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WILDLAND FIRE MANAGEMENT PLAN

TUALATIN RIVER NATIONAL WILDLIFE REFUGE



2012

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1. INTRODUCTION

1.1. PURPOSE OF THE FIRE MANAGEMENT PLAN

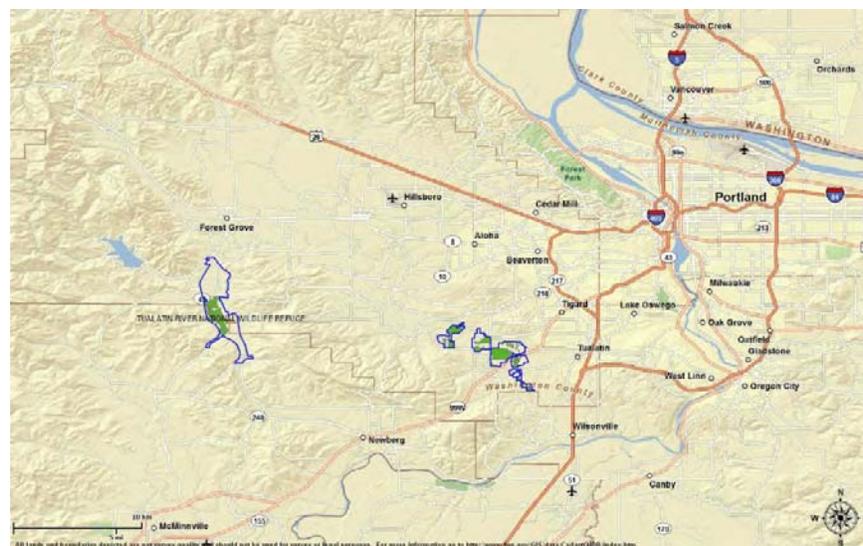
This Fire Management Plan (FMP) is written to meet the U.S. Department of the Interior (USDOI) and U.S. Fish and Wildlife Service (USFWS; the Service) requirement that every area with burnable vegetation have an approved FMP ([620 DM 1.4](#)). It also enables the Tualatin River National Wildlife Refuge (the refuge) to meet the Service requirement that refuges review and/or revise the FMP at a minimum of 5-year intervals or when significant land use changes are proposed (621 FW 2).

The goal of wildland fire management is to plan and implement actions that help accomplish the mission of the National Wildlife Refuge System (Refuge System). That mission is to administer a national network of lands and waters for the conservation, management, and, where appropriate, restoration of fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations of Americans (095 FW 3.2).

The approval of this FMP enables the refuge to consider a full range of appropriate suppression strategies and to conduct prescribed fires; without this FMP, prescribed fires cannot be conducted and only wildfire suppression strategies may be implemented.

This plan outlines both wildland fire suppression and prescribed fire activities on the refuge within the context of an approved comprehensive conservation plan (CCP). The CCP planning process began in 2010 and is scheduled to be completed by December 2012. The FMP defines a program to manage wildland fires and to ensure that wildland fire management goals and components are coordinated and in compliance with all required direction.

Figure 1: Tualatin River National Wildlife Refuge



1.2. GENERAL DESCRIPTION OF THE AREA IN THE FIRE MANAGEMENT PLAN

Tualatin River National Wildlife Refuge, which includes both the Sherwood Units and the Wapato Lake Unit, is located within the Tualatin River Basin in the northern portion of the Willamette Valley, in Washington and Yamhill Counties, Oregon. The refuge preserves a wetland ecosystem and provides a Wildlife Center in the shadow of Oregon’s largest metropolitan area, Portland. The overall management focus cited for the Sherwood Units in the Land Protection Plan (1992) is to “protect, enhance, and manage upland, wetland, and riparian habitats for a variety of migratory birds and resident fish and wildlife, as well as for the enjoyment of people.” The Wapato Lake Unit serves a similar purpose as the Sherwood Units and supports many of the same types of habitats. The approved acquisition boundary of the refuge totals approximately 7,370 acres. The refuge may purchase any lands within the boundary from willing sellers (Figures 3 and 4).

Figure 2: Regional Vicinity Map of Tualatin River National Wildlife Refuge

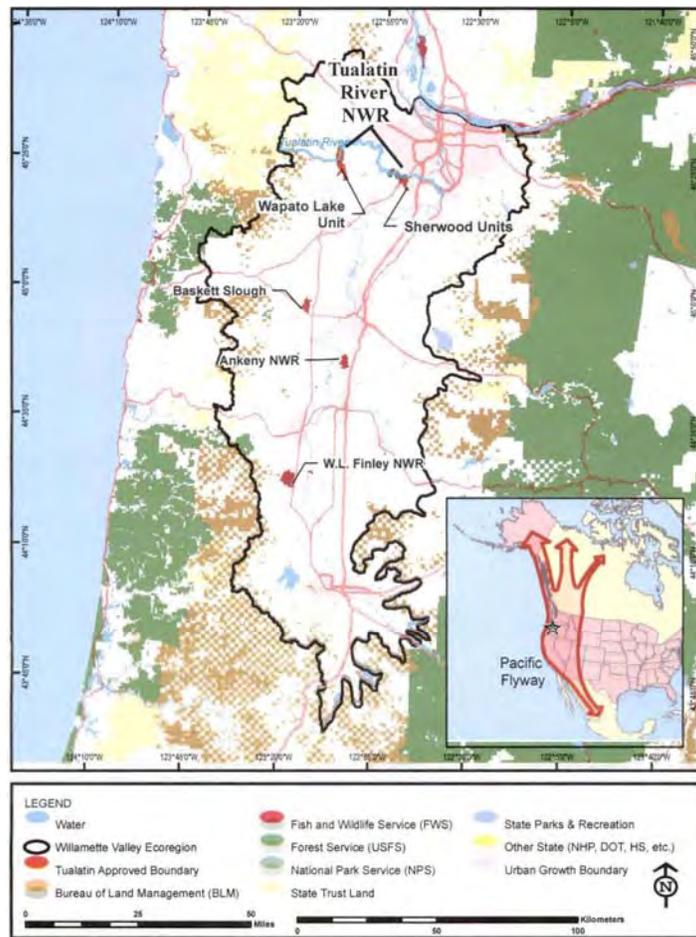
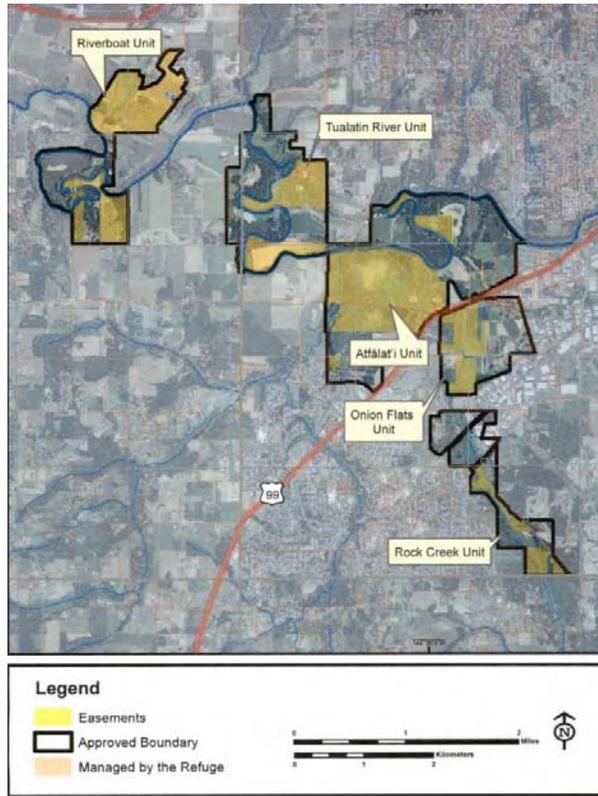


Figure 3: Sherwood Units Land Status on Tualatin River National Wildlife Refuge

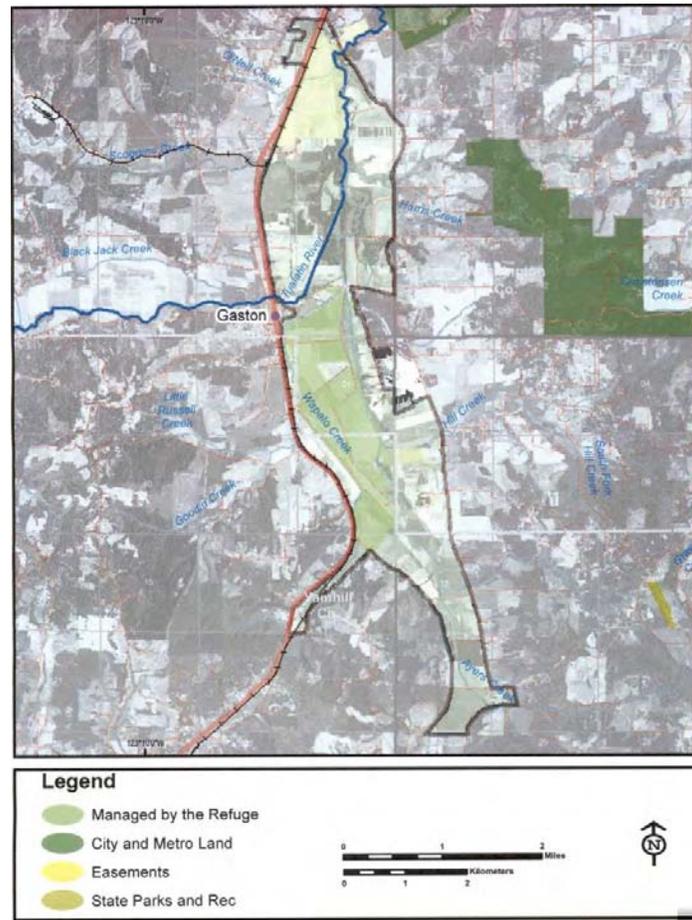


Current acreage owned or managed by the refuge is distributed among six management units (Table 1). The Tualatin River Valley consists of low foothills, terraces, alluvial fans, and floodplains. The refuge’s landscape is predominately flat bottomland bordered by uplands with elevations ranging from 105 to 300 feet above sea level. Habitats consist of rivers and streams; herbaceous and scrub-shrub wetlands; riparian forests; wet prairie; oak savanna, and mixed coniferous/deciduous forested uplands.

Table 1: Management Units on Tualatin River National Wildlife Refuge

Management Unit	Acres
Riverboat	355
Tualatin River	229
Atfalat'i	561
Onion Flats	129
Rock Creek	75
Wapato Lake	816
Total	2,165

Figure 4: Land Status of Wapato Lake Unit on Tualatin River National Wildlife Refuge



1.3. SIGNIFICANT VALUES TO PROTECT

1.3.1. CULTURAL RESOURCES

Three pre-European sites have been recorded on the refuge. They are not listed but may be eligible for listing on the National Register of Historic Places (NRHP). Two post-European sites have not been evaluated, but may also qualify for listing on the NRHP. Ground disturbance will be avoided if possible during suppression activities on all archeological sites. The regional archeologist will be notified of any suppression actions taken on refuge lands.

1.3.2. FISH AND WILDLIFE

The diverse habitat types found on the refuge host a variety of fish and wildlife. Over 165 species of birds have been recorded on the refuge. Mammals, reptiles, amphibians, and fish have not been inventoried on the refuge, but a diverse number of species breed, migrate, or forage on refuge properties. Large concentrations of waterfowl including Canada geese, northern pintails, and green-winged teal occur during late fall and winter. In spring and summer, numerous species of neotropical migrant songbirds migrate through or nest on the refuge. Two federally listed

threatened species, the bald eagle and upper Willamette steelhead, are potentially present year-round on the refuge, although no known bald eagle nesting territories occur or have been located on the refuge. In addition, peregrine falcons are present during fall through early spring. Western pond turtles and red-legged frogs use many of the refuge wetlands.

1.3.3. STRUCTURES AND FACILITIES

There are numerous refuge facilities that serve both the visitor services and biological programs and range from boundary fencing, barns, outbuildings, and numerous water control structures to residences and public use facilities, such as the Wildlife Center and environmental education shelter. In addition, there are structures that serve as offices for other Service programs, such as the Office of Law Enforcement and Cultural Resources.

There is a mixture of properties adjacent to the refuge. Many of the properties adjacent to the Sherwood Units have a rural agricultural nature as well as highly urbanized components. Many of the rural lots have single-family homes with other structures such as barns. The urban areas include closely spaced single- and multi-family residences and commercial businesses of various types. Adjacent and in the vicinity of refuge boundaries are large subdivisions within the urban growth boundary. Properties adjacent to the Wapato Lake Unit are mostly rural in nature with some single-family homes.

2. POLICY, LAND MANAGEMENT PLANNING, AND PARTNERSHIPS

2.1. IMPLEMENTATION OF FIRE POLICY

2.1.1. FEDERAL INTERAGENCY WILDLAND FIRE POLICY

This FMP implements these guiding principles of Federal wildland fire policy:

- Firefighter and public safety is the first priority in every fire management activity.
- The role of wildland fire as an essential ecological process and natural change agent has been incorporated into the planning process. Federal agency land and resource management plans set the objectives for the use and desired future condition of the various public lands.
- FMPs, programs, and activities support land and resource management plans and their implementation.
- Sound risk management is a foundation for all fire management activities. Risks and uncertainties relating to fire management activities must be understood, analyzed, communicated, and managed as they relate to the cost of either doing or not doing an activity.
- Fire management programs and activities are economically viable, based upon values to be protected, costs, and land and resource management objectives.
- FMPs and activities are based upon the best available science.
- FMPs and activities incorporate public health and environmental quality considerations.
- Federal, state, Tribal, local, interagency, and international coordination and cooperation are essential.

- Standardization of policies and procedures among Federal agencies is an ongoing objective.

2.1.2. NATIONAL FIRE PLAN

This FMP emphasizes the following primary goals of the [10-year Comprehensive Strategy](#) and the [Cohesive Strategy for Protecting People and Sustaining Natural Resources](#):

- Improving fire prevention and suppression
- Reducing hazardous fuels
- Restoring fire-adapted ecosystems
- Promoting community assistance

2.1.3. U.S. DEPARTMENT OF INTERIOR FIRE POLICY

This FMP incorporates and adheres to USDO I policy stated in [620 DM 1](#), by giving full consideration to use of wildland fire as a natural process and tool during the land management planning process and by providing for the following guidelines.

Wildland fires, whether on or adjacent to lands administered by the USDO I, that threaten life, improvements, or are determined to be a threat to natural and cultural resources or improvements under the USDO I's jurisdiction will be considered emergencies and their suppression given priority over other USDO I programs.

Bureaus shall cooperate in the development of interagency preparedness plans to ensure timely recognition of approaching critical wildland fire situations; to establish processes for analyzing situations and establishing priorities; and for implementing appropriate management responses to these situations.

Bureaus will enforce rules and regulations concerning the unauthorized ignition of wildland fires, and aggressively pursue violations.

2.1.4. U.S. FISH AND WILDLIFE SERVICE FIRE POLICY

This FMP addresses a full range of potential wildland fires and considers a full spectrum of tactical options (from monitoring to intensive management actions) for appropriate management response (AMR) to meet Fire Management Unit (FMU) objectives. It fully applies procedures and guidelines in the [Service Fire Management Handbook](#) and the National Interagency Fire Center's [Interagency Standards for Fire and Fire Aviation Operations](#) and affirms these key elements of Service fire policy:

- Firefighter and public safety is the first priority of the wildland fire management program and all associated activities.
- Only trained and qualified leaders and agency administrators will be responsible for, and conduct, wildland fire management duties and operations.

- Trained and certified employees will participate in the wildland fire management program as the situation requires, and noncertified employees will provide needed support as necessary.
- Fire management planning, preparedness, wildfire and prescribed fire operations, other hazardous fuel operations, monitoring, and research will be conducted on an interagency basis with involvement by all partners to the extent practicable.
- The responsible agency administrator must have coordinated, reviewed, and approved this FMP to ensure consistency with approved land management plans, values to be protected, and natural and cultural resource management plans, and to ensure that it addresses public health issues related to smoke and air quality.
- Fire, as an ecological process, will be integrated into resource management plans and activities on a landscape scale, across agency boundaries, based upon the best available science.
- Wildland fire will be used to meet identified resource management objectives and benefits when appropriate.
- Prescribed fire and other treatment types will be employed whenever they are the appropriate tool to reduce hazardous fuels and the associated risk of wildfire to human life, property, and cultural and natural resources and to manage our lands for habitats as mandated by statute, treaty, and other authorities.
- Appropriate management response will consider firefighter and public safety, cost effectiveness, values to protect, and natural and cultural resource objectives.
- Staff members will work with local cooperators and the public to prevent unauthorized ignition of wildfires on our lands.

2.2. LAND/RESOURCE MANAGEMENT PLANNING

2.2.1. LAND RESOURCE MANAGEMENT DOCUMENTS

The refuge is in the process of developing a CCP. The CCP will create a roadmap to guide refuge management over the next 15 years and beyond. An environmental assessment (EA) will be developed with the CCP to analyze the effects of the proposed plan and alternatives.

2.2.2. COMPLIANCE WITH REGULATORY ACTS

Compliance with regulatory acts (i.e., National Environmental Policy Act [NEPA]) associated with fire management activities will be documented in the CCP and associated EA.

2.3. FIRE MANAGEMENT PARTNERSHIPS

2.3.1. INTERNAL PARTNERSHIPS

The refuge does not have a dedicated fire position on the refuge. Fire management activities are coordinated by the zone fire management officer (FMO) stationed at the W.L. Finley National Wildlife Refuge. The Zone FMO is responsible for updating suppression agreements, providing fire management guidance in the event of a wildfire, and assisting with implementing prescribed fire projects identified by the refuge. The Zone FMO is also responsible for maintaining training records and ensuring that current policy and procedures are followed.

2.3.2. EXTERNAL PARTNERSHIPS

A memorandum of understanding with Tualatin Valley Fire and Rescue (TVFR) is in the process of being developed to cover suppression response in the Sherwood FMU (Appendix E of FMP). A similar agreement is also being developed with the Gaston Rural Fire Department to cover fire suppression on the Wapato Lake Unit (Appendix F of the FMP).

3. FIRE MANAGEMENT UNITS CHARACTERISTICS

The intent of this portion of the FMP is to articulate and describe the general fire management situation within the local area and describe the specific fire management goals and objectives for the refuge. In addition, this portion of the FMP will describe the particular FMUs defined within the refuge. These FMUs attempt to categorize lands on the refuge based on fire suppression response and are not limited to vegetation type or fuel model.

3.1. AREA-WIDE CONSIDERATIONS

3.1.1. FIRE MANAGEMENT ORGANIZATION

The refuge has no dedicated fire personnel. It relies on local fire departments for fire suppression and the Zone FMO to keep agreements for suppression up to date. The Zone FMO also provides program oversight for the development of annual dispatch plans and prescribed fire projects.

3.1.2. THE HISTORY OF PRESCRIBED FIRE AT THE REFUGE

The earliest historical records indicate that Native Americans started fires that burned extensive areas of the Willamette Valley annually. What role fire played prehistorically is not known. In general, fire is considered beneficial to the native grassland areas and oak savanna uplands. Fire is considered essential in the prairie areas to maintain the grassland condition and suppress encroaching woody vegetation. Previous versions of the FMP for Tualatin River National Wildlife Refuge only allowed for pile burning, and prescribed fire broadcast burning was not addressed. With the approval of this document, prescribed fire broadcast burning will be considered as a management tool available to managers. Each prescribed fire project will have an approved prescribed fire plan outlining procedures, notifications, and permits required for implantation of prescribed fire.

3.1.3. MANAGEMENT GOALS, OBJECTIVES, AND CONSTRAINTS IN THE CCP

3.1.3.1. GOALS FOR TUALATIN RIVER NATIONAL WILDLIFE REFUGE

The following goals were derived from the refuge CCP that is currently being developed with expected completion in December 2012.

1. Maintain, enhance, and restore bottomland riparian habitat to a historical range of variability representative of the Willamette Valley ecosystem in order to support breeding and migratory landbirds and other native species.
2. Maintain, enhance, and restore mixed coniferous/deciduous upland habitat to a historical range of variability representative of the Willamette Valley ecosystem in order to support breeding and migratory landbirds and other native species.
3. Maintain, enhance and restore oak savanna habitat to a historical range of variability

representative of the Willamette Valley ecosystem in order to support breeding and migratory landbirds and other native species.

4. Maintain, enhance, and restore native Willamette Valley wet prairie habitat, with an emphasis on management for rare and listed plant species.
5. Maintain, enhance, and restore a diversity of wetlands to support landbirds, waterbirds, and shorebirds with special emphasis on wintering waterfowl.
6. Maintain, enhance, and, where feasible, restore streams and off-water backwater slough habitats to benefit salmonids and other native aquatic species.
7. Cultivate and maintain croplands as an interim measure to control nonnative invasive species.
8. Collect scientific information (surveys, scientific assessments, and research) necessary to support adaptive management decisions that are associated with Goals 1 through 9 of the CCP.
9. Protect and manage the refuge’s unique cultural resources for their cultural, scientific, and educational values, while consulting with appropriate Native American groups and preservation organizations and complying with historic preservation legislation.
10. Provide visitors, local residents, volunteers, and partners with opportunities to understand and appreciate fish and wildlife conservation as well as the purpose, ecology, and management of the refuge and the Refuge System.
11. Provide students and teachers from the greater Portland area with compatible and high-quality opportunities to participate in environmental education.
12. Provide refuge visitors with diverse, compatible, and high-quality opportunities to participate in wildlife-dependent recreation and interpretation.

3.1.3.2. SPECIFIC RESOURCE MANAGEMENT GOALS RELATED TO FIRE
MANAGEMENT

<i>Objective 2.1 Enhance and maintain mixed coniferous/deciduous upland forest</i>
<i>Strategies Applied to Achieve Objective</i>
<ul style="list-style-type: none"> • Use common forest health practices including prescribed fire and mechanical removals to create variable age structure.
<i>Objective 2.2 Restore mixed coniferous/deciduous upland forest</i>
<i>Strategies Applied to Achieve Objective</i>
<ul style="list-style-type: none"> • Use prescribed fire as appropriate to control invasive species and reduce thatch.
<i>Objective 3.1 Enhance and maintain oak savanna habitat</i>
<i>Strategies Applied to Achieve Objective</i>
<ul style="list-style-type: none"> • Use prescribed fire during fall with burn interval of 3 to 5 years.
<i>Objective 3.2 Restore oak savanna habitat</i>
<i>Strategies Applied to Achieve Objective</i>
<ul style="list-style-type: none"> • Use prescribed fire during spring to control nonnative species prior to initial planting. • Use prescribed fire during fall with burn intervals of 3 to 5 years to reduce thatch and control invasive species.

<i>Objective 4.1 Enhance and maintain native wet prairie</i>
<i>Strategies Applied to Achieve Objective</i>
<ul style="list-style-type: none"> • Use prescribed fire at burn intervals of 3 to 5 years.
<i>Objective 4.2 Restore native wet prairie</i>
<i>Strategies Applied to Achieve Objective</i>
<ul style="list-style-type: none"> • Use prescribed fire during spring to control nonnative species prior to initial planting. • Use prescribed fire at burn intervals of 3 to 5 years.
<i>Objective 5.1 Enhance and maintain herbaceous wetland</i>
<i>Strategies Applied to Achieve Objective</i>
<ul style="list-style-type: none"> • Use prescribed fire to reduce extent of emergent stands and/or remove encroaching woody species (e.g., willow).
<i>Objective 5.2 Restore native herbaceous wetland</i>
<i>Strategies Applied to Achieve Objective</i>
<ul style="list-style-type: none"> • Use prescribed fire during spring to control nonnative species prior to initial planting.
<i>Objective 5.3 Enhance and maintain scrub-shrub wetland</i>
<i>Strategies Applied to Achieve Objective</i>
<ul style="list-style-type: none"> • Use prescribed fire to increase diversity in older stands.
<i>Objective 8.2 Research</i>
<i>Strategies Applied to Achieve Objective</i>
<ul style="list-style-type: none"> • Conduct study to evaluate timing of prescribed fire to best promote native herbaceous cover and control invasive plants.
<i>Objective 5.2 Restore native herbaceous wetland</i>
<i>Strategies Applied to Achieve Objective</i>
<ul style="list-style-type: none"> • Use prescribed fire during spring to help remove nonnative species prior to initial planting.
<i>Objective 5.3 Enhance and maintain scrub-shrub wetland</i>
<i>Strategies Applied to Achieve Objective</i>
<ul style="list-style-type: none"> • Use prescribed fire to increase diversity in older stands.

3.1.3.3. OBJECTIVES FOR FIRE MANAGEMENT AT THE REFUGE

The objectives for fire management at the refuge are:

- Promote a program to ensure firefighter and public safety, reduce occurrence of human-caused fires, and ensure appropriate suppression response capability to meet expected wildland fire complexity.
- Utilize prescribed fire and mechanical treatments to reduce hazardous fuels and enhance and maintain wildlife habitat.

3.1.3.4. SPECIFIC FIRE MANAGEMENT OBJECTIVES

-  Promote a safety-oriented fire management program.
-  Protect life, property, and resources from wildland fires at costs commensurate with

resource values at risk.

-  Use appropriate suppression tactics and strategies that minimize long-term impacts of suppression actions.
-  Use prescribed fire to reduce hazardous fuels and enhance and maintain native habitats.

3.2. FIRE MANAGEMENT UNITS

3.2.1. FIRE MANAGEMENT UNITS—SPECIFIC DESCRIPTIONS

FMUs are areas on a refuge that have common wildland fire management objectives and strategies, are manageable as units from a wildland fire standpoint, and are based on natural or human-made fuel breaks. An FMU may coincide with a prescribed fire burn block or treatment area or unit, but this is not always the case. Current acreage owned and managed by the refuge is distributed among six management units within the Sherwood and Wapato Lake Units. Five management units are located within the Sherwood Units and one on the Wapato Lake Unit. Due to the similarity in fire response within the management units, the refuge is categorized into two FMUs. Other factors, including the geographic separation within the urban setting, allow for the simple organization of the refuge into two FMUs.

The two FMUs at Tualatin River National Wildlife Refuge are:

FMU 1: Sherwood;

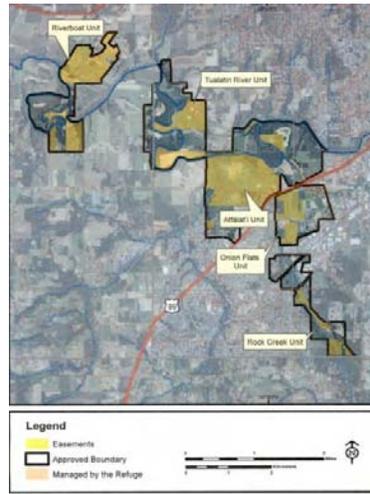
- Riverboat Unit (355 acres)
- Tualatin River Unit (229 acres)
- Atfálat'i Unit (561 acres)
- Onion Flats Unit (129 acres)
- Rock Creek Unit (75 acres)

FMU 2: Wapato Lake (816 acres)

3.2.2. FMU 1—SHERWOOD

The Sherwood FMU is 1,349 acres and includes the Riverboat, Tualatin River, Atfálat'i, Onion Flats, and Rock Creek Units (Figure 5). These management units are defined in the CCP, and would elicit a similar response in the event of a wildfire. FMU 1 is predominately flat bottomland bordered by uplands. It has oak savanna habitat, mixed coniferous/deciduous forested uplands, riparian forests, scrub-shrub wetlands, and wet prairies. In the event of a fire within this FMU, suppression actions would include using existing natural and human-made fire breaks to catch the fire at the smallest possible size. The lands surrounding the Sherwood FMU are primarily a mix of urban and agricultural lands. The City of Sherwood abuts the southern and western edge of the Sherwood FMU. The City of Tualatin is to the east, and King City is to the northeast.

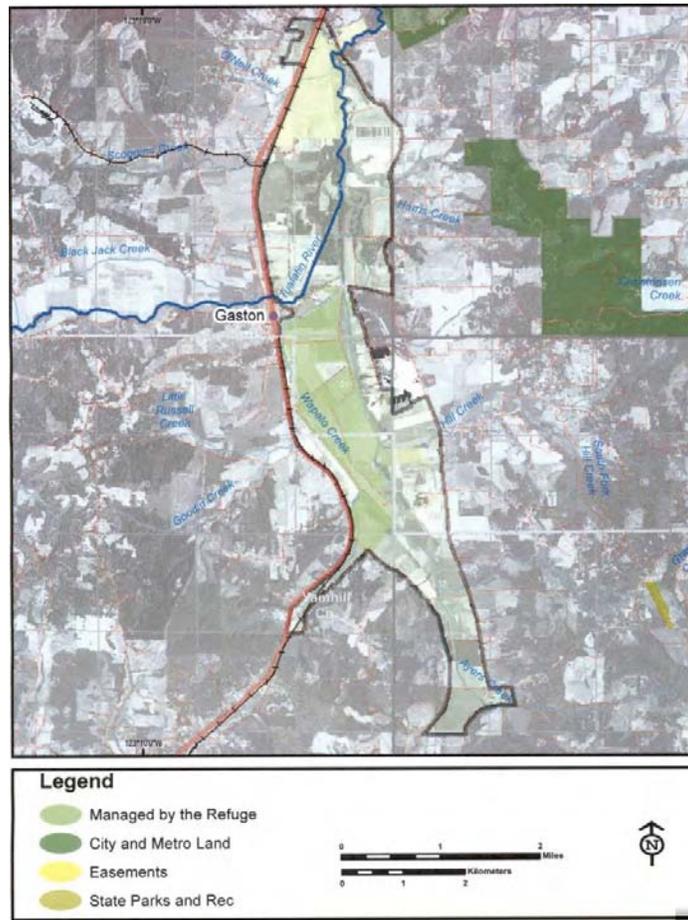
Figure 5: FMU 1 (Sherwood)



3.2.3. FMU 2—WAPATO LAKE

The Wapato Lake FMU is approximately 816 acres (Figure 6). The Wapato Lake Unit was established in 2007. This unit serves a similar purpose as the Sherwood Units and supports many of the same types of habitats. Current ownership is primarily of a historical lake bed where a series of dikes and levees were built in the 1930s to support irrigation of onion farming practices. The City of Gaston is adjacent to the western boundary of the Wapato Lake FMU and Forest Grove sits to the north.

Figure 6: FMU 2 (Wapato Lake)



4. WILDLAND FIRE OPERATIONAL GUIDANCE

The procedures used to implement the FMP for the refuge are covered in this section. Information pertaining to this management is either directly provided or references are cited. Interagency standards for fire and fire aviation operations have been developed, and are documented and available for reference in the Interagency Standards for Fire and Fire Aviation Operations (National Interagency Fire Center’s National Fire Equipment System [NFES] No. 2724).

Structural fire suppression is the responsibility of local governments. USFWS may assist with exterior structural protection activities under formal Fire Protection Agreements that specify mutual responsibilities, including funding (Redbook 01-3).

All wildfires will be supervised by a qualified incident commander (IC), through a delegation of authority (0 of FMP) from the project leader. The IC is responsible for the following:

- Assessing the fire situation and making a report to dispatch as soon as possible.
- Using guidance in this FMP and/or a delegation of authority to determine and implement an appropriate management response.
- Determining organization, resource needs, strategy, and tactics.
- Preparing brief incoming and assigned resources on the organization, strategy and tactics, weather and fire behavior, LCES, seasonal and historical ERCs, and radio frequencies.
- Advising dispatch of resources needed for the appropriate management response.
- Managing the incident until relieved or until the fire is suppressed.

The FMP and a delegation of authority can provide a general strategy to an IC, who has the discretion to select and implement appropriate tactics within the limits described for the FMU, including when and where to use minimum impact suppression tactics (MIST), unless otherwise specified.

All resources, including mutual aid resources, will report to the IC, in person or by radio and receive an assignment prior to tactical deployment.

The refuge is dedicated to providing for the safety of each visitor and all residents and property adjacent to the refuge's boundary. Residents adjacent to the refuge will be notified with as much advance warning possible of any wildfire that poses the threat of burning outside refuge boundaries. A contact list can be found in Appendix A of this FMP.

4.1. PREPAREDNESS

Preparedness is the work accomplished prior to fire occurrence to ensure that the appropriate response, as directed by the FMP, can be carried out. Preparedness activities include budget planning, equipment acquisition, equipment maintenance, dispatch planning, equipment inventory, personnel qualifications, and training. The preparedness objective is to have a well-trained and equipped fire management organization to manage all fire situations within the refuge. Preparedness efforts are to be accomplished outside the normal fire season dates. The general fire season recognized by the Oregon Department of Forestry runs from June 10 through October 15.

Wildland fire training, experience, and position qualifications information will be maintained through the Service's Incident Qualification and Certification System (IQCS) database. The information will be updated annually.

The minimum qualification will be Firefighter Type 2 (FFT2), which requires the annual firefighter refresher. Specific training and certification requirements can be found in the Redbook Chapter 13.

Fire lines consisting of vegetation-cleared area will be constructed around the perimeter of the refuge annually. Work on these lines will begin after July 16. Fire lines will consist of combination mow and disc lines, and will be cleared to make them accessible to Type 6 engines.

There are two apparatus available at Baskett Slough National Wildlife Refuge (35 miles to the south of Tualatin River National Wildlife Refuge) for suppression and prescribed fire. Equipment is primarily designed and maintained for use in support of prescribed fire activities on-refuge. They are:

- Type 6 engine (E-76 fire-ready)
- Type 4 engine (unmaintained)

E-76 is a Type 6 engine and will be maintained fire-ready during the specified fire season. The Type 4 engine requires an operator with a Commercial Driver’s License (CDL) and will be maintained for fire suppression and used if qualified personnel are available to operate it. Personal protective equipment (PPE) will be assigned to qualified personnel. Assigned PPE will be inspected annually as part of the annual fire refresher.

Additional equipment and supplies are available through cooperators and the interagency cache system and would be ordered through the Coastal Valley IACC.

4.2. DETECTION

Most wildland fires at Tualatin River National Wildlife Refuge are caused by human-related activities. Many times the person who started the fire will call refuge headquarters for help or the local fire department if the refuge office is closed after hours. Fires are typically reported through 911 emergency services, and the refuge is contacted along with the TVFR.

4.3. COMMUNICATIONS

Cellular phones are the primary means of communication on the refuge. All immediate emergency notifications and contacts can be found in Appendix A of the FMP. During emergency fire operations, local radio frequencies will be used. Frequencies that will be used are found in Table 2.

Table 2: Radio Frequencies

Channel Name	Assignment	Tx:	Rx:
ODF Red Net	Command	151.3400	151.3400
ODF White Net	Air to Ground	151.3100	151.3100
NIFC Tac 1	Tactical	168.0500	168.0500
NIFC Tac 2	Tactical	168.2000	168.2000
NIFC Tac3	Tactical	168.6000	168.6000

4.4. DISPATCH, INITIAL RESPONSE, AND INITIAL ATTACK

Upon report of wildfire, qualified refuge personnel will respond initially and provide the dispatch center with a fire update. These procedures and criteria for status reports are outlined in the dispatch plan (Appendix D of FMP). Qualified and available refuge staff should respond to assist with tasks such as securing the point of origin, fire suppression, protecting visitors at risk, and implementing necessary closures. In most cases, initial attack (IA) resources will respond from

TVFR. The refuge will use the Incident Command System (ICS) as a guide for suppression organization and actions.

4.5. EXTENDED ATTACK AND LARGE FIRE MANAGEMENT

If the fire exceeds the capabilities of IA resources and transitions into extended attack, additional resources and logistics will be handled through TVFR. The required incident analysis, delegations of authority, and briefing regarding incoming resources will be initiated by the Zone FMO. Specific incident management procedures for transition into extended attack can be found in the Redbook Chapter 11.

4.6. AVIATION OPERATIONS

All fire-related aviation operations will follow applicable guidelines of the USDOJ National Business Center Aviation Management Directorate. Aviation requests and operations will be coordinated with regional office staff.

Aircraft may be used in all phases of fire management operations. All aircraft must be approved by the National Business Center (NBC) or the U.S. Forest Service (USFS). An OAS Aviation Policy Department Manual will be provided by OAS.

Helicopters may be used for reconnaissance, bucket drops, and transportation of personnel and equipment. Natural helispots and parking lots are readily available in most cases. Clearing for new helispots should be avoided where possible. Improved helispots will be rehabilitated following a fire.

As in all fire management activities, safety is the primary consideration. Qualified aviation personnel will be assigned to all flight operations.

4.7. REVIEWS AND INVESTIGATIONS

Reviews and investigations are used by wildland fire and aviation managers to assess and improve the effectiveness and safety of organizational operations. Brief descriptions of various reviews and associated procedures and requirements, including those for serious wildland fire accidents, entrapments, and trespass are listed in the Redbook Chapter 18.

4.8. REPORTS

The Zone FMO will complete and file an individual fire report (DI-1202) for the following types of fires within 10 days of a fire being declared out:

- All wildfires on Service lands.
- Wildfires threatening Service lands on which Service personnel take action.
- All escaped prescribed fires. When a fire exceeds prescription, it must be declared a wildfire and a separate new report filed to report acres burned by the wildfire from the time of declaration to the time of being declared out.
- All false alarms responded to by field office staff.

DI-1202s are required regardless of who takes action, whether it is a Service engine, cooperator, or contractor. When we take IA off our lands, the agency with jurisdiction over where the fire occurs will file a report and we will file a limited report to document our response and to support potential billing to non-Federal entities for trespass fires.

4.9. HAZARDOUS FUELS MANAGEMENT

4.9.1. PRESCRIBED FIRE PROGRAM FOR HAZARDOUS FUELS AND HABITAT RESTORATION

The annual prescribed fire and fuels treatment schedule should be prepared in February/March and included as an important aspect in the annual work plan. Prescribed fire plans (i.e., burn plans) should be completed and submitted prior to the burn season.

4.9.1.1. PROGRAM OVERVIEW

All prescribed fires must comply with NEPA requirements. An EA for management actions associated with prescribed fire was completed as part of the CCP development process. The CCP recognizes prescribed fire as a necessary tool for habitat management and restoration. All prescribed fire activities must also adhere to Service requirements, which can be found in the Interagency Prescribed Fire Planning and Implementation Procedures Reference Guide in Chapter 17 of the USFWS Fire Management Handbook and the Redbook.

The fire management program consults with the refuge wildlife biologist to formulate a prescribed fire program for the annual work plan that:

- Identifies the annual target acreage scheduled for treatment.
- Designates the burn units to be treated.
- Determines prescribed burn unit complexities.
- Identifies the preferred treatment interval (this can vary by fuel type).
- Recommends the approved method of treatment (fire, fire/mechanical/chemical, etc.).
- Recommends an effective treatment sequence (rotation).
- Identifies the type of monitoring and frequency.

4.9.1.2. PRESCRIBED BURN PROGRAM OBJECTIVES

Prescribed fire is a useful tool for restoring and maintaining natural conditions and processes. The goals of prescribed fire are to:

-  Restore and maintain native wetland prairies and oak savanna using fire to set back and reduce woody vegetation, such as Douglas-fir.
-  Enrich soil nutrients that benefit vegetation.
-  Provide benefits to specific rare plant species, such as Nelson's checker-mallow (*Sidalcea nelsoniana*).
-  Provide opportunities for research of fire-dependent species and plant communities.
-  Remove unwanted accumulations of residual vegetation in association with wetland restoration.
-  Realize beneficial effects upon native prairie plant species.

Upland grasslands are burned to maintain an open oak savanna habitat by inhibiting the encroachment of shrubs and woody vegetation, and to invigorate native plant species. Wetland habitats on the refuge may be burned to remove dense stands of reed canarygrass, which dominate the shallow moist soil areas. Some areas may be treated with herbicide post-burn, as reed canarygrass sprouts quickly following fire. The increase in sunlight and exposed soil will allow native species to germinate, thereby promoting and supporting a healthy wetland ecosystem.

The Willamette Valley native prairies evolved under a regime of fire. There are no known ecological equivalents to the use of fire, although mowing can be used to mimic some of the effects. Mowing is used as a restoration tool as it provides a disturbance. Timing of mowing allows nonnative species to be targeted prior to the development of seed heads. Mowing is used as an alternative treatment type to burning if burn windows are not available during a given field season.

4.9.1.3. EFFECT OF NATIONAL AND REGIONAL PREPAREDNESS LEVELS

Prescribed fires may be ignited during National Preparedness Levels 4 or 5 as specified in the National Interagency Mobilization Guide.

The program relies on interagency cooperators from the USFS, the Bureau of Land Management (BLM), and the Bureau of Indian Affairs (BIA) to accomplish prescribed fire projects. Elevated preparedness levels are indicative of an active fire season, and resource availability may be limited due to local resources being committed to ongoing incidents.

4.9.1.4. PROJECT PLANNING

Prescribed fire will be used to reduce hazard fuel accumulations, restore fire-dependent ecological communities, improve conditions for federally listed threatened and endangered species, improve wildlife habitat, and contribute to research. All prescribed fire activity will comply with applicable Federal, state, and local air quality laws and regulations.

Prescribed fire plans for the units to be treated will be prepared and approved prior to treatment. Prescribed fire plans should be prepared well enough in advance to allow for as much time as possible for review prior to the start of a burn season or burn execution phase.

A smoke management section is required and must contain adequate information to meet Oregon State requirements. No permits are required.

All burn plans are prepared by a qualified burn boss, reviewed by a technical reviewer and the Zone FMO, and then approved by the project leader.

Which qualified burn boss will be assigned burn boss duties is determined near the time of the burn by the Zone FMO or designated member of the Zone FMO's staff. The approved burn plan must be reviewed and signed by the designated burn boss before implementation. Procedures for

prescribed fire implementation are covered within the Interagency Prescribed Fire Planning and Implementation Procedures Reference Guide.

4.9.1.5. PROJECT IMPLEMENTATION

Site-specific treatment objectives are developed to guide project operations. Prescribed fire objectives describe what a treatment must accomplish in order to meet a resource management objective. Each prescribed burn plan contains objectives for the project that are quantifiable and measurable.

The Zone FMO shall assign the burn boss appropriate to the complexity level of the planned burn. The burn boss will follow all the guidelines and procedures that are contained in the prescribed fire plan.

Cooperators, contractors, and administratively determined emergency hires may be used to implement prescribed fires. All individuals working on Federal agency prescribed fires must meet the Fire Management Handbook and Wildland Fire Qualification Guide (published by the National Wildfire Coordinating Group [NWCG], PMS 310-1) standards unless local agreements specify otherwise. The complexity of each prescribed burn determines the organization needed to safely achieve the objectives specified in the burn plan. Further information on qualifications is found in Chapter 17 of the 2008 Interagency Standards for Fire and Fire Aviation Operations. The Zone FMO will be responsible for ensuring that refuge personnel maintain the qualifications necessary to implement prescribed fire programs.

A prescribed fire must be declared a wildfire by those identified in the burn plan when those person(s) determine that the contingency actions have failed or are likely to fail and cannot be mitigated by the end of the next burning period. An escaped prescribed fire must be declared a wildfire when the fire has spread outside the project boundary, or is likely to do so, and cannot be contained by the end of the next burning period. A prescribed fire can be converted to a wildfire for reasons other than an escape. An appropriate management response will be made to such incidents. A formal analysis using a required wildfire decision support tool will be undertaken when needed. The refuge manager and project leader will be notified of an escaped prescribed fire.

The public will be informed of prescribed fires through news releases, interpretive messages, and educational programs. Individual prescribed fires should not be conducted without informing agencies and members of the public likely to be impacted.

4.9.1.6. SMOKE MANAGEMENT

All grass burning in the Willamette Valley is strictly regulated by the Oregon Department of Environmental Quality (DEQ) through the Oregon Department of Agriculture, Division of Smoke Management (DSM), to comply with smoke dispersal requirements in the Willamette Valley. DSM decides, on a daily basis, whether burning will be allowed and how many acres may be burned. No prescribed burns are conducted without DSM approval. Approval is obtained by contacting DSM on the morning of a proposed burn. In addition to smoke management by DSM, the refuge lands are also constrained by fire danger ratings for the area. If the fire danger

rating is extreme, then no prescribed burning will be allowed even when weather conditions are favorable for smoke dispersion.

4.9.1.7. AFTER ACTION REVIEWS AND ESCAPED FIRE REVIEWS

The burn boss will ensure an informal After Action Review (AAR) is conducted for each operational period on a prescribed fire, as described in the Incident Response Pocket Guide (IRPG).

All prescribed fires declared a wildfire will have an investigative review initiated by the refuge manager or project leader. The level and scope of the review will be determined by policy and procedures of the Redbook and the USFWS Fire Management Handbook.

4.9.1.8. REPORTS

Burn plans will specify information to be included in a project file. The burn boss will ensure this information is provided to the refuge manager and/or Zone FMO as specified. This includes documenting conditions and fire behavior during the prescribed fire to assess how well actual fire characteristics fit those predicted, documenting any unanticipated difficulties encountered during implementation, and assessing how well the fire accomplished the intended objectives.

The burn boss will complete an Individual Fire Report (DI-1202) with the Zone FMO, who will file an Individual Fire Report (DI-1202) electronically within 10 days of the fire being declared out.

4.9.2. NON-FIRE HAZARD FUELS TREATMENT PROGRAM

Many activities associated with normal habitat maintenance are similar to pre-suppression fire activities. Mowing is a regular tool used to treat invasive species of grasses and shrubs and to mimic a fire disturbance. These activities may not be funded through the fire program but directly benefit the fire program as well as the habitat. Mowing is used in pretreatment of prescribed fire units to lower flame lengths near the control lines. These areas may not be classified as hazardous fuels but their treatment would aid in suppression if a fire were to occur on the refuge.

4.9.3. PROCESS TO IDENTIFY HAZARD FUELS TREATMENTS

Due to the difficulty of access to areas within the refuge, most hazardous fuels treatments are identified to aid in creating defensible space and engine access. An annual site visit is conducted with the project leader, refuge biologist, and the Zone FMO to identify areas that would benefit ecologically as well as aid in suppression in the event of a wildfire.

4.10. EMERGENCY STABILIZATION AND BURNED AREA REHABILITATION

Immediate post-wildfire actions are needed to minimize the threat to life and health and prevent unacceptable degradation to natural and cultural resources (see Interagency Burned Area Emergency Response Guidebook). Required repair of damage resulting for wildland fire activities will be completed before crews and resources are released from assignment to the incident.

Rehabilitation and restoration efforts will be undertaken to protect and sustain ecosystems, public health, and safety, and to help communities protect infrastructure. Natural recovery is the preferred emergency stabilization or burned area rehabilitation (BAR) treatment.

The goal of the Emergency Stabilization and Rehabilitation (ESR) Plan is to promote public safety, stabilize and prevent further degradation of natural and cultural resources, and rehabilitate the stability, productivity, diversity, and ecological integrity of refuge lands after a wildland fire as described in approved refuge management plans. The ESR Plan is tiered to the refuge CCP, FMP, and operations or step-down plans. Development of ESR Plan objectives is guided by resource management objectives, general management practices, and constraints identified in an approved CCP, habitat management plan, and/or supporting step-down plans.

If burned area ESR is required to reduce the effects of a wildland fire, then the refuge should request appropriate funding through the ESR fund. The Service representative at the National Interagency Fire Center administers the ESR fund. A rehabilitation and restoration survey, plan, and request must be prepared and submitted according to agency guidelines. Smaller incidents may only need simple plans prepared by refuge staff. Larger incidents with extensive rehabilitation efforts should employ an ESR team. An ESR team is composed of personnel who specialize in key disciplines of resource management and are experts in ESR Plan preparation. A formal request for an ESR team should be made in consultation with the Incident Management Team as soon as it appears that damage may be significant. Instructions for ESR team mobilization can be found in the NWCG mobilization guide. Delays in making a request may hinder funding approval and magnify the damage. Once an ESR team is employed, the project leader or their representative should provide guidance to the ESR team leader with expectations. The project leader, biologist, and Zone FMO will review all ESR plans. The final plan will be submitted to the Regional Office for review prior to submission to the Washington Office. Direction on ESR guidelines can be found in the Service Fire Management Handbook.

4.11. PREVENTION, MITIGATION AND EDUCATION

4.11.1. PREVENTION/MITIGATION

The objective of fire prevention activities is to prevent human-caused wildfires. The inadvertent or intentional ignition of wildland fuels by humans is illegal. All human-caused wildfires will be investigated at the earliest possible time. The investigation may range from a documented determination of cause by the IA crew to criminal investigation by a qualified arson investigator.

Educating the public on the value of fire as a natural process is important to increasing public understanding and support for the fire management program. The refuge will use the most appropriate and effective means to explain the overall future of the fire and smoke management programs. This may include supplemental handouts, signage, personal contacts, auto tour routes, or media releases. When deemed necessary, interpretive presentations will address the fire management program and explain the role of fire in the environment.

The public information program would include the following options.

1. The concepts of the prescribed burn program will be incorporated, as appropriate, in publications, brochures, and handouts.
2. During periods when prescribed burns are ignited, handouts will be prepared and distributed to all visitors entering areas of fire activity.
3. The fire management program may be incorporated into visitor contacts. Particular attention will be given when fires are conspicuous from roads or visitor use areas.
4. News releases will be distributed to the media as appropriate.
5. The public information outlets of neighboring and cooperating agencies and the Regional Office will be provided with all fire management information.
6. The fire management program will be discussed in informal talks with all employees, volunteers, residents, and neighbors.

5. MONITORING AND EVALUATION

The intent of this section is to document the processes for determining whether the FMP is being implemented as planned and fire-related goals and objectives are being achieved. Information obtained from monitoring is used to update the FMP and land management plans.

5.1. FIRE MANAGEMENT PLAN MONITORING

5.1.1. ANNUAL FIRE MANAGEMENT PLAN REVIEW

This FMP will be reviewed annually and updated as needed, upon local agency administrator approval. Revisions of FMPs with regional review and concurrence are required every 5 years and following completion of a new (or significantly revised) CCP or habitat management plan.

5.2. HAZARD FUELS TREATMENT MONITORING

Any prescribed fire treatment will be monitored according to the 2010 Pacific Region Hazardous Fuels Monitoring Framework. At a minimum, a perimeter will be collected of the treatment area and archived in the regional database.

5.3. FIRE CRITIQUES

Fire reviews will be documented and filed with the final fire report. The Zone FMO will retain a copy for the refuge files.

5.4. FIRE MANAGEMENT TERMINOLOGY

Terms in the FMP are defined by the NWCG, at <http://www.nwcg.gov/pms/pubs/glossary>.

Appendix A. *Directory (update annually)*

Name	Position	Office Phone	Extension	Cell Phone	Home
Erin Holmes	Project Leader	(503) 625-5944	221	(503) 816-1227	(971) 400-4405
John Gahr	Deputy Project Leader	(503) 625-5944	223	(503) 816-1666	(971) 239-9122
Greg Hagedorn	Zone Fire Management Officer	(541) 757-7236	205	(541) 740-5613	(503) 913-2883
Kolleen Irvine	Law Enforcement Officer	(503) 625-5944	230	(971) 832-1730	N/A
Sarah Gray	Administrative Assistant	(503) 625-5944	226	N/A	N/A
Kim Strassburg	Visitor Services Manager	(503) 625-5944	228	(503) 539-5194	N/A
Pete Schmidt	Refuge Biologist	(503) 625-5944	231	(503) 816-2007	N/A
John Schweitzer	Equipment Operator	(503) 625-5944	N/A	(503) 329-8384	N/A
Wildlife Center	N/A	(503) 625-5945	N/A	N/A	N/A

Appendix B. *Fire Management—Roles and Responsibilities*

Agency Administrator/Project Leader

- Is responsible for implementation of all fire management activities within the refuge, and will ensure compliance with USDOJ, Service, and refuge policies.
- Selects the appropriate management responses to wildland fire.
- Coordinates refuge programs to ensure personnel and equipment are made available and utilized for fire management activities including fire suppression, prescribed burning, and fire effects monitoring.
- Ensures that the fire management program has access to refuge and resources when needed.
- Ensures that staff consider the fire management program during refuge-related planning and implementation.

Refuge Biologist

- Identifies prescribed burn units and biological objectives to the Zone FMO, notifies Zone FMO of prescribed fire project constraints, and ensures that refuge resources are available to accomplish prescribed fire and fire suppression objectives.
- Acts as the primary refuge resource management specialist during fire management planning and operations.
- Drafts wildland fire rehabilitation plans for project leader.
- Coordinates through project leader to provide biological input for the fire program to the Zone FMO.
- Assists in design and implementation of fire effects monitoring for the Zone FMO.
- Participates, as requested, and is appropriately trained in prescribed burning and wildland fire suppression.

Fire Management Officer

- Maintains oversight and review role for fire management activities on refuge lands.
- Responsible for all fire-related planning and implementation.
- Responsible for implementation of this FMP. This responsibility includes coordination and supervision of all prevention, pre-suppression, detection, wildland fire, prescribed fire, suppression, monitoring, and post-fire activities involving refuge lands.
- Prepares burn plans.
- Integrates biological refuge objectives into all fire management planning and implementation.
- Solicits program input from the project leader.
- Supervises prescribed fire planning.
- Responsible for planning, coordinating, and directing preparedness activities including fire training, physical fitness testing, and Interagency Fire Qualification System (IFQS) data entry, fire cache and equipment inventory accountability, maintenance, and operation, and cooperation with cooperative agencies.
- Responsible for setting up rural fire assistance agreements and grants.

- Responsible for setting up and overseeing WUI and hazardous fuels treatment contracts.
- Responsible for preparation of fire reports following the suppression of wildland fires and for operations undertaken while conducting prescribed fires.
- Prepares an annual report detailing fire occurrences and prescribed fire activities undertaken in each calendar year. This report serves as a post-year fire management activities review, as well as provides documentation for development of a comprehensive fire history record for the refuge.
- Submits budget requests and monitors FIREBASE funds.
- Nominates personnel to receive fire-related training, as appropriate.
- Responsible for interagency coordination.
- Ensures fire management policies are observed.
- When available, may serve as prescribed fire burn boss and propose prescribed fire projects.
- Prepares refuge fire prevention plan, and coordinates fire prevention with other employees.
- Assists in updates of this FMP, maintains fire records, reviews fire reports (DI-1202) for accuracy, and enters fire reports into FMIS.
- Maintains engines and fire-related equipment in state of readiness.

Fire Management/Suppression Personnel

- Consists of all refuge personnel, whether permanent or seasonal, who meet the minimum standards set by the NWCG for firefighters.
- Are fully equipped with proper PPE, have taken and passed the minimum classroom training, and meet physical fitness standards required.
- Undertake fire management duties as assigned by the qualified IC on each suppression action or by the prescribed fire burn boss on each prescribed fire project.
- Responsible for their PPE and physical conditioning, qualifying annually with the work capacity test.

Incident Commander

ICs (of any level) use strategies and tactics as directed by the project leader and WFDSS where applicable to implement selected objectives on a particular incident. A specific Delegation of Authority (0 of FMP) will be provided to each IC prior to their assuming responsibility for an incident. Major duties of the IC are given in the NWCG Fireline Handbook.

Initial Attack Teams

IA teams consist of experienced, fully qualified firefighters. Teams will be prepared and equipped with hand and power tools as needed and will be dispatched self-sufficient to function up to 24 hours without additional support.

Employees participating in any wildland fire activities on Service or cooperator lands will meet fitness requirements established in PMS 310-1, except where Service-specific fitness requirements apply.

Resource Advisor

Resource advisors (RAs) are technical specialists appointed by the agency administrator; they report to the IC or designee and provide guidance for natural and cultural resource protection from suppression operations. The RA provides input to the IC in the development of fire suppression strategies and tactics to minimize or mitigate the expected impacts of fire and fire suppression actions upon natural and cultural resources. The RA also provides input required for the development of rehabilitation plans. RA responsibilities include providing analysis, information, and advice to fire managers for areas of concern, including:

- Critical watersheds, riparian areas, fisheries, and water sources
- Threatened or endangered species
- Prehistoric and historic archaeological sites and cultural landscapes
- Fuelbreaks—locations and specifications
- Urban interface impact—structures and improvements
- Hazardous materials

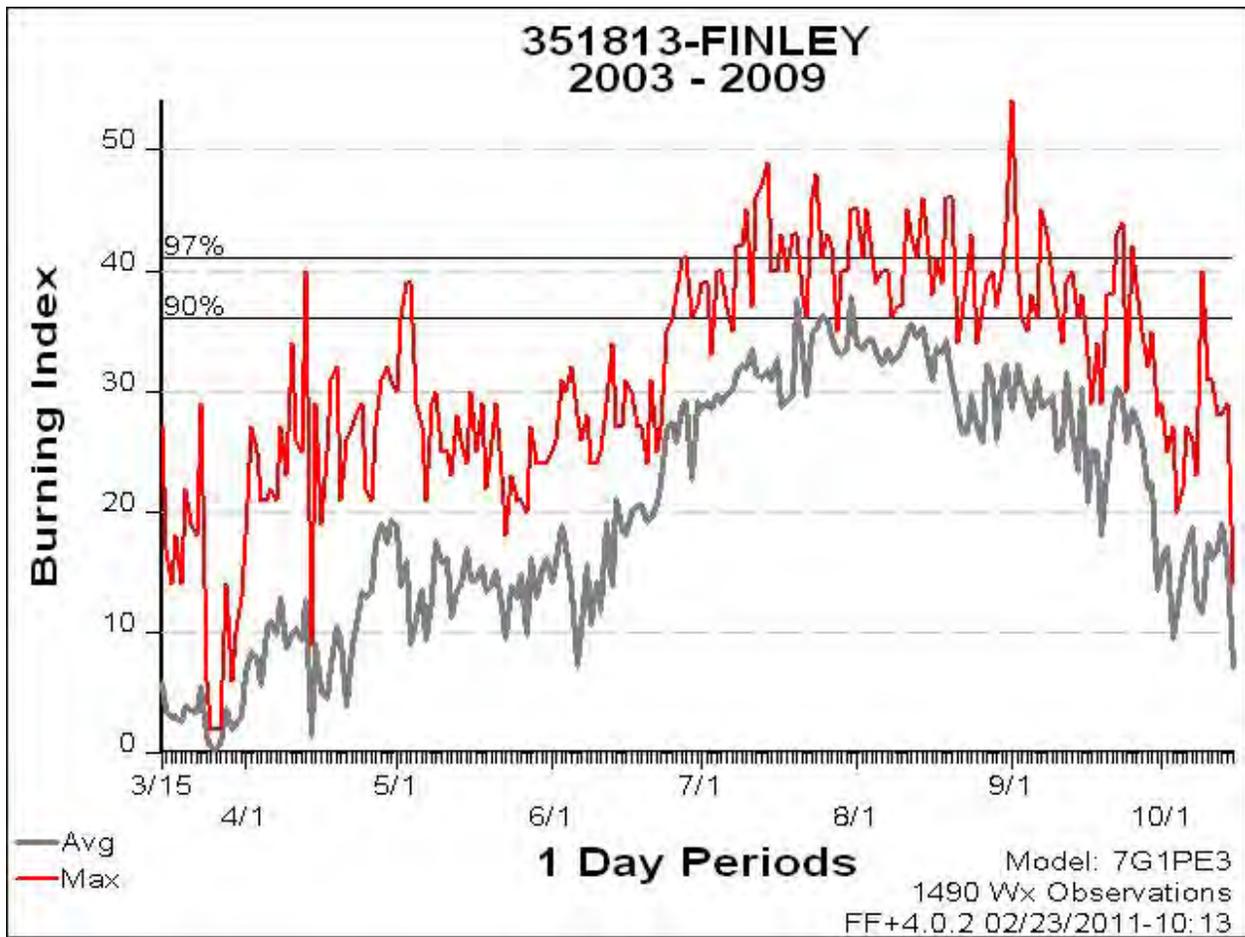
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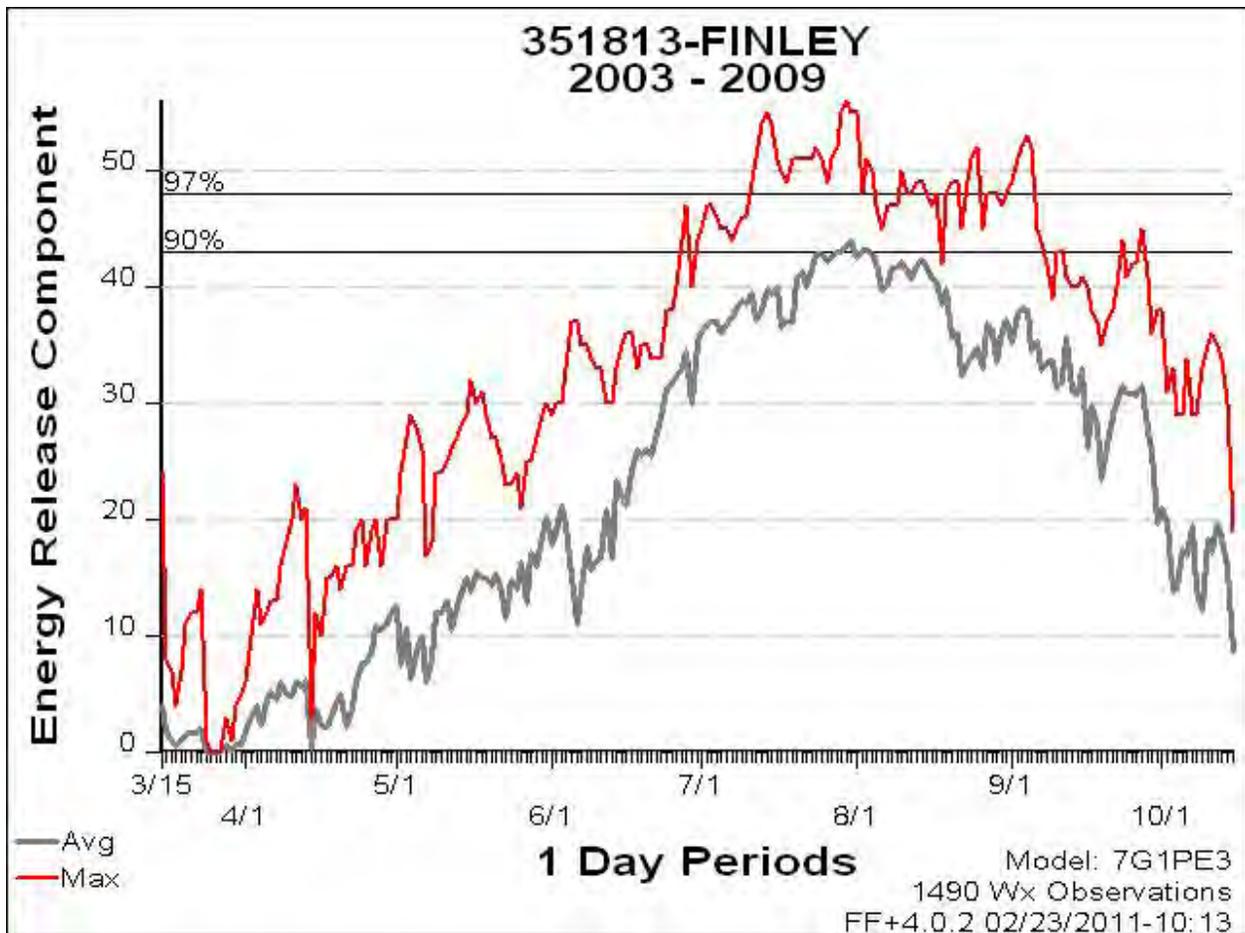
- Assists the planning function in developing fire maps and identifying areas of concern,
- Determines environmental restrictions commensurate with FMP resource protection in the fire area,
- Provides recommendations to fire management personnel and agency administrators for fire suppression rehabilitation needs,
- Documents potential and actual suppression/fire-related resource impacts and the rationale for protection of priority areas, and
- Provides resource information to local IA ICs, dispatchers, or other fire personnel during pre-season training and planning meetings (NWCG 1996).

Appendix C. *Fire Danger Indices*

The fire season at Tualatin River National Wildlife Refuge can begin in July and continue through October during drought years. Fire season can be influenced by both moist Pacific weather systems and drying trends created through a warm easterly flow. The wettest months are November through March, when over 70 percent of the precipitation occurs. There is a pronounced warm, dry period beginning in mid-July and running through late September. This period accounts for less than 10 percent of the average annual precipitation. During this period, temperatures are generally at their highest levels (80 to 90 degrees Fahrenheit) and relative humidity at the lowest (20% to 30%).

Wildland fire danger in the United States is characterized by a system called the National Fire Danger Rating System (NFDRS). This system has indices that are used to display and provide context to fire danger on a subregional scale. The most accurate way of displaying the relationship of weather and fuels to fire danger in the short term at the refuge is through the NFDRS Burning Index, or BI. The BI is an estimate of the potential difficulty of containment of a wildland fire as it relates to the flame length at the head of the fire. The BI value is a function of the spread component (how fast the fire could spread) and the energy release component (how hot the fire could burn). The BI is scaled such that a BI value of 40 would indicate a predicted average flame length of 4 feet. Wildland fires where the flame length exceeds 4 feet are judged to be too hazardous for hand crews and engines to attack along the direct edge of the fire. The BI may also communicate the relative fire danger in a rating area. The ninetieth percentile defines the index that 90 percent of all BIs are at or below for the time period calculated, and the same is true for the ninety-seventh percentile. When overlaid with historical fire occurrence, a relationship with fire weather can assist with more accurate preparedness planning. A representative NFDRS fire weather station is located 70 miles south of the refuge area at W.L. Finley National Wildlife Refuge. The following graphs display seasonal fire danger trends for the period from 2003 to 2009.





Appendix D. *Dispatching Plans*

FIRE DISPATCH PLAN 2012
TUALATIN RIVER NATIONAL WILDLIFE REFUGE

To comply with Service policy these procedures should be followed for wildland fire initial response on our refuges.

1. Call 911 for emergency management services for assistance. Provide dispatcher with fire size up.
2. Inform refuge project leader or refuge manager.
3. Utilize qualified engine bosses that are responding from our interagency partners to supervise suppression activities.
4. Engines require two qualified firefighters to operate. If responding alone, scout fire and complete fire size-up documentation and wait for assistance.
5. Be safe; no fire is worth risking your safety and well being.

You cannot legally participate in any extended attack or prescribed fire activities until you have cleared the work capacity process and fire refresher for 2011.

Elements of Initial Fire Size-up:

- Location of smoke or fire: (plot on map if possible)
- Location, name, and telephone # of reporting party
- Estimated size
- Fuel type: (1) Grass (2) Brush (3) Timber (4) Slash
- Fire behavior: (1) Smoldering (2) Creeping (3) Running (4) Torching (5) Crowning
- Structures threatened: (1) Yes (2) No
- Weather conditions: temperature, sky/cloud cover, wind/speed/direction
- Slope: (1) 0-25% (2) 26-40% (3) 41-55% (4) 56+%
- Potential for spread: (1) Low (2) Moderate (3) High
- Additional resources needed for control

CONTACT INFORMATION

Name	Position	Office Phone	Extension	Cell Phone	Home
Erin Holmes	Project Leader	(503) 625-5944	221	(503) 816-1227	(971) 400-4405
John Gahr	Deputy Project Leader	(503) 625-5944	223	(503) 816-1666	(971) 239-9122
Greg Hagedorn	Zone Fire Management Officer	(541) 757-7236	205	(541) 740-5613	(503) 913-2883
Kolleen Irvine	Law Enforcement Officer	(503) 625-5944	230	(971) 832-1730	N/A
Pam Ensley	Regional Fire Management Coordinator	(503) 231-6174	n/a	(503) 781-7978	N/A
Brian Gales	Regional Fire Operations Specialist	(503) 231-6769	n/a	(541) 778-0372	N/A
Brett Fay	Regional Fuels Specialist	(503) 872-2756	n/a	(503) 347-8194	N/A

Appendix E. *Memorandum of Understanding, Tualatin Valley Fire and Rescue*

Appendix F. *Memorandum of Understanding, Gaston Rural Fire Department*

Appendix G. *Example: Delegation of Authority to Incident Commanders*

Subject: Delegation of Authority to Manage Type VI and Type V Incidents

To: ICT5, ICT5(T), ICT4, ICT4 (T) Fill in Name

From: *****, Project Leader, U.S. Fish and Wildlife Service, Tualatin River National Wildlife Refuge

You are delegated authority to manage the suppression of Type V Incidents to which you are assigned and qualified as Incident Commander, in accordance with the following guidelines, priorities, and constraints, until such time as you are relieved of command by my representative or me.

Goals and constraints for managing Type V Incidents are as follows:

- Ensure the safety of firefighters and the public.
- Adhere to the 10 Standard Fire Orders, LCES, and 18 Situations at all times.
- Protect life and property.
- Be cost efficient when ordering resources.
- Follow all guidelines that pertain to the use of retardants and foam.
- Maintain communication with Hanford Fire Dispatch and Complex Duty Officer at all times.
- Be considerate of cooperating agency policies when assisting in fire suppression on non-Service lands.
- Use appropriate management response suppression tactics as defined in the Fire Management Plan.
- Maintain accurate records for fire reporting and documentation.
- Protect fire origin and order an investigation on fires where cause may be other than lightning.
- Conduct regular tailgate safety sessions to discuss job hazards and what measures are necessary to mitigate accidents to injuries. Document, as needed and submit any safety records to Chris Schulte, or his acting.
- Utilize information/processes in the “Incident Response Pocket Guide” and “Wallet Card.”

Fire Management Officer, Greg Hagadorn, or his designee have been assigned as my representative. He, or his acting, is authorized to make decisions and recommendations regarding the management of Type V and Type VI Incidents within the level of authority delegated to me.

/s/*****

Tualatin River National Wildlife Refuge
Project Leader

Appendix H. *Annual Review Check List*

Element	Yes	No	Comment
1. Date FMP was approved _____ <ul style="list-style-type: none"> • Annual Review yrs 1 – 4 by Refuge Manager • Year 5 of Plan, Contact Complex FMO. FMP requires revision and Regional Director approval. 			
2. Will the FMP continue to adequately provide for firefighter and public safety as the first priority in every fire management activity this year?			
3. Does this FMP continue to support land and resource management Plans? <ul style="list-style-type: none"> • Completion of CCP or new habitat management plan might require more extensive FMP revision. 			
4. Were there any significant fire management activities from the previous year that were not adequately addressed within the scope of this FMP?			
5. Does the direction in this Plan remain economically viable given the values needing protection, and the costs to administer?			
6. Does this FMP continue to be based on best available science?			
7. Does the FMP provide for adequate response to wildland fire (wildfire) and prescribed fire (if applicable)? <ul style="list-style-type: none"> • Directories/Contact List(s) updated • Agreements and Operating Plans current • Staffing/equipment meet Service policy and ready • Annual work and Prescribed Burn Plans completed • Seasonal Assessment made by Complex FMO 			
8. Were there additional lands added to the refuge last year? <ul style="list-style-type: none"> • Total acres to amend _____ • Burnable acres _____ 			
9. If additional lands were added, will environment compliance requirements (EA for this FMP) adequately allow for fire management program activities to be conducted if appropriate?			
10. Based on FMO advice, are there changes in national fire policy or direction that now conflict with direction within the FMP? <ul style="list-style-type: none"> • Policy changes warrant an amendment. • Policy changes are significant – need for immediate revision. • Policy changes can be incorporated within the 5-year revision. 			
11. Considering the responses above, can this FMP be amended without further review? <ul style="list-style-type: none"> • If yes, attach amended information, including maps. Refuge Manager approval. Notify the Complex FMO. • If no, most likely the FMP and/or environmental compliance require Plan revision and Regional Director approval. Contact Complex FMO for assistance. 			

Appendix I. Zone FMO Area of Responsibility

