NFPORS

National Fire Plan Operations and Reporting System

Treatment Unit Definitions

This paper provides background on the use of the National Fire Plan Operations and Reporting System (NFPORS) to track and report accomplishments of the National Fire Plan. It defines the term Treatment Unit and provides descriptions of its components. In addition, it outlines the importance of adhering to this definition.

Issue

Fundamental requirements of NFPORS include the ability to report total and "footprint" areas planned and actually treated through the federal hazardous fuels reduction program and to document resulting condition class changes.

Treatment Area is an area of land, measured in acres, within a defined perimeter that mechanical, prescribed fire and other treatments (e.g. chemical, biological and grazing) are applied that meet the objectives of the federal hazardous fuels reduction program. This area may include small or insignificant islands that were skipped or protected for various reasons.

Total Treatment Area is the sum of treatment areas for all hazardous fuels reduction treatments – "treated acres." Treatment areas that are treated multiple times to reach the final hazardous fuels reduction objective are counted each time they are treated.

Footprint Area is the sum of the spatial union of treatment areas. Footprint area represents the total area within the landscape where hazardous fuels are reduced.

Confusion exists regarding the data entry requirements necessary for distinguishing footprint area from total treatment area. This paper describes changes to NFPORS terminology, presents expanded definitions and outlines business rules to eliminate confusion and improve data quality.

Alternate Terminology

NFPORS adopted the concept and terminology of "boundary units" from FASTRACS to distinguish between total treatment area and footprint area. This concept has proven difficult to grasp during the initial NFPORS rollout. Many users have defined their boundary units to represent areas much larger than the treatment area, sometimes representing the project area or even the boundary of their entire administrative unit (e.g. refuge boundary).

As a result of user feedback and concern we will change the term used to represent a boundary unit to **Treatment Unit**.

Definitions

The following revised and expanded NFPORS definitions provide the foundation for differentiating total treatment area from footprint area and documenting changes in condition class.

Project – is defined by a single NEPA document and may span multiple fiscal years. A project occurs at the scale of planning. The project area is the conceptual area analyzed during this effort (Figure 1). A project consists of planning or administrative activities and potentially treatments that are intended to address hazardous fuels management objectives.

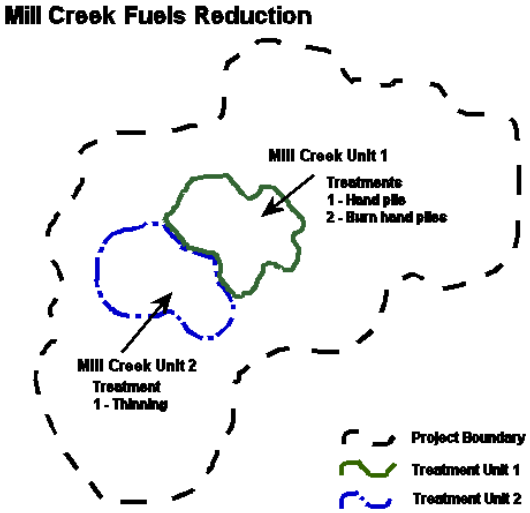

Figure 1. Pictorial representation of project area and treatment units for the Mill Creek Fuels Reduction project.

Projects have the following attributes: project name, project number, status, local approval date, region/state office approval date, agency/bureau approval date, decision record date, estimated direct costs, estimated duration, location (latitude, longitude centroid), project goals, project objectives, and project partners. These attributes are defined in the NFPORS Hazardous Fuels Module User Manual.

Activity – is a discrete administrative or planning task (e.g. permits, consultations, and approvals) that is required to accomplish project objectives. Activities are funded, accomplished and reported by fiscal year.

Activities have the following attributes and are defined in the NFPORS Hazardous Fuels Module User Manual: activity name, activity category, activity type, local approval date, WUI, planned direct costs, funding source, work agent, contract number, planned initiation date, planned completion date, actual initiation date and actual completion date.

Treatment Unit – is a parcel of land where one or more mechanical, prescribed fire and other treatments (e.g. chemical, biological and grazing) are uniformly applied and intended to meet the objectives of the federal hazardous fuels reduction program (Figure 1). This parcel may include small or insignificant islands that were skipped or protected for various reasons. Treatment Units have the following attributes:

Treatment Unit Name – is a meaningful name given to a treatment unit that will uniquely identify it at the administrative unit level (e.g. refuge, field office, forest). For example, it might consist of the project name and unit number from the NEPA document (e.g. “Mills Creek Unit 1”).

Acres – is the gross area within the perimeter of the identified treatment unit. This area may include small or insignificant islands that are skipped or protected for various reasons. Linear treatment units, like fences, that have no perceptible width and have no area.

State – identifies the state that a treatment unit occurs within as identified by the location of the treatment unit centroid. State is identified by its two character, U.S. Postal Service abbreviation.

Fire Regime – identifies the predominant fire regime within activity area as defined in the "Implementation Plan for the 10-Year Comprehensive Strategy." Fire regimes are defined by the following categories of fire frequency (return interval) and severity:

Fire Regime	Frequency (years)	Severity
I	0 to 35	Low
II	0 to 35	Stand Replacement
III	35 to 100+	Mixed
IV	35 to 100+	Stand Replacement
V	> 200	Stand Replacement

Latitude – is the angular distance measured north (positive) or south (negative) of the equator to the treatment unit center (i.e. centroid) and presented in decimal degree format (e.g. 45.1875). Reference should be to North American Datum of 1927.

Longitude – is the angular distance measured east (positive) or west (negative) from the prime meridian to the treatment unit center (i.e. centroid) and presented in decimal degree format (e.g. –93.8711). Reference should be to North American Datum of 1927.

County – the county identified by location of the treatment unit centroid.

Congressional District – is federal congressional district identified by the location of the treatment unit centroid.

Representative - Name of the federal representative for the congressional district identified by the treatment unit centroid.

Treatment Unit Observations – Condition Class is a quality of a treatment unit that changes with time and therefore must be associated with an

observation date. These observations are used to document changes in condition class for treatment units following treatment.

Condition Class – "has been developed to categorize the current condition with respect to each of the five historic Fire Regime Groups. Current condition is defined in terms of departure from the historic fire regime, as determined by the number of missed fire return intervals – with respect to the historic fire return interval – and the current structure and composition of the system resulting from alterations to the disturbance regime. The relative risk of fire-caused losses of key components that define the system increases for each respectively higher numbered condition class, with little or no risk at the Class 1 level." (Protecting People and Sustaining Resources in Fire-Adapted Ecosystems: A Cohesive Strategy)

Condition Class	**Condition Class Description** [1/]
Condition Class 1	Fire regimes are within an historical range and the risk of losing key ecosystem components is low. Vegetation attributes (species composition and structure) are intact and functioning within an historical range.
Condition Class 2	Fire regimes have been moderately altered from their historical range. The risk of losing key ecosystem components is moderate. Fire frequencies have departed from historical frequencies by one or more return intervals (either increased or decreased). This results in moderate changes to one or more of the following: fire size, intensity and severity, and landscape patterns. Vegetation attributes have been moderately altered from their historical range.
Condition Class 3	Fire regimes have been significantly altered from their historical range. The risk of losing key ecosystem components is high. Fire frequencies have departed from historical frequencies by multiple return intervals This results in dramatic changes to one or more of the following: fire size, intensity, severity, and landscape patterns. Vegetation attributes

have been significantly altered from their historical range.

[1/] Current conditions are a function of the degree of departure from historical fire regimes resulting in alterations of key ecosystem components such as species composition, structural stage, stand age, and canopy closure. One or more of the following activities may have caused this departure: fire suppression, timber harvesting, grazing, introduction and establishment of exotic plant species, insects or disease (introduced or native), or other past management activities.

Treatment Unit Observations have the following attributes:

Observation Date – The date of observation or measurement of the treatment unit feature.

Condition Class Percent – percent of treatment unit area that is in each condition category as defined above.

Important Note: To discern changes in condition class, treatment unit observations are initially required whenever a treatment unit is established and after any treatments are accomplished. In addition, it is important that Treatment Unit Acres approximate the planned accomplishment for the treatment. If the planned accomplishment acreage is different from the acreage of the Treatment Unit then another Treatment Unit must be defined.

Treatment – is a discrete treatment applied to a treatment unit that is intended to accomplish project objectives. Treatments are funded, accomplished and reported by fiscal year. They have the following attributes and are defined in the NFPORS Hazardous Fuels Module User Manual: treatment name, treatment category, treatment type, local approval date, WUI, treatment unit (as defined above), planned direct costs, funding source, work agent, contract number, planned initiation date, planned completion date, planned accomplishment, actual initiation date, actual completion date, and actual accomplishment.

Planned Total Treatment Acres – equals the sum of **planned** accomplishments for mechanical, prescribe fire and other hazardous fuels reduction treatments and will be calculated by project, administrative unit (e.g. refuge, field office, forest), state, region, and agency/bureau.

Actual Total Treatment Acres – equals the sum of **actual** accomplishments for mechanical, prescribe fire and other hazardous fuels reduction treatments and will be calculated by project, administrative unit (e.g. refuge, field office, forest), state, region, and agency/bureau.

Planned Footprint Acres – equals the total number of acres planned to be treated by one or more methods within a treatment unit, project, administrative unit, state, region, agency/bureau, and department.

Actual Footprint Acres – equals the total number of acres that were treated by one or more methods within a treatment unit, project, administrative unit, state, region, agency/bureau, and department.

Business Rules

The following NFPORS business rules are established to improve the ability to distinguish *total treatment acres* from *footprint acres* and to document changes in condition class:

- A warning message will be displayed to users whenever the planned accomplishment (acres) entered is between 95 and 98 percent of the associated Treatment Unit acres. The warning message points out a potential error, but users are allowed to confirm and accept the entered information.
- An error message will be displayed to users when the planned accomplishment (acres) entered is less than 95 percent of the associated Treatment Unit acres. This message will require a change in the number of planned accomplishment acres or the establishment of another Treatment Unit.
- Users will be required to enter a condition class observation for when they add a new treatment unit.

- Users will be prompted to enter a condition class observation when they enter an actual completion date for a treatment.

Example-

Referring to Figure 1, a set of Project, Treatment Unit, and Treatment attributes is shown on the following tables.

Not all of the information that NFPORS collects is portrayed and some of the information that is shown is derived from other information that NFPORS collects from the user. The purpose here is to demonstrate the relationships between Projects, Treatment Units, and Treatments and show the level of information that is maintained for each.

Project Information	
Project Name	Mill Creek Fuels Reduction
Planned Total Treatment Acres	1,800 acres
Actual Total Treatment Acres	1,100 acres
Planned Footprint Acres	1,250 acres
Actual Footprint Acres	550 acres

Treatment Unit Information – There are two Treatment Units in the Project					
Mill Creek Unit 1			**Mill Creek Unit 2**		
Acres	550 acres		Acres	700 acres	
State	SD		State	SD	
Fire Regime	I		Fire Regime	I	
Latitude	43.9186		Latitude	43.9143	
Longitude	-103.5632		Longitude	-103.5713	
County	Pennington		County	Pennington	
Congr District	1st District		Congr District	1st District	
Representative	John Thune (R)		Representative	John Thune (R)	
Condition Class Observation(s)			**Condition Class Observation(s)**		
Observation Date 9/15/2000			Observation Date 9/15/2000		
Condition Class 1	10-percent		Condition Class 1	20-percent	
Condition Class 2	30-percent		Condition Class 2	20-percent	
Condition Class 3	60-percent		Condition Class 3	60-percent	
Observation Date 6/1/2001			(no subsequent observations to date)		
Condition Class 1	40-percent				
Condition Class 2	50-percent				
Condition Class 3	10-percent				

Treatment Information
There are three Treatments. Two are in Mill Creek Treatment Unit 1.
One is in Mill Creek Treatment Unit 2

Mill Creek Unit 1 Mechanical Treatment	
Treatment Unit Name	Mill Creek Unit 1
Treatment Category	Mechanical
Treatment Type	Hand Pile
Planned Initiation Date	8/1/2001
Planned Completion Date	9/15/2001
Planned Accomplishment	550 acres
Actual Initiation Date	7/15/2001
Actual Completion Date	8/15/2002
Actual Accomplishment	550 acres

Mill Creek Unit 2 Mechanical Treatment	
Treatment Unit Name	Mill Creek Unit 2
Treatment Category	Mechanical
Treatment Type	Thinning
Planned Initiation Date	10/15/2002
Planned Completion Date	5/30/2002
Planned Accomplishment	700 acres
Actual Initiation Date	TBD
Actual Completion Date	TBD
Actual Accomplishment	TBD

Mill Creek Unit 1 Prescribed Burn	
Treatment Unit Name	Mill Creek Unit 1
Treatment Category	Prescribed Burn
Treatment Type	Hand Pile Burn
Planned Initiation Date	5/15/2002
Planned Completion Date	5/30/2002
Planned Accomplishment	550 acres
Actual Initiation Date	5/15/2002
Actual Completion Date	5/25/2002
Actual Accomplishment	550 acres

(no subsequent treatments are currently planned for Mill Creek Unit 2)