



BUDGET The United States
Department of the Interior
JUSTIFICATIONS

and Performance Information
Fiscal Year 2022

**WILDLAND FIRE
MANAGEMENT**

NOTICE: These budget justifications are prepared for the Interior, Environment and Related Agencies Appropriations Subcommittees. Approval for release of the justifications prior to their printing in the public record of the Subcommittee hearings may be obtained through the Office of Budget of the Department of the Interior.



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Executive Summary

Introduction

Fire is generally a natural and essential component of a healthy ecosystem, but it can be destructive and costly in unhealthy ecosystems. The average wildfire has become larger, costlier, and more complex, and wildfire “season” has grown to be almost year-round. Furthermore, climate change has contributed to more frequent and severe wildfire activity, and wildfire itself contributes to climate change through the release of carbon emissions into the atmosphere.

In the United States, on average, more than 62,000 wildfires burn 6.8 million acres¹ every year. During the 2020 fire year, wildfire activity burned 10.3 million acres nationally—a 51 percent increase over the ten-year average. The majority of acres burned occurred in the latter half of the year, with National Preparedness Level 5 starting in the middle of August and lasting for 44 days. That represented a significant increase above the ten-year average of 9.6 days. To manage an effective wildland fire program, it is critical to take a proactive and cooperative approach that mitigates the negative effects of wildfires while actively managing the use of fire to achieve resource management goals.



The wildland fire community includes two Cabinet-level agencies that manage wildland fire on behalf of the Federal government: the U.S. Department of the Interior and the U.S. Department of Agriculture.

The Department of the Interior (DOI) and the Department of Agriculture (USDA)—through its U.S. Forest Service (USFS)—are integral parts of a larger wildland fire management (WFM) community that works collaboratively to implement a cohesive fire management framework that ensures wildland firefighter and public safety while mitigating loss from wildfire. The goal of DOI’s WFM program is to provide integrated, cost-efficient, and operationally effective actions that meet resource and safety objectives before, during, and after wildfires. The guiding program principles and priorities are to create fire-resilient landscapes, promote fire-adapted communities, and safely and effectively respond to wildfires through strong Federal, Tribal Nation, State, and local collaboration. DOI’s WFM program

¹ Statistics cited from the ten-year average of fires from 2010-2019:
<https://www.predictiveservices.nifc.gov/IMSR/2020/20201231IMSR.pdf>

comprises the Office of Wildland Fire (OWF) and four bureaus with WFM responsibilities: (1) the Bureau of Indian Affairs (BIA), (2) the Bureau of Land Management (BLM), (3) the U.S. Fish and Wildlife Service (USFWS), and (4) the National Park Service (NPS).

In addition, other bureaus and agencies play an integral role in supporting DOI’s WFM program. Collaboration with other Federal agencies, Tribal Nations, States, local communities, and the private sector is essential to providing a unified and coordinated response to wildland fire. Military and international partners provide additional wildfire suppression support, especially when existing resources are insufficient to meet the increased demands of a severe fire season.

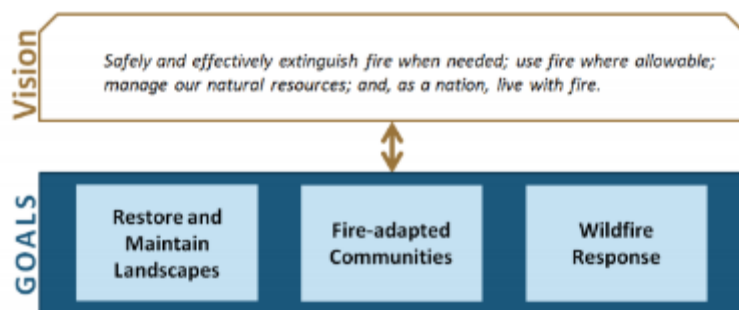
Governance & Coordination

The Federal WFM program is closely coordinated and integrated with other Federal, Tribal Nation, State, and local programs using interoperable equipment, training, and standards. The program is guided by a common policy and approach, implemented through agency line organizations, and operates within the context of the statutory mission of each agency. A number of governance structures are used to develop and maintain this common, integrated approach—ranging from the national, strategic level to regional and local coordination groups.



The Wildland Fire Leadership Council (WFLC) is an intergovernmental council that includes Federal, Tribal Nation, State, and local officials. The Secretaries of the Interior and Agriculture established WFLC in 2002 in the aftermath of several severe fire seasons. WFLC provides strategic guidance in the application of WFM policy across multiple jurisdictions. The council is instrumental in the development and implementation of the *National Cohesive Wildland Fire Management Strategy*, which remains the foundation of Federal wildland fire management policy.

The *National Cohesive Wildland Fire Management Strategy* establishes a national vision for wildland fire management. Developed in 2014, it represents a commitment to working collaboratively among all stakeholders and across all landscapes through shared stewardship to achieve the three national goals.



In DOI, OWF is the principal office responsible for developing, managing, and overseeing WFM policy, planning, budget, program accountability, and review. In carrying out these responsibilities, OWF ensures that implementation of the WFM program is consistent across DOI and adheres to the laws and directives established by Congress and the President, Administration priorities, DOI’s Strategic Plan, and other wildland fire policies and directives. Furthermore, OWF is responsible for developing and managing many of the information technology systems that the WFM community uses for tracking and using data, planning, and responding to wildfires.

America the Beautiful

The America the Beautiful Initiative – A key component of the Administration’s investment strategy to address climate impacts on-the-ground through land stewardship and conservation is to leverage the power of Americans across the country. The Administration recently released a preliminary report to the National Climate Task Force titled *Conserving and Restoring America the Beautiful*, recommending a ten-year, locally led campaign to conserve and restore America’s lands and waters. The report provides an overarching framework to implement the President’s goal to conserve 30 percent of U.S. land and waters by 2030, which will help address the climate crisis and its impacts on nature, improve equitable access to the outdoors, and strengthen the economy. The report recognizes and celebrates the voluntary conservation efforts of farmers, ranchers, and forest owners; the leadership of sovereign Tribal Nations in caring for lands, waters, and wildlife; the contributions and stewardship traditions of America’s hunters, anglers, and fishing communities; and the vital importance of investing in playgrounds, trails, and open space in park-deprived communities.

The “America the Beautiful” initiative is intended to serve as a call to action to support locally led conservation and restoration efforts across public, private, State, and Tribal lands and waters. The initiative welcomes all communities wishing to steward their lands and waters and boost the economy and support jobs. The guiding principles—which include a commitment to collaboration, support for voluntary and locally led conservation, and honoring of Tribal sovereignty and private property rights—are essential to building and maintaining broad support, enthusiasm, and trust for this effort. Supporting these principles, the 2022 budget includes increases across Interior to support local partnership programs, improve targeted conservation efforts, restore damaged lands, and promote locally led efforts of all kinds wherever communities wish to safeguard the lands and waters they know and love.

American Jobs Plan

The 2022 budget request includes the American Jobs Plan legislative proposal, which calls for significant investments to create jobs, bolster the Nation’s infrastructure, and help make America more competitive in a changing world. The plan invests in much needed brick-and-mortar infrastructure, climate response and resilience, clean energy infrastructure, and Tribal Nations and underserved communities. Working with other Federal agencies, DOI will contribute to the following governmentwide initiative.

Investing in Climate Resilience—President Biden’s American Jobs Plan includes \$50.0 billion to protect and, where necessary, restore nature-based infrastructure—our lands, forests, wetlands, watersheds, and coastal and ocean resources. Families and businesses throughout the United States rely on this infrastructure for their lives and livelihoods. President Biden is calling on Congress to invest in protection from extreme wildfires, coastal resilience to sea-level rise and hurricanes, support for agricultural resources management and climate-smart technologies, and the protection and restoration of major land and water resources, such as Florida’s Everglades and the Great Lakes.







An example of how DOI would contribute is additional investments in Federal and Tribal hazardous fuels management. Fire is essential in shaping healthy forests and rangelands, yet increasingly severe wildfire is transforming our public lands at an unprecedented rate, with extreme, negative consequences for community safety and public health, carbon storage, and biodiversity. Additional investments could be

used to prioritize reducing risks to life and property in the wildland-urban interface, improving watershed health, and maintaining sensitive ecosystems for long-term carbon sequestration.

Program & Budget Overview

DOI’s WFM program is committed to addressing the effects of climate change and the severity of wildfires on public health, resources, and communities. In addition, WFM works to restore and maintain resilient landscapes, protect lives and properties, create fire-adapted communities, and ensure safe and effective responses to wildfires. DOI strives to achieve a cost-effective, technically sound, and evidence-based wildland fire management program that safely meets WFM and resource management goals. The WFM program makes every effort to minimize the cost of wildfire response and the damage to communities, nature, and cultural resources in accordance with DOI’s strategic goals.

DOI’s **Wildland Fire Management Appropriation** funds the following program activities:

Program Activity	Description
 Preparedness	Provides an integrated and coordinated framework for wildfire response by funding core firefighting resources and managing the capacity of assets and operations to respond to fire activities across the United States.
 Suppression Operations	Comprises the range of actions taken to directly extinguish wildfires, prevent the movement and growth of unwanted fire, and manage fire for resource benefits.
 Fuels Management	Represents a strategic investment in actively managing vegetation to reduce the intensity, severity, or negative effects of wildfire. Fuels management practices include prescribed fires, as well as mechanical, chemical, and biological treatments, among other methods.
Other Operations	
 Burned Area Rehabilitation (BAR)	Supports efforts to repair or improve burned landscapes unlikely to recover without human assistance.
 Facilities, Construction and Maintenance	Provides the infrastructure used to support firefighters, safeguard the public, and improve capability to protect values at risk from damage by wildfire.
 Joint Fire Science Program (JFSP)	Delivers dedicated wildland fire research and science to inform fire management policies and decisions at local, regional, and national levels.

DOI uses the WFM appropriation to fund the Administration’s priorities for wildland fire management and increasing the country’s resilience to the adverse effects of climate change.

Fiscal Year 2022 Budget Request

The Fiscal Year (FY) 2022 budget request for DOI’s WFM program is **\$1.1 billion**.

Budget Authority (Dollars in Thousands)	FY 2020 Actual	FY 2021 Enacted	FY 2022 Request
Current	\$952,338	\$992,623	\$1,110,441
Net Other Transfers ^(a)	\$49,953	-	-
Total Current, including Transfers:	\$1,002,291	\$992,623	\$1,110,441
Cap Adjustment ^(b)	[\$300,000]	[\$310,000]	[\$330,000]
Staffing			
Full-Time Equivalent (FTE) Employees ^(c)	3,655	3,965	4,365

(a) Transfers reflect the amount of funding received from USDA’s Forest Service (USFS). In FY 2020, USFS transferred \$2.8 million for interagency projects and an additional \$47 million in Suppression funding to support DOI’s response to the 2020 wildfire year.

(b) During FY 2020, \$68 million of the \$300 million cap adjustment was transferred to the Wildland Fire Management account, yielding a total FY 2020 actual funding level of \$1,070,291,000.

(c) The FTE amounts in this table include reimbursable FTE employees, which explains the difference from the FTE level displayed in Table 2: Summary of Requirements, on pages 12-13.

Fiscal Year 2022 Priorities

The FY 2022 budget request for WFM supports the following DOI and Administration priorities:

Meet the challenges of wildfire risk and climate change through collaboration and applied science.

- Collaboration with Federal, State, and local entities and Tribal Nations is critical to efficiently and effectively reduce wildfire risk to firefighters, communities, and landscapes. These collaborative partnerships ensure a coordinated approach to wildland fire management that enables resources, assets, and capabilities to be shared and optimized to achieve WFM goals.
- WFM will provide a technically sound and science-driven program to help reduce losses from wildfire, restore or maintain landscape and ecosystem resiliency, provide safer conditions for firefighters, and help all communities (including the underserved) live with wildland fire.

- Post-fire rehabilitation objectives are achieved by actions such as reseeding vegetation to control fire-prone invasive species and maintain carbon storage, restore wildlife habitat, repair minor facilities damaged by wildfire, and monitor efforts to ensure effectiveness.

Support and incorporate Tribal Nations' well-being and sovereignty in WFM.

- DOI's BIA primarily provides wildland fire management for Indian trust lands; however, all WFM bureaus and offices work closely with Tribal Nations and their partners to fulfill DOI's trust responsibilities. DOI recognizes and promotes self-governance by supporting Tribal Nations that choose to directly manage some or all WFM program elements and activities.
- DOI's Burned Area Rehabilitation program is an important source of funding for the long-term stabilization and repair of damage to Tribal lands caused by catastrophic wildfires, and this work helps uphold DOI's trust responsibilities.
- Within the Fuels Management program, dedicated funding of \$15.0 million for FY 2022 (an increase of \$5.0 million over the FY 2021 level) for fuels treatment on Reserved Treaty Right Lands upholds DOI's trust responsibilities by supporting Tribal Nations' participation in collaborative strategic Fuels Management projects on non-Tribal lands to protect Tribal natural resources that are at high risk from wildfire.
- The WFM program will continue to dedicate \$15.0 million of Preparedness funding to firefighting organizations managed by Tribal Nations and Tribal workforce development. Funding also provides for Tribal contract support costs and allows Tribes to pay for facilities, unemployment assistance, and workers' compensation. The FY 2022 budget provides an additional \$5.0 million in Fuels Management for Tribal contract support costs.

Build information technology infrastructure to improve WFM efficiency and effectiveness

- Applications and data in the Wildland Fire Information Technology (WFIT) portfolio provide the capability to plan, analyze, and monitor the landscape for variables that affect wildland fire management and support incident management operations.
- In 2022, WFM will transition to a formal data management organization, accelerating the development and maintenance of foundational data catalogs, standards and processes that will streamline access to data for analysis, decision making, and evaluations.

Good Government

Good Accounting Obligation in Government Act Report

The *Good Accounting Obligation in Government Act* (GAO-IG Act, P.L. 115-414) enacted January 3, 2019, requires that Federal agencies report the status of each open audit recommendation issued more than one year prior to the submission of the agency's annual budget justification to Congress. The Act requires agencies to include the current target completion date, implementation status, and any discrepancies on closure determinations.

The Department of the Interior leadership takes audit follow-up seriously and considers our external auditors, to include the Government Accountability Office (GAO) and Office of the Inspector General, valued partners in not only improving the Department's management and compliance obligations but also enhancing its programmatic and administrative operations. As good stewards of taxpayer resources, the Department applies cost-benefit analysis and enterprise risk management principles in recommendations and implementation decisions. The Department's GAO-IG Act Report is available at the following link: <https://www.doi.gov/cj>.

PROTECTING AGAINST COVID-19 WHILE MEETING THE MISSION

The Alaska Hot Shot Crew arrives at the National Interagency Fire Center (NIFC) in Boise, Idaho, 2020. (Photo by NIFC)

During 2020, in response to the coronavirus COVID-19 pandemic, the wildland fire community adopted prevention and mitigation strategies to protect the health and safety of firefighters as they protected the health and safety of other Americans, public and private lands, and the country's natural and cultural resources. The WFM program re-engineered fire camps to support social distancing and insulate resources in modules to help limit potential exposure and the spread of COVID-19. The wildland fire community also used smaller spike camps, technology, daily screening protocols, and face coverings. Collectively, these efforts helped to ensure continued operations during the pandemic and one of the most active fire years on record.

Budget Summary Tables

Budget at a Glance

Table 1: Wildland Fire Management Budget at a Glance (Dollars in Thousands)

Appropriation: Wildland Fire Management (14X1125)	FY 2020 Actual	FY 2021 Enacted	Fixed Costs (+/-)	Internal Transfers (+/-)	FY 2022 Program Changes (+/-)	FY 2022 Request
Preparedness	332,784	347,105	+8,438	+0	+0	355,543
Fixed Costs			+8,438			
Suppression Operations	383,657	383,657	+0	+0	+0	383,657
Wildfire Suppression Operations Reserve Fund Transfer	[+68,000]					
Fuels Management	194,000	219,964	+4,380	+0	+80,000	304,344
Fixed Costs			+4,380			
Increase Capacity for Fuels Management					+65,000	
Increase Tribal Contract Support and Reserved Treaty Rights Lands Projects					+10,000	
Increase Investments in Outcome Measures and Information Technology					+5,000	
Other Operations	41,897	41,897	+0	+0	+25,000	66,897
Burned Area Rehabilitation	20,470	20,470	+0	+0	+20,000	40,470
Increase Capacity for Burned Area Rehabilitation (BAR)					+15,000	
Increase BAR Projects for Tribal Nations and Underrepresented Communities					+5,000	
Facilities Construction and Maintenance	18,427	18,427	+0	+0	+0	18,427
Joint Fire Science Program	3,000	3,000	+0	+0	+5,000	8,000
TOTAL, Wildland Fire Management Appropriation	1,020,338	992,623	+12,818	+0	+105,000	1,110,441
Net Other Transfers*	49,953	0			+0	0
TOTAL, Wildland Fire Management Appropriation (with Transfers)	1,070,291	992,623	+12,818	+0	+105,000	1,110,441
Appropriation: Wildfire Suppression Operations Reserve Fund (14X1130)						
Suppression Operations	300,000	310,000	+0	+0	+20,000	330,000
Wildfire Suppression Operations Reserve Fund Transfer to Suppression	[-68,000]					
TOTAL, Wildfire Suppression Operations Reserve Fund	232,000	310,000	+0	+0	+20,000	330,000
TOTAL, ALL DEPARTMENTWIDE WILDLAND MANAGEMENT	1,302,291	1,302,623	+12,818	+0	+125,000	1,440,441

*Transfers reflect the amount of funding received from the U.S. Department of Agriculture's Forest Service (USFS). In FY 2020, USFS transferred \$2.953 million for interagency projects and an additional \$47 million in Suppression funding to support DOI's responses to the 2020 wildfire year.

Summary of Requirements

Wildland Fire Management Table 2: Summary of Requirements <i>(Dollars in Thousands)</i>											
	2020 Amount	2021 Total FTE	2021 Amount	Fixed Costs (+/-)	Internal Transfers (+/-)	Program Changes (+/-) FTE	Program Changes (+/-) Amount	2022 FTE	2022 Amount	Change from 2021 (+/-) FTE	Change from 2021 (+/-) Amount
Wildland Fire Management											
Preparedness	332,784	2,173	347,105	+8,438	0	+0	+0	2,173	355,543	+0	+8,438
Total, Preparedness	332,784	2,173	347,105	+8,438	0	+0	+0	2,173	355,543	+0	+8,438
Suppression Operations	383,657	363	383,657	+0	0	+0	+0	363	383,657	+0	+0
Wildfire Suppression Operations Reserve Fund Transfer	[+68,000]										
Total, Suppression Operations	383,657	363	383,657	+0	0	+0	+0	363	383,657	+0	+0
Fuels Management	194,000	1,128	219,964	+4,380	0	+325	+80,000	1,453	304,344	+325	+84,380
Total, Fuels Management	194,000	1,128	219,964	+4,380	0	+325	+80,000	1,453	304,344	+325	+84,380
Other Operations											
Burned Area Rehabilitation	20,470	47	20,470	+0	0	+75	+20,000	122	40,470	+75	+20,000
Facilities Construction and Maintenance	18,427	2	18,427	+0	0	0	+0	2	18,427	0	+0
Joint Fire Science Program	3,000	3	3,000	+0	0	+0	+5,000	3	8,000	+0	+5,000
Total, Other Operations	41,897	52	41,897	+0	0	75	+25,000	127	66,897	75	+25,000
Total, Wildland Fire Management	1,020,338	3,716	992,623	+12,818	0	+400	+105,000	4,116	1,110,441	+400	+117,818
Net Other Transfers*	49,953										
Total, Wildland Fire Management (With Transfers)	1,070,291	3,716	992,623	+12,818	0	+400	+105,000	4,116	1,110,441	+400	+117,818
Wildland Suppression Operations Reserve Fund											
Suppression Operations	300,000		310,000	+0	0	+0	+20,000	0	330,000	+0	+20,000
Wildfire Suppression Operations Reserve Fund Transfer to Suppression	[-68,000]										
Total, Wildland Suppression Operations Reserve Fund	232,000		310,000	+0	0	+0	+20,000	0	330,000	+0	+20,000

*Transfers reflect the amount of funding received from the U.S. Department of Agriculture's Forest Service (USFS). In FY 2020, USFS transferred \$2.953 million for interagency projects and an additional \$47 million in Suppression funding to support DOI's responses to the 2020 wildfire year.

Note: The FTE amounts in this table do not include reimbursable FTE, which explains the difference from the FTE displayed in the Budget Summary table on page 6.

Program Activities

The FY 2022 budget request for DOI's WFM program is \$1,110,411,000 and 4,116 Full-Time Equivalent (FTE) employees. The request is \$117,818,000 (+11.9 percent) more than the FY 2021 Enacted level of \$992,623,000 and 400 FTE more than the FY 2021 Enacted level of 3,716 FTE employees. The FY 2022 budget provides an increase of \$12,818,000 for fixed costs and sustains the 2021 investments to strengthen the WFM workforce.

The FY 2022 budget for the Wildland Fire Management program will help mitigate the risks and impacts of catastrophic wildfire by improving the health, increasing the resiliency, and facilitating the recovery of wildland ecosystems. The WFM program has a significant role in advancing the President's plan for addressing the climate crisis. Wildland fire and climate change are interconnected. Climate change and other factors, such as prolonged drought, have contributed to more frequent and severe wildfire activity. Further, wildfire itself contributes to climate change through the release of carbon emissions into the atmosphere. The request increases funding to address wildfire risk and climate change, including:

- \$100.0 million to increase climate resilience through Fuels Management (\$80.0 million) and Burned Area Rehabilitation (\$20.0 million), and
- \$5.0 million to increase climate science through the Joint Fire Science Program.

Preparedness (\$355,543,000/2,173 FTE)

Preparedness activities continue to support an interoperable approach to wildland fire management that promotes efficiencies, supports partnerships, and sustains core capabilities. The request increases funding by \$8.4 million (+2.4 percent) above the FY 2021 Enacted level, for fixed cost increases.

Suppression Operations (\$383,657,000/363 FTE)

The request fully funds Suppression Operations at the 10-year average of suppression obligations as reported in the FY 2015 budget, in accordance with Division O of the *Consolidated Appropriations Act, 2018* (P.L. 115-141). The budget funds Suppression Operations at \$383.7 million, and it also assumes the availability of \$330.0 million as DOI's share of the Wildfire Cap Adjustment established under Division O. The combination of the Suppression Operations funding and the cap adjustment helps to ensure that sufficient funds are available for suppression needs in even the most severe wildfire years.

Fuels Management (\$304,344,000/1,453 FTE)

The request increases funding for Fuels Management by \$84.4 million (+38.4 percent) above the FY 2021 Enacted level. The request increases funding for fixed costs (\$4.4 million) and provides another \$80.0 million program increase to advance resilience to climate change. This amount includes \$65.0 million to increase program capacity to conduct fuels treatments to mitigate the consequential impacts of climate change on public health, resources, and communities. A portion of these funds will be used to address wildfire risk in the wildland-urban interface, including work in areas adjacent to underrepresented communities. The budget provides a \$10.0 million increase for Tribal Nations contract support (\$5.0 million) and Reserved Treaty Rights Lands projects (\$5.0 million). The request also includes \$1.0 million to fund the development and initial implementation of new outcome data collection, management, and analysis, and a \$4.0 million increase for data management, information-sharing, and collaboration.

Burned Area Rehabilitation (\$40,470,000/122 FTE)

The request increases funding for Burned Area Rehabilitation by \$20.0 million (+97.7 percent) above the FY 2021 Enacted level. The request is driven by the trend of larger and more destructive wildfires that require post-fire rehabilitation work to help restore DOI and Tribal lands. DOI will use the funds to promote resilience to climate change in areas adjacent to underrepresented communities, Tribal Nations, and elsewhere by reducing the long-term negative effects of wildfires and increasing the resiliency of landscapes and ecosystems in areas unlikely to recover naturally. The total funding provides for treating approximately 1,500,000 acres.

Facilities Construction and Maintenance (\$18,427,000/2 FTE)

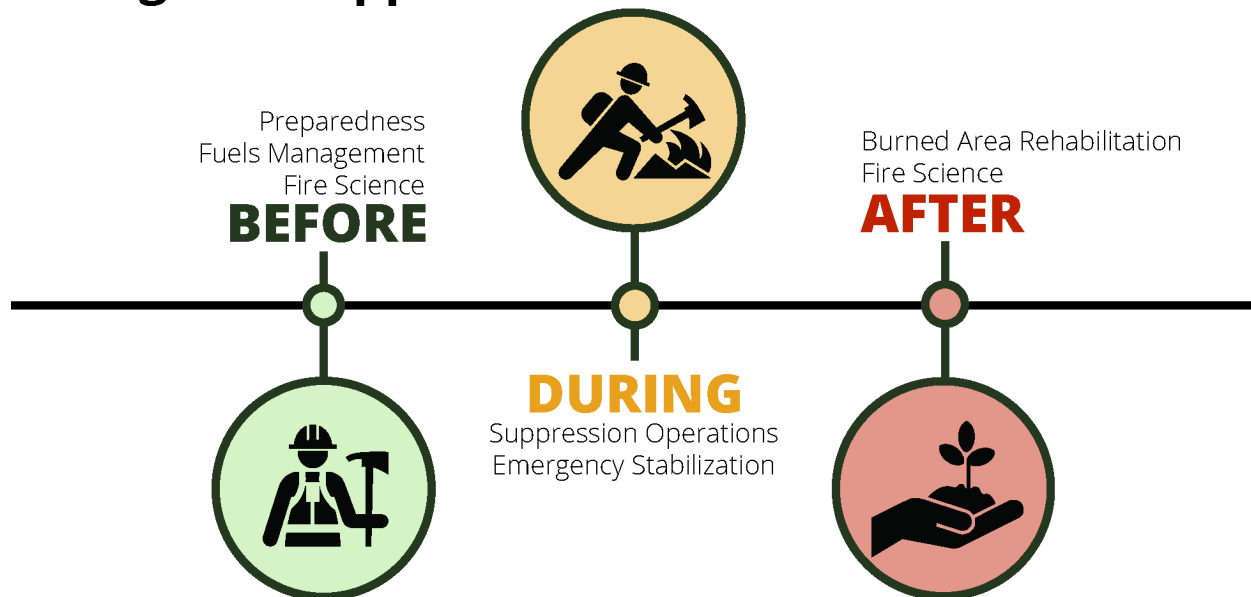
The request provides the same level of funding as FY 2021 Enacted. Using these funds, WFM will continue to provide for safe, functional, and energy efficient facilities that are essential to DOI’s mission to protect lives, property, and resources from wildfire.

Joint Fire Science Program (\$8,000,000/3 FTE)

The request increases funding for the Joint Fire Science Program (JFSP) by \$5.0 million (+166.7 percent) above the FY 2021 Enacted level. JFSP will fund high-priority research studies to ensure that climate change adaptation and resilience are integrated throughout the WFM program. JFSP-funded studies will focus on researching the effects of climate change on wildland fire and determining what management actions can help make ecosystems more resilient to the effects of climate change. For example, the smoke emissions that contribute to climate change also affect public health; JFSP research will help document how smoke affects different communities and populations.

WILDLAND FIRE MANAGEMENT

Integrated Approach



PREPAREDNESS



The WFM Preparedness program provides an integrated and coordinated framework for wildfire response. Preparedness funds the core firefighting resources and manages the capacity of assets and operations to respond to fire activities across the United States.

Activity: Preparedness

Subactivity: Preparedness

	FY 2020 Actual	FY 2021 Enacted	FY 2022 Request				
			Fixed Costs (+/-)	Internal Transfer (+/-)	Program Changes (+/-)	2022 Request	Change from 2021 (+/-)
Dollars <i>(in Thousands)</i>	332,784	347,105	+8,438	-	-	355,543	+8,438
<i>FTE</i>	2,098	2,173	-	-	-	2,173	-
<i>Tribal FTE</i>	281	287	-	-	-	287	-

Program Changes

The FY 2022 budget request for Preparedness is \$355,543,000 and 2,173 FTE, which reflects no program or FTE change from the FY 2021 Enacted level.

Program Overview

The Preparedness program provides for the firefighting resources and assets to protect the public, communities, watersheds, and natural and cultural resources from the detrimental effects of wildfires.

The WFM program manages a fire response framework for efficient wildfire response regionally and nationally. As conditions change during a fire season, or as wildfire activity increases in specific locations, DOI and its partners strategically move firefighting resources, including equipment and people, to locations where the risks are highest and additional resources are needed.

Preparedness funds firefighting assets such as aviation resources, engines, and equipment, along with firefighters and services that provide the capacity to fight wildfires safely and effectively. DOI shares fire resources at all levels of government across the country. Through national interagency coordination and collaboration, assets are available at the national, regional, Tribal, or local level depending on current need. Maximizing the mobility of WFM resources increases efficiency by lowering costs and reducing the potential for duplicating the deployment of valuable firefighting assets.

SPOTLIGHT ON COLLABORATION

National Interagency Fire Center

BLM—in cooperation with other DOI WFM bureaus and OWF, USFS, and the National Weather Service—hosts the **National Interagency Fire Center (NIFC)** in Boise, Idaho. Through NIFC, partners work together to share operating costs, exchange support, and jointly coordinate WFM support operations.

NIFC's important services and activities include the following:

- **The National Incident Coordination Center (NICC)** is a focal point for the national mobilization of firefighting resources. It provides fire outlook assessments and tracks daily wildland fire activity.
- **The Great Basin Cache** serves as one of 11 national fire warehouses for supplies and equipment. It has the capacity to equip 8,000 – 10,000 firefighters.
- **The National Multi-Agency Coordinating group (NMAC)** coordinates the movement of wildland firefighting resources and other activities supporting wildfire response.
- **The National Incident Radio Cache** provides emergency communication services to support wildland fire incidents. It is one of the largest radio caches in the world and has equipment to support about 32,000 firefighters, or 53 major disasters, at one time.
- **National Predictive Services** evaluates indicators of burn probability, fire potential, long-term drought, and weather trends to forecast areas that may be subject to increased or severe wildfire activity.



The Preparedness program strives to increase efficiencies and partnerships to ensure the entire WFM program maintains core capabilities. For example, the Preparedness program helps to eliminate administrative and operational redundancy through the use of combined positions and reduced contract costs. Cooperative protection agreements with other Federal agencies, States, self-governing Tribal Nations, and local communities—along with contracts with private firms—provide protection, facilitate the sharing of resources, and streamline work. These agreements promote safe and quick response, help minimize overall protection costs for all parties, and foster relationships essential to the development of a cohesive and coordinated response to manage wildfires. This coordination is especially important when fires burn across land ownerships, jurisdictions, and administrative boundaries.

For FY 2021, Congress appropriated DOI's WFM program a total of \$29 million—including \$7 million for Preparedness—to implement *DOI's Plan to Transform the Firefighting Workforce*, in recognition of the growing severity and extent of wildfires brought on in part by climate change. Using these funds, the WFM program is investing in developing a stable, professional, and permanent DOI firefighting workforce that is capable of suppression activities and fuels management work on a year-round basis. DOI is converting more than 700 positions from seasonal to full-time or from temporary to permanent,

and the WFM bureaus plan to hire 235 new positions. Equity and diversity are important components of the hiring decisions. DOI's plan addresses the challenges of retention by fostering an on ramp to permanent employment and opportunities for career growth. The workforce transformation that is beginning in FY 2021 will continue in FY 2022 (see also Fuels Management, below).

Program Activities

The FY 2022 budget request continues to support an interoperable approach to WFM that increases efficiencies, supports partnerships, and maintains core capabilities. Preparedness efforts help reduce the risk of large fire potential and lower the cost of more intensive fire response.

The request for Preparedness supports:

- 2,173 FTE who make up DOI's core firefighting capacity;
 - Core firefighting resources and operations necessary to respond to fire activity across the United States, including but not limited to:
 - The National Interagency Fire Center in Boise, Idaho,
 - The National Interagency Coordination Center,
 - National Predictive Services, and
 - Resources as depicted in Tables 3A, 3B and 3C, which follow; and
- (See also "Spotlight on Collaboration" on the preceding page.)
- Firefighting organizations managed by Tribal Nations and Tribal workforce development through dedicated funding of \$15 million.



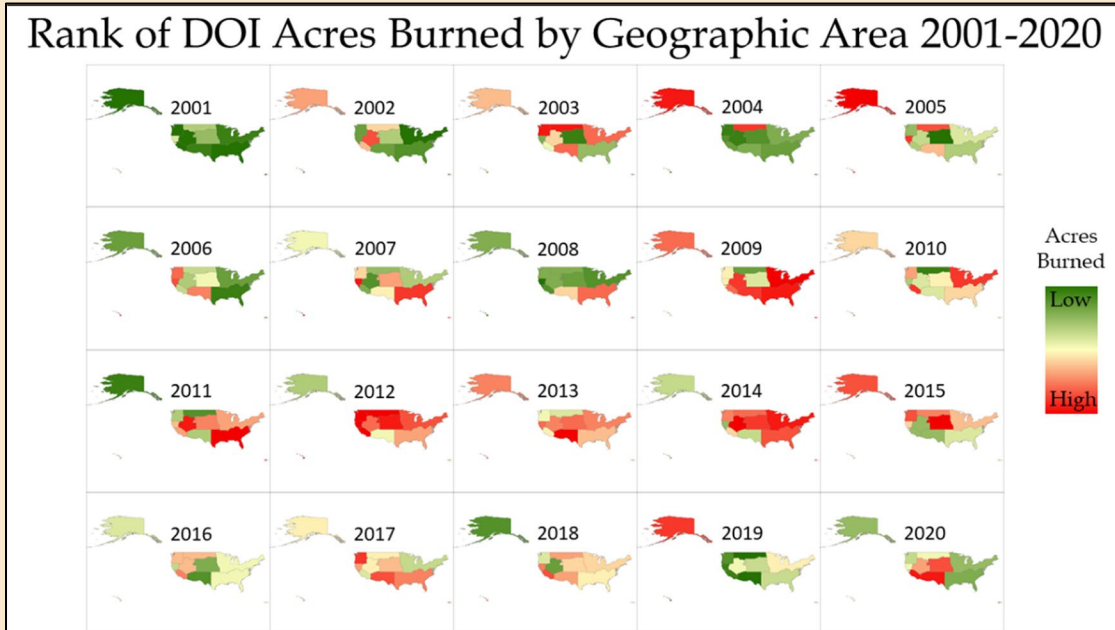
BLM's Ruby Mountain Hotshot Crew receives a letter of appreciation for protecting the Marine Corps Mountain Warfare Training Area and surrounding communities during the Slink Fire, which was a result of lightning in the Slinkard Valley west of Coleville, California, 2020. (Photo by USFS)

The effective mobilization of wildfire response resources is critical to meet objectives for protecting and managing natural and cultural resources. Federal wildfire management agencies emphasize risk-informed wildfire response. This approach means DOI and other agencies take intensive suppression actions when required to protect life, property, and other assets at risk. However, a different approach may be utilized in areas where wildfire risks are low or where fire may achieve ecological benefits.

Managing wildfires for multiple objectives allows implementation of fire management strategies and tactics to better manage risk, meet protection and resource objectives, and reduce overall cost. Effective response to wildfire requires the proper resources to analyze risks, evaluate potential actions, provide program management and oversight, and provide operational resources to manage wildfires.

Additionally, DOI recognizes the importance of developing and adopting advanced or emergent technologies to support the preparation for and response to wildfire incidents.

MANAGING UNCERTAINTY



One of the main challenges of managing wildfires on DOI and Tribal lands is the uncertainty of predicting where wildfires will occur from year to year. DOI relies on analytical techniques to help predict what parts of the country might have conditions that support an above-normal occurrence of wildfires. However, this indicator does not yield a consistent trend from year to year, and data may not be available until post-season fire statistics are compiled. The diagram above depicts the relative magnitude of fire activity on DOI-managed lands for each geographic area from 2000 to 2020. Every year is ranked from highest to lowest number of acres burned within that geographic area, relative to the other years in the past 20 years.

As illustrated, each geographic area experiences significant variations in the number of acres burned from year to year. The Preparedness program manages the complexity and uncertainty of wildfire occurrence by ensuring that it has the capacity of a flexible and mobile workforce and other resources to respond quickly whenever and wherever wildfires strike.

Data source: Giglio, L., Justice, C., Boschetti, L., Roy, D. (2015). MCD64A1 MODIS/Terra+Aqua Burned Area Monthly L3 Global 500m SIN Grid V006 [Data set]. NASA EOSDIS Land Processes DAAC. doi: 10.5067/MODIS/MCD64A1.006

Preparedness Resources Tables

Table 3A provides the total number of personnel employed within the Preparedness program and the type and amount of resources utilized (staffed or contracted). FY 2020 data is actual implementation, while FY 2021 and FY 2022 are estimated numbers.

Table 3A: Estimated Government Preparedness Resources FYs 2020-2022

Firefighting Asset	Resource Type	FY 2020 Actual	FY 2021 Planned	FY 2022 Request
Personnel	All Personnel	4,692	4,665	4,665
	FTE	2,098	2,173	2,173
	Smokejumpers	151	151	151
	Type 1 Hotshot Crews	17	18	18
Equipment	Engines	630	644	644
	Other Heavy Equipment	109	109	109
Aviation	Water Scoopers	5	6	6
	Single Engine Air Tankers	35	35	35
	Helicopters Type 1	1	1	1
	Helicopters Type 2	9	9	9
	Helicopters Type 3	29	28	29
	Smokejumper Plane	7	7	7
	ASM/Lead Plane	4	4	4
	Air Tactical	11	11	11
	Utility	5	5	5

This table provides estimates. Actual figures will depend on the timing and implementation of specific budget actions.

SPOTLIGHT ON INNOVATION

Smokejumper Airplane Fleet Upgrade

The BLM Great Basin Smokejumpers load the Dash-8 aircraft at NIFC for a training jump during the evaluation process in Boise, Idaho. (Photo by Carrie Bilbao)

DOI's Fire and Aviation program consistently strives to assess innovative tools and technology to increase safety, efficiency, and overall wildland fire suppression efforts. This past year, the BLM smokejumper program evaluated the Bombardier Dash 8 aircraft as an interagency smokejumper platform to provide fast, efficient smokejumper delivery to wildland fire incidents.

The aircraft features significant improvements in speed, payload, and range that can make an important difference in the effective initial attack of fires and protection of resources in Alaska and the western United States. After completing the testing phase during fire activity in 2020, initial indications are that the aircraft is a viable smoke jumping platform, and the approval process to make the aircraft a part of BLM's smokejumper fleet will proceed during Fiscal Year 2021. This will allow even faster, more efficient initial attack efforts, particularly for remote wildfires.

Table 3B is an extension of Table 3A. It identifies additional Preparedness resources funded through agreements between BIA and individual Tribal Nations. FY 2020 data is actual, while FY 2021 and FY 2022 levels are estimates.

Table 3B: Estimated Tribal Preparedness Resources FYs 2020-2022

Asset	Resource Type	FY 2020 Actual	FY 2021 Planned	FY 2022 Request
Personnel	All Personnel	391	404	404
	<i>Tribal Staff Equivalent</i>	281	287	287
	Type 1 Hotshot Crews	4	4	4
Equipment	Engines	82	85	85
	Other Heavy Equipment	18	18	18
	Helicopters Type 3	1	1	1

This table provides estimates. Actual figures will depend on the timing and implementation of specific budget actions.

Table 3C displays DOI’s Preparedness expenditures across the different general cost categories. FY 2020 displays actual budget data generated from DOI’s financial accounting system. FY 2021 and FY 2022 display estimated cost category allocations.

Table 3C: Estimated Preparedness Program Costs FYs 2020-2022 (Dollars in Thousands)

General Cost Category	FY 2020 Actual	FY 2021 Planned	FY 2022 Request
Salaries and Benefits	\$ 197,615	\$ 202,000	\$ 208,000
Travel and PCS Move	\$ 5,312	\$ 6,000	\$ 6,500
General Contracts and Agreements	\$ 40,524	\$ 43,000	\$ 43,500
Aviation Contracts and Use	\$ 37,691	\$ 38,000	\$ 38,000
Tribal Contracts and Agreements	\$ 24,398	\$ 25,000	\$ 25,500
Fire Vehicle and Equipment Fleet	\$ 6,590	\$ 7,000	\$ 7,200
Supplies and Materials	\$ 16,596	\$ 17,000	\$ 17,500
Other ¹	\$ 9,737	\$ 9,105	\$ 9,343
Total Program Cost	\$ 338,463	\$ 347,105	\$ 355,543

¹ This category includes primarily expenditures in utilities and rental payments.

PREPARED TO RESPOND IN A HISTORIC YEAR



In 2020, Las Vegas Helitack, which received DOI WFM Preparedness funding, provides suppression response on the Big Summit fire in Eastern Nevada. (Photo by Joe Bradshaw)

DOI’s Preparedness program funds roughly 1,000 assorted non-personnel firefighting resources. Most of these resources are configured to respond to local initial attack fires; however, these resources become available for national response as greater needs for firefighting resources arise. In a typical year, most DOI-funded firefighters spend multiple weeks fighting fires outside of their local area. This effect is even more amplified for National Resources and Aviation Resources.

Las Vegas Helitack’s initial attack response area includes BLM’s Southern Nevada District, NPS’s Lake Mead National Recreational Area, and USFWS’s Pahrangat and Ash Meadows National Wildlife Refuges. In 2020, Las Vegas Helitack initial-attacked 35 wildfires and spent over 120 days in seven different States supporting active wildfire incidents. 2020 was an historic year, but it was not atypical, as fire “season” becomes nearly year-round.

SUPPRESSION OPERATIONS



The WFM program prepares thoroughly so that, when the need for fire suppression arises, personnel and other resources are ready to go on a moment’s notice. Suppression Operations comprises the range of actions taken to directly extinguish wildfires, prevent the movement and growth of unwanted fire, and manage fire for resource benefits.

Suppression Operations also provides funding for post-fire emergency stabilization.

Activity: Suppression Operations

Subactivity: Suppression Operations

	FY 2020 Actual	FY 2021 Enacted	FY 2022 Request				
			Fixed Costs (+/-)	Internal Transfers (+/-)	Program Changes (+/-)	2022 Request	Change from 2021 (+/-)
Dollars (in Thousands)	383,657	383,657	-	-	-	383,657	-
<i>FTE</i>	363	363	-	-	-	363	-

Program Changes

The FY 2022 budget request for Suppression Operations is \$383,657,000 and 363 FTE, which reflects no program or FTE change from the FY 2021 Enacted level.

Maintain 10-Year Suppression Average at FY 2015 Level (\$0/0 FTE)

The request fully funds Suppression Operations at the 10-year average of suppression obligations as reported in the FY 2015 President’s budget, in accordance with Division O of the *Consolidated Appropriations Act, 2018* (P.L. 115-141). The budget funds Suppression Operations at \$383.7 million, and it also assumes the availability of \$330.0 million as DOI’s share of the Wildfire Cap Adjustment established under Division O. The combination of the Suppression Operations funding and the cap adjustment helps to ensure that sufficient funds are available for suppression needs in even the most severe wildfire years.

Program Overview

When wildfires occur, DOI uses Suppression Operations funds to support the direct response to manage these incidents to protect life, property, infrastructure, and natural and cultural resources. Suppression Operations funds the extensive level and range of resources necessary for fireline operations such as incident management and support functions; aviation assets and operations; logistical services, supplies, and equipment; temporary emergency firefighters; and personnel costs beyond those that are covered by the Preparedness program.

Wildfire response actions are guided by resource priorities and objectives identified in DOI and bureau management plans, including fire management plans. Responses may include the following:

- Suppressing wildfires that threaten lives, communities, and values at risk;
- Managing wildfires to accomplish resource goals;
- Implementing emergency stabilization projects that minimize threats to life or property; protect water quality; and reduce the risks of floods, landslides, and erosion; and
- Using fire severity funding, provided by the Suppression Operations appropriation, to increase Preparedness response capabilities during extraordinary situations. These funds ensure that DOI can effectively prepare for and manage wildfire response in periods of prolonged high fire danger or when wildfire seasons start earlier than normal or last longer than normal.



The Craig Hotshots Crew from Colorado work the Mullen Fire, which was near Laramie, Wyoming, in 2020. (Photo by BLM)

Program Activities

The FY 2022 budget request for Suppression Operations supports wildfire suppression and response throughout the United States and 363 FTEs—including seasonal and temporary workers—who provide increased capacity for incident management operations.

The *Consolidated Appropriations Act, 2018* (P.L. 115-141) provided additional new budget authority for FYs 2020-2027. Under this Act, otherwise known as the *Stephen Sepp Wildfire Suppression Funding and Forest Management Activities Act*, both DOI and USDA are provided additional new budget authority in excess of the average costs for suppression operations as reported in the FY 2015 President's budget.

The FY 2022 budget allocates, as a preliminary split, \$330 million of the \$2.45 billion authorized cap adjustment resources to DOI and the remainder to USDA/USFS. The Administration will reallocate resources between agencies as necessary to meet actual wildfire suppression needs.

DOI's annual Suppression Operations obligations fluctuate from year to year. In calculating the ten-year average, obligations are adjusted annually to account for inflation.

Funding for Suppression Operations was historically formulated using a 10-year average of prior-year obligations, which was updated annually. As previously noted, pursuant to P.L. 115-141, funding for Suppression Operations is now based on the 10-year average of suppression obligations as reported in the FY 2015 President's budget. For informational purposes, to show the trend in fire suppression costs, DOI continues to report the updated 10-year average, as shown in the table below.

Table 4:
SUPPRESSION OBLIGATIONS FYs 2011–2020 (Dollars in Thousands)

Fiscal Year	Net Nominal Suppression Obligations	GDP Inflator [2012=1.00]	GDP Deflator [2020=1.00]	Adjusted Obligations [2020=1.00]	Rolling 10-Year Average
2011	\$318,788	0.9791	0.8676	\$367,192	\$424,309
2012	465,832	1.0000	0.8861	525,691	420,936
2013	399,199	1.0159	0.9002	443,445	423,180
2014	326,194	1.0316	0.9141	356,834	420,771
2015	417,545	1.0369	0.9188	454,431	427,588
2016	371,729	1.0441	0.9252	401,778	413,814
2017	508,103	1.0620	0.9411	539,919	409,479
2018	528,350	1.0853	0.9617	549,381	417,307
2019	440,708	1.1040	0.9783	450,488	466,174
2020	510,947	1.1285	1.0000	510,947	460,035

See also Figure 1 on the following page.

As illustrated in Figure 1, below, the trend over the past 26 years indicates a significant rise in costs, with obligations doubling during this time period.

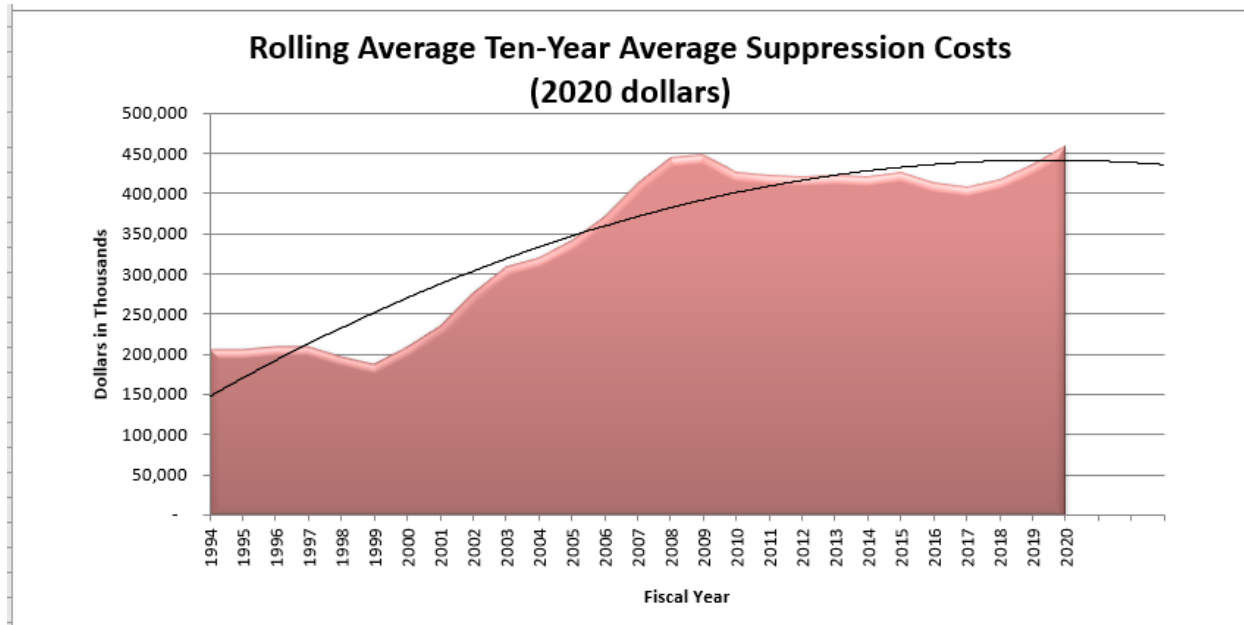


Figure 1: Trend in DOI Suppression Obligations Ten-year Average, FYs 1994-2020

This rise in costs is attributable to several compounding factors such as climate change (increasing annual fire workload and exacerbating fire behavior); population growth and development trends (increasing wildfire exposure and incident complexity); and escalation in costs of firefighting resources. For example:

- Increases in invasive annual grasses result in increased flammability and shorter fire return intervals on rangelands²;
- Drought conditions, insect infestations, below normal snowpack (or earlier mountain snow melt), and extended burning seasons result in higher frequency of large fires and greater wildfire severity in forests; and
- Population growth and home construction in the Wildland Urban Interface (WUI) complicates landscape protection and response efforts while also creating additional sources of ignition.³

DOI’s WFM program is continuing to work closely with USDA/USFS to address the challenge of rising suppression costs. This work includes using risk-based strategies to reduce unwanted vegetation and manage wildfires to meet resource and protection objectives. A single wildfire may be simultaneously

² Germino, Matthew J., Chambers, Jeanne C., Brown, Cynthia S. (2016). “Exotic Brome-Grasses in Arid and Semi-arid Ecosystems of the Western US”.

³ Stein, S.M., Menakis, J., Carr, M.A., Comas, S.J., Stewart, S.I., Cleveland, H., Bramwell, L. & Radeloff, V.C. (2013). “Wildfire, wildlands, and people: understanding and preparing for wildfire in the wildland-urban interface—a Forests on the Edge Report”. U.S. Department of Agriculture General Technical Report, RMRS-GTR-299, 36.

suppressed in one spot and allowed to burn in another to achieve resource benefits, including the reduction of fuel load. These operations balance the expenditure of Suppression Operations funding with the risk a wildfire poses to firefighters, the public, and natural and cultural resources.

SPOTLIGHT ON PLANNING

Partnerships Pay Dividends in Colorado’s 2020 Fire Season

The scope and scale of fires in Colorado during 2020 were unprecedented in recent history. These fires required an all-out suppression effort from all agencies involved. However, with both the Cameron Peak and East Troublesome Fires, the extreme fuels, drought, and weather conditions made it impossible to stop these fires when they were burning at their peak.

“2020 was a challenging fire year for us and for all Coloradoans,” said park superintendent Darla Sidles. “Having strong partnerships in place before the fire season was vital to our firefighting effort last year.”



NPS staff from Rocky Mountain National Park observe the smoke plume from the Cameron Peak Fire near Estes Park, Colorado, 2020. (Photo by NPS)



Congressman Joe Neguse (CO-2) points to a map showing the location of the Cameron Peak and East Troublesome Fires while Senator Michael Bennet (CO) (to his left), local officials, and the Rocky Mountain National Park Superintendent provide updates. (Photo by NPS)

“It was recognized years ago that Estes Park and other communities adjacent to the park were at risk from wildfire,” said Fire Management Officer Mike Lewelling. “Over that time, there was a realization that wildfires are getting larger nationwide, fire seasons are getting longer and to make matters worse, the mountain pine beetle outbreak created a fuels profile that is very volatile.”

Recognizing the increased threat from wildfire, park leadership began engaging community partners and stakeholders to develop Community Wildfire Protection Plans, attend training, and purchase needed equipment. In 2017 and 2019 the park coordinated workshops engaging local, county, and Federal partners to look at scenarios that challenged people to plan for the inevitability of a large wildfire.

“These workshops allowed us to have conversations with our partners about how we will engage wildfire as a community,” noted Lewelling. “We ran a scenario with the fire coming out of the park and into the community of Estes Park. The scenario was remarkably similar to what happened last year and really helped us plot out agency roles and involvement, evacuation plans, staffing roles, and prioritize fuels treatments and suppression strategies.”

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FUELS MANAGEMENT



The Fuels Management program represents a strategic investment in managing vegetation to reduce the intensity, severity, or negative effects of wildfire. It provides cost-effective benefits to the American people, helps restore and maintain healthy ecosystems, supports communities in their efforts to become fire-adapted, and helps protect highly valuable resources and assets.

Activity: Fuels Management

Subactivity: Fuels Management

	FY 2020 Actual	FY 2021 Enacted	FY 2022 Request				
			Fixed Costs (+/-)	Internal Transfer (+/-)	Program Changes (+/-)	2022 Request	Change from 2021 (+/-)
Dollars (in Thousands)	194,000	219,964	+4,380	-	+80,000	304,344	+84,380
<i>FTE</i>	893	1,128	-	-	+325	1,453	+325
<i>Tribal FTE</i>	391	450	-	-	+65	515	+65

Summary of FY 2022 Program Changes for Fuels Management

Request Component	(\$000)	FTE
<u>Program Changes:</u>		
Increase Capacity for Fuels Management	+65,000	+325
Increase Tribal Contract Support and Reserved Treaty Rights Lands Projects	+10,000	+0
Increase Investments in Outcome-Based Measures and Information Technology	+5,000	+0
TOTAL Program Changes	+80,000	+325

Program Changes

The FY 2022 budget request for Fuels Management is \$304,344,000 and 1,453 FTE, a program change of +\$80.0 million and +325 FTE from the FY 2021 Enacted level.

- Increase Capacity for Fuels Management:** To help reduce the risk of catastrophic wildfire and advance the Administration’s goal to mitigate and increase resilience to climate change, the budget requests an increase of \$65.0 million to increase the capacity of the Fuels Management program. The additional funds will support the management of additional vegetation—totaling an estimated 360,000 acres—and more than 100 risk assessments, post-treatment monitoring, contract preparation,

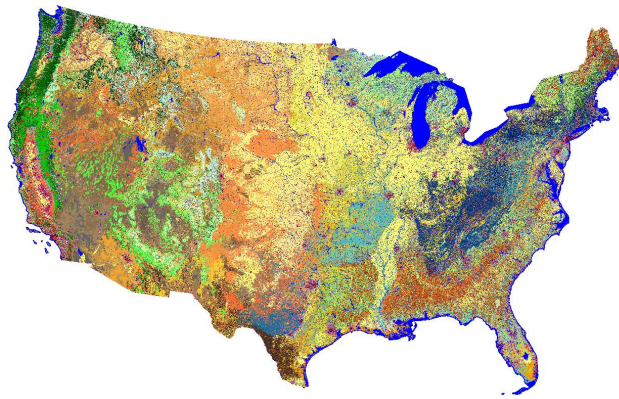
and administration actions necessary to apply scientific principles to mitigate the risk of wildfires that would otherwise contribute to carbon emissions. This work will improve the climate resiliency of communities, infrastructure, and ecosystems to wildfires by increasing their abilities to withstand a wildfire and recover quickly.

The impacts of wildfire smoke on human health can be both locally and regionally profound, and these impacts are often concentrated in underrepresented communities, including Tribal Nations. To address these inequities, a portion of the requested increase in funding will be used to address fuels management in targeted geographic areas. Additionally, DOI will invest further in personnel, science, and technology that will lead to better-informed and more effective land management decisions; partnerships to address climate adaptation, conservation, and ecological resilience; and clean energy technology and infrastructure. Current studies and new research funded by the Joint Fire Science Program will further inform the effects of climate on wildfire, the effects of wildfire on greenhouse gas emissions, and carbon cycling (see Other Operations, below).

- **Increase Tribal Contract Support and Reserved Treaty Rights Lands Projects:** The request includes a \$10.0 million increase in support for Reserved Treaty Rights Lands (RTRL) projects and Tribal contract costs. RTRL enables Tribal Nations to participate in collaborative projects with non-Tribal landowners to enhance the health and resiliency of priority Tribal Nation natural resources at high risk from wildfire. The budget increases support for RTRL by \$5.0 million (33.3 percent) to a total of \$15.0 million and Tribal contract costs by \$5.0 million. This new Fuels Management contract support is in addition to \$9.0 million currently in Preparedness base funding in support of Tribal Preparedness activities.
- **Increase Investments in Outcome-Based Measures and Information Technology:** The request includes a \$1.0 million increase to fund the development and initial implementation of new Fuels Management outcome data collection, management, and analysis. While legacy fuels metrics focus primarily on quantifying amounts of work accomplished (e.g., acres), DOI is working to move beyond general acreage targets (i.e., outputs) to outcome-based measures in order to improve program management and oversight. This initiative will support the development of outcome-based measures and will help to advance strategic implementation of the Fuels Management program and meet *Evidence Act* requirements.

In addition, the request provides a \$4.0 million increase for DOI's investment in data management, information-sharing, and collaboration within the WFM program and with partners. This investment will support identification, and when mutually agreeable, mapping and display of shared values, planned, and completed work among WFM partners as well as leveraging of capacity, funding, and unique skillsets across geographic and governmental boundaries to communicate risk mitigation outcomes. By enhancing opportunities for collaboration and communication this work will improve risk mitigation, increase resilience to climate change, and reduce carbon emissions, while providing transparency of planning and implementation across jurisdictions.

SPOTLIGHT ON PARTNERSHIPS
LANDFIRE



The Landscape Fire and Resource Management Planning Tools (LANDFIRE), is a shared program between the wildland fire management programs of the U.S. Departments of Agriculture (USDA) and the Interior (DOI). LANDFIRE provides more than 20 landscape-scale geospatial products to support cross-boundary planning, management, and operational activities. This multi-partner program produces consistent, comprehensive, geospatial data and databases that describe vegetation, wildland fuel, and fire regimes across the United States and in insular areas.

LANDFIRE develops and improves vegetation and fuels management products to inform landscape management across all jurisdictions. It is based on the best available, authoritative data and science resulting from interagency/interorganizational collaboration and cooperation. LANDFIRE is a cornerstone of a fully integrated national data framework. It provides essential information for decision support and aids in identifying areas with similar characteristics, prioritizing work, modeling capacity and potential, and improving collaboration among landowners.

RESERVED TREATY RIGHTS LANDS

Collaboration with and partnerships among Federal, Tribal Nations, State, and local stakeholders to leverage capabilities and resources to accomplish priorities are critical to the success of DOI's Fuels Management Program.

Treaties recognize and establish a unique set of rights, benefits, and conditions for Tribes who agreed to cede millions of acres of their lands to the United States in exchange for guarantees and protections. For many Tribal Nations, these areas fall under the management of other Federal agencies, and in some cases, Tribal Nations share management rights with Federal agencies. Fuels Management funding has been designated for the purpose of treating and restoring Tribal landscapes within and adjacent to Reserved Treaty Right Lands (RTRL). The RTRL program enables Tribal Nations to participate in collaborative projects with non-Tribal landowners to enhance the health and resiliency of priority Tribal natural resources at high risk from wildfire.

Reserved Treaty Rights

The FY 2022 budget provides \$15 million (+\$5 million above the FY 2021 level) for the Reserved Treaty Rights Lands (RTRL) program. RTRL provides funding to Tribal Nations to participate in collaborative projects with other landowners supporting the health and resiliency of priority Tribal resources at high risk to wildfire.

'MANTÉN VIVA LA LLAMA' - 'KEEP THE FLAME ALIVE!'



TREX participants take a break during prescribed fire ignitions.

Mantén Viva la Llama' -- 'Keep the Flame Alive!' describes the theme of the Spanish Language Training Exchange (TREX) held near Santa Fe, New Mexico, in October 2019. The two-week TREX program brings diverse fire practitioners from many Spanish-speaking countries—including Argentina, Bolivia, Costa Rica, Ecuador, Guatemala, Honduras, Mexico, and Spain—together to build skills in prescribed fire, fire management, and fire ecology.

TREX participant Pablo Alcorta, a wildland firefighter from Patagonia, Argentina, described his experience as enriching. “Joining a professional wildland fire work team allowed us to gain and share knowledge and experiences and learn new processes and practices,” said Alcorta.

Program Overview

The strategic management of burnable vegetation (known in the WFM community as “fuels”) before a wildfire occurs is an effective approach to reduce the negative effects from wildfires to highly valuable resources and assets. DOI carries out fuels management in collaboration with multiple partners, including other Federal agencies, Tribal Nations, States, counties, local organizations, and private landowners. Bureau specialists plan, implement, and monitor fuels management projects to mitigate wildfire risk and achieve priority land management objectives. This work occurs year-round, encompassing a diversity of geographic locations, vegetation types, and treatment methods.

Specialists use a variety of active management practices, including prescribed fire (e.g., broadcast burning and pile burning), mechanical methods (e.g., thinning excess trees and mowing brush and grass), and other methods (e.g., chemical, biological, and grazing). Fuels Management is coordinated with resource management and among stakeholders to mitigate wildfire risks and ensure projects meet full regulatory compliance. Community assistance activities enhance and facilitate these efforts.

Fuels projects most effectively mitigate the potential losses and impacts from wildfires when prioritized and coordinated across land ownerships. DOI continues to support the implementation of work to achieve the following goals of the Cohesive Strategy through:

- **Fire-Adapted Communities**
 - Working with communities to share expertise and implement effective wildfire mitigation to protect community values;
 - Contributing to and protecting local and Tribal Nation economies;

- **Resilient Landscapes**
 - Maintaining and restoring the integrity of landscapes and their resilience to wildfires;
 - Integrating cultural and natural resource program efforts to maintain fire's natural role;
 - Implementing treatments on invasive species; and
- **Safe and Effective Wildfire Response**
 - Strategically locating treatments to improve public and firefighter safety, enhance opportunities to manage wildfires, and reduce losses from wildfires.



Prescribed Fire reduces fuels at Mount Rushmore National Memorial, South Dakota, April 2020. (Photo by NPS)

For FY 2021, Congress appropriated DOI's WFM program a total of \$29 million—including \$22 million for Fuels Management—to implement *DOI's Plan to Transform the Firefighting Workforce*, in recognition of the growing severity and extent of wildfires brought on in part by climate change. Using these funds, the WFM program is investing in developing a stable, professional, and permanent DOI firefighting workforce that is capable of suppression activities and fuels management work on a year-round basis. DOI is converting more than 700 positions from seasonal to full-time or from temporary to permanent, and the WFM bureaus plan to hire 235 new positions. Equity and diversity are important components of the hiring decisions. DOI's plan addresses the challenges of retention by fostering an on ramp to permanent employment and opportunities for career growth. The workforce transformation that is beginning in FY 2021 will continue in FY 2022 (see also Preparedness, above).

Program Activities

DOI will continue to partner with Federal, Tribal Nation, State, and local partners and stakeholders to maximize resources and better incorporate fuels management into resource management planning.

The FY 2022 budget request for Fuels Management supports:

- 1,453 FTE to plan, implement, and monitor fuels treatments in an integrated approach with resource management and stakeholders to ensure projects meet full regulatory compliance and DOI objectives, including increasing firefighter and public safety.
- Increased capacity to implement priority prescribed fires, mechanical, chemical, and biological treatments; to reduce wildfire risk and promote resilience to climate change on an estimated 1.7 million acres of DOI and Tribal Nation lands; and to perform more than 500 risk assessments, post-treatment monitoring, contract preparation, and administration actions necessary to apply scientific principles to wildfire risk mitigation.
- Increased support totaling \$15.0 million for the RTRL program, which provides dedicated funding to BIA to enable Tribal Nations to participate in collaborative projects.
- Increased contract support totaling \$5.0 million for BIA to assist firefighting organizations managed by Tribal Nations. BIA's WFM program is required to pay contract support costs to Tribal Nations for tribal management for contracted and compacted wildland fire management programs. (This contract support is in addition to \$9.0 million in Preparedness activities.)
- Mitigation of impacts from potential wildfire emissions by promoting and maintaining land in desired condition.
- Increases of \$1.0 million to support the development of outcome-based performance measures to help advance the strategic implementation of the Fuels Management program and \$4.0 million for WFM's investments in data management, information-sharing, and collaboration among partners.

Among the Fuels Management projects for FY 2022, DOI will support efforts to protect intact areas of sagebrush from wildfire. The conversion from sagebrush- to cheatgrass-dominated lands leads to a net reduction in carbon storage. That reduction worsens the impacts from climate change. Homes that exist in this ecosystem are among those with the highest likelihood of loss from wildfire in the United States.⁴ DOI will support collaborative wildland fire and invasive plant management strategies to reduce the establishment, spread, and subsequent degradation by invasive annual grasses that alter wildfire probability and intensity and therefore increase risk.

⁴ The USDA Forest Service created the "Wildfire Risk to Communities" website in 2020 under the direction of Congress. The site is designed to help community leaders, such as elected officials, community planners, and fire managers. <https://wildfirerisk.org/>

OTHER OPERATIONS

Other Operations is a category of program activities that consists of three sub-activities:

1. Burned Area Rehabilitation
2. Facilities Construction and Maintenance
3. Joint Fire Science Program

Activity: Other Operations (Dollars in Thousands)

Sub-activity	FY 2020 Actual	FY 2021 Enacted	FY 2022 Request				
			Fixed Costs (+/-)	Internal Transfers (+/-)	Program Changes (+/-)	2022 Request	Change from 2021 (+/-)
Burned Area Rehabilitation	20,470	20,470	-	-	+20,000	40,470	+20,000
Facilities Construction and Maintenance	18,427	18,427	-	-	-	18,427	-
Joint Fire Science Program	3,000	3,000	-	-	+5,000	8,000	+5,000
TOTAL Other Operations	41,897	41,897	-	-	+25,000	66,897	+25,000
<i>FTE</i>	52	52	-	-	+75	127	+75

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Burned Area Rehabilitation



The Burned Area Rehabilitation program supports efforts to repair or improve burned landscapes that are unlikely to recover without human assistance.

Activity: Other Operations

Subactivity: Burned Area Rehabilitation

	FY 2020 Actual	FY 2021 Enacted	FY 2022 Request				
			Fixed Costs (+/-)	Internal Transfers (+/-)	Program Changes (+/-)	2022 Request	Change from 2021 (+/-)
Dollars (in Thousands)	20,470	20,470	-	-	+20,000	40,470	+20,000
FTE	47	47	-	+75		122	+122
Tribal FTE	9	9	-	+5	-	14	+5

Summary of FY 2022 Program Changes for Burned Area Rehabilitation

Request Component	(\$000)	FTE
<u>Program Changes:</u>		
Increase Capacity for Burned Area Rehabilitation (BAR)	+15,000	+75
Increase BAR for Tribal Nations & Underrepresented Communities	+5,000	+0
TOTAL Program Changes	+20,000	+75

Program Changes

The FY 2022 budget request for Burned Area Rehabilitation is \$40,470,000 and 122 FTE, a program change of +\$20,000,000 and +75 FTE from the FY 2021 Enacted level.

- Increase Capacity for Burned Area Rehabilitation (BAR):** The request includes an increase of \$15.0 million to increase support for the early phases of restoration to landscapes damaged by wildfire that are unlikely to recover naturally. These treatments and activities reduce the long-term negative effects of wildfires and increase the resiliency of landscapes and ecosystems to climate change.
- Increase BAR Projects for Tribal Nations and Underrepresented Communities:** The request includes an increase of \$5.0 million to support projects adjacent to underrepresented areas and communities impacted by wildfires that burned between 2018 and 2021 and require additional

resources to complete restoration activities. The increase will allow DOI to fully fund restoration treatments and activities where on-going work is progressing towards a positive outcome.

Program Overview

The BAR program provides for the early phases of restoration to landscapes damaged by wildfire that are unlikely to recover naturally. DOI—along with partners from Tribal Nations, States, counties, and local governments—works on non-emergency, rehabilitation actions that may take up to five years to complete. Immediate threats after a fire, such as floods, debris flows, and landslides are treated using Emergency Stabilization funds from the Suppression Operations activity. BAR picks up where emergency stabilization leaves off.

BAR projects help prevent further degradation of watersheds and landscapes affected by severe wildfire. Through these projects, agencies may re-seed or plant trees and other desired vegetation to mitigate the risk of catastrophic landslides, prevent the establishment of invasive species, maintain soil productivity, and initiate the recovery of critical wildlife habitat. Other activities may also include the repair of minor assets such as signs damaged by wildfire, rehabilitation of Tribal Nation trust resources, and monitoring treatment effectiveness and success.

Program managers evaluate and prioritize rehabilitation projects at the local and national level. Restoration projects that may be required five or more years after a fire fall under the land management agency’s program goals for long-term management.

Examples of BAR actions include:

BAR Action	Accomplishment
Chemical Treatment – application of herbicide to reduce the incidence of an undesired plant	Treated 785 acres affected by the Smith Fire in Idaho to reduce the incidence of invasive species and to prepare the site for seeding.
Planting – placement of nursery stock, seedlings, or cuttings into the soil	Planted tree seedlings on 210 acres affected by the Witten Complex in Oregon.
Seeding – placement of seed into the soil to improve the vegetative composition of a piece of land	Ground seeded 440 acres of land burned in the Crum Fire in Nevada with desirable vegetation seed.
Exotic Plant Removal – control of exotic plants to improve the vegetative condition of the land	Removed exotic species on 4,185 acres burned in the 2017 Cowbell Fire in Florida.
Minor Repairs – repair/replacement of minor assets damaged by a wildfire (small trail bridges, handrails, campgrounds, boat ramp, fence, stock tanks, informational kiosk, etc.)	Replaced 17 stream monitoring sites damaged by the Woolsey Fire in California. Removed 16 miles of fence damaged by the Bendire BR J1A5 Fire in Oregon.

Program Activities

The FY 2022 budget request funds the BAR program at \$40.5 million for post-wildfire treatments that restore and enhance ecosystem health and enable landscapes to be more resilient to wildfires and the effects of climate change. Without timely rehabilitation and recovery action to restore burned acres to their desired condition, post-wildfire damages become more complex and costly to treat.

The request supports 122 FTE to evaluate and implement priority rehabilitation projects at the local and national levels. BAR will fund rehabilitation and restoration treatments for an estimated 1,500,000 burned acres, up to five years after a fire. DOI will continue to work cooperatively with USDA/USFS, the U.S. Geological Survey, and various scientific institutions to implement monitoring protocols and methods for BAR treatments.

The WFM program established a baseline in 2009 to monitor the long-term effects of rehabilitating treated acres to their desired condition. The description of desired condition includes objectives for physical, chemical, hydrologic, and biologic attributes. For example, objectives may include managing for specific species canopy cover or vegetation height.

RESTORING THE COLVILLE TRIBES' GATHERING GROUNDS



The Colville Tribes BAER Implementation Group in 2016. (Photo by Colville Tribes staff)

After the 2015 North Star Fire scorched more than 218,000 acres just 10 miles out of Nespelem, Washington, there was a dire need for the Confederated Tribes of the Colville Reservation to restore traditional gathering grounds. The fire was historic in scope in so many ways; it caused significant impacts to many environmental, ecological, economic, and traditional aspects of the Colville people's way of life. For example, until the fire, one elder had picked berries in one of the many restoration planting areas every year of her life since she was a little girl.

In response, BIA worked with the Colville Tribes to implement noxious/invasive weed treatments using hand pulling and biodegradable tarps, along with livestock exclusion fencing to stabilize areas where huckleberries were to be planted. In July 2016, a small group including the Colville Tribes BAR team, area youth, and Mount Tolman Fire Center firefighters planted 2,000 huckleberry seedlings in traditional harvesting sites. They planted another 7,500 in each of the years 2017 and 2020. These huckleberry plantings in traditional harvesting sites may have seemed insignificant, but it was immense in helping to restore the hopes of the Tribal members that their traditions would not be lost.

SPOTLIGHT ON REHABILITATION

Post-Fire Trail Damage at Tonto National Monument

In summer 2019, when the human-caused Woodbury Fire in the Tonto National Forest threatened cultural resources in the Tonto National Monument, NPS staff and responders took steps to protect cliff dwellings and other cultural resources. These operations were successful; however, the fire still impacted soil conditions creating unstable trails, increased flood hazard, and greater risk of falling rocks or trees. These conditions can impact visitor and staff safety for years to come.

In fall 2019, a trail crew from Saguaro National Park assisted Tonto National Monument in mitigating trail damage that resulted from soil movement after the Woodbury Fire. Fire-related flood flows are normally elevated and typically move ash, soil, rock, and floatable woody debris, increasing the potential for resource damage in an area impacted by wildfire.



Before Rehabilitation: Flood damage after the Woodbury Fire in 2019 caused a trail to degrade. (Photo by NPS)



After Rehabilitation: The same trail after it was restored and redesigned. (Photo by NPS)

In addition to trail mitigation, the crew removed debris from culverts throughout the park and repaired damage to the trails. A landscape architect was hired to redesign water surface flow impacting the picnic area and rerouting water into existing culverts.

The trail, used to take tours to the Upper Cliff Dwelling, is one of the main attractions at Tonto National Monument. It took an extraordinary effort from NPS trail crews to re-open the trail for safe use. The impressive work also eliminated several areas of deferred maintenance during the project. The trail was redesigned in some parts of the riparian area and is now a sustainable and safe feature for future generations.

Facilities Construction and Maintenance



The Facilities Construction and Maintenance Program provides safe, functional, and energy efficient facilities that are essential to DOI’s mission to protect lives, property, and resources from wildfire.

Activity: Other Operations

Subactivity: Facilities Construction and Maintenance Program

	FY 2020 Actual	FY 2021 Enacted	FY 2022 Request				
			Fixed Costs (+/-)	Internal Transfers (+/-)	Program Changes (+/-)	2022 Request	Change from 2021 (+/-)
Dollars (in Thousands)	18,427	18,427	-	-	-	18,427	-
FTE	2	2	-	-	-	2	-

Program Changes

The FY 2022 budget request for Facilities Construction and Maintenance is \$18,427,000 and 2 FTE, which reflects no program or FTE change from the FY 2021 Enacted level.

At the requested level, DOI will continue to complete deferred maintenance on buildings and facilities in disrepair and ensure that facilities meet current health and safety standards. The program will provide infrastructure necessary to support DOI’s firefighters, safeguard the public, and improve DOI’s response to values at risk from wildfire.

Program Overview

Facilities Construction and Maintenance provides safe, functional, and energy-efficient facilities that are essential to DOI’s mission to protect lives, property, and resources from wildfire.

The WFM program has developed a five-year deferred maintenance and capital improvement plan. The plan presents the projects of greatest need in priority order, focusing on critical health and safety, mission critical resource protection and public safety, achieving sustainability goals, and decreasing long-term operation and maintenance costs. Each project is submitted consistent with DOI’s guidance for deferred maintenance and capital improvement. To ensure an efficient allocation of funding to the highest priority projects, a national interagency team reviews submitted projects by total project score and forwards a prioritized list to the DOI WFM leadership for their recommendation to DOI for approval.

The areas of emphasis for the Facilities Construction and Maintenance Program include:

- Correcting critical health- and safety-related facility problems by ensuring facilities are compliant with Federal accessibility and Occupational Safety and Health Administration (OSHA) requirements;
- Replacing building systems and components that have exceeded their useful lives;
- Installing facilities that improve the wildfire response capability required to keep fires small and reduce the threats to communities, structures, municipal watersheds, other infrastructure, and wildlife habitat; and
- Providing fire facilities that are sufficient to maintain readiness and provide full support for fire management activities.

Safe and properly maintained facilities are critical for protecting firefighters and their equipment. The WFM program is repairing and updating facilities that are in deteriorating condition to maintain current health and safety standards. Work is accomplished through such authorities as P.L. 93-638 (related to contracts) and P.L. 297-100 (related to grants), and through commercial contracting.

Maintaining a Facilities Construction and Maintenance program allows the WFM program to centrally evaluate projects submitted by all of DOI's WFM bureaus, enhances coordination, and helps ensure the most cost-efficient allocation of funds to best advance the facility needs of the WFM program's integrated fire program. As facilities are replaced or upgraded, efficiencies in design translate to lower operating costs and energy use, reducing agencies' carbon footprint. The emphasis on energy conservation and sustainability is a major area of importance for all projects.

Program Activities

In FY 2022, the planned accomplishments in the program include nine projects in six States with the highest critical health, safety, and resource protection ratings for a total of \$18.4 million.

Design and construction of all Facilities Construction and Maintenance program projects are monitored by DOI and the bureaus to ensure they are completed within scope and budget. DOI bureaus jointly evaluate departmental project priorities on an annual basis. Out-year priorities are adjusted and updated based on objective criteria applied during the annual evaluation process. The Facilities Construction and Maintenance program provides for safe, functional, and energy efficient facilities that are essential to DOI's mission to protect lives, property, and resources from wildfire.

See Table 5 on the following page for a detailed list of projects.

Table 5:

**FY 2022 WILDLAND FIRE MANAGEMENT
CONSTRUCTION/DEFERRED MAINTENANCE PLAN SUMMARY
(in dollars)**

PROJECT DESCRIPTION	STATE	BUREAU	INTERIOR SCORE	COST	INTERIOR RANK
New Salem Maintenance and Fire Shop Replacement	TX	USFWS	100	3,230,000	1
Crow Helitack Replacement	MT	BIA	90	900,000	2
Ontario Aviation Base Replacement	OR	BLM	90	4,628,000	3
San Carlos Fire Station Replacement (Phase 1 of 2)	AZ	BIA	90	500,000	4
Warm Springs Warehouse Dispatch Replacement	OR	BIA	90	1,600,000	5
Highway 16 Fire Station Replacement	ID	BLM	80	5,200,000	6
Sand Creek Fire Bunkhouse Replacement (Phase 2 of 2)	MT	USFWS	62	751,000	7
Boise District Air Operations Center at National Interagency Fire Center (Phase 1 of 2)	ID	BLM	60	500,000	8
Big Cypress Fire Station Replacement (Phase 1 of 2)	FL	NPS	52	303,000	9
Architectural and Engineering Design		DOI		815,000	10
TOTAL FY 2022 REQUEST				18,427,000	

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Joint Fire Science Program



The Joint Fire Science Program delivers dedicated wildland fire research and science to inform fire management policies and decisions at local, regional, and national levels.

Activity: Other Operations

Subactivity: Joint Fire Science Program

	FY 2020 Actual	FY 2021 Enacted	FY 2022 Request				
			Fixed Costs (+/-)	Internal Transfers (+/-)	Program Changes (+/-)	2022 Request	Change from 2021 (+/-)
Dollars (in Thousands)	3,000	3,000	-	-	+5,000	8,000	+5,000
FTE	3	3	-	-	-	3	-

Summary of FY 2022 Program Changes for Joint Fire Science Program

Request Component	(\$000)	FTE
<u>Program Changes:</u>		
Joint Fire Science Program	+5,000	+0
TOTAL Program Changes	+5,000	+0

Program Changes

The FY 2022 budget request for the Joint Fire Science Program (JFSP) is \$8,000,000 and 3 FTE, a program change of +\$5,000,000 and 0 FTE from the FY 2021 Enacted level.

The increase will support the President’s priorities to increase climate science and resilience to climate change. JFSP will use the increases to fund science supporting WFM as follows:

- Climate Science:** Study the effects of climate change on wildland fire—both wildfire and prescribed fire—through smoke emissions, changes in carbon storage and cycling, and changes in albedo. Albedo is a measure of how much light that hits a surface is reflected without being absorbed. It is readily measured by satellite remote sensing. Complex issues need quantification and clarification: for example, in Alaska tundra, wildfires increase absorption of sunlight, leading to melting of permafrost; while in the Continental United States (CONUS), wildfires tend to increase reflectivity, leading to decreased rainfall and drought. Carbon cycling is also complex due to tradeoffs between short and long-term effects of fire, and accounting of below-ground storage and above-ground biomass. Prescribed fire use is thought to benefit long term carbon

storage and may lessen the abrupt changes in albedo in most CONUS ecosystems, but additional research is required to confirm its beneficial use under these scenarios.

- **Resilience to Climate Change:** Determine what management actions can help make ecosystems more resilient to the effects of climate change (i.e., “harden” ecosystems). For example, JFSP grants could fund research into the feasibility of planting species or genotypes that are more drought and heat tolerant (from different parts of species’ range).
- **Environmental Justice:** Examine differences in how wildland fire—including smoke emissions, and downstream water quality and debris flow issues—affects different populations and potential strategies to address inequities among populations.

Program Overview

Created by Congress in 1998, JFSP is an interagency partnership between DOI and USDA/USFS. The program responds to the needs of the wildland fire community by competitively funding fire science research projects and science delivery to answer emerging questions and fill knowledge gaps on managing wildland fire, fuels, and fire-impacted ecosystems.

JFSP works across agency and programmatic boundaries to identify wildland fire research priorities that transcend agency-specific needs. In doing so, JFSP forms valuable cross-agency partnerships to address complex fire science questions that require multiple disciplines, funding sources, integration, and coordination to address. Results from JFSP research studies help agencies:

- Plan and implement fuels treatments;
- Support fire management decisions;
- Better understand the role of fire in various ecosystems;
- Restore lands affected by fire;
- Use the latest science to inform policy; and
- Meet regulatory requirements.



JFSP is unique in supporting a national collaboration network of 15 regional fire science exchanges: the Fire Science Exchange Network.

Results from JFSP’s research studies are delivered to the fire management community, which consists of over 8,000 Federal, Tribal Nation, State, and local fire and resource management personnel, through the Fire Science Exchange Network (FSEN). This research includes new science on firefighter safety, fuels management, co-management of risk within the wildland-urban interface, and post-fire recovery. The 15 regional members of FSEN translate the science to ensure it is useful and actionable by managers and

officials, and they engage managers to identify new research and emerging management needs. In addition, JFSP promotes future workforce development through JFSP's core research funding and the Graduate Research Innovation (GRIN) program. Together, these efforts support hundreds of



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undergraduate and graduate students who are the next generation of fire, fuels, and natural resources scientists and managers.

Program Activities

The FY 2022 budget request for JFSP supports an investment portfolio that includes:

- **Science Delivery and Knowledge Exchange:** During FY 2022, JFSP will begin to implement the findings of the 2021 FSEN evaluation that will enhance the program's ability to meet end-user wildland fire science needs;
- **Research:** JFSP will execute high-priority research to meet the needs of the wildland fire management and policy communities in collaboration and coordination with USGS and USDA/USFS Research. Examples of these high-priority issues include the effects of climate change on wildfire, the effects of wildfires on climate change, using prescribed fire and other fuel management to increase climate resilience, carbon cycling and greenhouse gas and smoke emissions;
- **Assessments/Syntheses:** JFSP will conduct assessments to ascertain the state of scientific understanding or management practice and syntheses to capture current scientific understanding and summarize in a manner useful to managers on high priority issues and topics to the wildland fire management and policy communities, e.g., short and long term tradeoffs between prescribed fire and wildfire across multiple geographic and temporal scales;
- **Workforce Development:** JFSP will support management- and policy-relevant research through the GRIN program and other initiatives that support workforce development for the wildland fire community; and
- **Environmental Justice:** Examine differences in how wildland fire—including smoke emissions, and downstream water quality and debris flow issues—affects different populations and potential strategies to address inequities among populations.

JFSP will continue to manage ongoing research projects and execute new research that meets WFM priorities. It will also continue its funding and oversight of the FSEN and its activities, support workforce development programs, and exercise leadership and coordination among the WFM community. See Table 6 on the following page.

**Table 6:
Joint Fire Science Program Performance Capacity**

Performance Measure	FY 2018 Actual	FY 2019 Actual	FY 2020 Actual	FY 2021 Enacted	FY 2022 Request	Change from 2021 to 2022 Request
Research projects initiated ¹	22	9	24	32	20	-12
Research projects completed ¹	32	33	27	27	15	-12
Refereed publications completed ¹	37	34	25	17	25	+8
Social media ²	8,978	13,042	6,100	7,100	6,100	-1,000
Events/activities ²	3,240	1,751	1,250	1,178	1,250	+72

¹JFSP projects are typically completed and published two to four years after initiation, depending on whether they are core or graduate student (GRIN) research. Completed projects reflect the receipt and acceptance of final project deliverables. Refereed publication figures represent only the publications that notify JFSP. Includes 20 projects approved in FY 2019 but funded in FY 2020, and 12 projects approved and funded in FY 2020.

²JFSP has expanded its science delivery program by establishing a national network of science exchange partnerships. In 2013, in lieu of reporting the number of “science delivery projects,” JFSP began tracking and reporting FSEN accomplishments in two sub-categories: social media and events/activities.

A list of ongoing and completed projects is published at http://www.firescience.gov/JFSP_research.cfm.

Other Exhibits

Appropriations Language

Appropriations Language Sheet

DEPARTMENT OF THE INTERIOR DEPARTMENT WIDE PROGRAMS

Wildland Fire Management

(Including Transfers of Funds)

For necessary expenses for fire preparedness, fire suppression operations, fire science and research, emergency rehabilitation, fuels management activities, and rural fire assistance by the Department of the Interior, [\$952,623,000] \$1,110,441,000, to remain available until expended, of which not to exceed \$18,427,000 shall be for the renovation or construction of fire facilities: *Provided*, That such funds are also available for repayment of advances to other appropriation accounts from which funds were previously transferred for such purposes: *Provided further*, That of the funds provided [\$219,964,000] \$304,344,000 is for fuels management activities: *Provided further*, That of the funds provided [\$20,470,000] \$40,470,000 is for burned area rehabilitation: *Provided further*, That persons hired pursuant to 43 U.S.C. 1469 may be furnished subsistence and lodging without cost from funds available from this appropriation: *Provided further*, That notwithstanding 42 U.S.C. 1856d, sums received by a bureau or office of the Department of the Interior for fire protection rendered pursuant to 42 U.S.C. 1856 et seq., protection of United States property, may be credited to the appropriation from which funds were expended to provide that protection, and are available without fiscal year limitation: *Provided further*, That using the amounts designated under this title of this Act, the Secretary of the Interior may enter into procurement contracts, grants, or cooperative agreements, for fuels management activities, and for training and monitoring associated with such fuels management activities on Federal land, or on adjacent non-Federal land for activities that benefit resources on Federal land: *Provided further*, That the costs of implementing any cooperative agreement between the Federal Government and any non-Federal entity may be shared, as mutually agreed on by the affected parties: *Provided further*, That notwithstanding requirements of the Competition in Contracting Act, the Secretary, for purposes of fuels management activities, may obtain maximum practicable competition among: (1) local private, nonprofit, or cooperative entities; (2) Youth Conservation Corps crews, Public Lands Corps (Public Law 109–154), or related partnerships with State, local, or nonprofit youth groups; (3) small or micro-businesses; or (4) other entities that will hire or train locally a significant percentage, defined as 50 percent or more, of the project workforce to complete such contracts: *Provided further*, That in implementing this section, the Secretary shall develop written guidance to field units to ensure accountability and consistent application of the authorities provided herein: *Provided further*, That funds appropriated under this heading may be used to reimburse the United States Fish and Wildlife Service and the National Marine Fisheries Service for the costs of carrying out their responsibilities under the Endangered Species Act of 1973 (16 U.S.C. 1531 et seq.) to consult and conference, as required by section 7 of such Act, in connection with wildland fire management activities: *Provided further*, That the Secretary of the Interior may use wildland fire

appropriations to enter into leases of real property with local governments, at or below fair market value, to construct capitalized improvements for fire facilities on such leased properties, including but not limited to fire guard stations, retardant stations, and other initial attack and fire support facilities, and to make advance payments for any such lease or for construction activity associated with the lease: *Provided further*, That the Secretary of the Interior and the Secretary of Agriculture may authorize the transfer of funds appropriated for wildland fire management, in an aggregate amount not to exceed \$50,000,000 between the Departments when such transfers would facilitate and expedite wildland fire management programs and projects: *Provided further*, That funds provided for wildfire suppression shall be available for support of Federal emergency response actions: *Provided further*, That funds appropriated under this heading shall be available for assistance to or through the Department of State in connection with forest and rangeland research, technical information, and assistance in foreign countries, and, with the concurrence of the Secretary of State, shall be available to support forestry, wildland fire management, and related natural resource activities outside the United States and its territories and possessions, including technical assistance, education and training, and cooperation with United States and international organizations: *Provided further*, That of the funds provided under this heading \$383,657,000 is provided *as the average costs for wildfire suppression operations* to meet the terms of [section 251(b)(2)(F)(ii)(I) of the Balanced Budget and Emergency Deficit Control Act of 1985, as amended] *a concurrent resolution on the budget. (Department of the Interior, Environment, and Related Agencies Appropriations Act, 2021.)*

Appropriations Language Citations
DEPARTMENT OF THE INTERIOR
DEPARTMENT WIDE PROGRAMS

Appropriation: Wildland Fire Management (Including Transfers of Funds)

1. For necessary expenses for fire preparedness, fire suppression operations, fire science and research, emergency rehabilitation, fuels management activities, and rural fire assistance by the Department of the Interior, \$1,110,441,000, to remain available until expended, of which not to exceed \$18,427,000 shall be for the renovation or construction of fire facilities:

This language provides funding for fire preparedness, suppression operations, fire science and research, emergency rehabilitation, fuels management, and rural fire assistance. The language further provides that such funding is available until expended. \$18,427,000 is the maximum for the construction and maintenance of fire facilities.

2. *Provided*, That such funds are also available for repayment of advances to other appropriation accounts from which funds were previously transferred for such purposes:

This language authorizes appropriations to be used to repay treasury accounts and transfers for previous fires and incidents.

3. *Provided further*, That of the funds provided \$304,344,000 is for fuels management activities:

This language provides funding for fuels management activities.

4. *Provided further*, That of the funds provided \$40,470,000 is for burned area rehabilitation:

This language provides funding for burned area rehabilitation.

5. *Provided further*, That persons hired pursuant to 43 U.S.C. 1469 may be furnished subsistence and lodging without cost from funds available from this appropriation:

This language allows the Department to feed and house firefighters with this appropriation.

6. *Provided further*, That notwithstanding 42 U.S.C. 1856d, sums received by a bureau or office of the Department of the Interior for fire protection rendered pursuant to 42 U.S.C. 1856 et seq., protection of United States property, may be credited to the appropriation from which funds were expended to provide that protection, and are available without fiscal year limitation:

This language allows DOI agencies to retain funds they receive as reimbursement for fire protection provided to other entities, rather than having to submit them over to the U.S. Treasury, and makes these collected amounts available for use until expended.

7. *Provided further*, That using the amounts designated under this title of this Act, the Secretary of the Interior may enter into procurement contracts, grants, or cooperative agreements, for fuels management activities, and for training and monitoring associated with such fuels

management activities on Federal land, or on adjacent non-Federal land for activities that benefit resources on Federal land:

This language allows the Department to enter into procurement mechanisms (contracts, grants, and/or cooperative agreements) for firefighting, fuels management, and training for the benefit of federally held or adjacent lands.

8. *Provided further*, That the costs of implementing any cooperative agreement between the Federal Government and any non-Federal entity may be shared, as mutually agreed on by the affected parties:

This language allows DOI to use cost-shared cooperative agreements.

9. *Provided further*, That notwithstanding requirements of the Competition in Contracting Act, the Secretary, for purposes of fuels management activities, may obtain maximum practicable competition among: (1) local private, nonprofit, or cooperative entities; (2) Youth Conservation Corps crews, Public Lands Corps (Public Law 109–154), or related partnerships with State, local, or nonprofit youth groups; (3) small or micro-businesses; or (4) other entities that will hire or train locally a significant percentage, defined as 50 percent or more, of the project workforce to complete such contracts:

This language indicates the Secretary may utilize contracting arrangements with the Youth Conservation Corp., local/private/non-profit entities, small businesses, or any other entity that may hire or train a significant percentage (50 percent) of the project workforce to complete projects.

10. *Provided further*, That in implementing this section, the Secretary shall develop written guidance to field units to ensure accountability and consistent application of the authorities provided herein:

This language directs DOI to formulate and distribute guidance for field staff to use these contracts.

11. *Provided further*, That funds appropriated under this heading may be used to reimburse the United States Fish and Wildlife Service and the National Marine Fisheries Service for the costs of carrying out their responsibilities under the Endangered Species Act of 1973 (16 U.S.C. 1531 et seq.) to consult and conference, as required by section 7 of such Act, in connection with wildland fire management activities:

This language allows DOI to use appropriated funds to reimburse the U.S. Fish and Wildlife Service and the National Marine Fisheries Service for consultation services necessary for compliance with the Endangered Species Act.

12. *Provided further*, That the Secretary of the Interior may use wildland fire appropriations to enter into leases of real property with local governments, at or below fair market value, to construct capitalized improvements for fire facilities on such leased properties, including but not limited to fire guard stations, retardant stations, and other initial attack and fire support facilities, and to make advance payments for any such lease or for construction activity associated with the lease:

This language allows DOI the ability to enter into leases with local governments for properties necessary to provide firefighting facilities and to provide payment in advance for any construction activities if necessary.

13. *Provided further*, That the Secretary of the Interior and the Secretary of Agriculture may authorize the transfer of funds appropriated for wildland fire management, in an aggregate amount not to exceed \$50,000,000, between the Departments when such transfers would facilitate and expedite jointly funded wildland fire management programs and projects:

This language allows the Departments of the Interior and Agriculture to transfer funds up to \$50,000,000 annually between agencies to expedite joint wildland fire management programs or projects.

14. *Provided further*, That funds provided for wildfire suppression shall be available for support of Federal emergency response actions:

This language allows the Departmental wildland fire management personnel and services to be used in support of Federal emergency responses.

15. *Provided further*, That funds appropriated under this heading shall be available for assistance to or through the Department of State in connection with forest and rangeland research, technical information, and assistance in foreign countries, and, with the concurrence of the Secretary of State, shall be available to support forestry, wildland fire management, and related natural resource activities outside the United States and its territories and possessions, including technical assistance, education and training, and cooperation with United States and international organizations:

This language allows DOI's wildland fire management personnel and services to be used to assist foreign countries with the concurrence of the Secretary of State, in support of forestry, wildland fire management, and related natural resource activities, including technical assistance, education, training and cooperation outside the United States.

16. *Provided further*, That of the funds provided under this heading, \$383,657,000 is provided as the average costs for wildfire suppression operations to meet the terms of a concurrent resolution on the budget.

This language provides funding for fire suppression based on the ten-year average of suppression operations costs, as reported in the FY 2015 President's budget, to meet the terms of a concurrent resolution on the budget. The budget deletes language referring to section 251(b)(2)(F)(ii)(I) of the Balanced Budget and Emergency Deficit Control Act of 1985, as amended, because the spending caps under that law expire at the end of FY 2021.

Appropriations Language Citations**DEPARTMENT OF THE INTERIOR
DEPARTMENT WIDE PROGRAMS****Wildfire Suppression Operations Reserve Fund**

(Including Transfers of Funds)

In addition to the amounts provided under the heading “Department of the Interior-Department-Wide Programs-Wildland Fire Management” for wildfire suppression operations, [\$310,000,000] \$330,000,000, to remain available until transferred, is additional new budget authority [as specified] *in excess of the average costs for wildfire suppression operations* for purposes of [section 251(b)(2)(F) of the Balanced Budget and Emergency Deficit Control Act of 1985] *a concurrent resolution on the budget: Provided*, That such amounts may be transferred to and merged with amounts made available under the headings “Department of Agriculture-Forest Service-Wildland Fire Management” and “Department of the Interior-Department-Wide Programs-Wildland Fire Management” for wildfire suppression operations in the fiscal year in which such amounts are transferred: *Provided further*, That amounts may be transferred to the “Wildland Fire Management” accounts in the Department of Agriculture or the Department of the Interior only upon the notification to the House and Senate Committees on Appropriations that all wildfire suppression operations funds appropriated under that heading in this and prior appropriations Acts to the agency to which the funds will be transferred will be obligated within 30 days: *Provided further*, That the transfer authority provided under this heading is in addition to any other transfer authority provided by law[: *Provided further*, That, in determining whether all wildfire suppression operations appropriated under the heading “Wildland Fire Management” in this and prior appropriations Acts to either the Department of Agriculture or the Department of the Interior will be obligated within 30 days pursuant to the previous proviso, any funds transferred or permitted to be transferred pursuant to any other transfer authority provided by law shall be excluded]. (*Department of the Interior, Environment, and Related Agencies Appropriations Act, 2021.*)

Appropriations Language Citations**DEPARTMENT OF THE INTERIOR
DEPARTMENT WIDE PROGRAMS****Appropriation: Wildfire Suppression Operations Reserve Fund
(Including Transfers of Funds)**

1. In addition to the amounts provided under the heading “Department of the Interior-Department-Wide Programs-Wildland Fire Management” for wildfire suppression operations, \$330,000,000, to remain available until transferred, is additional new budget authority in excess of the average costs for wildfire suppression operations for purposes of a concurrent resolution on the budget:

This language makes available funding in addition to funding provided under the Department of the Interior (DOI) Wildland Fire Management (WFM) appropriation for wildfire suppression operations costs. The language further provides that such funding is available until transferred. \$330,000,000 is the maximum amount of this additional new budget authority for DOI WFM.

2. *Provided*, That such amounts may be transferred to and merged with amounts made available under the headings “Department of Agriculture-Forest Service-Wildland Fire Management” and “Department of the Interior-Department-Wide Programs-Wildland Fire Management” for wildfire suppression operations in the fiscal year in which such amounts are transferred:

This language provides that the amount of additional new budget authority for DOI WFM (and likewise for the Department of the Agriculture [USDA]) wildfire suppression operations may be transferred to and merged with suppression operations funding provided in the same fiscal year through the DOI WFM appropriation.

3. *Provided further*, That amounts may be transferred to the “Wildland Fire Management” accounts in the Department of Agriculture or the Department of the Interior only upon the notification to the House and Senate Committees on Appropriations that all wildfire suppression operations funds appropriated under that heading in this and prior appropriations Acts to the agency to which the funds will be transferred will be obligated within 30 days:

This language requires that, before this funding is transferred to the WFM account of DOI (or likewise USDA), the Department must notify both the House and Senate Committees on Appropriations that all funding for suppression operations appropriated under the WFM appropriations heading in FY 2022 or prior years be obligated within 30 days of the transfer.

4. *Provided further*, That the transfer authority provided under this heading is in addition to any other transfer authority provided by law.

This language provides that the transfer authority under this heading is in addition to any other transfer authority available to DOI WFM. Further, the budget deletes language added in the FY 2021 Appropriations Act providing that, with respect to the preceding citation (#3, above), any funds transferred or permitted to be transferred pursuant to any other transfer authority provided by law shall be excluded. The Administration does not support that proviso.

Justification of Fixed Costs

Wildland Fire Management
Table 7: Justification of Fixed Costs
(Dollars In Thousands)

Fixed Cost Changes and Projections	FY 2021 Total or Change	FY 2021 to 2022 Change	Description
Change in Number of Paid Days	-1,861	+0	This column reflects changes in pay associated with the change in the number of paid days between FY 2021 and FY 2022, which is the same number of paid days in both FY 2021 and FY 2022 (261 days or 2,088 hours).
Pay Raise	+7,487	+9,487	The President's Budget for FY 2022 includes one quarter of a planned 1.0 percent pay raise and three quarters of a planned 2.7 percent pay raise for FY 2022.
Employer Share of Federal Employee Retirement System	+4,585	+3,320	The change reflects a 1.1 percent (and 1.8 percent for Law Enforcement) increase in the employer contribution to the Federal Employees Retirement System.
Departmental Working Capital Fund	+20	+35	The change reflects the final FY 2022 Central Bill approved by the Working Capital Fund Consortium.
Workers' Compensation Payments	+0	+0	The amount reflects final chargeback costs of compensating injured employees and dependents of employees who suffer accidental deaths while on duty. Costs for FY 2022 will reimburse the Department of Labor, Federal Employees Compensation Fund, pursuant to 5 U.S.C. 8147(b) as amended by Public Law 94-273.
Unemployment Compensation Payments	+0	+0	The amounts reflect projected changes in the costs of unemployment compensation claims to be paid to the Department of Labor, Federal Employees Compensation Account, in the Unemployment Trust Fund, pursuant to Public Law 96-499.
Rental Payments	+14	-24	The amounts reflect changes in the costs payable to General Services Administration (GSA) and others for office and non-office space as estimated by GSA, as well as the rental costs of other currently occupied space. These costs include building security; in the case of GSA space, these are paid to the Department of Homeland Security. Costs of mandatory office relocations, i.e., relocations in cases where due to external events there is no alternative but to vacate the currently occupied space, are also included.
Baseline Adjustments for O&M Increases	+0	+0	In accordance with space maximization efforts across the Federal Government, this adjustment captures the associated increase to baseline operations and maintenance (O&M) requirements resulting from movement out of GSA or direct-leased (commercial) space and into Bureau-owned space. Although the GSA portion of fixed costs will go down as a result of these moves, Bureaus often encounter an increase to baseline O&M costs not otherwise captured in fixed costs. This category of funding properly adjusts the baseline fixed cost amount to maintain steady-state funding for these requirements.

Employee Count By Grade

Office of the Secretary – Office of Wildland Fire
Table 8: Employee Count by Grade
 (Total Employment)

Employee Count by Grade	2020 Actuals	2021 Estimate	2022 Estimate
Executive Level V	0	0	0
SES	1	1	1
Subtotal	1	1	1
SL - 00	0	0	0
ST - 00	0	0	0
Subtotal	0	0	0
GS/GM -15	6	6	6
GS/GM -14	14	14	14
GS/GM -13	5	5	5
GS -12	2	3	3
GS -11	1	1	1
GS -10	0	0	0
GS - 9	1	1	1
GS - 8	0	0	0
GS - 7	0	0	0
GS - 6	0	0	0
GS - 5	0	0	0
GS - 4	0	0	0
GS - 3	0	0	0
GS - 2	0	0	0
GS - 1	0	0	0
Subtotal	29	30	30
Other Pay Schedule Systems	0	0	0
Total employment (actuals & estimates)	30	31	31

This exhibit only displays personnel counts in the Office of Wildland Fire (OWF). The WFM appropriation funds thousands of firefighters and support personnel who are not shown in this table. These personnel are included in the "Employee Count by Grade" exhibits in the BIA, BLM, USFWS, and NPS budget justifications.

Section 403 Compliance

Wildland Fire Management
Table 9: Section 403 Compliance
 (Dollars In Thousands)

<i>Description of Assessment</i>	<i>Bureau</i>	<i>Preparedness</i>	<i>Suppression</i>	<i>Fuels</i>	<i>BAR</i>	<i>Basis</i>
External Administrative Costs						
Centrally Funded Initiatives includes Working Capital Fund Direct and Central Bill and BLM Director's Priorities	BLM	\$ 7,366	\$ -	\$ 3,720	\$ -	Share of total BLM appropriated funds
National Operations Center (Procurement, HR, IT, data management services centrally provided for entire agency)	BLM	\$ 1,937	\$ -	\$ 1,717	\$ -	FTEs
Headquarters Support (General headquarters oversight, external affairs, IT, law enforcement, EEO, HR, resources, business practices)	BLM	\$ 665	\$ -	\$ 390	\$ 217	Evaluation of support needed for subactivity
User Pay Cost Share: The non-resource management cost share collects costs from multiple, distributed accounts. The funds collected are used to pay Service-wide charges that cannot easily be attributed to a specific program or subactivity.	USFWS	\$ 2,950	\$ -	\$ -	\$ -	Percentage based on FTE
Enterprise Wide Cost Share: The Service assesses its resource management programs for costs that can be directly tracked back to users. This includes such items as software licenses, cell phone costs, ID cards and the like.	USFWS	\$ 1,120	\$ -	\$ 225	\$ -	Percentage based on FTE
Working Capital Fund Central Bill: Costs covered include administrative and contract support for the Boise Acquisition Office related to centralized aviation contracts.	BIA	\$ 237	\$ -	\$ -	\$ -	The basis for distribution of costs includes elements such as aviation cost and utilization of contract support.
Working Capital Fund Central Bill: Costs covered include a variety of services including mail services, safety, security, property services, building management and services, and the finance branch.	OS	\$ 425	\$ -	\$ -	\$ -	The basis for distribution of costs includes elements such as FTE's and square footage.
Subtotal External Administrative Costs		\$ 14,700	\$ -	\$ 6,052	\$ 217	

<i>Description of Assessment</i>	<i>Bureau</i>	<i>Preparedness</i>	<i>Suppression</i>	<i>Fuels</i>	<i>BAR</i>	<i>Basis</i>
Program Assessment Costs						
Office of Aircraft Services Central Bill (Administrative charges for OAS training, management, flight services, safety)	BLM	\$ -	\$ 3,791	\$ -	\$ -	Flight time by subactivity
Subtotal Program Assessment Costs		\$ -	\$ 3,791	\$ -	\$ -	
Bureau Administrative Costs						
Preparedness Indirect for Tribal Programs	BIA	\$ 3,856	\$ -	\$ 7,975	\$ -	7% of Base Prep. Allocation, 14.5% Fuels allocation.
State Level Indirect (Admin support at the State, district, and field office level: procurement, HR, IT)	BLM	\$ 11,783	\$ -	\$ 5,975	\$ -	10% of State Base allocation
Regional Program Management Support Share: This includes regional assessments made to meet specific administrative support and Regional Director priorities for that particular geographic region. Most methods based on FTE to cover HR, Contracting, and other admin costs.	USFWS	\$ 2,825	\$ -	\$ 850	\$ -	Percentage based on FTE
Subtotal Bureau Administrative Costs		\$ 18,464	\$ -	\$ 14,800	\$ -	
Total Assessments and Reserves		\$ 33,164	\$ 3,791	\$ 20,852	\$ 217	

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Appendix A – Lists of Key Tables and Figures

LIST OF KEY TABLES

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Appendix B – References

ACRONYMS

DOI	U.S. Department of the Interior
BAR	Burned Area Rehabilitation
BIA	Bureau of Indian Affairs
BLM	Bureau of Land Management
CR	Continuing Resolution (for appropriations)
FSEN	Fire Science Exchange Network
FTE	Full-Time Equivalent (employees)
FY	Fiscal Year (time span from October of one year through September of the next)
GACC	Geographic Area Coordination Center
GRIN	Graduate Research Innovation program
JFSP	Joint Fire Science Program
NPS	National Park Service
OWF	Office of Wildland Fire
PL or P.L.	Public Law (U.S. Federal law)
RTRL	Reserved Treaty Rights Lands
USDA	U.S. Department of Agriculture
USFS	U.S. Forest Service (part of USDA)
USFWS or FWS	U.S. Fish and Wildlife Service
WFIT	Wildland Fire Information Technology
WFLC	Wildland Fire Leadership Council
WFM	Wildland Fire Management
WUI	Wildland-Urban Interface

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- Program Graphics
 - Preparedness, Suppression Operations, Fuels Management, Burned Area Rehabilitation: Luis Prado/Noun Project
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- Forests and Rangelands – The National Cohesive Wildland Fire Management Strategy: <https://www.forestsandrangelands.gov/strategy/>
- The National Interagency Fire Center: <https://www.nifc.gov/>
- The National Interagency Coordination Center – Predictive Services: <https://www.predictiveservices.nifc.gov/>
- Wildfire Risk to Communities: <https://wildfirerisk.org/>
- Publications:
 - Germino, Matthew J., Chambers, Jeanne C., Brown, Cynthia S. (2016). “Exotic Brome-Grasses in Arid and Semiarid Ecosystems of the Western US”.
 - Stein, S.M., Menakis, J., Carr, M.A., Comas, S.J., Stewart, S.I., Cleveland, H., Bramwell, L. & Radeloff, V.C. (2013). “Wildfire, wildlands, and people: understanding and preparing for wildfire in the wildland-urban interface—a Forests on the Edge Report”. U.S. Department of Agriculture General Technical Report, RMRS-GTR-299, 36.

For more information on DOI’s Wildland Fire Management budget, please visit:

- <https://www.doi.gov/wildlandfire/budget>