DEPARTMENT OF FORESTRY AND FIRE MANAGEMENT

2023 ANNUAL WILDLAND FIRE REPORT

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WHO WE ARE

The Department of Forestry and Fire Management provides resources for the prevention and suppression of wildland fire on State Trust lands and private lands located outside of incorporated communities.

The Department of Forestry and Fire Management (DFFM) provides fire protection to 22-million acres of State and private lands. DFFM also responds and provides suppression assistance on Federal and Tribal jurisdictions through cooperative agreements. Besides suppression duties, the agency supports prevention, education and outreach opportunities, and includes a Public Affairs division. DFFM incorporates a forest health section, a grants shop and houses the Office of the State Fire Marshal. Every division works in alignment with the agency's vision: to provide an Arizona whose diverse landscapes are healthy and whose people are protected from the threat of fire.

Wildland Fire Division:

- 5 District Offices: Northern, Northeastern, Southern, Central, and Northwestern Arizona
- Maintain in-house fire command and wildland firefighting capabilities, including engines, 11 Type 2 Wildland Fire Inmate Hand Crews (approximately 240 personnel), and one Type 2-IA Hand Crew (20 personnel)
- Eight engines: 5, Type 6 and 3, Type 3
- Established Aviation program to include a UAS platform
- Cooperative agreements provide DFFM access to 2,700 fire department/district wildland firefighters and 3,000 pieces of equipment
- Operates the Arizona Dispatch Center

The Department of Forestry and Fire Management's mission is to foster, maintain, and enhance collaboration with partners, stakeholders, and cooperators to: proactively promote the health and safety of Arizona's forests, woodlands, deserts, and watersheds; encourage fire-adapted communities; provide leadership and oversight of resources in wildfire response; and ensure fire safety in public buildings through the enforcement of the state fire code.

AGENCY AND FINANCIAL HIGHLIGHTS

Active Employees

FY 2023: 184

FY 2022: 134

FY 2021: 127

FY 2020: 88

*Active employees include, Full Time Employees (FTEs), seasonal, and temporary

Agency Financials

In 2023, the Arizona Department of Forestry and Fire Management was given a supplemental budget of $20 million dollars for fire suppression costs as part of a $65 million, 2023 Special Line Item (SLI). This additional funding mirrored the extra monies DFFM received during a special session in 2021. However, the FY 2023 SLI funding was intended as a three-year appropriation continuing through FY 2025 calculated for use within those three fiscal years. The SLI funding was provided to the agency ***in addition*** to its annual fire suppression budget of $3,200,000.

The SLI funding was allocated to DFFM as wildland fire costs continue to rise due to the number of large-scale and longer duration incidents. Plus, rising costs for aircraft, cooperating fire departments, including personnel and equipment, along with inflation play a role in high fire suppression costs.

Fire Suppression Budget:*

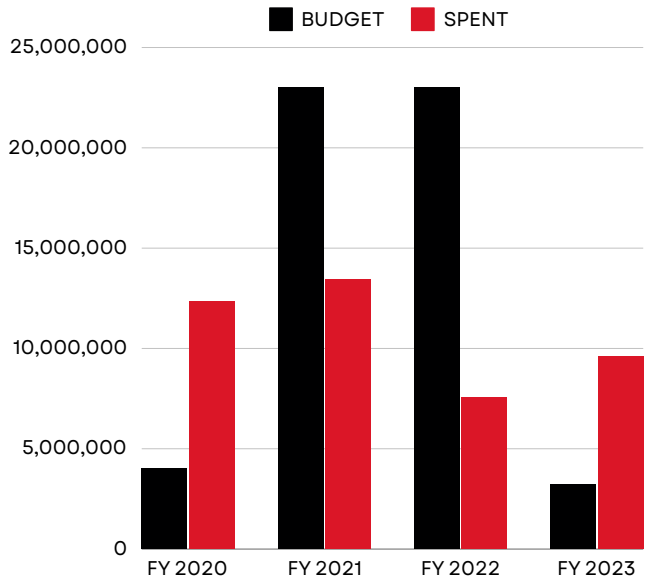
FY 2023: $3,200,000**
Actual Spent: $9,597,838

FY 2022: $23,000,000
Actual Spent: $7,535,441

FY 2021: $23,000,000
Actual Spent: $13,440,742

FY 2020: $4,000,000
Actual Spent: $12,339,668

*Budget: Actuals spent fluctuate from past year reporting as agency continues to receive cooperator wildland fire invoices



**SLI supplemental funding not included in chart

EXECUTIVE SUMMARY

La Nina made a momentous arrival during the winter of 2022 and stayed fairly active through the spring. The La Nina climate pattern provided significant amounts of snow in the high country and wetting rain throughout the rest of the state.

In fact, and According to the Arizona Department of Water Resources (ADWR) Drought Preparedness Annual Report (ADPAR), Arizona experienced the 28th wettest October 2022 through April 2023-period with 8.50 inches received in the state. The long-term average between October and April is 6.89 inches.

The deluge of precipitation over the winter and spring months helped saturate the state and pull it out of both extreme and exceptional drought statuses. However, that influx of moisture increased the fine fuel loading across the Sonoran Desert and into lower lying elevations in Southern Arizona. The moisture, coupled with below average temperatures throughout May and into June helped to keep fire activity at a minimum and significantly delayed the start of Arizona's 'fire season' by about a month. In fact, ADWR's Drought Preparedness Report revealed June 2023 to be the 18th coldest on record.

Cooler temperatures associated with the La Nina pattern, delayed the buildup of monsoon ridge and thunderstorm activity across the state, according to ADWR's report.

Hence, the lag in the monsoon's arrival. However, by July, with sky-high temperatures and conditions dried out, fire activity increased quickly. The ADPAR states that July was the hottest month statewide on record. The report goes on to say that, "every county experienced its hottest July." The state dealt not only with high temperatures, but dry conditions also. Per the report, June and July were also the driest on record with an average of .61 inches of rainfall statewide.

But as activity picked up in July, DFFM's organization of multiple task forces - prepositioned in areas of higher concern, helped provide faster Initial Attack and overall suppression efforts. The task forces were a proactive move, made up of department and cooperator engines, and overhead to provide for quicker response to fires, and in most cases helped to keep incidents at manageable Type 3 levels. There were no 'significant' incidents in 2023 that required the need of a Type 1 Incident Management Team.

Moving up into Arizona's high country, fire activity remained fairly quiet as snowpack lingered for months into the early summer. Some fire activity developed in Northern Arizona, but nothing noteworthy as the area experienced over the past few years.

[1] *Reference Source: Arizona Department of Water Resources. 2023. Arizona Drought Preparedness Annual Report for Water Year 2023. https://www.azwater.gov/sites/default/files/2023-12/ADPAR_2023_FINAL.pdf*

ADAMS ROBLEX COMPLEX, JULY 2023

The Adams Robles Complex started as two separate fires along both sides of Interstate 10, near the community of Dragoon in Southern Arizona. The fires were the result of lighting associated with monsoon storms that moved through the area.

EXECUTIVE SUMMARY CONT.

As the state moved deeper into summer, non-existent monsoon conditions pushed fire season into early fall. Arizona's monsoon season starts on June 15 and ends on September 30, but in 2023, it struggled to produce any significant precipitation. However, dry lightning storms associated with monsoonal buildup did spark wildfires throughout Central and Southern Arizona, ultimately keeping crews busy.

July's high temperatures along with an extensive ridge of high pressure across the Southwest played a role in the quiet monsoon season. Come August, the monsoon finally made a short appearance, but the amount of moisture the state received was not enough to put an end to the 2023 fire season. According to the ADPAR, June through September saw above average temperatures, especially in Central and Southeastern Arizona. Due to those factors, resources handled fires well into October, to include the Cecil Fire, a Type 3 incident, southwest of Flagstaff.

While the 2023 fire season did not see any large scale incidents as in years past, firefighters still kept busy as they responded to more fires in 2023, than in 2022.

In 2023, 1,850 wildland fires were reported, up by approximately 400 incidents from the previous year. In all, more than 188,000 acres burned in Arizona, on all land jurisdictions; including State, Federal, and Tribal lands. In 2022, 1,440 fires burned an estimated 125,000 acres.

Of the 1,850 wildfires in 2023, 71% of them were human-caused. While the Arizona Department of Forestry and Fire Management has jurisdiction on State Trust and private lands, many of the fires the agency responds to involve private lands, like June's Diamond Fire in north Scottsdale. The Diamond Fire reached nearly 2,000 acres before it was 100% contained a week after it's start.

Other notorious fire causes include, escaped debris or vegetation burns, sparking tools, and roadside fires.

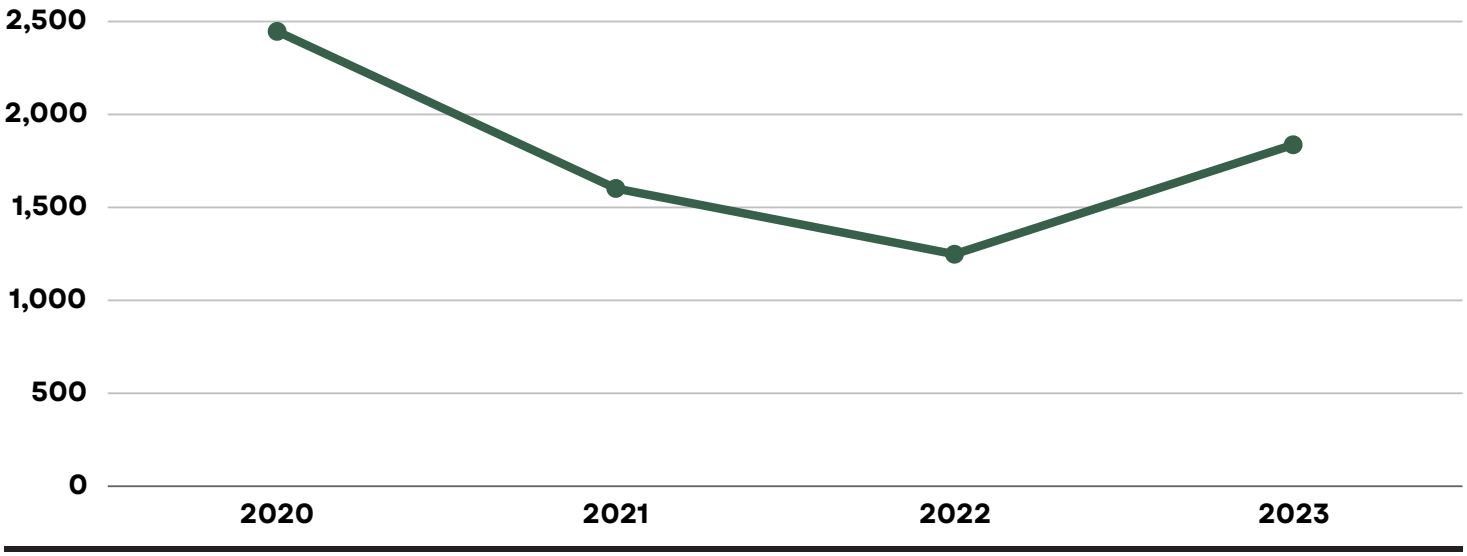
In 2023, per data gathered by DFFM's Arizona Dispatch Center, 481 roadside fires occurred throughout the state, or 26% of the total fires reported.

[1] *Reference Source: Arizona Department of Water Resources. 2023. Arizona Drought Preparedness Annual Report for Water Year 2023. https://www.azwater.gov/sites/default/files/2023-12/ADPAR_2023_FINAL.pdf*

2023 FIRE DATA

The 2023 fire statistics are gathered through multiple sources, including the Southwest Coordination Center (SWCC), Arizona Dispatch Center (ADC) intelligence, and Department 209's. Numbers may fluctuate as data continues to filter through SWCC and ADC.

Number of Fire Incidents



Five-Year Fire Data*

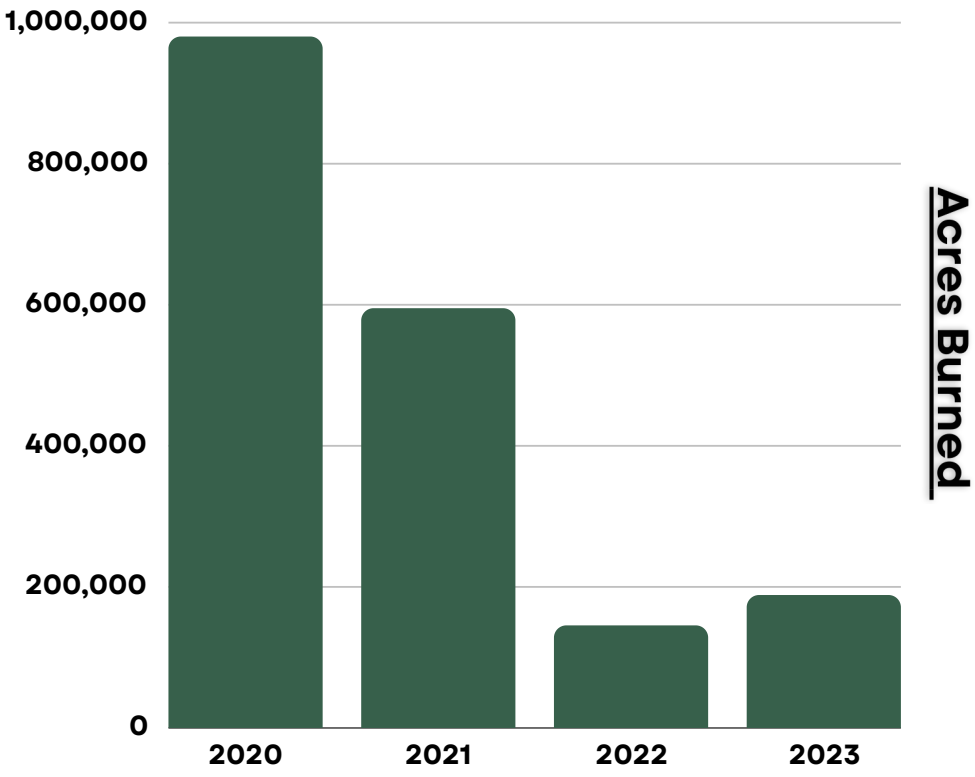
2023:
1,837 fires
188,483 acres burned

2022:
1,248 fires
145,422 acres burned

2021:
1,602 fires
595,135 acres burned

2020:
2,447 fires
980,308 acre burned

*Data is reflective of all land jurisdictions to include, State Trust, Federal, and Tribal lands, along with the Arizona Strip.



STATE FIRE DATA

2023

A1S:
15 fires; 1,074 acre burned

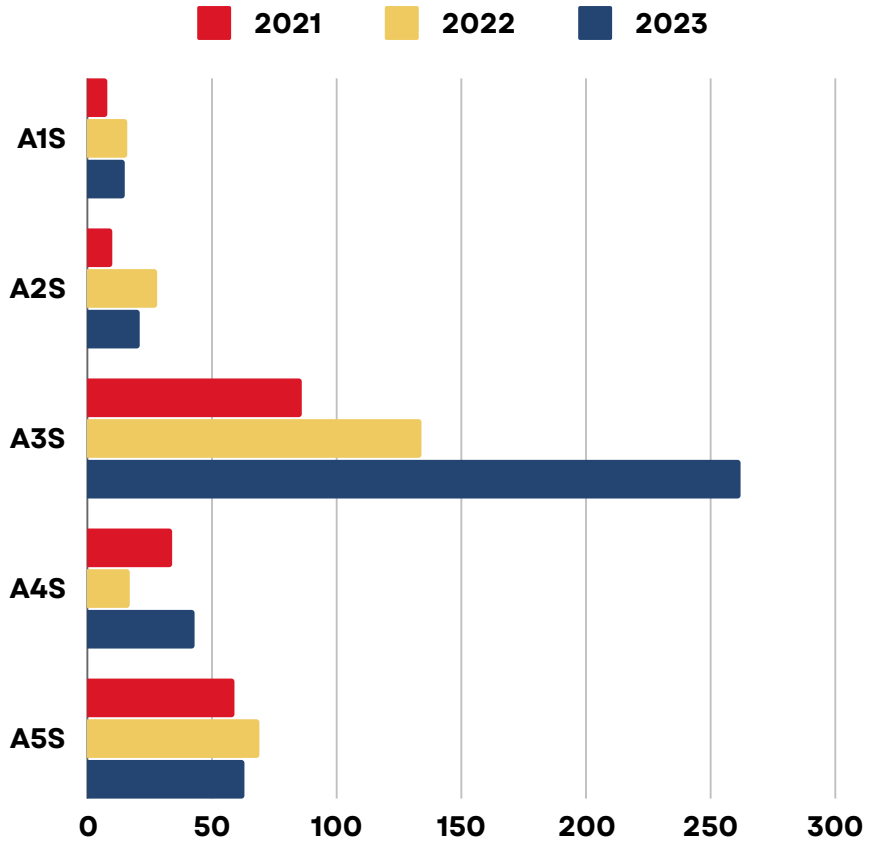
A2S:
21 fires; 89 acres burned

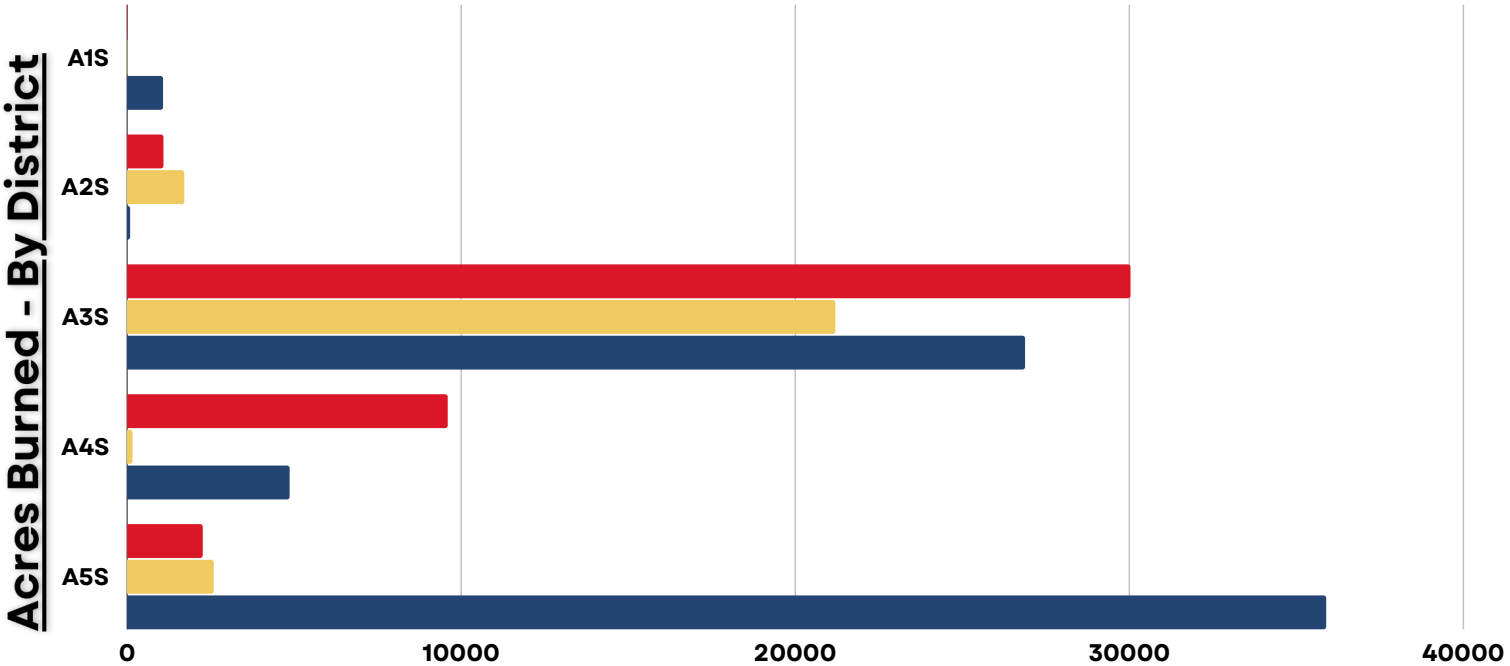
A3S:
262 fires; 26,879 acres burned

A4S:
43 fires; 4,863 acres burned

A5S:
63 fires; 35,894 acres burned

Fire Starts - By District





NOTABLE FIRES

DIAMOND FIRE - STATE:

- June 27, 2023
- 1,960 acres
- Human-Caused
- North Scottsdale, 11 miles southwest of Rio Verde
- Dept. Forestry and Fire Management jurisdiction

PILOT FIRE:

- July 1, 2023
- 34,810 acres
- Human-Caused
- 20 miles. E. of Wikieup
  - near Pilot Knob within Mohon Mountains
- Dept. Forestry and Fire Management jurisdiction

DIAMOND FIRE - TONTO NF:

- July 22, 2023
- 5,060 acres
- Under Investigation
- Southwest of Sunflower
- Tonto National Forest jurisdiction

ADAMS ROBLES COMPLEX:

- July 19, 2023
- 5,232 acres
- Lightning
- 3 miles southwest of Dragoon, north and south of Interstate 10
- Dept. Forestry and Fire Management jurisdiction

2023 FIRE ASSISTANCE MANAGEMENT GRANTS

The Fire Management Assistance Grant Program, otherwise known as FMAG, provides assistance from the Federal Emergency Management Agency (FEMA) to the Department of Forestry and Fire Management - for certain costs associated with an incident - when applicable.

In order to apply for a FMAG, the incident must meet certain criteria. For example, population size, community threat, among other measures determine if an agency will be eligible for financial assistance.

If and when a FMAG is approved, the disaster assistance grant provides up to a 75% FEMA federal cost share with the state incurring the remaining portion of its total fire cost.

2023 DFFM FMAGS:

Diamond Fire*, North Scottsdale
DFFM Fire Cost: $778,684
FMAG Request: $584,013
*Under approval with requested 75% FEMA reimbursement

2022 DFFM FMAGS:

Tunnel Fire, Flagstaff-area
DFFM Fire Cost: $2,037,287
FEMA Reimbursement: $1,027,110
50% Reimbursement

Crooks Fire, Prescott-area
DFFM Fire Cost: $7,527,211
FEMA Reimbursement: $4,072,504
54% Reimbursement

Pipeline Fire, Flagstaff-area
DFFM Fire Cost: $2,468,684
FEMA Reimbursement: $390,871
16% Reimbursement

AVIATION

In 2023, the Department of Forestry and Fire Management contracted two Single Engine Air Tankers (SEATs) for the season. The SEATs were staged and dispatched out of the Marana Regional Airport, outside of Tucson, Arizona. DFFM also worked one Air Attack platform throughout the season relying also on federal assistance.

For large aircraft, including Very Large Air Tankers (VLATs) and Large Air Tankers (LATs), the agency contracts with its federal cooperators, including the US Forest Service for use of the aircraft.

In total, DFFM SEATs supported 30 fires statewide and delivered more than 113,000 gallons of retardant to support both federal and state incidents. Of those 113,656 gallons delivered, nearly 85,000 were used on state-jurisdiction fires. In total, DFFM's SEATs accumulated 178 hours of flight time on State, Federal and Tribal fires.

Along with SEATs, DFFM also supports an Air Attack (AA) platform. DFFM's AA was provided through Safford Aviation and based out of Mesa, AZ's Falcon Field. The AA platform flew 35 fires for a total of 185 hours. DFFM's single AA platform covers the entire state and is also utilized by federal counterparts upon request.

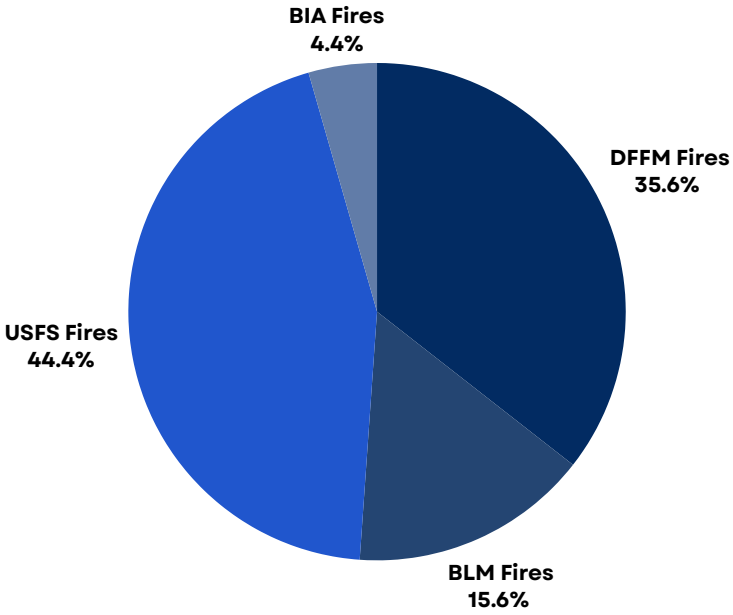
Very Large Air Tanker Drop on Stockton Hill Fire, Kyle Runner

Large Air Tanker assigned to Two Sides Fire, along State Route 74, near Morristown. Staff Photo

AVIATION CONT.

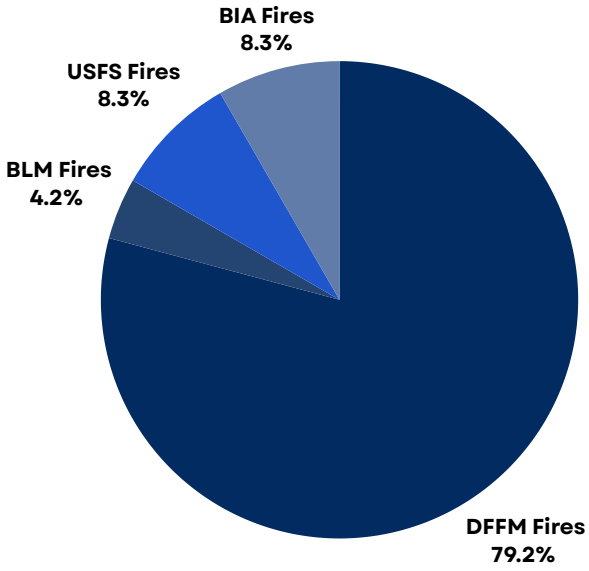
DFFM Single Engine Air Tanker (SEAT) Response

Total Fires Flown



Air Attack (AA) Response

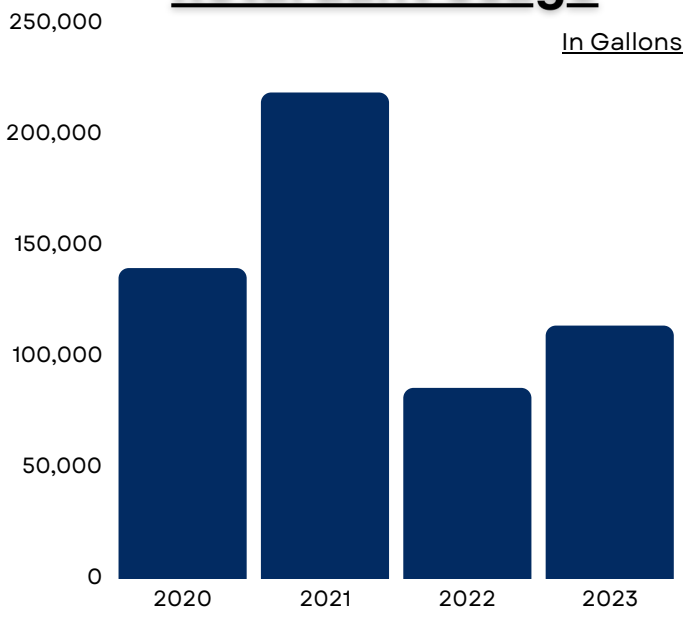
Total Fires Flown



In 2023, the Department's retardant usage on both state and federal-assist fires was up by approximately 14% compared to 2022. This increase in retardant usage reflects the increase in fires and acres burned in 2023 compared to 2022.
Total usage in 2023: 113,656 gallons versus 2022: 85,601 gallons.

Retardant Usage

In Gallons



AVIATION CONT.

One of the most recent additions to DFFM's Aviation Division is the use of Unmanned Aircraft Systems or (UAS). The agency's four UAS, or drones, are a newer tool being utilized for both fire suppression and prescribed fire work.
In 2023, the drones flew approximately nine hours and 28 minutes and were used on both fires and prescribed fire work. Over the last year, there have been continued improvements to the systems to extend range and altitude of the equipment to operate Beyond Visual Line of Sight (BVLOS).
These improvements can allow for greater distances to be achieved with improved signal transmission which will help provide real time transmission of live data to Fire Command and additional staff and overhead.

This provides a different aspect of situational awareness to get a better eye on activity, landscape, fuel bed, and other factors which help with total fire suppression.
The agency's UAS platforms can be a cost saving measure as the drones can be used in place of more expensive aircraft for reconnaissance and mapping missions. They can be used at night, when aircraft cannot and also have infrared capabilities.
Moving forward, the Aviation department continues to look for opportunities to use the UAS platforms and they are working to enhance the fire mapping capabilities to the UAS program.

2023 Unmanned Aerial Platforms Statistics:

- **9.5 hours flown**
- **Flew 52 miles on fire missions and assists**
- **Assisted on 7 assignments incl.:**
  - **Pilot Fire**
  - **Diamond Fire, state**
  - **Grayback Fire**
  - **Dead Horse Ranch RX**

PREVENTION

The Department's Prevention division is responsible for duties including, community outreach and prevention education, the statewide Firewise USA program, prevention patrols, state-jurisdiction fire investigations, and Community Wildfire Protection Planning. Their goals reflect the Department's top overall objectives to reduce the risk of wildfires throughout Arizona.

Firewise USA

The Department of Forestry and Fire Management is the state liaison for the National Fire Protection Association's (NFPA) Firewise USA program. The program encourages community engagement and involvement between homeowners to learn how to adapt to living with wildfire. Prevention officers provide education, in the form of in-classroom instruction and field training to homeowners to help them achieve these goals. In 2023, the Prevention division held 17 Firewise USA Assessor classes across the state for a total of 335 participants. Prevention officers helped bring on 30 new Firewise USA sites in Cochise, Gila, Maricopa, Navajo, Pima, Pinal, and Yavapai Counties. In total, Arizona has 154 Firewise USA communities.

New Firewise USA Communities Per Year:

NFPA | FIREWISE USA® RESIDENTS REDUCING WILDFIRE RISKS

→ 2023: 30

2022: 13	2018: 15
2021: 12	2017: 12
2020: 5	2016: 4
2019: 16	

PREVENTION CONT.

Prevention Patrols

The Prevention division is also responsible for mitigation patrols when the state is in fire restrictions, typically from May to July, and dependent on the severity of the season. Areas targeted are based on heavy recreational traffic and notorious fire activity.

Prevention officers work four primary routes which include, the State Route 74 – from Morristown to Lake Pleasant and over to Cave Creek. They patrol Interstate 10 south into Tucson and southern Arizona, State Route 79 from the Florence Junction to Oracle, Mammoth, Kearney and into Superior. They also hit Interstate 17 from Phoenix into the high country.

In 2023, electronic roadside signs were also utilized in those areas to remind drivers of fire restrictions and the high fire danger.

During the 2023 patrols, officers discovered eight abandoned campfires on State Trust lands and nearby federal lands. They picked up three roadside fires and responded to five reports of illegal target shooting. In total, Prevention officers made 127 contacts. Besides the patrols, qualified prevention officers also support the State's Single Engine Air Tanker base(s) during the season.

Educational Outreach

In 2023, the Prevention team attended more than 150 events, including, the annual Game and Fish Outdoor Expo, the Arizona Department of Water Resources 'State Water Day', Prescott YMCA Wildfire Prevention Day, a Day at the Ballpark with the Diamondbacks and Smokey Bear, among many more.

Fire Investigations

Another critical component of this division is fire investigations. Qualified prevention officers take lead on DFFM-jurisdiction fire investigations. In 2023, investigators conducted four fire investigations including the Dry Canyon, Hamilton, Kelvin, and Diamond Fire incidents.

Smokey and the Arizona Diamondbacks mascot, Baxter. For the past few years Smokey has had the opportunity to throw out the first pitch at a baseball game.

TRAINING

The Department of Forestry and Fire Management's Training division helps thousands of internal and cooperating wildland firefighting resources stay up to date with continuing education and advancements. They provide training courses and assist with Red Card distribution and support in accordance with the National Wildfire Coordinating Group standards. DFFM also hosts and participates in statewide trainings.

2023:
113 Courses Taught
2,417 Students in Attendance

The agency also provides the Incident Management Team and instructional support for the Arizona Wildfire and Incident Management Academy which accommodates, on average, 800 students every year.

Training Data

Number of Trainee and Fully Qualified positions that were approved through the Arizona Wildland Qualification Committee Each Year

		2019		2020		2021		2022		2023	
		Qualified	Trainee	Qualified	Trainee	Qualified	Trainee	Qualified	Trainee	Qualified	Trainee
OPS	Engine Boss Postions	20	30	19	16	39	31	16	34	15	26
OPS	Other Single Resource Boss Positions	10	26	6	14	15	23	20	16	12	6
OPS	Opeartions Positions Above Single Resource Boss	10	26	14	13	29	24	16	16	18	23
OPS	Faller Positions	20	18	5	11	8	23	5	6	4	16
C&G	Command & General Staff Positions	15	28	12	21	22	34	19	23	14	28
PLANS	Planning Positions	3	9	4	9	12	13	7	9	5	4
LOGS	Logistics Positions	5	14	7	14	12	15	9	12	8	13
FINANCE	Finance Positions	1	1	1	0	1	2	4	1	1	0
RX	Prescribed Burn Positions	2	2	0	0	2	2	0	0	0	1
DISPATCH	Dispatch Positions	0	0	0	0	1	0	0	0	0	0

IN CONCLUSION

In conclusion, the outlook for the 2023 wildland fire season remained on point as the southern portion of the state did see the bulk of the state's fire activity. That activity occurred after a delayed start to the state's typical 'fire season' period due to the heavy moisture between the end of 2022 and the beginning of 2023. Below average temperatures and soil moisture also played a role in the slow start.

Fire activity, including the number of fires was up by approximately 20% from 2022. However, fire sizes were kept to manageable levels, mostly relying on Type 3, internal - agency, incident management teams to handle and fully suppress the fires. The monsoon's lackluster appearance kept resources busy well into late summer with fire activity dying out in the fall.

Moving into 2024, the seasonal outlook will be heavily reliant on what El Nino brings. However, even in early 2024, the forecast for El Nino and its impact has not been solidified by forecasters with lingering uncertainty.
El Nino's impression will certainly shape the outlook for 2024, but it's still to early to tell what that will be.

IMPORTANT LINKS

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