



**STATE OF MAINE
130th LEGISLATURE
SECOND REGULAR SESSION**

**REPORT OF THE STATE FIRE MARSHAL'S OFFICE ON THE SALE and USE OF CONSUMER
FIREWORKS IN MAINE FOR 2022**

Joint Standing Committee on Criminal Justice and Public Safety

March 1, 2023

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Table of Contents

	Page
Executive Summary	1
Licensing	1
Town Ordinances.....	1
Consumer Fireworks-Related Injuries and Fires	1- 2
Consumer Fireworks and Animals	2
Regulating Fireworks	2 -4
Summary and Recommendations	4 - 5
Appendix A: NFIRS Fireworks Fire Data for 2022	
Appendix B: EMS Fireworks Injury Data for 2022	
Appendix C: Maine Forest Service Fireworks Fire Reports for 2022	
Appendix D: Medical Form for Fireworks Injuries (Hospital Form)	

EXECUTIVE SUMMARY

The use, possession or sale of consumer fireworks became legal with the passage of Chapter 416, LD 83 “An Act to Legalize the Sale, Possession and Use of Fireworks” during the first session of the 125th Maine Legislature. The law took effect on January 1, 2012. Plantations could adopt consumer fireworks ordinances with the passage of LD 3 “An Act to Grant Plantations the Power to Control Consumer Fireworks” during the first session of the 128th Maine Legislature in 2017. That law took effect on March 24, 2017.

Each year in Maine several individuals are injured using consumer fireworks. The last known fatality occurred in 2015. The number of licensed businesses selling consumer fireworks has declined. Each year the Office of State Fire Marshal (FMO) gathers data on fireworks-related injuries and burns by working with the Bureau of Emergency Medical Services (EMS), Maine Forestry and data drawn from Maine’s Fire Incident Reporting System (NFIRS). Each year the NFIRS system records numerous incidents of fires where the heat source was identified as a firework. On January 22, 2014, EMS began sending data on fireworks related injuries to the FMO. Any EMS reports that are entered with a code involving fireworks are now automatically sent to the FMO. However, the drawback to this data source is that the EMS data only records those injured people that are transported by an ambulance.

LICENSING

In 2022, eighteen consumer fireworks retail stores were successfully licensed for a total of \$27,000. A cost of \$1,500 per license. The number of licensed consumer sales outlets has declined from high of twenty-seven stores to the current eighteen. In 2022 the eighteen stores earned \$1.1 million in taxable sales and paid \$393,555 in sales tax. Down nine percent from 2020.

TOWN ORDINANCES

As required in statute, Maine municipalities choosing to restrict or prohibit the sale and or use of consumer fireworks, or those permitting the sale of consumer fireworks, must provide the FMO with a copy of the ordinance. There were no new ordinances or towns added in 2022. Documents are available from the FMO website on this webpage: <https://www.maine.gov/dps/fmo/inspections/fireworks/ordinances>

CONSUMER FIREWORKS-RELATED FIRES AND INJURIES

The Fire Marshal’s Office collected fireworks related fire and injury data through its National Fire Incident Reporting System (NFIRS), the Maine Emergency Medical Management system (EMS) and Maine’s Forest Service.

As of February 23, 2022, there were eighteen fires in 2022 reported by Maine’s fire departments that were determined to be caused by fireworks (Appendix A). This was an increase of fifteen incidents over 2021¹. These fires required the attention of an average of ten first responders working a total of 223 hours. In addition to an average of five apparatus per incident to put out these fires. A final summary of fire causes will be published in the 2022 Annual Report of the Maine State Fire Marshal in the spring of 2023. At the time of this report, seventy-two percent of these fires were determined to be unintentional. The fires cost an estimated \$97,458 in property and contents loss.

It's particularly concerning that most of these fires are building fire incident types; and most of them are occurring in single-family homes. Most fire fatalities and injuries occur in homes. Homes in residential areas

¹ Fire department reports for 2022 can continue to be submitted to the Fire Marshal’s Office until July of 2022.

pose a high risk of fire spread to other homes and subsequently a higher risk of injury and death.

Fireworks related fires and injuries are seasonal with July accounting for seventy-one percent of fires and injuries combined in 2022. Additional data on the distribution of fireworks related emergency incidents including type of incident, items ignited, and the actions taken to extinguish the fires can be found in Appendix A.

The Maine Forest Service reported eighteen fires destroying 2.7 acres in 2022 costing \$1,350 in natural resource property damage and another \$11,816 in costs to extinguish the fires (see Appendix C). In the last eight years the Maine Forest Service has recorded seventy-six fires caused by fireworks. An average of ten each year.

EMS reported twelve individuals injured from fireworks. Eleven of them were transported to medical facilities for treatment of injuries and the victims ranged in age from seventeen to sixty-nine. Because the EMS data only provides the count of individuals injured and transported to a hospital for fireworks related injuries, the data is considered baseline data. This is more likely to be an undercount of actual injuries. (See Appendix B)

Maine's hospitals reported no fireworks related injuries in 2022.

CONSUMER FIREWORKS AND ANIMALS

Since the legalization of consumer fireworks in Maine there have been several legislative attempts to prohibit them outright, or at least limit use near or around animals. Many citizens in Maine have complained to local and state authorities about the harm consumer fireworks are doing to their animals. High-noise fireworks have a sound level of more than 120 decibels. This is the decibel level limit the UK sets for consumer fireworks. Display fireworks produce a louder sound but are further away from animals. Consumer fireworks which are closer to people have a lower decibel level, but sound louder. Literature suggests that fireworks use can damage an animal's hearing and make them experience high levels of stress. Because animals have acute hearing, the considerable noise of fireworks and heightened senses, causes them to become distressed and in many cases panic.

Most of the research on the fear fireworks can create in animals has been done on dogs. Dogs have particularly acute senses. They are sensitive to the sounds of fireworks and gunshots which is why they fear them. A dog's response to fireworks can include trembling, cowering, hiding, soliciting human attention, increased attention or startled response, loss of appetite and barking. In severe cases vomiting and self-inflicted injury can occur. Without treatment, phobias can develop and persist even after the events have occurred. Fireworks have adverse impacts on small animals (rabbits, guinea pigs, rats, etc.) as well, although there have been few studies done on them. Noise impacts have not been studied on these animals as much as they have on dogs.

Horses are considered highly unpredictable and are also highly reactive to fireworks. Fireworks have been known to **cause** significant stress in horses. The most common fear behaviors they exhibit are escaping, followed by shivering and hiding. In addition, they experience other problems like those seen in dogs.

The degree to which consumer fireworks negatively impact animals and how loud they are can vary based on the proximity to the animal as well as weather conditions. However, the negative behavior in animals over time can worsen. There are ways to manage and mitigate an animal's fear of fireworks ranging from pharmaceuticals, better sheltering, psychological treatments, and various approaches to desensitization. These remedies come at cost.

REGULATING FIREWORKS

Since the use and sale of fireworks were legalized in 2012, there has been little change in the basic structure of the law and how consumer fireworks are regulated. The most significant change of law was a 2017 law

granting Maine Plantations permission to adopt consumer fireworks regulations.²

In Maine, as in most states, commercial (display) and consumer fireworks are regulated in different ways. The biggest difference in the regulatory scheme is that display fireworks require the licensing of those conducting the display and transporting the fireworks in addition to a permitting process for putting on the display. Within that framework are numerous rules focused on containers, distance, and other requirements necessary to put on a large show safely. Display fireworks are much larger and more dangerous than consumer fireworks. Though still very dangerous, use and possession of consumer fireworks is granted to most individuals over the age of eighteen without any restrictions or requirements to be trained or licensed to use them.

Maine's Chapter 416 provides Maine municipalities the option to choose to restrict or prohibit the sale and/or use of consumer fireworks. Municipalities can require a permit for the sale of consumer fireworks. Those municipalities making their own regulations must provide the FMO with a copy of the ordinance. There were no new ordinances or towns added in 2022. All town ordinances are made available to the public on the FMO website. Sellers of consumer fireworks are required to provide customers a copy of a given towns consumer fireworks ordinance at the point of sale if one exists.

At present there are only two municipalities with ordinances that prohibit just the use of consumer fireworks. Fifty municipalities prohibit both the use and sale in the given community. Sixty-five municipalities restrict use and/or sale in various ways. Such restrictions include limiting the time and area in which fireworks can be used. Ordinances focused on area of use generally forbid the use of consumer fireworks in areas zoned residential, public lands, on the street and other areas identifiable by borders, or as described within that communities' incorporated area. The town of Calais has included in its ordinance a clause referencing animals. The Calais ordinance reads as follows: "The use of Consumer Fireworks outside of the Urban Area shall follow the laws of the State of Maine-except that the use of consumer fireworks in any livestock zone shall be prohibited." The Calais ordinance defines a livestock zone as, "...any area within 1,500 feet of a facility where livestock is being raised or boarded."

In general, legislation, rules, and ordinances in Maine and across the nation vary regarding what types of consumer fireworks are permitted for use. Today, consumer fireworks are legal in forty-six states. Washington, D.C., Ohio, Vermont and Illinois only allow the purchase of sparklers and novelty-type fireworks. Massachusetts bans the sale of all consumer fireworks. States also vary in terms of the age at which an individual can use fireworks. Age requirements range from sixteen to twenty-one and older. Details regarding what type can be used are guided by definitions established by organizations such as the National Fire Protection Association, the Consumer Products Safety Commission, and the American Pyrotechnics Association Standards.

In a survey of state laws and regulations conducted through the National Association of State Fire Marshal's, little to none referenced animals. Recently, however, Pennsylvania passed legislation addressing consumer fireworks nuisance with specific protections for animals. The bill was the result of widespread complaints about the irresponsible use of consumer grade fireworks. The bill, Public Law 762, No. 74 which was signed into law in 2022 defines "*an animal housing facility as a roof structure or facility, or portion of the facility, used for the occupation of livestock or poultry.*" The law further stipulates as a condition of use "*No person...may use consumer fireworks within 150 feet of an animal housing facility or a fenced area designed to confine livestock owned or managed by another person. If a person uses consumer fireworks at a distance of 150 to 300 feet from an animal housing facility or fenced area designed to confine livestock owned or managed by another person, the user of consumer fireworks shall notify in writing the owner or manager of the livestock at least 72 hours in advance of the use that consumer fireworks will be used in the area.*" The impact of this legislation is unknown having passed the summer of 2022.

² 30-A §7501, Chapter 141

In Maine, there have been several attempts, to rectify the problems with the use of consumer fireworks. There was a failed effort to legalize consumer fireworks a year prior to the passage of Chapter 416. Since legalization, successful efforts have focused largely on safe disposal, items to include/exclude within the definition of consumer fireworks, adjusting times of use and location. There have been recurring and unsuccessful efforts to address the impact of consumer fireworks on animals.

In 2022, L.D. 1348 “An Act to Limit the Decibel Level of Fireworks Near Working Farms” was introduced that would have prohibited the user from discharging “...fireworks or consumer fireworks that results in a noise that exceeds 75 decibels at a boundary of a farm actively engaged in agricultural production and containing livestock.” Testimony in support of the bill cited incidents of consumer fireworks causing stress and panic to animals and even costs to first responders responding to animals running loose because of consumer fireworks being discharged. Those opposing the bill, primarily from the firework industry, cited the difficulty enforcing such a bill, as well as previous failed attempts to pass such a law. Chief among the difficulties mentioned, would be how to measure decibels and distance. They also cited potential unemployment and revenue losses.

Discussion over enforcement difficulties resulted in amendments to the original bill. The amendments recognized the complexities of enforcing distances and decibels requirements and sought to remedy the problem by removing references to decibel levels in the title. Another amendment, worked out between the sponsor of the bill and the fireworks industry, would require an individual using the fireworks “within 250 feet of neighboring property owners’ livestock pen...to notify the owner...no less than five days in advance..” of that use, which would allow owners a chance to prepare. Other potential changes would allow only the use, of lower noise fireworks within certain distances from animals. It was also mentioned that absent the capacity of local law enforcement to enforce such laws, a state level approach would be necessary.

Faced with such uncertainties the Committee replaced the original bill with a resolve directing the State Fire Marshal to convene a stakeholder group to review matters relating to the impacts of consumer fireworks use and provide the Committee with the findings, recommendations, and any proposed legislation of this review. This report is the result. Testimony provided to the committee during hearings are in Appendix E at the end of this report.

SUMMARY AND RECOMMENDATIONS

RECOMMENDATIONS

1. Require hospital staff complete the medical form to enable an accurate count of fireworks related incidents and costs of those injuries as well the details set out in Appendix D.
2. Create a report form for law enforcement officers to report violations of local and state ordinances and laws including incidents involving animals. This will provide documentation of incidents involving animals.
3. Designate livestock zones where consumer fireworks use is prohibited.
4. Require decibel levels be posted on every fireworks product package.

Legislative

1. Amend Title 8 §227-A, pt.8 Restrictions to read:
 8. Restrictions on use of consumer fireworks. The use of consumer fireworks is governed by this subsection.
 - A. Consumer fireworks may be used between the hours of 9:00 a.m. and 10:00 p.m., except that on the

following dates they may be used between the hours of 9:00 a.m. and 12:30 a.m. the following day:

(1) July 4th;

(2) December 31st; and

(3) The weekends immediately before and after July 4th and December 31st. [PL 2011, c. 416, §5 (NEW); PL 2011, c. 416, §9 (AFF).]

B. A person may use consumer fireworks only on that person's property or on the property of a person who has consented to the use of consumer fireworks on that property. [PL 2011, c. 416, §5 (NEW); PL 2011, c. 416, §9 (AFF).]

C. No person may use consumer fireworks within 150 feet of an animal housing facility or a fenced area designed to confine livestock owned or managed by another person. If a person uses consumer fireworks at a distance of 150 to 300 feet from an animal housing facility or fenced area designed to confine livestock owned or managed by another person, the user of consumer fireworks shall notify in writing the owner or manager of the livestock at least 72 hours in advance of the use that consumer fireworks will be used in the area.

(or)

C. A person may use only low noise non-ariel consumer fireworks within 350 feet of an animal housing facility or a fenced area designed to confine livestock owned or managed by another person. Low noise non-ariel fireworks include only:

(1) Fountains and conics

(2) Wheels; and

(3) Quite cakes and candles

Appendix A

Fires

NFIRS 5.0 National Reporting System: Fireworks 2022

Manpower and Equipment Used to Fight Fireworks Related Fire Incidents 2022

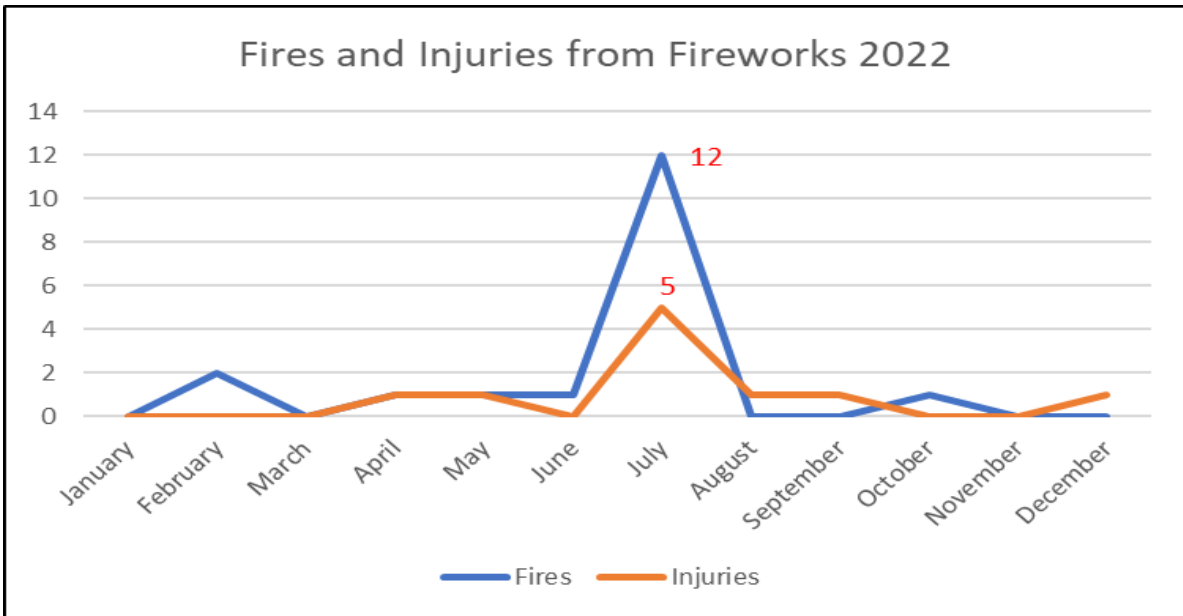
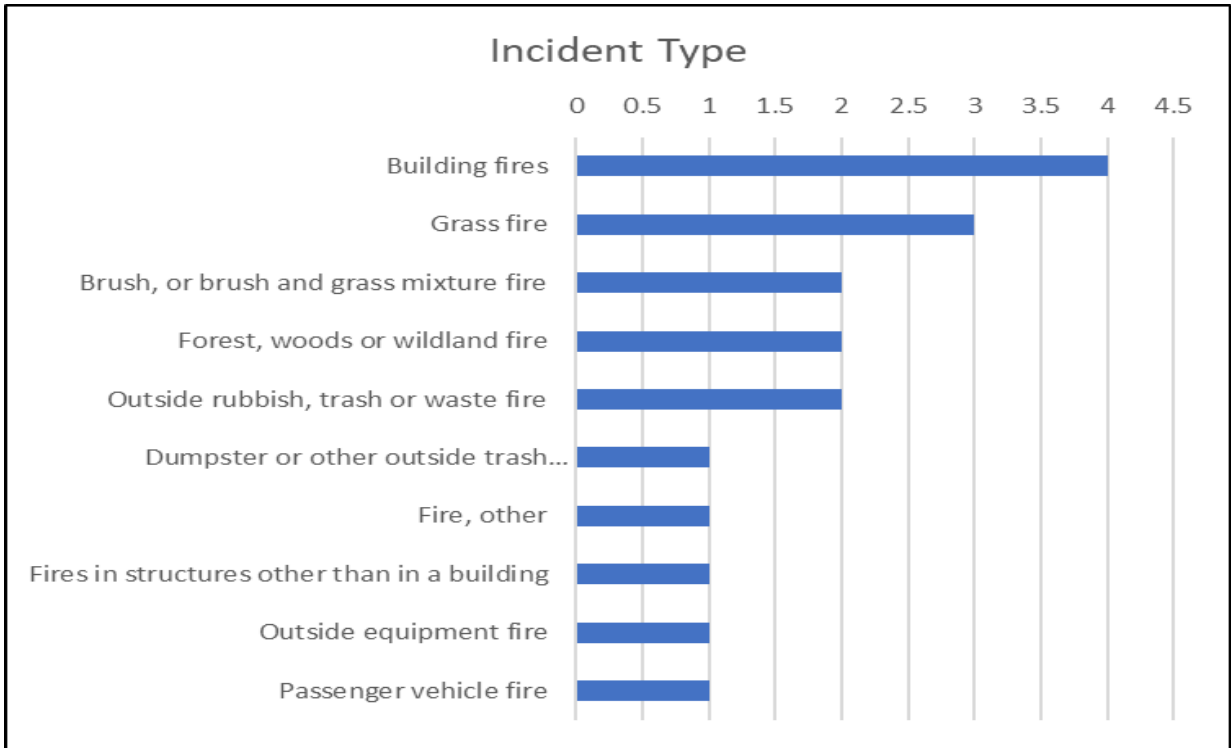
Code	Description	Frequency		Exposures	Average Number						Total Man Hours	Average Response Time (min)	
		#	%		Personnel			Apparatus					Man Hours
					Suppression	EMS	Other	Suppression	EMS	Other			
54	Fireworks	17	0.66%	0	8.06	0.18	1.35	4.00	0.18	0.35	13.14	223.30	6.41

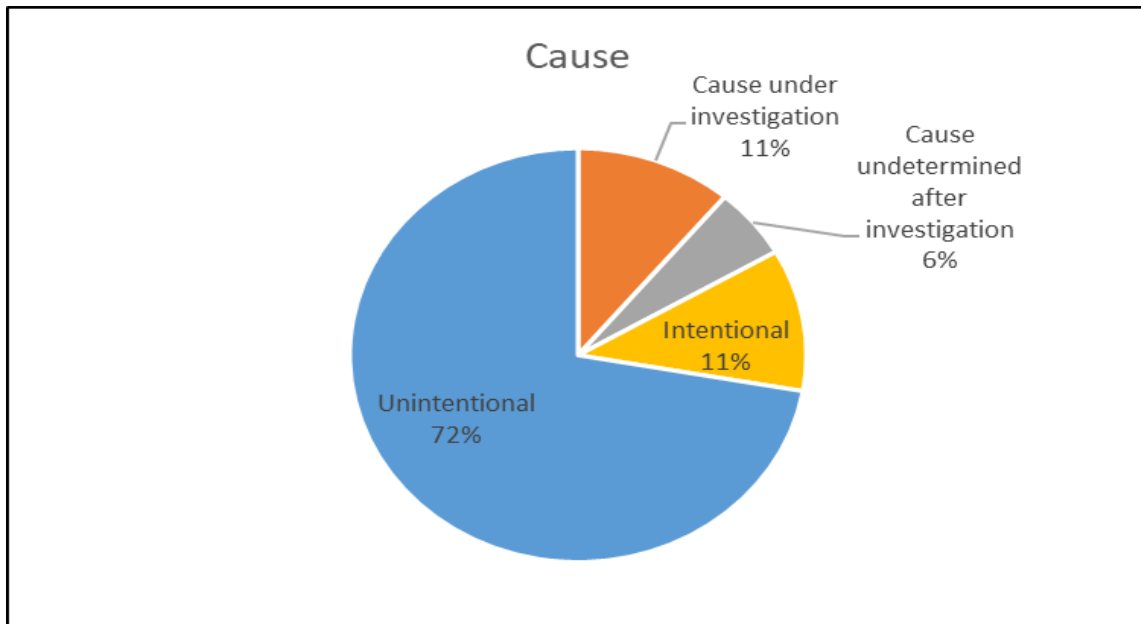
Selected Coded Field: Fire: Heat Source **Fireworks**

Report Period: From 01/01/2022 to 12/31/2022

Property and Contents Dollar Losses from Fireworks Related Fires 2022

Code	Description	Frequency		Civilian Deaths		Civilian Injuries		Fire Fighter Deaths		Fire Fighter Injuries		Property Loss		Contents Loss		Total Loss	
		#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%
419	1 or 2 family dwelling	5	27.8%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	58,858	74.1%	18,000	100.0%	76,858	78.9%
429	Multifamily dwellings	3	16.7%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	20,600	25.9%	0	0.0%	20,600	21.1%
700	Manufacturing, processing	1	5.6%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
898	Dock, marina, pier, wharf	1	5.6%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
931	Open land or field	2	11.1%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
936	Vacant lot	1	5.6%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
961	Highway or divided highway	1	5.6%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
962	Residential street, road or residential driveway	1	5.6%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
965	Vehicle parking area	2	11.1%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
NNN	None	1	5.6%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Totals		18	100.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	79,458	100.0%	18,000	100.0%	97,458	100.0%





Appendix B

EMS Fireworks Injury Reports for 2020

Incident Date	Victim Gender	Age	Injury Cause
4/30/2022	Male	36	Fire/Explosion - Firework(W39)
5/30/2022	Male	17	Fire/Explosion - Firework(W39)
7/3/2022	Female	67	Fire/Explosion - Firework(W39)
7/4/2022	Female	43	Fire/Explosion - Firework(W39)
7/4/2022	Female	43	Fire/Explosion - Firework(W39)
7/4/2022	Female	69	Fire/Explosion - Firework(W39)
7/17/2022	Male	51	Fire/Explosion - Firework(W39)
8/11/2022	Male	53	Fire/Explosion - Firework(W39)
9/4/2022	Male	39	Fire/Explosion - Firework(W39)
9/23/2022	Male	19	Fire/Explosion - Firework(W39)
10/23/2022	Male	26	Fire/Explosion - Firework(W39)
12/28/2022	Female	35	Fire/Explosion - Firework(W39)

Appendix C

Maine Forest Service Fireworks Fire Reports for 2022

Count by Region and Acres Destroyed

Cause	Southern Region		Central Region		Norther Region		Statewide	
	Fires	Acres	Fires	Acres	Fires	Acres	Fires	Acres
Fireworks	15	2.4	3	0.3	0	0	18	2.7

Damages 2022

Natural Resource Property Damage (damage to wildlands)	Real Property Damage (homes, sheds, automobiles)	Total Cost of Extinguishing Fires
\$1,350	0	\$11,816

Appendix D

MAINE FIRE MARSHAL'S OFFICE CONSUMER FIREWORKS INJURY REPORT



The Office of the Fire Marshal would greatly appreciate the assistance of Maine's medical community in tracking consumer fireworks related injuries. The purpose of reporting these injuries is to assist the Fire Marshal in developing any necessary statutory, rule, or policy changes essential to minimizing the frequency of fireworks injuries in Maine. For more information call (207) 626-3873. Thank you.

Demographic Information:

Hospital/Clinic Name: _____

Date of Injury (month/day/year): _____

Municipality in which the injury occurred: _____

Age

0 – 4
 5 – 14
 15 – 20
 21 - 25
 26 – 44
 45 and older

Type of Device:	Reason for Injury:
<input type="checkbox"/> Hand-held (sparkler, firecracker, roman candle, smoke bomb, ground spinner)	<input type="checkbox"/> Bystander (not involved with igniting device)
<input type="checkbox"/> Display (stationary mortar, wheel, missile rocket, fountain)	<input type="checkbox"/> User error (mishandled, relit fuse, device not set up correctly, throwing, etc.)
<input type="checkbox"/> Other _____ _____	<input type="checkbox"/> Device malfunctioned (errant flight pattern, uncontained explosion)
	<input type="checkbox"/> Other _____

Severity of Injury (circle one only)	Body Part Injured (check one):
1. No injury	<input type="checkbox"/> Head/face
2. Minor (1 st degree burn, minor cut (no stitches), bruising)	<input type="checkbox"/> Extremity
3. Moderate (2 nd degree burn, laceration (stitches), broken bone)	<input type="checkbox"/> Torso
4. Significant injury (3 rd degree burn, partial or total loss of digit, hearing or sight)	
5. Fatality	

Comments

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FOR AN ONLINE POSTING OF THIS FORM AND MORE INFORMATION ON CONSUMER