



# VOLUSIA COUNTY WILDLAND FIRE COORDINATING GROUP

## MODEL

## POLICY AND PROCEDURE GUIDELINE

<b>POLICY #</b> Model #1	<b>SUBJECT:</b> WILDLAND FIRES
<b>DATE ISSUED:</b> 21 August 2002	<b>REVIEW DATE:</b> 12 MARCH 2002

### I. ADMINISTRATION

#### A. SCOPE

This standard presents fundamental information for the successful control of wildland fires, burning in natural and other vegetative fuels. Included is necessary and useful information on safety procedures, organization operations, specialized clothing, equipment and apparatus response, communications, as well as other topics that are essential for a safe and successful operation.

#### B. PURPOSE

The purpose of this document is to provide a model promoting standardized priorities and tactics as well as improved interagency co-operation among the various agencies, companies, and individuals with responsibility for the control and suppression of wildland fires occurring in Volusia County. This document identifies organizational practices, management policies, and standard operating procedures for wildland firefighting operations. This model covers specific requirements on incident command, safety procedures, apparatus operation, communications, equipment, and specialized clothing.

#### C. APPLICATION

This standard applies to all personnel who work to control or suppress wildland fires and to the incident commanders responsible for the management of such fires.

#### D. DEFINITIONS

1. Air Operations Branch Director Command position with primary responsibility for management of air operations at an incident.
2. Air Tanker Fixed wing aircraft certified by FAA as being capable of transport and delivery of fire retardant solutions.
3. Anchor Point An advantageous location, usually a barrier to fire spread, from which to start

- constructing a fireline. The anchor point is used to minimize the chance of being flanked by the fire while the line is being constructed.
4. Backfire  
A fire set along the inner edge of a fireline to consume the fuel in the path of a wildfire and/or change the direction of force of the fire's convection column.
  5. Barrier  
Any obstruction to the spread of fire. Typically an area or strip devoid of combustible fuel.
  6. Brush Engine  
Any ground vehicle with off-road (4WD) capability providing specified levels of pumping, water and hose capacity but with less than the specified level of personnel (up to 400 gallons of water, **NWCG type 6,7 engines**).
  7. Brush Attack Engine  
Any ground vehicle with off-road (6WD) capability providing specified levels of pumping, water and hose capacity but with less than the specified level of personnel (over 400 gallons of water. **NWCG type 4,5 engines.**)
  8. Build-up Index  
An index indicating the cumulative effects of long term drying on current fire danger.
  9. Clear Text  
The use of plain English in radio communications transmissions. No Ten Codes or agency specific codes are used when using Clear Text.
  10. Direct Attack  
Any treatment applied directly to burning fuel such as wetting, smothering, or chemically quenching the fire or by physically separating the burning from unburned fuel.
  11. Dispersion Index  
A numerical index that estimates the atmosphere's capacity to disperse smoke from a wildland fire.
  12. Dozer  
Any tracked vehicle with a front mounted blade used for exposing mineral soil.
  13. Engine  
Any ground vehicle providing specified levels of pumping, water and hose capacity but with less than the specified level of personnel.
  14. Fire Danger Rating  
A fire management system that integrates the effects of selected fire danger factors into one or more qualitative or numerical indices of current protection needs.

15. Fire Readiness Level A numerical index indicating DOF's readiness to respond to wildland fire incidents. Arrived at by factoring weather conditions, season, recent fire activity and other related factors such as KBDI level.
16. Incident Command System (ICS) A standardized on-scene emergency management concept specifically designed to allow its user(s) to adopt an integrated organizational structure equal to the complexity and demands of single or multiple incidents, without being hindered by jurisdictional boundaries. The State of Florida has adopted the ICS component of the National Inter-agency Incident Management System (NIIMS) as the statewide standard.
17. Incident Commander The command position responsible for incident activities including the development and implementation of strategic decisions and for approving the ordering and releasing of resources.
18. Indirect Attack A method of suppression in which the control line is located some considerable distance away from the fire's active edge. Generally done in the case of a fast spreading or high intensity fire and to utilize natural or constructed firebreaks or fuelbreaks and favorable breaks in topography. The intervening fuel is usually backfired; but occasionally the main fire is allowed to burn to the line, depending on conditions.
19. Initial Attack The actions taken by the first resources to arrive at a wildland fire to protect lives and property, and prevent further extension of the fire.
20. Keetch-Byram Drought Index An index providing a numerical value representing the net effect of evaporation, transpiration and precipitation in producing cumulative moisture depletion in deep duff or upper soil layers.
21. Mixing Height Measured from the surface upward, the height to which relatively vigorous mixing due to convection occurs. Use of this term normally implies presence of an inversion and the base of the inversion is the top of the mixed layer and defines mixing height.

22. Mop-up  
Extinguishing or removing burning material near control lines, felling snags, and trenching logs to prevent rolling after an area has burned, to make a fire safe, or to reduce residual smoke.
23. Red Flag Alert  
Alerts fire service, other emergency response personnel and land managers that a serious wildfire potential exists based on weather conditions, moisture levels of vegetative fuels and availability of fire suppression resources. The Florida Division of Forestry is the only state agency to initiate a Red Flag Alert.
24. Red Flag Warning  
Issued by the National Weather Service when any of the following weather situations occur: (1) relative humidity <35% for 4 or more hours, (2) relative humidity <35% for any duration and wind speed >15mph, (3) forecast afternoon dispersion index >75.
25. Single Resource Boss  
That person responsible for supervising and directing a fire suppression module such as a hand crew, an engine, a dozer, a tractor-plow, a firing team, or one or more fallers.
26. Spot Fire  
Fire ignited outside the perimeter of the main fire by a firebrand. Also called "spotover".
27. Spread Index  
Part of the National Fire Danger Rating System (NFDRS). A rating of the forward rate of spread of a head fire.
28. Tractor Plow  
Any tractor with a plow for constructing fireline by exposing mineral soil. In addition, as a resource for typing purposes, a tractor plow includes the transportation and personnel for its operation.
29. Unified Command  
In ICS, a unified team effort which allows all agencies with jurisdictional responsibility for the incident, either geographical or functional, to manage an incident by establishing a common set of incident objectives and strategies. This is accomplished without losing or abdicating authority, responsibility, or accountability.
30. **Wildland**/Urban Interface  
Urban areas that have a distinct boundary between the wildland and developed area.

- |                   |  |
|-------------------|--|
| 31. Water Tender  | Any ground vehicle capable of transporting specified quantities of water.  |
| 32. Wildland Fire | A fire occurring in an area in which development is essentially nonexistent, except for roads, railroads, powerlines, and similar transportation facilities. Structures, if any, are widely scattered. |

## II. PRE-FIRE PLANNING

Pre-planning is an essential part of emergency preparedness. Determining and directing an attack on a wildland fire depends on good pre-planning in order to realize a successful outcome.

### A. DIVISION OF FORESTRY FIRE WEATHER FORECAST

A valuable pre-planning resource available to wildland firefighters is the Division of Forestry (DOF) Fire Weather Forecast. The Fire Weather Forecast, provided daily by the DOF District 10 office in Bunnell, is comprised of two (2) categories of information; anticipated weather conditions and anticipated fire conditions.

#### 1. WEATHER

- a) Maximum temperature
- b) Minimum relative humidity
- c) Wind speed and direction
- d) Mixing height
- e) Keetch-Byram Drought Index (KBDI)
- f) Dispersion Index (a measure of atmospheric stability)
- g) Red Flag Warning

#### 2. FIRE

- a) Buildup Index
- b) Spread Index
- c) Fire Danger
- d) Fire Readiness Level
- e) Red Flag Alert

### B. PREPAREDNESS

Based on the (DOF) Fire Readiness Level, wildland firefighters should consider additional actions to prepare for wildland fire suppression activities. As the DOF Readiness Level increases, wildland firefighters should consider the following: operational status of all wildland firefighting equipment including the scheduling

of repairs, use of early and aggressive attack, additional staffing of suppression equipment/crews, responding with additional resources (mutual aid).

### III. WILDLAND FIRE RESPONSE PLANNING

Utilizing the information in the Daily Fire Weather Forecast as received from DOF, as the DOF Readiness Level increases, individual agency/company response levels should increase. Use experience and data collected from previous responses to determine appropriate response levels.

### IV. SAFETY

#### A. PERSONNEL SAFETY

1. ALL personnel operating on a wildland fire incident shall have a minimum level of training in wildland firefighting practices and the incident command system.
  - a) Suggested minimum training classes include: S-130 Basic Wildland Firefighting, Standards for Survival, S-190 Introduction to Wildland Fire Behavior, S-205 Fire Operations in the Wildland/Urban Interface, Florida Fire Behavior, and I-200 Basic Incident Command,
2. While responding to, or working at, a wildland fire emergency, recommended protective clothing to be worn includes:
  - a) Wildland firefighting pants and fire shirt/jacket (Nomex) or jumpsuit
  - b) 8" leather boots with skid resistant soles
  - c) Flame resistant or leather gloves
  - d) Helmet with goggles and/or face shield.
  - e) If appropriate to your agency/company, full protective structural gear shall be readily available at all times in the event fire conditions change rapidly.
3. Fire shelters are required to be carried on the person of each wildland firefighter, including supervisors and command personnel, at all times while involved in suppression operations on or near the fireline.
  - a) All wildland firefighters should receive annual training in the use, proper care and inspection of fire shelters.
4. Use of respiratory protection is optional. If your agency/company decides to require respiratory protection for certain or all wildland fire incidents, such equipment should meet the following minimum requirements:
  - a) NIOSH certified with special care exercised for heat resistance and flammability of the filter medium
  - b) Fit testing for individual use
  - c) Complete annual written medical evaluation followed by a physician's examination if any of the written responses indicate a medical history that would prohibit the use of a respirator
  - d) Annual training in the proper use and maintenance of the respirator
  - e) Proper maintenance and care of the respirator with periodic compliance inspections.
5. Wildland firefighters operating at a wildland fire incident should observe the Standards for Survival – Watch Out Situations and Standard Fire Orders and

LACES (Lookouts, Awareness, Communications, Escape Routes, Safety Zones).

6. Suppression operations shall not be deployed in front of an advancing head fire unless authorized by the Incident Commander such as in the case of small incipient fires. Brush engines should, whenever possible, operate in the burned area or on the flanks of the fire.
7. Although it is not the intent of this model to impose unilateral staffing mandates, it is recommended that all vehicles and/or crews operate with a minimum of two (2) personnel whenever practical.

#### B. EQUIPMENT/APPARATUS SAFETY

1. While responding, all personnel shall ride in the cab of the vehicle in a seated and safety belted position.
2. Do not leave vehicles unattended in dry grass or other flammable vegetation.
3. Roll up windows and leave keys in the ignition of a vehicle left unattended near the fire area. This applies to staff and support vehicles as well as suppression apparatus.
4. While operating off-road, maintain a constant awareness of soil composition or conditions that would hamper mobility.
5. Do not use brush engines to push over or plow through trees and heavy brush.
6. Do not drive vehicles into areas of unstable ground conditions that might cause vehicle immobility.
7. Unless otherwise directed by the IC, vehicles so equipped should operate with warning lights flashing and headlights/running lights on.

#### C. OPERATIONS AROUND UTILITY FACILITIES

1. Maintain 30-foot clearance around electrical transmission lines.
2. In the event of arcing, explosion, flash or trip, clear the area immediately and prevent access by other suppression personnel operating in the area.
3. Consider all downed lines to be "live", and maintain a distance of 1.5 times the length of the downed wire.

### V. INCIDENT COMMAND AND CONTROL

#### A. INCIDENT COMMAND SYSTEM

1. Every wildland fire incident will employ the National Inter-agency Incident Management System (NIIMS) for the command and control of all resources assigned to that incident.
2. Each incident will have a designated Incident Commander (IC).
3. In the event two (2) or more agencies/companies **have jurisdiction over** the same fire, Unified Command may be used.

#### B. INCIDENT COMMANDER RESPONSIBILITIES

1. The first arriving crew boss at a wildfire emergency shall establish command and provide the following information in the arrival report:
  - a) Size of fire involvement (an estimate, given in acres or fractions of acres involved).
  - b) Vegetative fuels (light, medium, heavy; terrain conditions).

- c) Rate of spread (slow, moderate, rapid).
  - d) Potential (number of acres and/or improved property exposed, other problems).
2. The IC shall establish division/group assignments, as needed using available resources.
- a) The IC may assign multi-agency resources to these division/group operations.
  - b) When required, the IC may use helicopters and/or fixed wing aircraft for assistance.
    - (1) Coordination of all State and/or Federal controlled helicopters and/or air tankers for suppression efforts is the responsibility of the Division of Forestry; therefore, staffing of the Air Operations Branch Director in these situations shall be assigned to DOF personnel only.
    - (2) If necessary for a helicopter to land as part of these operations, establish a suitable landing zone (LZ) including provision of the GPS coordinates for the LZ in DMS (degrees/minutes/seconds) format.
3. The IC should plot and update the fire size, location, and progress as often as possible using maps or aerial photographs and information from the Planning Section when staffed.

#### C. TRANSFER OF COMMAND

1. Transfer of command may take place under one of the following situations:
- a) A higher ranking or more qualified person arrives at the incident
  - b) Jurisdictional authority for the incident changes
  - c) Current IC needs relief for rest and recuperation.
2. When transferring command, ensure the following:
- a) Transfer will take place face-to-face, if possible
  - b) A briefing shall take place from the outgoing to the incoming IC. This briefing shall consist of:
    - (1) Situation status including incident objectives, strategy and priorities
    - (2) Resources assigned, en route and ordered
    - (3) Communications plan
    - (4) Facilities established.
  - c) All appropriate incident and off-incident personnel are notified of the transfer.

#### D. SINGLE RESOURCE BOSS RESPONSIBILITIES

Single Resource Bosses shall:

- 1. Ensure the safety and welfare of their crewmembers.
- 2. Protect themselves and others in the hazardous task of firefighting through compliance with all safety standards, regulations and procedures.
- 3. Keep their incident supervisor apprised of their unit/crew status.

VI. STRATEGY AND TACTICS

A. INCIDENT OBJECTIVES

1. Based on the initial size-up, the IC will develop incident objectives according to the following priorities:
  - a) Life Safety
  - b) Incident Stabilization
  - c) Property Conservation
  - d) Natural Resource Protection
2. Additional considerations are
  - a) Social
  - b) Economic
  - c) Environmental

B. STRATEGY

Based on incident objectives, the IC selects appropriate strategy:

1. Deployment of Initial Attack (Wildland) Resources
2. Deployment of Structural Resources
3. Logistical Resources
  - a) Ground Support Resources
4. Medical Resources
5. Air Operations Resources
6. Extended Attack

C. TACTICS

1. There are two (2) basic methods of attacking a wildland fire, the direct attack and the indirect attack. In many situations, a combination of the two, applied to different areas, has proven the most effective in providing fire control.
2. Command must quickly develop a firefighting plan, and the plan must remain flexible throughout the incident.
3. Tactical Priorities

General guidelines for setting priorities for resource allocation during wildland fire events shall be:

  - a) Public and firefighter safety
  - b) Protection of property (improvements) and resources
    - (1) Structures currently being used or capable of being used with minimal repairs or modification
    - (2) Commercial assets, including timber and other unoccupied structures and equipment
  - c) Initial attack from an established anchor point
  - d) Out of control fires and emerging potential fire problems
  - e) Going project or campaign fires (fires that are of a size or complexity to require the installation of incident management teams).

4. When allocating resources and setting priorities, the IC should make every effort to limit and control the fire before it reaches communities.
  - a) Rapidly spreading wildland fires often present numerous and complex exposure problems.
  - b) The basic wildland fire tactical philosophy will be to control the spread of the fire by the use of natural or artificial barriers.
5. Evaluate the probability of success with the available resources in order to properly allocate and utilize resources. This might take the form of a "triage" process, where incidents or sections can be categorized as follows:
  - a) Area will burn regardless of action (take no action)
  - b) Area will not burn regardless of action (take no action)
  - c) Area will burn unless action is taken (take action)
  - d) Wildland fire will burn safely to meet fuels management objectives (take limited action)
    - (1) The decision to allow a fire to burn to meet fuel management objectives, and all subsequent burning, shall be supervised by certified burn managers.
6. In all instances, assign dispatched resources in such a manner as to ensure that the kinds and types are appropriate for the incident. All suppression personnel should be well trained, equipped and familiar with equipment, tactics, fuels and terrains.
7. **Use of Counterfire (Chapter 590.02(3) F.S.) - DOF employees and those of federal, state, and local agencies, and all other persons and entities that are under contract or agreement with the DOF to assist in firefighting operations as well as those entities called upon the Division to assist in firefighting may, in the performance of their duties, set counterfires without incurring liability to any person or entity.**
  - (a) Use of **counterfire** requires the direct approval of the **DOF IC**.
  - (b) All **counterfire** and/or burnout operations shall be directly supervised by personnel who have adequate training in the practice of igniting such fires.

#### D. STANDARD RESOURCE OPERATIONS

1. ENGINES (TYPE I OR TYPE II)
  - a) Locate on an improved road, at the head of the fire and assume a safe position from which to provide structure protection.
  - b) Responsibilities include:
    - (1) Exposure protection
    - (2) Water supply for brush trucks
    - (3) Mop-up of accessible areas (Engines shall not be taken off improved roads).
    - (4) Area reconnaissance.
2. BRUSH ENGINES (TYPE III, IV, V, VI, VII)

- a) Locate access to fire area, begin reconnaissance, and attack if warranted. First arriving brush engine should advise later arriving units of access points to used.
- b) Responsibilities include:
  - (1) Off-road, operation in natural ground cover to directly apply hose streams.
  - (2) Reconnaissance
  - (3) Exposure protection
  - (4) Fire line and spotover patrols
  - (5) Lighting and control of **counterfires**
  - (6) Mop-up

### 3. WATER TENDER

- a) If not required for structural protection, locate at a point easily accessible for brush engines, such as an intersection near the fire or an area that has burned up to the roadway leaving clear access for brush engines, and supply water for suppression operations.
- b) Responsibilities include:
  - (1) Water supply for engines and brush engines
  - (2) Exposure protection
  - (3) Mop-up of accessible areas (Water Tenders shall not be taken off improved roads).
- c) Command shall establish the location of water tenders and other water supply sources and relay such information to all units operating at the incident.

### 4. TRACTOR-PLOW

- a) Initial attack
- b) Perimeter control through fire line establishment
- c) Control of spotovers
- d) Lighting and control of counterfires**

### 5. DOZERS

- a) Improving plow lines to establish navigable access for wheeled apparatus
  - b) Establish fire lines in heavy timber
  - c) Felling snags
6. Due to the ever-changing nature of wildland fires, a key concept in standard unit/crew operations is mobility. Whenever possible engines and tankers should not be committed in such a way as to become inflexible to rapid reassignment of duties or location.

## E. STAGING

- 1. Establish a staging area as soon as possible to prevent the obstruction of ingress/egress points.
- 2. Maintain one clear lane of access to the fire area.

- a) When possible, establish separate ingress/egress points to maintain traffic flows.

#### F. GAINING ACCESS

Chapter 590.02, Florida Statutes, permits personnel from the Division of Forestry, and other firefighting crews under its control and direction, to enter any lands for the purpose of preventing and suppressing fires. This includes cutting fences when necessary. **Non-DOF agencies are not covered under this statute unless working under the direction of the DOF.**

1. Upon coming to a fence during the suppression of a fire, the wildland firefighter should search the fence line for gates or places where the fence is already cut.
2. If no immediate threat to exposures exists, personnel will attempt to make contact with a representative of the property before cutting any fence. Property representatives can often provide an alternative to cutting a fence.
3. If necessary to gain access through a locked gate, check hinges to see if gate can lift up and swing aside.
4. If a gate or opening cannot be located, the firefighter should attempt to obtain their incident supervisors permission to cut the fence.
  - a) If possible cut the link of chain nearest the padlock rather than cutting the padlock.
  - b) Close all gates or openings opened for access to a fenced area after the apparatus have passed through. This may require temporary splicing of cut fencing material.
  - c) Anytime a fence is cut it shall be recorded in the incident log, either by the IC or the dispatch center. The following information should be included:
    - (1) Date
    - (2) Time
    - (3) Location of cut
    - (4) Name of landowner
    - (5) Name of supervisor authorizing cut
5. The engine/crew boss cutting the fence is responsible for notifying IC of all cut fences or gates.
6. The IC is responsible to ensure all cut fences or gates are repaired, all locks secured and property owners notified of actions taken before terminating the incident.

#### VII. COMMUNICATIONS

- A. All agencies operating at wildland fires will employ the use of clear text for all radio communications.
- B. The IC should consider methods of providing cross communications between agencies operating on different radio systems, i.e., 800MHz trunked vs. VHF conventional systems.