid to late seral forest cycled by infrequent fire that removes > 75% of the upper layer.

drawbacks, however, notably in the inherent speculation on seral stage composition, fire frequency, and fire severity. Moreover, we are uncertain of what will be sustainable in the future.

Table 2-2 – Comparison of the Present Natural Range of Variation (PNRV) and Historical Range of Variation (HRV) approaches.

	Historical Range of Variation (HRV)	Present Natural Range of Variation (PNRV)
Time frame	Prior to Euro-American settlement (date varies). Must define the time period (such as 400 years prior and up to settlement).	Current and near future (approximately 100 years).
Climate	Historic climate.	Current climate and modeled future climatic trends.
Human influences	Includes the influence of Native American management activities on the affected landscape patterns. (Prescribed burns and wildfires indistinguishable from fire scar data.)	Incorporates the legacy of Native American activities because much of the current native plant diversity reflects those activities.
Strengths	Empirical data is available from dendrochronology, historic photos, historic surveys, and other historical ecology techniques.	May provide the most realistic baseline from which to assess landscape change and departure Modeling can integrate expert judgment and current/future simulations with historical empirical data.
Weaknesses	Reference conditions for landscape assessments would be based on a climate that no longer exists. Rapid warming as the Little Ice Age ended may have created short-lived fire regimes that cannot be confidently extrapolated either forward or backward in time. How do we know what was sustainable under past conditions? Even a 400-year pre-settlement period is shorter than the life span of many tree species.	Data are often lacking on vegetation state trends. It may be difficult to predict state mix on the landscape. Problem of "shifting baselines:" The possible trap of defining what is there today or what we desire as a baseline that may not represent natural or even functional conditions. Selecting reference areas can be difficult, particularly in landscapes highly altered by humans. How do we know what will be sustainable under future conditions? 100 years may be to short for some vegetation state changes to occur.
Possible refinements	Timeframe can vary and must be defined.	Option to include introduced organisms (such as cheatgrass, blister rust, chestnut blight, feral horses) that have naturalized. What if control methods are developed in the future?
Interpretive issues	HRV is based on at least some limited data about past conditions plus modeling. It therefore may be less speculative than NRV. HRV requires careful examination of the available data and comparison of past and present climates.	NRV is based primarily on modeling because we have no data on future conditions. It therefore may be more speculative than HRV. NRV requires careful examination of model assumptions and accurate knowledge of species dynamics.

Fire Regime Condition Class (FRCC)

[from "Interagency Fire Regime Condition Class Guidebook", version 1.2, May 2005]

FRCC's measure/indicate "the degree of departure from reference conditions, possibly resulting in changes to key ecosystem components, such as:

- vegetation characteristics (e.g., species composition, stand structure, stand age, canopy closure, mosaic pattern);
- fuel composition;
- fire frequency, severity and pattern;
- insect & disease mortality"

Possible causes of departure:

- fire suppression, timber harvesting, livestock grazing, introduction/establishment of invasive species (plants, insects, disease).

There are 3 FRCC's, based on departure from "the central tendency of the reference conditions*"

I – no or low departure;

II – moderate departure;

III – high departure.

*Reference conditions have been identified and descriptions developed for the western U.S. (and other areas) concerning:

- vegetation-fuel composition;
- fire frequency;
- fire severity.

Worksheet: From field 103, categorize the departure value for your project area into a condition class:

1 = ≤ 33 percent (within the reference condition range of variability)

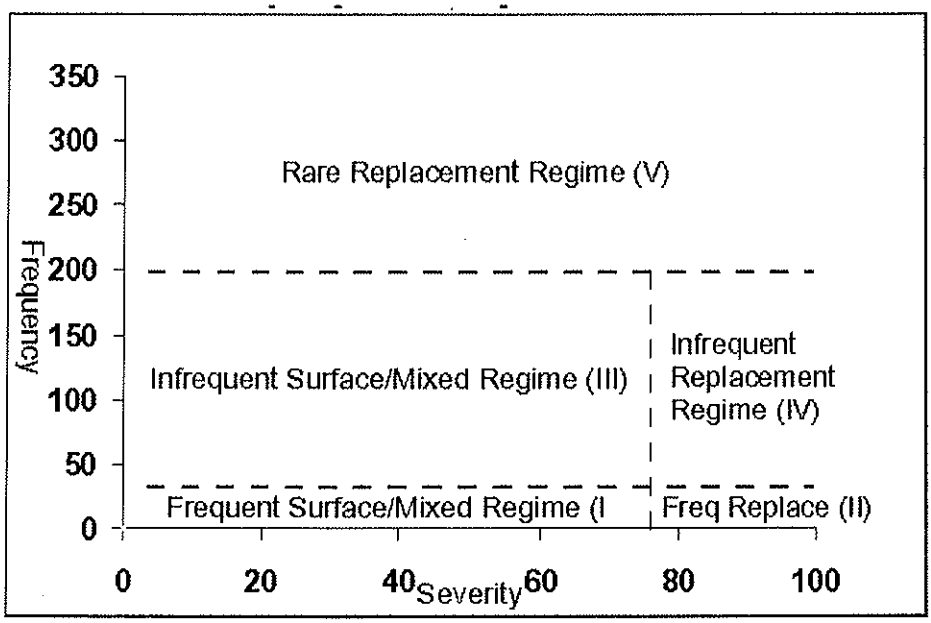
2 = > 33 percent to ≤ 66 percent (moderate departure)

3 = > 66 percent (high departure)

Completing the Standard Landscape Worksheet Graphs

Worksheet: Follow the procedures below to graph your results

Figure 3-4 – Fire regime classification graph.



Fire Regime Classification graph

(Note: this graph can be used for individual stratum as well as for your overall project area.)

Step 1. On the Y-axis, place a mark representing your project area's Fire Frequency (from field 93).

Step 2. On the X-axis, mark your project area's Fire Severity (from field 96).