

**Testimony of George Geissler, Washington State Forester
On Behalf of the National Association of State Foresters
Submitted to the U.S. House of Representatives Subcommittee on National Parks, Forests,
and Public Lands
Tuesday June 16, 2020**

Good morning, Chair Haaland, Ranking Member Young, and Members of the Committee. My name is George Geissler, State Forester and Deputy, Wildland Fire and Forest Health/Resiliency, Washington Department of Natural Resources, Past President of the National Association of State Foresters (NASF), Chair of the NASF Wildland Fire Committee, and member of the Wildland Fire Leadership Council (WFLC). I appreciate the opportunity to speak with you today and submit written testimony in support of HR 5040, “The AIR Safety Act” introduced by Ranking Member Curtis and co-sponsored by Rep. Huffman.

NASF represents the directors of the state forestry agencies in all 50 states, eight U.S. territories, and the District of Columbia. State Foresters deliver technical and financial assistance to private land owners, along with protection of forest health, water and wildfire for more than two-thirds of the nation’s forests, as well as partner with federal agencies through authorities like Good Neighbor Authority in managing and protecting the nation’s federal forests. While the duties of state agencies vary from state to state, all share common forest management and protection missions and most have statutory responsibilities to provide wildland fire protection on all lands, public and private.

State Contribution to Wildfire Operations

State forestry agencies contribute a significant portion of the overall wildland fire suppression effort nationally in terms of resources, personnel, capacity, and funds. Collectively, States reported spending \$1.9 billion on fire suppression, prevention, and mitigation in 2018, with \$1.4 billion spent on suppression alone. The overall federal cost of fire suppression for 2018 was \$3.1 billion. In 2018, there were 8,080 State personnel (including overhead and crews) mobilized through the National Interagency Coordination Center. Of those State personnel, 6,026, or nearly 75%, were mobilized to federal wildfires.¹ State forestry agencies also provide local governments and volunteer fire departments with access to fire and emergency response resources, which in 2018, included 93,656 firefighters, 91,940 fire engines, 2,851 dozers, and 620 aircraft. In 2019, 50,477 wildland fires burned nearly 4.7 million acres.² State and local agencies respond to the majority – 79% – of these wildfires across all jurisdictions.²

State Foresters work closely with Conservation Districts, mayors, local and county governments, Tribal and Federal partners across the US to deliver forestry programs and wildfire protection on a national scale. NASF is a key partner in the development and implementation of the National

¹ Statistics posted above were gathered from the Interagency Fire and Aviation Management Web Applications (FAMWEB) system, which includes the Situation Report and Incident Status Summary (ICS-209) programs. The statistics presented here are intended to provide a national perspective of annual fire activity but may not reflect official figures for a specific agency.

² National Interagency Fire Center, Historical Wildland Fire Summaries, pg. 8. Last accessed March 4, 2020 at https://www.predictiveservices.nifc.gov/intelligence/2019_statsumm/intro_summary19.pdf

Cohesive Wildland Fire Management Strategy (Cohesive Strategy), which provides the roadmap for interagency wildland fire management across the country and allows diverse stakeholders to work collaboratively using the best science to achieve resilient landscapes, fire-adapted communities, and effective wildfire response. NASF is also a key partner and member of the WFLC, an intergovernmental committee of Federal, State, Tribal, county, and municipal government officials convened by the Secretaries of the Interior, Agriculture, Defense, and Homeland Security dedicated to consistent implementation of wildland fire policies, goals, and management activities. WFLC provides strategic recommendations to help ensure policy coordination, accountability and effective implementation of Federal wildland fire management policy and related long-term strategies through collaboration.

Risk to Wildland Firefighters and Public Safety

Unauthorized drone flights near wildfires have the very real potential to cause serious injury or even death to firefighters and pilots who are in the air, as well as firefighters and public citizens on the ground. This is because aerial firefighting aircraft, such as air tankers and helicopters, fly at very low altitudes, the same as drones flown by the general public, creating an environment for mid-air collisions.

Adding to this disastrous mix of unauthorized drone flights and fire is the fact that firefighting aircraft typical fly in smoky, windy, and turbulent conditions. Safety depends on knowing what other aircraft are operating in the airspace and where they are at all times. Consequently, their safety is compromised by the presence of a drone.

Suspending air operations because of drone use can decrease the effectiveness of wildfire suppression operations. There have been many documented instances of unauthorized flights of drones over or near wildfires over the last several years all across the country.

The effects of lost aircraft airtime could be compounded by potential flames moving into untreated terrain. This type of delay can allow wildfires to grow larger with the potential to threaten lives and property. Suspended air operations can also delay transportation of firefighters to different locations and add to costs of fighting the fire and limit the ability to respond effectively with a strong initial attack strategy. Attacking fires when they are small is the key to reducing fatalities, injuries, loss of homes, and cutting federal fire-fighting costs.

Those who fly drones without authorization over wildfires may be violating federal, state, or local laws, regulations, and ordinances, whether a Temporary Flight Restriction is in place or not. Civil penalties for violations of the federal aviation regulations range from a maximum per violation penalty of \$1,466, for individual operators, to \$33,333 for large companies. In addition, Congress granted the Federal Aviation Administration (FAA) authority (U.S. Code of Federal Regulations 43 CFR 9212.1(f)) to assess civil penalties of up to \$20,000 against an individual who operates an Unmanned Aerial System (UAS) and in so doing knowingly or recklessly interferes with a law enforcement, emergency response, or wildfire suppression activity. The FAA may take enforcement action against anyone who conducts an unauthorized UAS operation or operates a UAS in a way that endangers the safety of the airspace of the United States. This authority is designed to protect users of the airspace as well as people and property on the ground.

Drone Incursions on Wildfire Operations

The FAA typically implements temporary flight restrictions to support wildfire suppression operations utilizing aviation resources. Despite this, the use of recreational drones to capture video footage of wildfires unfortunately continues to pose a hazard to the success of these operations and to the lives of the wildland firefighters and the public.

The U.S. Department of Interior tracks private unauthorized unmanned aircraft incursions over wildland fires. In their first year of reporting (2014), there were two incursions of unauthorized unmanned aircraft over wildland fires. In 2015, the number of unauthorized unmanned aircraft incursions increased six-fold from the prior year to total 12 incursions. By 2016, there were 42 unauthorized unmanned aircraft incursions over wildland fires. Of these 42 incursions, 12 resulted in delays of aerial support to firefighters, and several incursions resulted in fire suppression aviators taking evasive action to avoid collisions with unmanned aircraft. During 2017, aerial wildland firefighting efforts ceased 25 times due to unauthorized unmanned aircraft incursions.³ ([2018 DOI Report](#))

In addition to these findings, I would like to bring your attention to several recent incident reports of UAS incursions on wildfire operations from State agencies. The following are actual reports provided by state forestry and wildfire agencies, they are not altered and contain jargon.

Arizona
May 20, 2018
Prison Hill Fire
Report Number: SAFECOM 18-0296

The local exclusive use helicopter was performing water drops utilizing a 50 foot longline with a fast bucket on the Prison Hill Fire on May 20, 2018. At approximately 1839, several helitack crewmembers at the helibase {about 1 mile to the west of the fire} noticed a small personal style drone aircraft in our vicinity. As soon as the drone was spotted, it quickly proceeded in an east to west direction toward the area the helicopter was working. As soon as the drone was spotted, one crewmember immediately notified the pilot of the situation on the designated air to ground, while another crewmember was notified by the incident commander that an engine firefighter had also spotted the drone. At this point, the crewmember and pilot agreed that we needed to cease air operations, land and shut down at the helibase.

Minnesota
April 29, 2018
Prairie Fire
Report Number: SAFECOM 18-0241

Air Attack 1 was working the Prairie Fire about 6 miles NE of Little Falls with FB-201, FB-202, and Helicopter 56BH. Each Fire Boss had made two drops with 56BH continuing to do bucket

³Federal Aviation Administration, Notice of Proposed Rulemaking, 84 FR 72438, docket number FAA-2019-1100<https://www.federalregister.gov/documents/2019/12/31/2019-28100/remote-identification-of-unmanned-aircraft-systems>

work. The Pilot of AA1 noticed what he thought was a bird fly underneath the Air Attack platform and above the helicopter that was doing bucket work as AA1 observed from a higher altitude. As the pilot continued to watch the object's flight he observed that its flight pattern was not consistent with a bird, but that it was instead an UAS quad-copter. AA1 informed 56BH that a UAS had been seen over the fire and 56BH discontinued bucket work and landed at an LZ south of the fire. AA1 repositioned east of the fire and contacted the IC and informed him of the UAS protocol and asked the IC's assistance in locating the UAS' operator. The IC made contact with law enforcement and had members of the local fire department that was already on scene to disperse and try to locate the operator. The earlier tanker drops and helicopter bucket work had taken care of most of the running fire. Air Attack 1 contacted HMGB Westerman for an assessment of the fire and his opinion if the ground resources could handle the remaining suppression work. Westerman informed AA1 that in his opinion it could be held with the resources on scene. AA1 contacted IC Butler and relayed the assessment and the IC released AA1. 56BH remained on the ground for approximately 25 minutes after AA1 departed the fire to return to Brainerd TB. The HMGB contacted Brainerd TB and asked that they call the Air Desk to determine the next steps as attempts to locate the drone operator were unsuccessful, and the UAS had not been seen since the initial sighting. Air Desk confirmation was received that if the UAS had not been seen recently, and the operator could not be located, that the flight crew could use their discretion to lift off. The HMGB contacted the IC and confirmed that 56BH was no longer needed on the fire, and that no ground resources, the FD, or law enforcement had seen the UAS airborne. The HMGB let the IC know that 56BH would depart the fire to the south, clear the area as soon as possible, and would not recon the fire before leaving.

California
June 5, 2020
Colleen Fire

While overhead of the Colleen Fire in San Jose, an Engine Company reported a drone flying in the area of C-106. I immediately held all incoming Tankers outside the FTA and grounded both Helicopters. I reported the incursion to the Morgan Hill ECC and the IC. I requested Law Enforcement to attempt to locate the drone or its operator. After approximately 20 minutes the IC gave an all clear on drone activity and we were able to resume normal Firefighting operations.

Washington
July 16, 2018
Kings Landing Fire
Report Number: SAFECOM 18-0564

Helicopter began flying on the Kings Landing Fire during its initial attack at 1600. At 1630, a TFR was requested for the fire with a three mile radius, up to 3000' MSL. A second helicopter engaged the fire. At 1700 dispatch logged the helicopters reported a drone in the area of the eastern edge of the fire. At 1707 the IC reported the helicopters were disengaging from the fire until such time it could be confirmed there was no longer a drone over the fire. The helicopters made wide circles looking for the drone. Until such time they became comfortable the threat was gone, they continued to circle the fire. The TFR took effect at 1710. No further drone activity was reported and aircraft operations continued with normal operations.

Colorado
May 10, 2018
Shooting Range Fire
Report Number: SAFECOM 18-0272

The Fire was detected at approximately 14:35. The type three helicopter was ordered for Initial Attack, additionally an Air Attack, two SEATS and a Large Air Tanker were ordered. At 18:25 the helicopter was performing bucket drops on the north end of the fire, Air Attack had headed to get fuel and the Seats and Large Air Tanker had completed their drops and had returned to the Tanker Base. A Firefighter that was monitoring a small spot fire approximately 0.20 miles from the main fire noticed a UAV operating over his position, He immediately called for emergency traffic on the tactical frequency stated drone in the area and gave location. The Manager and IC contacted the pilot on air to ground with the notification, the pilot had just completed a bucket drop and proceeded to H-1, the bucket reconfigure site. The time from the notification of the drone to the helicopter landing was approximately 2 minutes. Witnesses stated that the UAV had crested the ridge by the spot fire and then turned around and departed the area. Local Law Enforcement was notified and immediately patrolled the area, at that time no UAV operator was detected. After 30 minutes it was determined that the area was clear The IC, Manager and Pilot agreed that the area was clear and bucket operations started back up at approximately 18:50.

California
October 31, 2019
Maria Fire
Cal Fire Incident Report: 3122

At 1815 hrs, a helicopter was dispatched to the Maria Fire near Santa Paula, CA. At about 2230 hours, while conducting water drops near the heal of the fire, at a peak known as South Mountain, helicopter spotted a drone flying in the area of the communication towers near the heal. Hand crew working on the ground in that area also spotted the drone. This was promptly reported to Air Attack. Air Attack advised all helicopters working on the incident to be grounded at the Santa Paul Airport Helispot until it was deemed safe to fly. Helicopters were grounded for about an hour. Maria Operations requested Local Sheriff to respond units to investigate the drone, and drone operator. At about 2340 hours it was deemed safe for helicopters to re-engage in water dropping operations. This was due to the fact that nobody had seen the drone for over 30 minutes. Helicopter was comfortable with re-engaging the fire.

Colorado
June 28, 2018
Gold Course Fire
Report number: SAFECOM 18-0412

A Type 3 helicopter was on-loan from CO-FTC to CO-CRC for aviation support on The Golf Course Fire. The helicopter was on its second fuel cycle when the notification was that a drone came over the A-G frequency. The Pilot immediately asked for clarification and after a drone was confirmed in the airspace he returned to and landed at the helispot to deconflict the airspace. At

the same time another AS350-B3 helicopter which was also supporting the fire with bucket drops/water delivery, also heard the radio traffic as he was returning from KGNB for a fuel stop and landed at the helispot as well. Both Helicopter Managers informed the Ground Contact and Operations that the helicopters would not return to the airspace until the drone was confirmed to no longer be inside the airspace and pose a hazard. After approximately 15 minutes of time passed, Operations confirmed that a local Law Enforcement Officer located and removed the drone from the airspace. Dispatch was informed of the drone incursion immediately following. Both Aircraft returned to and landed at the helispot until the airspace was confirmed de-conflicted by Law Enforcement and the drone threat had been removed from the fire area. Upon confirmation the helicopters returned to the fire for bucket support.

Colorado
June 10, 2018
Bocco Fire
Report Number: SAFECOM 18-0340

Hotshot Crew reported drone intrusion shortly after ordering helicopter bucket drops. Air Attack was notified, and held helicopter on ground, delaying bucket work. Air attack was the only incident aircraft flying at time of intrusion. Dispatch completed online Unmanned Aircraft System {UAS} intrusion form. Temporary Flight Restriction {TFR} was in place.

Minnesota
May 6, 2020
Biwabik Fire

While navigating to the fire area, IC Dane observed individual operating a UAS. IC immediately requested the UAS be grounded, and stressed that all air operations would have to be ceased until it was on the ground. The operator insisted the UAS was not very high and was being used to verify if the fire was burning on company property. The IC insisted the altitude does not matter and the UAS must be grounded. Operator complied and began to fly UAS back to his location. At this time, aerial detection was over the fire, and a suppression helicopter was attempting to make initial contact with the IC. Helicopter was informed of UAS and directed to remain 7nm from incident, and IC would confirm when UAS was grounded. An engine was assigned duty of maintaining contact with UAS operator and reporting when UAS was on ground. Within minutes, the UAS was confirmed grounded. IC informed helicopter UAS was grounded and that the detection plane was the only other aircraft on the incident and to coordinate FTA entry with them. Helicopter coordinated with detection, recon'd the fire and set down to reconfigure for bucket operations.

Idaho
July 23, 2018
Rattlesnake Fire
Report Number: SAFECOM 18-0595

During bucket work on the south side of the Rattlesnake Fire, pilot encountered a black drone at eye level as he was coming out of the dip. This was during the initial attack phase of the fire. The

dip site was in the Little Salmon River next to Highway 95. The pilot notified Air Attack immediately and Air Attack advised him to set down at the helispot at the heel of the fire. Air Attack then notified the IC and the IC assigned someone to go investigate near the dip site. Neither the drone, nor the operator was found. No other aerial operations were conducted the rest of the shift on the south side.

Texas
March 11, 2018
Mickillroy Fire
Report number: SAFECOM 18-0147

While working the fire with 2 seats we were notified by ground unit of a drone over the NE corner of the fire. The inbound seat which I just cleared into fire area was told to hold to the west of fire and we also moved to the SW of fire. Dispatch, AOBD, and IC were notified of drone and seats fuel was verified. Five minutes later at 1630 were notified by ground units that drone operator had been located and drone was on the ground. We again made contacts and resumed aviation operations. A TFR was not requested due to a short duration of aviation resources anticipated over fire.

Idaho
August 1, 2018
Grassy Ridge Fire
Report Number: SAFECOM 18-0666

On 08/01/2018 A Helicopter was conducting a recon for rehab with 2 Agency Personnel. At the southern end of the Grassy Ridge Fire on Div. B the pilot was flying at an elevation of 4700 ft. at approximately 09:25 when he noticed a white drone 100ft below the helicopter. The Drone was flying northerly direction into the fire and when the near miss occurred it dropped elevation and reversed direction. It turned 180 degrees and flew south back to the suspected operator. See and avoid procedures where taken and Helibase was notified. Helicopter operations where shut down immediately. ASGS, Div. B, Operations on the fire and local law enforcement where called shortly after incident. The pilot was able to take a picture of the white vehicle that the drone flew back to. This is a Drone intrusion and a near miss Approximately 4 miles inside the TFR. Upon notification of the intrusion/near miss the rest of the recon was terminated and the helicopter flew back to the Helibase. All helicopter operations were suspended till air operations deemed the air space and situation safe. The Team on the fire and local Fremont/Clark county law enforcement where notified and responded to the location of the suspected truck/operator of the drone. In the discussion with the pilot and the Helibase manager after the incident, it was noted that pilot kept his situational awareness during the flight and avoided a serious accident.

Washington
July 25, 2017
Carr Road Fire

Two WA State DNR UH-1Hs were operating on the Carr Road Fire in the vicinity of Packwood, WA. The two aircraft were operating in daisy chain in and out of the dip site returning to the fire

line for drops made by ground firefighters calling in locations to the pilots. The day was coming to an end when the aircraft decided to refuel in preparation to depart back to base. The first aircraft had completed refueling and was departing when what appeared to be a DJI Phantom drone flying just to the rear and below the aircraft was spotted by the 2nd aircraft's crewman in the back. The crewman took the photograph attached. The Chief Pilot was in the second aircraft and determined that the drone was operated by a remote pilot in the camp ground on the other side of the river from the refuel site. There was no TFR in effect at the time, however, the FTA was in effect and the drone was operating above the 400' AGL ceiling regulation of FAA Part 107.

Conclusion

Thankfully, none of these incidents result in any loss of life or equipment, but there is clear documentation of situations that posed serious risk to pilots operating in close proximity to drones. All of these incidents represent examples where resources were delayed, and detracted from focusing on putting the fire out, resulting in unnecessary additional costs. Furthermore, most incidents resulted in additional law enforcement resources being requested to assist with locating the operators of the drones, as well as detracting firefighting resources. All of these incidents represent lost air time and initial attack operations which allow a fire to continue to burn and grow in size and severity, potentially increasing the overall cost and risk of the operation to the public. NASF supports an amendment to HR 5040, the AIR Safety Act to include State Foresters to participate in the "Study on Effects of Drone Incursions on Wildfire Suppression" as outlined in Section 2 of the bill. We already know that flying personal drones where wildland firefighters are actively suppressing wildfires puts the civilian operator, their neighbors, and wildland firefighting personnel in danger. The slogan is true, and state forestry agencies know it all too well: "If you fly, we can't." Now, it's time to quantify all the deleterious effects of drone incursions on wildfire fighting airspace. With hard numbers to support needed change, we'll be better positioned to prevent costly delays and shutdowns and protect both property and lives. I thank the Committee for the opportunity to testify in support of the AIR Safety Act to help address this important public safety issue and look forward to answering any questions you may have.