

Federal Prescribed Fire Programs White Paper

A Guide to Federal Qualification Standards for Managing Prescribed Fire

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Introduction

Prescribed fire has become a widely adopted tool to manage ecosystems and mitigate the risk of wildfire across the country. Obstacles for the implementation of prescribed fire continue to be identified. Based on a national survey, capacity was reported to be a primary impediment to increased prescribed burning based on the lack of qualified prescribed fire managers as well as associated training opportunities (Melvin, 2012). In order to overcome this barrier, it is important that those individuals interested in the becoming federal prescribed fire managers understand the minimum qualification standards, as well as the training pathway required to manage prescribed fire. It is also important for agencies that have federal prescribed fire programs to understand the broader landscape of qualifications in order to identify opportunities for collaboration to increase the availability and reach of prescribed fire training. In this paper, we outline the current landscape of federal prescribed fire programs (as of June 2015) based on minimum qualification standards that include training, education, experience and fitness requirements.

Federal Qualification Standards: Education, Experience and Training

The Federal Wildland Fire Policy and Program Review directed federal wildland fire agencies to establish fire management qualifications standards to improve firefighter safety and increase professionalism in fire management programs. The resulting Interagency Fire Program Management Qualification Standards and Guide (IFPM Standard) defined key fire management positions as well as minimum qualification standards (IFPM, 2008). To meet these minimum standards, all identified components (“Office of Personnel Management (OPM) Standard Requirements,” “Specialized Experiences,” “Additional Required Training” and “National Wildfire Coordinating Group (NWCG) Incident Management Qualifications”) must be met (IPFM, 2008). The NWCG Incident Management Qualifications relate to minimum incident management skills required to manage the local program on the unit.

Federal agency burners must adhere to the minimum qualifications standard outlined by the NWCG Wildland and Prescribed Fire Qualifications System Guide (PMS 310-1). Qualification in a position is based on having prerequisite experience, completion of required training, and successful position performance as documented through the completion of a position task book on fires, job activities, and in simulated exercises or classroom activities. Remaining qualified in a position (Position Currency) is accomplished by the completion of Recurrent Training (i.e. RT-130), annual fitness testing, and by regular successful position performance (NWCG, 2013).

Qualification Standards by Fire Complexity

The complexity of each prescribed fire or phase of fire(s) determines the organization(s) needs to safely achieve the objectives specified in the prescribed fire plan. The prescribed fire complexity rating is determined using the required Prescribed Fire Complexity Rating System Guide, PMS 424 (NWCG, 2004). The minimum supervisory position qualifications determined by prescribed fire complexity are identified in Figure 1 (NWCG, 2014).

Position	High Complexity	Moderate-Low Complexity	Low Complexity
RXM1	Optional	Optional	Optional
RXM2	Not Allowed	Optional	Optional
RXB1	Required	Optional	Optional
RXB2	Not Allowed	Required	Optional
RXB3	Not Allowed	Not Allowed	Required
FIRB	Optional	Optional	Optional

Figure 1: Qualification requirements based on prescribed fire complexity (Source: NWCG Interagency Prescribed Fire Planning and Implementation Procedures Guide, 2014)

In order to understand the hierarchy of supervisory positions that would handle the various prescribed fire scenarios, Figure 2 (NWCG, 2013) provides a basic positional flow chart starting from Prescribed Fire Burn Boss Type 2 to give a snapshot of the hierarchy within prescribed fire management and what qualifications are needed to move up in rank.

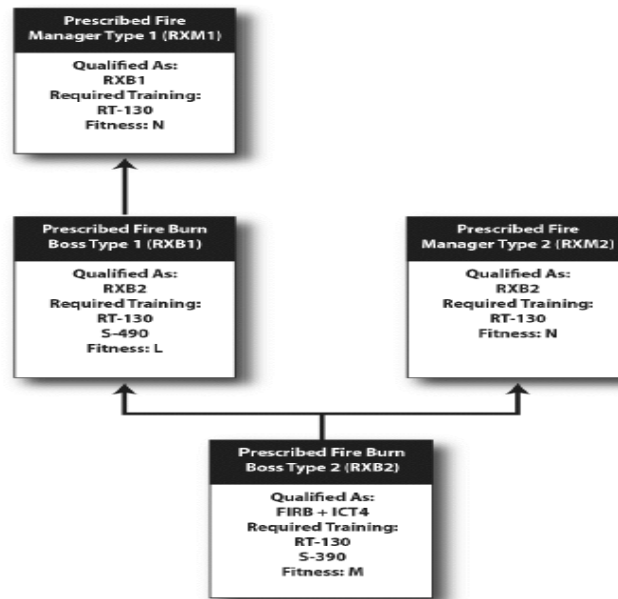


Figure 2: NWCG Positional flowchart (Source: NWCG, 2013)

The information below provides a cross-section of the IFPM, OPM and NWCG standard requirements for low, moderate and high complexity fires. Each section begins with the positional title based on the IFPM classification but also includes NWCG minimum incidents management skill requirements.

Low Complexity Standard

OPM Standard Requirements - GS-455/462 Technician Series. One year of specialized experience equivalent to the next lower grade level. Graduate education may be substituted for specialized experience only when it is directly related to the work of the position.

Employee Development Training: Employee must complete the following developmental training, (or agency equivalent) to fully achieve competencies:

- RX-301 “Prescribed Fire Implementation”
- RX-310 “Introduction to Fire Effects”
- RX-341 “Prescribed Fire Plan Preparation”
- RX-410 “Smoke Management Techniques”
- L-380 “Fireline Leadership”
- S-390 “Introduction to Wildland Fire Behavior Calculations”
- S-491 “National Fire Danger Rating System”
- BEHAVE
- National Environmental Policy Act (NEPA) training

Specialized Experience - Applicants must have a minimum of one year of creditable specialized wildland fire management experience equivalent to the next lower grade level (Table 1).

Table 1: Specialized experience requirements by proficiency areas

Fire Program Management	<ul style="list-style-type: none"> • Participating in implementing prescribed fire or fire use plans to ensure resource objectives can be met from a fire management standpoint. • Developing initial attack incident management strategies and tactics to meet the stated resource objectives.
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Source: Interagency Fire Program Management Qualification Standard Prescribed Fire and Fuels Specialist

Table 2 shows the NWCG minimum incident management skills required to manage the local program on the unit. Attainment of any single resource boss qualification (ie CRWB, ENGB, or FIRB) is an indication that the incumbent has demonstrated competence at supervising and leading resources on wildland incidents. The ICT4 qualification provides the incumbent with the knowledge of fire behavior, strategies and tactics, resources, equipment, and management objectives sufficient to safely, efficiently, and effectively direct the management of wildland fires.

Table 2: NWCG Primary and Secondary Core Requirements

NWCG Incident Management Qualifications – Currency Required Primary Core Requirement	Secondary Core Requirement
Engine Boss (ENGB) or Crew Boss (CRWB) or Firing Boss (FIRB)	Incident Commander Type 4 (ICT4)

Source: Interagency Fire Program Management Qualification Standard Prescribed Fire and Fuels Specialist

Moderate Complexity Standard

This position can be established at either the professional or technical level, depending upon the needs of the agency. If the position is established at the technical level, any professional duties would be handled by a separate, usually higher graded, professional position.

OPM Standard Requirements - GS-455/462 Technician Series. One year of specialized experience equivalent to the next lower grade level. Graduate education may be substituted for specialized experience only when it is directly related to the work of the position.

OPM Standard Requirements - GS-401 Professional Series. Bachelor’s degree in biological sciences, agriculture, natural resource management, or a related discipline appropriate to the position being filled; OR a combination of education and experience as defined in the Supplemental Qualification Standard for the GS-0401 Fire Management Specialist.

Employee Development Training: Employee must complete the following developmental training, (or agency equivalent) to fully achieve competencies:

- M-580 “Fire and Ecosystem Management”
- RX-310 “Introduction to Fire Effects”
- RX-341 “Prescribed Fire Plan Preparation”
- RX-410 “Smoke Management Techniques”
- S-490 “Advanced Wildland Fire Behavior Calculations”
- S-491 “National Fire Danger Rating System”
- 40-hour Supervisory Training
- Aviation safety, operations, and management training
- BEHAVE
- Contracting Officer’s Representative (COR) training
- National Environmental Policy Act (NEPA) training

Specialized Experience - Applicants must have a minimum of one year of creditable specialized wildland fire management experience equivalent to the next lower grade level (Table 3).

Table 3: Specialized experience requirements by proficiency areas

Fire Program Management	<ul style="list-style-type: none"> • developing fire management plans to ensure plan objectives can be met from a fire management standpoint • conducting field inspections before and/or after prescribed fires or wildland fires to determine if objectives have been met
Prescribed Fire/Fuels Management	<ul style="list-style-type: none"> • inventory methods and procedures • Fuel treatment methods and programming • evaluating prescribed fire plans or fire management plans to ensure containment is possible and identify contingencies if containment is not obtained
Fire Management Operations	<ul style="list-style-type: none"> • mobilization and dispatch coordination • fire prevention • training • logistics • equipment development and deployment • fire communication systems • suppression and preparedness

Source: Interagency Fire Program Management Qualification Standard Prescribed Fire and Fuels Specialist

Table 4 shows the NWCG minimum incident management skills required to manage the local program on the unit. RXB2 provides the incumbent with the skill and knowledge to develop fire behavior prescriptions to meet ecologically based objectives established in land management plans. Attainment of either single resource boss qualification (ie CRWB or ENGB) provides the incumbent the competencies required to supervise and lead fire fighters on wildland fire incidents. Moderate complexity programs typically involve projects that require numerous personnel and resources to achieve. The CRWB or ENGB qualifications are commensurate skill levels for implementing projects.

Table 4: NWCG Primary and Secondary Core Requirements

NWCG Incident Management Qualifications – Currency Required Primary Core Requirement	Secondary Core Requirement
Prescribed Fire Burn Boss Type 2 (RXB2)	ENGB or CRWB

Source: Interagency Fire Program Management Qualification Standard Prescribed Fire and Fuels Specialist

High Complexity Standard

OPM Standard Requirements - GS-401. Bachelor’s degree in biological sciences, agriculture, natural resource management, or a related discipline appropriate to the position being filled; OR a combination of education and experience as defined in the Supplemental Qualification Standard for the GS-0401 Fire Management Specialist.

Employee Development Training: Employee must complete the following developmental training, (or agency equivalent) to fully achieve competencies:

- M-580 “Fire in Ecosystem Management”
- RX-410 “Smoke Management Techniques”
- RX-510 “Applied Fire Effects”
- RX-580 “Advanced Fire Use Applications”/“National Park & Wilderness Fire Management”
- S-490 “Advanced Wildland Fire Behavior Calculations”
- S-491 “National Fire Danger Rating System’
- Aviation safety, operations, and management training
- Contracting Officer’s Representative (COR) training
- Leadership and organizational skills training
- National Environmental Policy Act (NEPA) training

Specialized Experience - Applicants must have a minimum of one year of creditable specialized wildland fire management experience equivalent to the next lower grade level (Table 5).

Table 5: Specialized experience requirements by proficiency areas

Fire Program Management	<ul style="list-style-type: none"> • Reviewing and evaluating fire management plans for ecological soundness and technical adequacy. • Conducting field inspections before and after prescribed or wildland fires to determine if objectives were achieved and/or evaluate the effectiveness of actions taken. • Developing analyses on the ecological role of fire and its use and/or exclusion, and smoke management.
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Fire and Fuels Management	<ul style="list-style-type: none"> • Inventory methods and procedures • Fuel treatment methods and programming • Land use planning and environmental coordination • Evaluating prescribed burn plans or fire management plans to ensure containment is possible and identify contingencies if containment is not obtained.
Fire Management Operations	<ul style="list-style-type: none"> • Mobilization and dispatch coordination • Fire prevention and education • Training • Logistics • Equipment development and deployment • Fire communication systems • Suppression and preparedness • Aviation

Source: *Interagency Fire Program Management Qualification Standard Prescribed Fire and Fuels Specialist*

Table 5 shows the NWCG minimum incident management skills required to manage the local program on the unit. RXB2 provides the incumbent with the skill and knowledge to develop fire behavior prescriptions to meet ecologically based objectives established in land management plans. Higher complexity programs typically involve projects of higher difficulty to achieve. The ICT3 or TFLD qualifications are commensurate skill levels for implementation of plans that require a larger workforce over multiple burn periods.

Table 6: *NWCG Primary and Secondary Core Requirements*

NWCG Incident Management Qualifications - Currency Required Primary Core Requirement	Secondary Core Requirement
RXB2	Incident Commander Type 3 (ICT3) or Task Force Leader (TFLD)

Source: *Interagency Fire Program Management Qualification Standard Prescribed Fire and Fuels Specialist*

Federal Agency Requirement by Position

Table 6 provides further details for the corresponding minimum training requirements and qualification standards that apply for all southeastern federal agencies (Bureau of Land Management (BLM), National Park Service (NPS), Bureau of Indian Affairs (BIA), United States Forest Service (USFS) and United States Fish and Wildlife Service (USFWS)) personnel to participate on a burn as well as those managing the burn. It also identifies the additional training and qualification standards for burns managed by Region 8 of the USFS and Region 4 of the USFWS that go beyond the basic requirements.

Table 6: Minimum Federal Requirements for Prescribed Fire Manager and Burn Boss Positions (US Forest Service, National Park Service, Bureau of Indian Affairs, Bureau of Land Management, and US Fish and Wildlife Service)

Position	Required Training	Required Experience	Physical Fitness	Additional Requirements*
Firefighter Type 2 (FFT2)	<ul style="list-style-type: none"> • Firefighter Training (S-130) 	None	Arduous	<ul style="list-style-type: none"> • I-100 Introduction to Incident Command System* • L-180 Human Factors on the Fireline • S-190 Introduction to Wildland Fire Behavior
Firefighter Type 1 (FFT1)	<ul style="list-style-type: none"> • Advanced Firefighter training (S-131) • Look Up, Look Down, Look Around (S-133) • Annual Fireline Safety Refresher (RT-130) 	<p>Satisfactory performance as Firefighter (FFT2)</p> <p>AND</p> <p>Satisfactory position performance as an Advanced Firefighter/Squad Boss on a wildland fire incident</p>	Arduous	<ul style="list-style-type: none"> • S-700: National Incident Management System (NIMS), An Introduction • S-211: Portable Pumps and Water Use • S-212: Wildfire Power Saws
Engine Boss (ENGB)	<ul style="list-style-type: none"> • S-230 Crew Boss • S-290 Intermediate Fire Behavior • RT-130 Annual Fireline Safety Refresher 	<p>Satisfactory performance as an Advance Firefighter/Squad Boss</p> <p>AND</p> <p>Satisfactory position performance as a Single Resource Engine Boss on a wildland fire incident</p>	Arduous	<ul style="list-style-type: none"> • I-200 Basic Incident Command System • IS-700 National Incident Management System (NIMS), An Introduction • L-280 Followership to Leadership • S-215 Fire Operations in the Urban Interface • S-231 Engine Boss or Geographic Area Engine Academy • S-234 Ignition Operations • S-260 Interagency Incident Business Management • S-270 Basic Air Operations

<p>Firing Boss (FIRB)</p>	<ul style="list-style-type: none"> • S-290 Intermediate Wildland Fire Behavior • S-230 Crew Boss (Single Resource) • RT-130 Annual Fireline Safety Refresher 	<p>Satisfactory performance as a Firefighter 1 (FFT1)</p> <p>AND</p> <p>Successful position performance as a Firing Boss, Single Resource (FIRB) on a wildfire or prescribed fire.</p>	<p>Moderate</p>	<ul style="list-style-type: none"> • I-200 Basic Incident Command System • IS-700 National Incident Management System (NIMS), An Introduction • L-280 Followership to Leadership • S-234 Ignition Operations • S-260 Interagency Incident Business Management • S-270 Basic Air Operations
<p>Incident Commander Type 4 (ICT4)</p>	<ul style="list-style-type: none"> • S-200 Initial Attack Incident Commander • RT-130 Annual Fireline Safety Refresher 	<p>Satisfactory performance in one of the following single resource boss positions (CRWB, HEQB, ENGB, FELB, FIRB, HMGB, TRPB)</p> <p>AND</p> <p>Successful position performance as an Incident Commander Type 4 (ICT4) on a wildfire incident</p>	<p>Arduous</p>	<ul style="list-style-type: none"> • IS-700 National Incident Management System (NIMS), An Introduction • L-280 Followership to Leadership • S-215 Fire Operations in the Urban Interface
<p>Prescribed Fire Manager Type 1 (RXM1)</p>	<ul style="list-style-type: none"> • RT-130 Annual Fireline Safety Refresher 	<p>Satisfactory performance as a Prescribed Fire Burn Boss Type 1 (RXB1)</p> <p>AND</p> <p>Successful position performance as a Prescribed Fire Manager Type 1 (RXM1) on a Prescribed Fire Incident</p>	<p>None Required</p>	<ul style="list-style-type: none"> • IS-700 National Incident Management System (NIMS), An Introduction
<p>Prescribed Fire Manager Type 2 (RXM2)</p>	<ul style="list-style-type: none"> • RT-130 Annual Fireline Safety Refresher 	<p>Satisfactory performance as a Prescribed Fire Burn Boss Type 2 (RXB2)</p> <p>AND</p> <p>Successful position performance as a Prescribed Fire Manager Type 2 (RXM2) on a Prescribed Fire Incident</p>	<p>None required</p>	<ul style="list-style-type: none"> • IS-700 National Incident Management System (NIMS), An Introduction

<p>Prescribed Fire Burn Boss Type 1 (RXB1)</p>	<ul style="list-style-type: none"> • RT-130 Annual Fireline Safety Refresher • S-490 Advanced Wildland Fire Behavior Calculation 	<p>Satisfactory performance as a Prescribed Fire Burn Boss Type 2 (RXB2)</p> <p style="text-align: center;">AND</p> <p>Successful position performance as a Prescribed Fire Burn Boss Type 1 (RXM2) on a Prescribed Fire Incident</p>	<p>Light</p>	<ul style="list-style-type: none"> • IS-700 National Incident Management System (NIMS), An Introduction • RX-301 Prescribed Fire Implementation • RX-310 Introduction to Fire Effects • RX-341 Prescribed Fire Burn Plan Preparation • RX-410 Smoke Management Techniques • RT-300FS – Prescribed Fire Workshop (Biennial)
<p>Prescribed Fire Burn Boss Type 2 (RXB2)</p>	<ul style="list-style-type: none"> • RT-130 Annual Fireline Safety Refresher • S-490 Advanced Wildland Fire Behavior Calculation 	<p>Satisfactory performance as a Firing Boss, Single Resource (FIRB)</p> <p style="text-align: center;">AND</p> <p>Satisfactory performance as an Incident Commander Type 4 (ICT4)</p> <p style="text-align: center;">AND</p> <p>Successful position performance as a Prescribed Fire Burn Boss Type 2 (RXB2) on a prescribed fire incident</p>	<p>Moderate</p>	<ul style="list-style-type: none"> • IS-700 National Incident Management System (NIMS) • RX-301 Prescribed Fire Implementation • RX-310 Introduction to Fire Effects • RX-341 Prescribed Fire Burn Plan Preparation • RX-410 Smoke Management Techniques • RT-300FS – Prescribed Fire Workshop (Biennial) • Introduction to Wildland Fire Behavior Calculations (S-390)** • Prescribed Fire Burn Plan Preparation (RX-341)** • Prescribed Fire Implementation (RX-301)** • National Incident Command System (IS-700.a)**

<p>Prescribed Fire Burn Boss Type 3 (RXB3)</p>	<ul style="list-style-type: none"> • S-290 Intermediate Wildland Fire Behavior 	<p>Incident Commander, Type 5 OR Type 1 (FFT1) AND Satisfactory position performance as a Prescribed Fire Burn Boss Type 3</p>	<p>Moderate</p>	<ul style="list-style-type: none"> • IS-700 National Incident Management System (NIMS), An Introduction • RT-130 Annual Fireline Safety Refresher
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*Unless otherwise designated, additional requirements for US Forest Service personnel

**Additional requirements for US Fish and Wildlife Service personnel

Sources: Forest Service Fire & Aviation Qualifications Guide (2011); Fish and Wildlife Service Fire Management Handbook (2014); BLM Standards for Fire Training and Workforce Development (2014); National Incident Management Wildland Fire Qualification System Guide (2013); Bureau of Indian Affairs Firefighter Training and Qualifications (2013); National Park Service Wildland Fire Incident Qualifications (2014).

CONCLUSION

Becoming a federal agency burner can be a complex process, and requires a specific combination of training, education and experience along with a specific training pathway to eventually manage prescribed fire. In order to ensure that capacity does not continue to serve as a barrier for implementation, understanding the minimum qualifications standards for prescribed fire managers remains important as federal agencies work towards increasing the network of trained professionals and training opportunities. This paper shows that federal agencies exhibit many similarities related to the minimum qualification standards. In times of declining budgets, it is important to take a collaborative interagency approach in order to reach more trainees and increase the capacity for prescribed fire operations across the country. It is also important to take the same collaborative approach to educating potential employees on the initial requirements to participate on prescribed fire projects so that they can begin the journey along the training pathway.

ACRONYMS

BIA: Bureau of Indian Affairs

BLM: Bureau of Land Management

CRWB: Crew Boss

COR: Contracting Officer's Representative

ENGB: Engine Boss

FFT1: Advanced Firefighter/Squad Boss

FFT2: Firefighter

FIRB: Firing Boss

GS: General Schedule

ICT3: Incident Commander Type 3

ICT4: Incident Commander Type 4

IFPM: Interagency Fire Program Management

NEPA: National Environmental Policy Act

NPS: National Park Service

NWCG: National Wildfire Coordinating Group

OPM: Office of Personnel Management

RXB1: Prescribed Fire Burn Boss Type 1

RXB2: Prescribed Fire Burn Boss Type 2

RXB3: Prescribed Fire Burn Boss Type 3

RXM1: Prescribed Fire Manager Type 1

RXM2: Prescribed Fire Manager Type 2

RXM3: Prescribed Fire Manager Type 3

TFLD: Task Force Leader

USFS: United States Forest Service

USFWS: United States Fish and Wildlife Service

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