Animal Welfare Institute

Barn Fires: A Deadly Threat to Farmed Animals

Animal Welfare Institute

Since its founding in 1951, the Animal Welfare Institute has been alleviating suffering inflicted on animals by people. AWI works to advance the welfare of animals raised for agricultural purposes– on the farm, during transport, and at slaughter.

Barn Fires: A Deadly Threat to Farmed Animals

In This Report ·

January 2025 (third edition)

About the Research ·

This Animal Welfare Institute (AWI) report presents an analysis of data on animal deaths from barn fires during a three-year period from 2022 through 2024. The term "barn" includes industrial confinement sheds typically associated with concentrated animal feeding operations (CAFOs) in addition to the more traditional barns commonly seen on family farms.

State and local fire reporting laws vary, but in many jurisdictions there is no formal requirement to report barn fires. This made it necessary to obtain the data analyzed herein largely from media reports. Because the analysis does not account for fires and/or animal deaths that went unreported, AWI acknowledges that some of the numbers provided represent conservative estimates.

This report was prepared by Allie Granger, AWI Farmed Animal Program Policy Advisor.

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Executive Summary •

This report explores the prevalence and causes of farmed animal deaths due to barn fires in the United States. AWI tracked and compiled information on barn fires over a three-year period to determine why they occur, how frequently farmed animals die as a result, and how barn fires can be prevented. This is the third edition of a report first published in 2018 as a first-of-its-kind effort to quantify farmed animal losses from barn fires across the United States.

Key findings include:

→ From 2022 through 2024, at least 2,534,800 farmed animals died as a result of barn fires. This total represents 30 percent of the reported 8.35 million animals killed in barn fires since AWI began tracking this issue in 2013. In all likelihood, however, the death toll is significantly higher due to fires that were not reported in the media.

→ Bird deaths per year vastly outnumbered those of other species: Of the more than 2.53 million farmed animals killed in barn fires during the time period studied, over 98 percent were poultry, with egg-laying hens accounting for most fatalities.

→ Number of fires per state: While many barn fires occurred in states with the most significant animal agriculture production, a disproportionate number occurred in northeastern and midwestern states with lower levels of animal agriculture production. This suggests that colder weather was a greater factor in the prevalence of barn fires than the intensity of a state's animal agriculture production.

→ Number of animal deaths per state: Neither overall intensity of production nor colder weather was the primary factor determining which states experienced the most barn fire *deaths*. In those states, rather, the distinguishing characteristic tended to be that one or two catastrophic fires occurred that killed hundreds of thousands of animals at once.

→ The 10 largest 2022–2024 barn fires (around 3 percent of the total number of fires during this period) were responsible for over 90 percent of the deaths. All 10 involved birds.

→ In a large majority of cases in which a suspected or determined cause was reported, the culprit was a malfunctioning or improperly used heating device or other electrical issue.

→ There are no federal laws in the United States specifically designed to protect farmed animals from barn fires, and only five states have adopted NFPA 150, *Fire and Life Safety in Animal Housing Facilities Code*—a voluntary code that offers the most comprehensive level of fire protection for farmed animals while they are on farms.

→ Tracking this issue via media reports due to an absence of other alternatives provides an incomplete picture of the scope of the problem, demonstrating the need for more consistent reporting requirements and a centralized mechanism for tracking the number of animal fatalities resulting from fires and the causes of such fires.

MATEUS BANDEIRA

Introduction to Barn Fires in the United States •

It is horrific when any animal dies in a fire. However, the sad reality is that hundreds of thousands of farmed animals die from fires every year, and the lack of mandated fire protection in farmed animal housing undoubtedly exacerbates this tragic situation. Trapped inside burning enclosures, farmed animals struggle helplessly to escape as they endure unimaginable suffering. Some die almost immediately as the fire sweeps through the barn; many who initially survive are severely burned and must be euthanized.

No farm is immune from the devastation that a barn fire can bring; these incidents range in size from single animal deaths at small, family-owned farms and backyard barns to large-scale fires at industrial facilities that kill hundreds of thousands of animals. While many fires could be prevented or their impacts mitigated with proper inspection, maintenance, and detection/suppression systems, only a few states across the country have adopted codes that specifically require fire protection measures in barns.

Given the limited legal protections available for farmed animals—both generally and as it relates to fire prevention—and the lack of reporting requirements nationwide, it is unfortunate but no surprise that farmed animal fatalities have flown under the radar and have not been prioritized. However, with comprehensive data, the political will to act, and a few significant changes made by industry groups and farm owners alike, thousands of farmed animals every year could avoid the terrible fate of perishing in barn fires.

Barn Fires by the Numbers •

A tally of the numbers of barn fires and animal deaths that occurred in the United States in the three-year period analyzed is shown below. It is likely, however, that the actual number is much higher due to barn fires and animal fatalities that go unreported in the media—an issue that is discussed at greater length below.

The total number of animals killed per year can vary significantly based on the frequency and impact of large fires; 2024 accounted for 60 percent of the reported three-year death toll while representing only about 29 percent of the reported fires during this period. Instances in which a single fire killed more than 100,000 chickens occurred in each of the years studied; however, 2024 saw the largest number of animal deaths from a single barn fire (1.2 million hens) since AWI began tracking this issue more than a decade ago.

On average during the period studied, nearly 845,000 animals were killed in barn fires each year, a significant increase compared to the yearly average of the first period AWI examined (552,000 for 2013–2017). It is a slight increase compared to the second period studied (748,000 for 2018–2021), even though the average number of barn fires per year decreased from 135 for 2018–2021 to 109 for 2022–2024.

DEADLY BARN FIRES PER YEAR

2022 → 138
2023 → 94
2024 → 96

Total: 328

FARM ANIMALS KILLED PER YEAR

2022 → 518,973
2023 → 486,240
2024 → 1,529,587

Total: 2,534,800

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The aftermath of a fire in a chicken confinement shed.

ANIMAL SPECIES

In 2022–2024, 17 animal species were reported to have died in barn fires. The vast majority of animals killed, however, were chickens—unsurprising given that chickens account for around 95 percent of all farmed animals raised for food in the United States and, in industrial settings, are densely packed together in much higher numbers than are other farmed animal species. In several instances during this period, a single fire killed more than 100,000 chickens, whereas the largest number of pigs killed in a single fire was 2,500. An exceptionally large number of cattle died in barn fires during this period, due primarily to a single 2022 fire at a Texas dairy operation that killed 18,000 cows. This was the deadliest reported fire involving cattle since AWI began tracking barn fires in 2013; prior to this incident, the largest number of cattle deaths from a single fire was 548.

The total number of farmed animals killed is an estimate based on media reports. Not all fires are reported in the media. When they are, the reports don't always indicate the number or species of the animals killed. In cases where a nonspecific number of animals was reported (e.g., "10–20 pigs"), the most conservative number was used when tallying animal deaths. When species were not identified, or in cases where multiple species were involved and an exact numerical breakdown for the deaths was not provided (e.g., "numerous farm animals" or "40 chickens, ducks, rabbits, and pigs"), these incidents were recorded under the "Species Not Specified" category. There have also been a limited number of fires on large-scale CAFOs in which animal deaths were confirmed, but the number was not reported. In those cases, estimates were made based on factors such as building specifications, production type, and scale.

Chickens	2,430,421	96.7%
Turkeys	37,091	1.5%
Other Birds (Ducks, Geese, Quail, Peacocks)	15,060	0.6%
Cattle	19,626	0.8%
Pigs	9,579	0.4%
Goats, Sheep	1,928	<0.1%
Horses	449	<0.1%
Alpacas, Rabbits, Donkeys, Cats, Dogs, Guinea Pigs	191	<0.1%
Species Not Specified	819	<0.1%

The Problem of Barn Fires at Industrial Operations •

The extraordinary number of animal lives lost in just a three-year period highlights the need for fire protection at industrial animal housing facilities, particularly commercial egg and broiler operations, where one fire can—and has—killed more animals in a single day than all the fires combined in a year. To achieve the biggest impact on animal welfare and reduce the number of animals killed in this horrific manner, this problem must be addressed by the country's largest poultry and livestock farms. Until fire prevention and suppression mechanisms are implemented across the sector, we will continue to see hundreds of thousands of animals burned alive each year. If any one of the 10 farms highlighted below had stronger fire prevention measures in place, many animals could have been spared tremendous suffering.

BARN FIRES AT POULTRY OPERATIONS

Considering how densely birds are packed into industrial barns, it is no surprise that, during the period studied, the 10 deadliest fires (listed below) occurred at commercial poultry operations, with a majority of the victims being egg-laying hens. In recognizing the severity of the issue, United Egg Producers (UEP)—a cooperative that accounts for more than 90 percent of eggs produced in the United States—commissioned a task force to investigate the circumstances surrounding barn fires and develop best practices. In 2022, the task force published a report documenting its findings and recommendations, many of which aligned with those of AWI. However, best practices are merely strongly encouraged rather than required for UEP members.[1] It could not be determined which of the producers involved in the 10 deadliest fires were UEP members and what fire protection measures they had in place.

1. May 29, 2024[2]
   Wabash Valley Produce
   Farina, Illinois
   1.2 million chickens
2. December 13, 2022[3]
   Kreider Farms
   Lebanon, Pennsylvania
   250,000 chickens
3. May 29, 2022[4]
   Forsman Farms
   Howard Lake, Minnesota
   200,000 chickens
4. December 16, 2023[5]
   Puglisi Egg Farms
   Middletown, Delaware
   200,000 chickens
5. April 23, 2024[6]
   Oakdell Egg Farms
   Lewiston, Utah
   120,000 chickens
6. January 28, 2023[7]
   Hillandale Farms
   Bozrah, Connecticut
   100,000 chickens
7. October 1, 2023[8]
   Cal-Maine Foods
   Bremen, Kentucky
   100,000 chickens
8. July 18, 2024[9]
   Demler Brothers Egg Ranch
   Ramona, California
   70,000 chickens
9. September 29, 2022[10]
   Unidentified Farm
   Beaver Falls Township, Minnesota
   30,000 turkeys
10. June 23, 2024[11]
    Unidentified Farm
    Federalsburg, Maryland
    28,000 chickens

TWYLA FRANCOIS/CETFA

The aftermath of a massive pig barn fire. Sows were unable to escape from their gestation crates and perished in the fire.

BARN FIRES AT PIG OPERATIONS

Similar to poultry, pigs raised for meat are often packed into barns by the hundreds or thousands, where they spend the majority of their lives without access to the outdoors. Such extreme confinement within massive buildings provides the animals no opportunity to escape during an emergency; once a fire ignites in the barn, high mortality is inevitable. Listed at right are the five worst fires that occurred on pig confinement operations from 2022 through 2024 that together resulted in the deaths of nearly 8,000 pigs. This is a decrease from the previous time period studied, during which the five largest barn fires involving pigs collectively killed nearly 42,000 animals.

1. March 24, 2022[12]
   Unidentified Farm
   Eyota, Minnesota
   2,500 pigs
2. March 3, 2022[13]
   Kenneth Scholl Hog Farm
   Darke County, Ohio
   2,000 pigs
3. July 12, 2023[14]
   Unidentified Farm
   Clarksburg, Indiana
   1,200 pigs
4. August 23, 2024[15]
   Brandt Swine Farms
   Versailles, Ohio
   1,100 pigs
5. September 10, 2024[16]
   Snow Hill Swine Farm
   Shine Township, North Carolina
   900 pigs

ADDITIONAL FIRES AT INDUSTRIAL FARMS AND UNREPORTED DEATHS

The above examples demonstrate the extent of loss and suffering that occurs when a fire breaks out on some of the nation's largest farms. And yet, the death toll from fires on large-scale operations presented in this report is underestimated. During this period, there were numerous fires at industrial farms in which loss of animal life was confirmed, but the number of animals killed was not disclosed. Information on these cases is shown below. The number of animals killed in these incidents likely ranged from several hundred to over 100,000, which would have significantly increased the numbers presented throughout this report.

1. March 29, 2022[17]
   Unidentified Farm
   Hawarden, Iowa
   Confinement structure housing pigs destroyed

2. May 1, 2022[18]
   Unidentified Farm
   Jones County, Mississippi
   Two structures housing chickens destroyed

3. November 12, 2022[19]
   Rose Acre Farms
   Knob Noster, Missouri
   Fire affected one end of a barn housing 100,000 chickens; "limited loss of chicken life" reported

4. May 8, 2023[20]
   Smithfield Foods
   Wakefield, Virgina
   One structure housing pigs damaged

5. October 17, 2023[21]
   Michael Foods
   Wakefield, Nebraska
   One of 10 structures housing chickens destroyed

6. January 29, 2024[22]
   Feather Crest Farms
   (owned by MPS Egg Farms)
   Bryan, Texas
   Two structures destroyed, one of which housed chickens

7. July 27, 2024[23]
   Hickmans Family Farms
   Tonopah, Arizona
   700-foot structure housing chickens destroyed

8. August 11, 2024[24]
   Pillen Family Farms
   Platte Center, Nebraska
   One structure housing pigs destroyed

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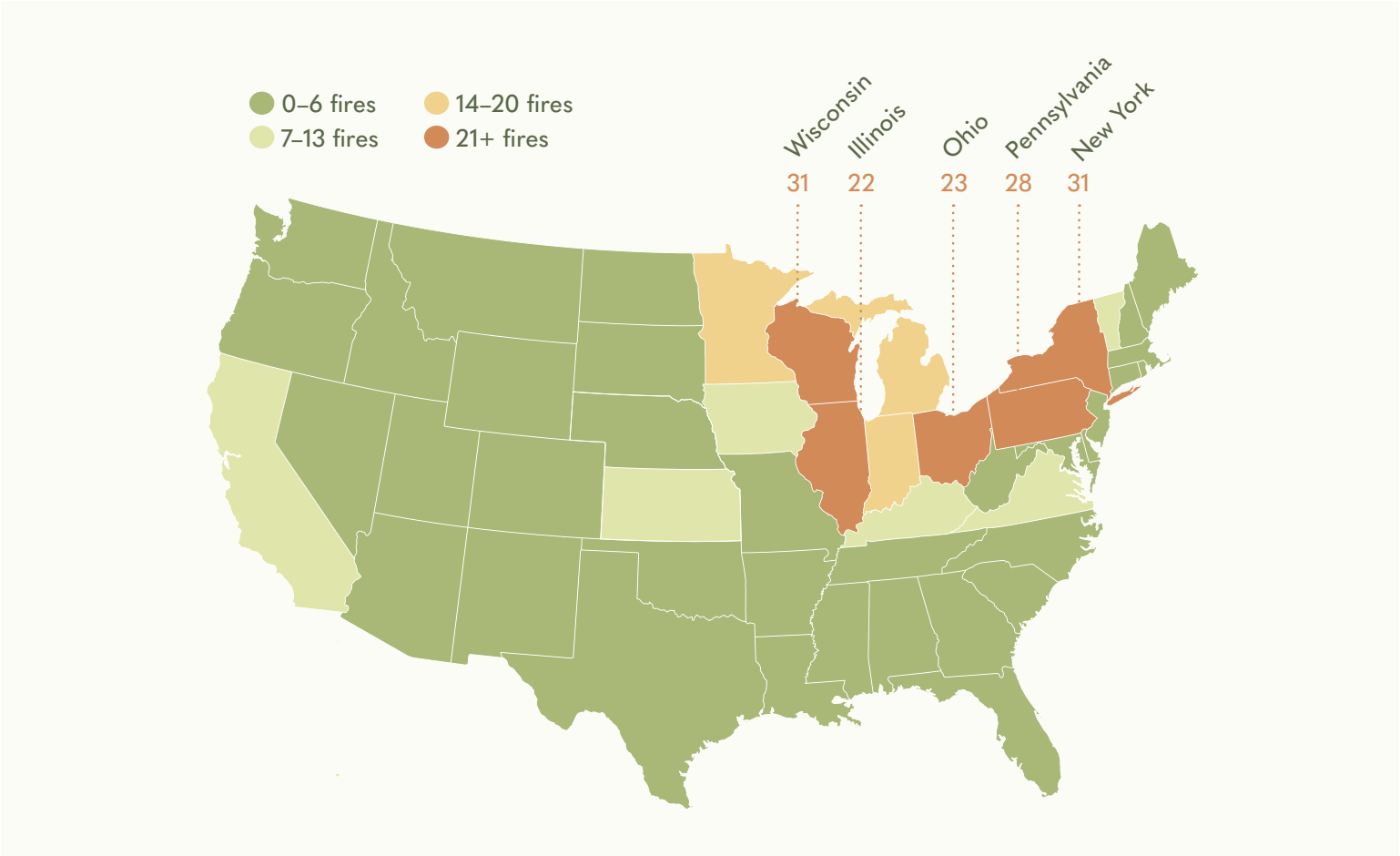
State-By-State Reports •

Barn fires that killed farmed animals were reported in 45 states from 2022 through 2024. While one might expect that the states with the most animal agriculture would have the highest number of fires, that is generally not the case. In Georgia, for instance, which has the largest broiler chicken industry, comprising over 2,000 farms, only four barn fires were reported by the media during the three-year period.[25] In Iowa, which has the largest number of egg-laying hens and pigs compared to all other states, only 10 barn fires were reported over the three-year span—far lower than several other states.[26]

A more significant factor influencing the number of fires appears to be the weather. Colder states experience more barn fires, regardless of whether they are top producers. As demonstrated by the graphic below, states with the most barn fires reported were concentrated in the midwestern and northeastern areas of the country, while warmer southern states with significant animal agriculture industries consistently had fewer fatal barn fires.

While weather seemed to play a primary role in the prevalence of barn fires, it did not have a major effect on the total number of deaths reported by state. What distinguished states with the highest total fatalities was that, in most, one or two catastrophic fires that took the lives of hundreds of thousands of animals accounted for nearly the entire death toll. The top five states for total number of animals killed were:

1. Illinois – **1,200,356 animals**
2. Minnesota – **240,831 animals**
3. Delaware – **200,000 animals**
4. Utah – **120,002 animals**
5. Kentucky – **100,175 animals**



Causes of Barn Fires •

Of the 328 barn fires that resulted in farmed animal fatalities, the cause or likely cause was reported in 111 cases, or roughly 34 percent. In many instances, the destruction that occurred was too severe to determine the cause. In others, the cause was still undetermined or under investigation at the time of press, and an update was never provided. In cases where the cause was confirmed or suspected, 70 percent involved malfunctioning or improperly used heating devices or other electrical issues.

- 32% Electric heating device (heat lamp, space heater) suspected
- 17% Electric heating device (heat lamp, space heater) confirmed
- 12% Other electrical malfunction suspected
- 9% Other electrical malfunction confirmed
- 17% Miscellaneous machinery (skid steer, manure pump, truck, chicken feeder, etc.)
- 4.5% Arson
- 13.5% Other (weather-related, human error, grass fire, hay combustion, gas leak, etc.)

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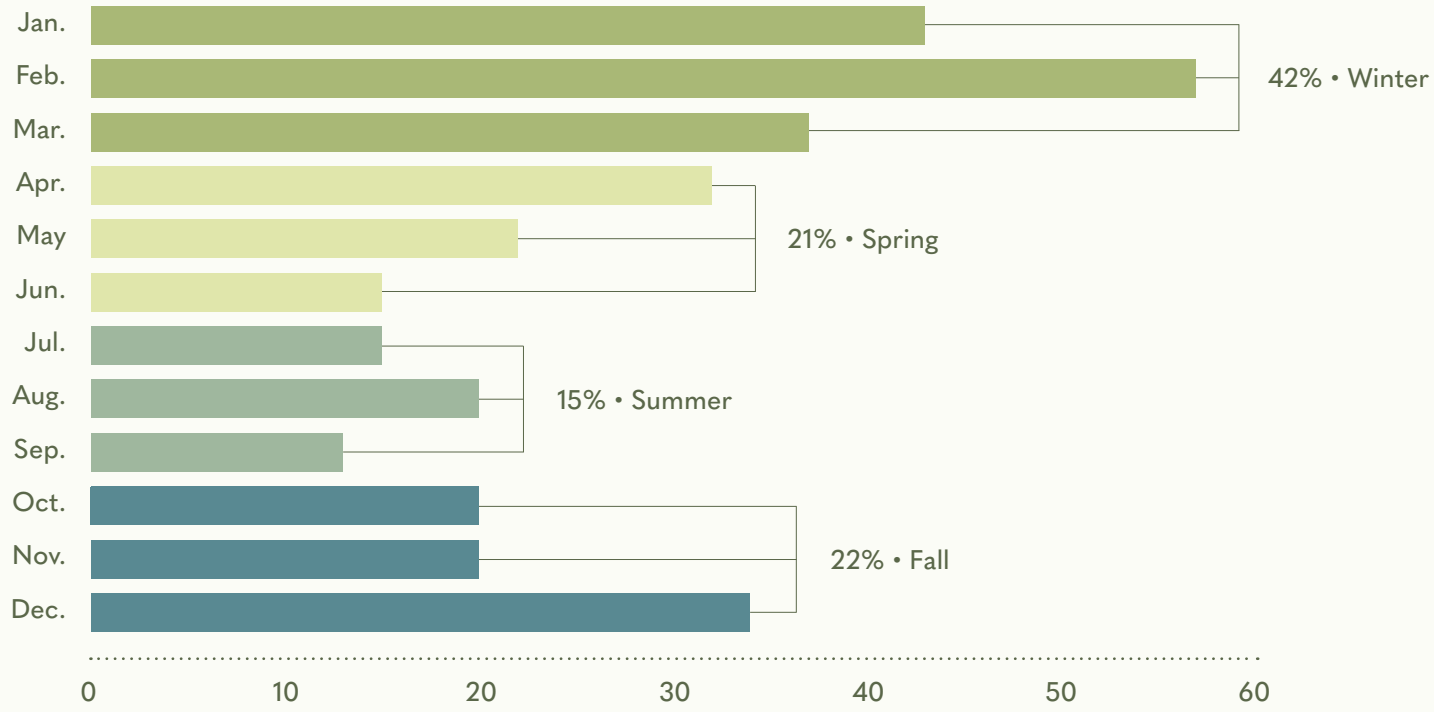
Seasonality of Barn Fires •

Given that heating devices were the most common confirmed or suspected cause of barn fires, it is not surprising that more fires occurred during colder months of the year. About 64 percent of fatal barn fires occurred between October and March, and nearly three times as many barn fires occurred in winter (January through March) than in summer (July through September).



Financial Costs of Barn Fires

Losing animals to barn fires can take a severe financial toll on farmers. It is not only the cost of the animals that is so staggering, but also that of the barn structures and the hay, machinery, and anything else that may have been stored in the barn. Barn fires can cause millions of dollars in damage, particularly on industrial farms, and it can take months to rebuild. In the aftermath of the second-largest fire in 2022–2024, which killed 250,000 hens, fire officials estimated the damage at $12 million.[27] Fires can also devastate smaller farms, as they tend to lack the resources to rebuild as quickly, if at all. Many small farms must rely on help from the community through fundraisers and donations in the form of money, equipment, or labor just to stay afloat.

According to the National Fire Protection Association (NFPA), between 2014 and 2018, barn fires caused an average of $48 million in property damage annually.[28] This figure is significantly higher than an earlier estimate by the NFPA that pegged the annual cost of damages from barn fires at $28 million.[29] In August 2022, the NFPA's Fire Protection Research Foundation released a report on fires in animal housing facilities that contained a literature review, including data and information provided by AWI, media reports, and information obtained from a questionnaire sent to various stakeholders concerning fire losses at their operations. Although the report did not provide an estimated dollar amount in damages, it did find that, based on the survey responses, the total financial loss was similar in magnitude to that of the NFPA's 2014–2018 estimate.[30]

Entities Responsible for Monitoring and Reporting Barn Fires

Several entities are responsible for creating and enforcing fire protection laws and regulations in the United States. While barn fires are monitored at the local, state, and federal levels, as well as by various nonprofit organizations, neither farmers nor fire departments are required to report on farmed animal fatalities, so there is currently very little official data available.

STATE AND LOCAL AUTHORITIES

For the most part, fire protection and control is the responsibility of state and local governments. Each state has a fire marshal or the equivalent (in Colorado, for example, the position is known as "director of the Division of Fire Prevention and Control"; in Hawai'i, it is "chair of the State Fire Council") who is responsible for performing investigations following a fire and inspecting facilities for compliance with various regulations. The state fire marshal is also responsible for adopting fire prevention codes, which can be through transcription (meaning the full code is spelled out in regulation) or by reference (meaning a jurisdiction adopts a short regulation stating that a particular model code—e.g., NFPA 150, *Fire and Life Safety in Animal Housing Facilities Code*—is legally enforceable as the jurisdiction's fire safety code).[31] Fire codes are also adopted at the local level, and local fire officials routinely conduct inspections and perform fire investigations.

UNITED STATES FIRE ADMINISTRATION

The US Fire Administration (USFA), a division of the Federal Emergency Management Agency (FEMA), was created in 1974 under the Federal Fire Prevention and Control Act. The USFA collects data on fires nationwide through the National Fire Incident Reporting System (NFIRS). Local fire departments report incidents to applicable state agencies, which transfer the reports to NFIRS. According to the USFA, these

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Cows graze in a pasture while a destroyed chicken barn still smolders after catching on fire.

data are used to analyze the severity of fires across the nation, make recommendations for national codes and standards, and support federal legislation, among other strategic uses. Currently, the USFA is involved in a multiphase rollout of a new data collection system—the National Emergency Response Information System (NERIS)—that will replace NFIRS by January 2026 and will, according to the USFA, "modernize incident data collection" and provide "analytic tools for local fire and emergency service leaders in near-real time."[32]

Reporting barn fires to the USFA, however, is not mandatory. While many fire departments choose to do so in order to receive federal grants and for other reasons, some fire departments opt out of reporting, potentially due to size and/or lack of resources. As such, some barn fires go unreported. Additionally, under previous NFIRS versions, tracking of animal fatalities was not prompted or encouraged, so even when a barn fire is reported to the USFA, this crucial information is often missing. In August 2022, AWI sent a letter to the USFA highlighting this flaw and requesting that the agency be more proactive in encouraging the tracking of animal fatalities from fires through its centralized reporting system;[33] hopefully, future iterations of NERIS will facilitate this.

NATIONAL FIRE PROTECTION ASSOCIATION

The NFPA is a nonprofit organization that develops consensus-based codes and standards for fire safety. Once the codes or standards are adopted by state or local governments, they become mandatory. As previously mentioned, the NFPA has developed NFPA 150, *Fire and Life Safety in Animal Housing Facilities Code* to address fire protection in animal housing facilities. Chapter 17 of NFPA 150 specifically covers animals used in agriculture who are housed indoors for commercial purposes (animals living on feedlots and pastures and those raised in residential-type settings are excluded).

NFPA 150 has evolved substantially since its initial development in 1979, which was prompted by a series of fires in racehorse stables. It has since

been amended 10 times to cover a wider range of species housed in various settings. A specific categorization for agricultural animals was first added to the 2016 edition of NFPA 150 to clarify the protections required for these animals under certain general provisions. For the 2019 edition, NFPA 150 was completely rewritten and changed from a standard to a code; under this version, specific provisions were added for animal agriculture facilities to address the particular hazards and safety needs of such facilities.

During the last two code revision cycles, four notable changes were made that will take effect in 2025: (1) emergency forces must now be notified of fire alarm signals from agricultural housing facilities; (2) all facilities must be inspected annually to identify electrical, structural, and housekeeping fire hazards; (3) automatic detection systems must be installed in areas where animals are actually housed (as opposed to only in "hazardous areas," as was previously the case); and (4) commercial animal agriculture facilities meeting or exceeding an established size threshold must install automatic fire sprinkler systems, unless exempted by a local fire authority.[34] All changes represent important steps toward strengthening protections for farmed animals and were advocated by AWI as an active member of the NFPA technical committee that administers NFPA 150.

Compliance with NFPA 150, especially among some of the nation's largest producers, has the potential to save thousands of animal lives from a gruesome death. In addition to the above requirements, other notable standards incorporated into the code include mandating emergency management programs, such as fire drills and extinguisher training for employees, and a minimum distance between buildings to prevent the spread of a fire to multiple buildings filled with animals.

NFPA 150 undoubtedly offers the strongest fire protection standards for animal housing facilities, especially agriculture operations; however, its impact is limited, as it requires adoption by jurisdictions for its standards to become mandatory and enforceable. NFPA 150 has yet to be adopted at the federal level and is not currently included within industry or third-party animal welfare certification standards. Nonetheless, five states—Connecticut, Delaware, Florida, Georgia, and Nevada—have promulgated regulations adopting NFPA 150.[35] Four of these states have adopted the 2019 edition of the code, while one (Connecticut), has adopted the 2009 edition. All of these states would need to update their regulations in order for the changes in the 2025 edition to take effect.

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Existing Fire Protection for Confined Animals •

Compared to other animals living in confinement, farmed animals in the United States receive considerably less protection (see appendix). It is worth noting that farmed animals are also excluded from the federal Animal Welfare Act (AWA), which provides minimal protections for the classes of animals highlighted below, including a recently implemented requirement that facilities develop contingency plans to protect animals during an emergency.

CAPTIVE WILD ANIMALS

The Association of Zoos and Aquariums (AZA), which accredits more than 235 zoos and aquariums in the United States and overseas, requires its participating facilities to have detection systems, alarms, and fire extinguishers, provide training to staff, and conduct fire and other emergency drills annually.[36] AZA accreditation is not required by law, however.

In the animal agriculture arena, this would be similar to an industry organization such as the National Chicken Council or the National Pork Board including comprehensive fire protection requirements in their guidelines or audits. An individual farm or facility would not be required to comply, but it would be under great pressure to do so to receive the benefits that go along with being a member of the organization, including using the organization's stamp of approval on products. Currently, no standards developed by any of the major animal agriculture industry groups require fire protection measures beyond developing an emergency action plan that may or may not include planning for a fire. It is worth noting that UEP's animal care guidelines do provide recommendations for fire mitigation and encourage certain fire protection measures that are mainly focused on prevention rather than suppression, but, again, these are merely recommendations.[37]

ANIMALS IN LABORATORIES

In many cases, animals confined for use in research, testing, and teaching are largely protected from fire because they are housed in laboratories or other areas where humans frequently work. In the United States, institutions that use warm-blooded animals in research (except mice, rats, and birds bred for research) are regulated under the AWA and are subject to contingency planning under the statute's regulations. Additionally, institutions that use vertebrate animals in research and receive federal funding from Public Health Services agencies must follow the *Guide for the Care and Use of Laboratory Animals* (8th ed.), which also requires disaster planning. Neither AWA regulations nor the *Guide* addresses fire prevention specifically, however; rather, they require that a general disaster plan be in place. The AWA regulations specify that this plan must establish a chain of command and address humane handling, treatment, transportation, housing, and care of animals in the event of a disaster. The *Guide* also specifies that animals who cannot recover from disaster-related injuries must be humanely euthanized, and fire officials or police officers must be able to reach those responsible for the animals should a disaster occur at a time when employees are not present.

The *Guide* is also one of three sets of standards used by AAALAC International under its voluntary accreditation program for companies, universities, hospitals, government agencies, and other research institutions worldwide. AAALAC International also uses the *Guide for the Care and Use of Agricultural Animals in Research and Testing* (4th ed.), which is specific to agricultural animals used in research and teaching and contains similar requirements when it comes to fire protection.[38]

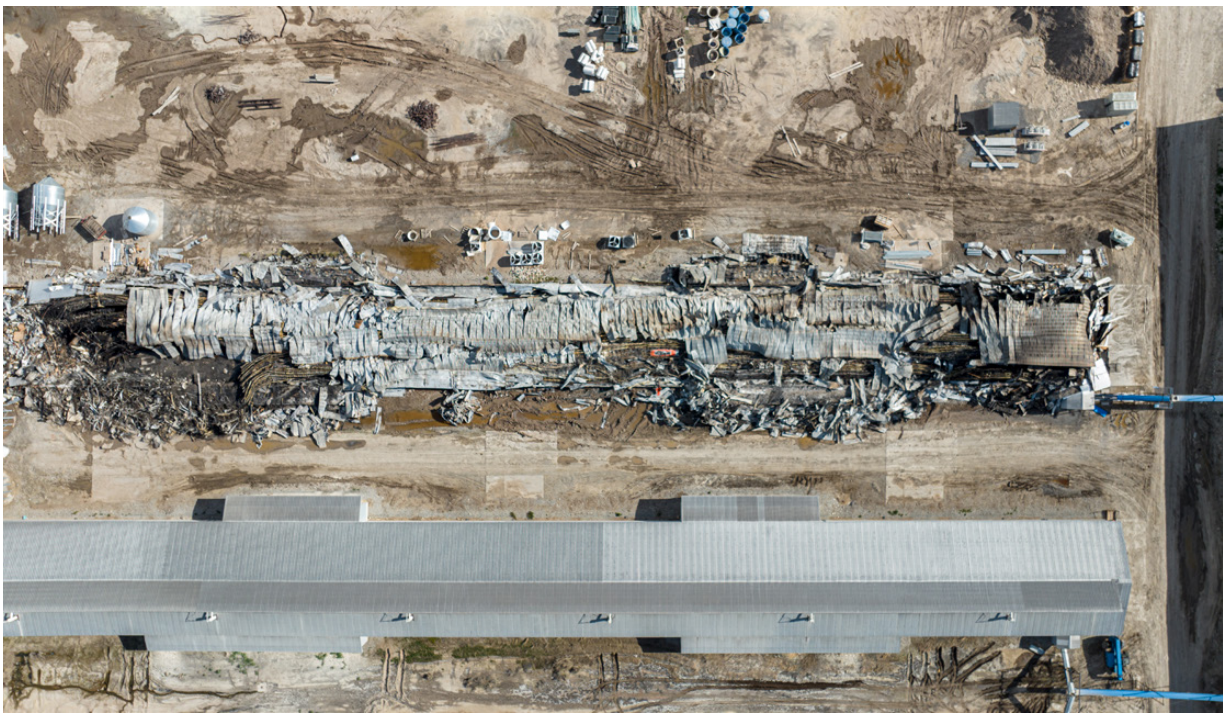
COMPANION ANIMALS

No federal laws specifically protect animals in pet stores and shelters from fires. However, local and state laws have sometimes been enacted in the aftermath of tragic fires to prevent them from reoccurring. In 2015, in response to several pet store fires, the New York City Council passed a bill requiring pet stores to install fire sprinkler systems.[39] In 2016, California passed a law requiring fire alarm systems and sprinklers in pet boarding facilities.[40] And in 2019, in the aftermath of a fire at a kennel that killed 29 dogs, Illinois passed a law requiring kennels to either be staffed at all times or install a sprinkler system or fire alarm that alerts local authorities.[41]

There are key similarities between companion animals housed in animal shelters, pet stores, and pet boarding facilities and farmed animals housed in cages, stalls, and crates within barns—both are trapped in enclosures, unable to escape during an emergency. Yet no legislation has ever been enacted to require fire prevention or suppression systems in barns, even though barn fires occur much more frequently than fires in facilities housing companion animals, and they kill hundreds of thousands more animals each year.

INTERNATIONAL PROTECTIONS

While NFPA 150 is the only set of US standards designed to protect farmed animals from barn fires, international standards do exist. Since 2004, the World Organisation for Animal Health (WOAH, formerly referred to as "OIE") has published standards for animal welfare that it updates periodically. Like NFPA 150, these standards are only guidelines for the animal agriculture industry; they are not mandatory. However, in many instances, the US animal agriculture industry closely follows WOAH recommendations. The current version of the WOAH Terrestrial Animal Health Code recommends that producers have an emergency plan in place to mitigate the impacts of disasters, including fire.[42]



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Recommendations •

No farmed animal deserves to die in a barn fire that could have been prevented. Thankfully, there are a number of steps farmers can take—from improving everyday operational protocols to investing in structural and facility renovations—to help prevent barn fires and promote fire safety. To minimize the risk of barn fires, AWI recommends farm owners implement the following fire protection methods:

OPERATIONAL

→ **ANNUAL INSPECTIONS**
Annual inspections performed by the fire department can help ensure that all electrical systems on the farm are working properly and that the barns are free of fire hazards. This is also a great opportunity for local fire personnel and other emergency responders to familiarize themselves with the operation, identify potential hazards, locate electrical panels and water sources, and ultimately improve their response should a fire occur.

→ **FIRE EXTINGUISHERS**
Fire extinguishers should be strategically placed throughout the facility, including near electrical panels and other potential ignition sources, and checked at least annually to confirm they are in good working order.

→ **EMERGENCY ACTION PLAN**
Proactive planning is the best way to ensure all parties are prepared in the event of an emergency. Planning should include mapping out the operation and identifying fire hazards and potential sources of ignition, documenting contact information for both emergency response units and key farm personnel, and detailing specific procedures to follow should a fire break out. If practicable, the emergency action plan should include a process for evacuating animals in case of a fire.

→ **ANNUAL FIRE SAFETY TRAINING**
It is critical for all farm employees to be familiar with the operation's emergency action plan so that if a fire breaks out, they can respond quickly—either by attempting to extinguish the fire and/or alerting the fire department before it overwhelms the facility. Annual fire safety training, including routine fire drills and fire extinguisher training, will ensure employees are best prepared to respond to a fire.

STRUCTURAL

→ **SPRINKLER SYSTEMS**
Installation of a sprinkler system is the most effective suppression system for putting out fires and may offer the best chance for reducing fatalities. Depending on the type and location of the facility, there are a number of wet, dry, or pre-action sprinkler systems on the market that provide different benefits. The cost and maintenance of each system varies, so farmers should always consult an expert to determine which type of system is best for their operation.

→ **EMERGENCY LANES**
Facilities should have multiple access points that are clear at all times and wide enough for emergency vehicles. It is recommended that emergency lanes be at least 12 feet wide.

→ **BUILDING MATERIALS**
To the extent possible, buildings—particularly, interior walls and ceilings—should be constructed using fire-resistant materials that have low flame spread ratings (materials categorized as "Class A" by the NFPA and other professional entities). Installation of firestops and firewalls where practicable is also recommended. When

constructing multiple animal housing facilities on one site, adequate distance should separate each building to help prevent a fire from spreading to multiple buildings and allow first responders to access different parts of the building. The NFPA recommends a minimum distance of 60 feet between each commercial animal housing facility on a site.

→ **ELECTRICAL SYSTEMS**

In nearly 70 percent of cases in which a suspected or determined cause of a barn fire was reported, the culprit was a malfunctioning or improperly used heating device or other electrical issue. Heating and other electrical equipment should be frequently checked, cleaned, and—if needed—repaired or replaced.

→ **SMOKE, HEAT, OR FLAME DETECTION SYSTEMS**

Early fire detection systems such as smoke, heat, or flame detectors that alert key farm personnel and local first responders may induce a quicker response, mitigate damage, prevent the fire from spreading to additional buildings, and save human and animal lives. At least one of these systems should be professionally installed and regularly tested. Farms should always consult an expert to determine which detection systems are best for their operation.

In addition to these recommendations, there are specific actions that larger, organized entities can take to minimize the occurrence and severity of barn fires. AWI recommends the following for each category:

→ **GOVERNMENT BODIES**

States and municipalities should adopt NFPA 150. Adopting NFPA 150 (specifically Chapter 17: Agriculture) is a great starting point for states and municipalities looking to improve fire safety and decrease fire-related animal deaths. Doing so could prevent numerous animal deaths and protect farm owners and firefighters from serious injuries. As mentioned above, NFPA 150 offers several beneficial provisions for preventing and suppressing fires in barns.

Government entities should improve and centralize reporting of animal fatalities from fires. Reporting of farmed animal deaths from barn fires can be improved in two ways. First, the USFA should make changes to its reporting systems to designate a specific area or mechanism for fire departments to report animal fatalities; the rollout of the new NERIS is a great opportunity to add this function and ensure that all fire departments are aware of it so they can begin tracking this data. Doing so would foster a more complete understanding of the problem among fire departments, regulators, and farmers. Second, more fire departments should take advantage of the data-collection systems. According to the USFA, only about 70 percent of fire incidents in the United States are submitted to NFIRS.

WE ANIMALS MEDIA

→ **THIRD-PARTY ANIMAL WELFARE CERTIFICATION PROGRAMS**

Third-party animal welfare certification programs should mandate, as a minimum fire safety standard, compliance with NFPA 150. Third-party animal welfare certification programs have publicly available standards that participating producers must adhere to, and compliance with the standards is verified by a third-party audit. Many certification program standards already address a wide range of welfare-related issues, from housing to transport to physical alterations. Adding comprehensive fire safety requirements to the standards could vastly improve animal welfare. While some certification standards do require emergency response protocols, going a step further and mandating compliance with NFPA 150 would be an appropriate baseline.

→ **ANIMAL AGRICULTURE INDUSTRY**

Industry guidelines, as a minimum fire safety standard, should include compliance with NFPA 150. Like third-party animal welfare certification programs, industry guidelines include standards for animal welfare. Requiring compliance with NFPA 150 as a baseline fire protection standard would not only reduce the pain and suffering experienced by animals killed in barn fires, but also decrease the emotional and financial burden on farmers.

The industry should fund additional fire-protection research on large-scale operations. Media coverage of fires on large-scale animal agriculture operations, particularly within the poultry industries, has increased in recent years, raising public awareness of the issue generally, as well as among industry groups and the private sector. This has led to the development of new fire protection strategies and technologies, such as advanced detection systems and construction materials. Industry groups are often involved in funding and conducting research on various aspects of production. Given the impacts of barn fires across the sector, additional research into fire risk factors, such as dust levels and air quality, as well as fire prevention and suppression technologies and strategies, are warranted.

Appendix •

ENTITY	Association of Zoos and Aquariums (AZA)
TITLE	Accreditation Standards and Related Policies: 2024 edition
MANDATORY?	Voluntary accreditation program: Compliance with standards is required for AZA accreditation, but accreditation is not required by law.
NOTABLE LANGUAGE	10.2.2. Systems and methods for fire protection and security must be in place and functional to provide a reasonable level of safety on a 24-hour basis. Routine maintenance records that detail safety checks of the equipment should be kept current. 11.2.2. The institution must have appropriate alarms and fire extinguishers readily available and provide training to appropriate paid and unpaid staff. 11.2.5. Live-action emergency drills (functional exercises) must be conducted at least once annually for each of the four basic types of emergency (fire is one of them). Four separate drills are required.
ANIMALS COVERED	Animals in public zoos and aquariums

ENTITY	AAALAC International (guide published by the American Dairy Science Association, the American Society of Animal Science, and the Poultry Science Association)
TITLE	*Guide for the Care and Use of Agricultural Animals in Research and Testing* (4th ed.)
MANDATORY?	Voluntary accreditation program: Compliance with standards is required for accreditation by AAALAC International, but accreditation is not required by law.
NOTABLE LANGUAGE	Chapter 3: Husbandry, Housing, and Biosecurity; Husbandry: Emergency, Weekend, and Holiday Care. In emergencies, facility security and fire personnel must be able to contact staff members responsible for the care of agricultural animals. A site-specific emergency plan must be developed to care for agricultural animals that are used for research and teaching. The goal for the plan should be to provide proper management and care for the animals regardless of the conditions. Chapter 5: Animal Handling and Transport; Transport: Emergency Procedures for the Research Facility and Transporters. Both research facilities and people transporting animals should have a list of emergency contact phone numbers (this list includes the fire department).
ANIMALS COVERED	Cows, horses, poultry, sheep, goats, and pigs used in research settings

ENTITY	National Fire Protection Association (NFPA)
TITLE	NFPA 150, *Fire and Life Safety in Animal Housing Facilities Code*, 2025 edition
MANDATORY?	Adherence to NFPA 150 is required only if the controlling government authority incorporates it into the jurisdiction's fire code.
NOTABLE LANGUAGE	17.1.4.1 Fire Resistance Rating of Exterior Walls. Where two or more buildings are located on the same lot, the facing exterior walls of Class A buildings to the facing exterior walls of the adjacent buildings shall be separated by a minimum distance of 60 ft. (18.3 m). 17.3.4.1 Fire Alarm. A fire alarm system in accordance with Section 9.3 shall be required in Class A facilities. 17.3.4.4 Emergency Forces Notification. Where communications infrastructure exists, emergency forces notification shall be provided in accordance with 9.5 or the fire alarm signal shall be received at a location approved by the AHJ. 17.3.4.5. Detection. An automatic detection system shall be installed in accordance with Section 9.3 in areas where animals are housed and in hazardous areas including, but not limited to, the following: Laundry areas Electrical rooms Kitchens Utility rooms Power washing rooms Storage areas greater than 50 ft^2 or containing ignitable (flammable or combustible) liquids or combustible materials 17.3.5.1 Automatic Fire Sprinklers. 17.3.5.1.1 Class A facilities meeting or exceeding the US Environmental Protection Agency animal size threshold of a Medium Concentrated Animal Feeding Operation shall be provided with automatic fire sprinklers in accordance with Section 9.2, unless otherwise permitted by 17.3.5.1.2. 17.3.5.1.2 Where approved by the AHJ, sprinkler protection required by 17.3.5.1 shall not be required where equivalent alternative active or passive protection, or a combination thereof is provided. 17.3.5.2. Fire Extinguishers. Fire extinguishers shall be provided in accordance with Section 9.10. 17.4.1. Disaster/Emergency Management Program. A disaster/emergency management program complying with 4.3.4 shall be provided. 17.4.2 Drills. Animal handlers, designated employees, and supervisory personnel shall hold disaster/emergency drills once annually in accordance with 4.3.5. 17.4.3. Extinguisher Training. 17.4.3.1 All designated employees shall be annually instructed in the use of portable fire extinguishers, emergency egress methods, and other site safety issues. 17.4.3.2 In addition to annual training, new employees shall receive initial training within 30 days of hire. 17.8.1 All Category 7 facilities shall be inspected annually to identify electrical, structural, and housekeeping hazards. 17.8.2 Inspections shall be performed by qualified personnel.
ANIMALS COVERED	Farmed animals housed indoors for commercial use; does not apply to agricultural animals housed outdoors or agricultural animals in residential-type housing

ENTITY	AAALAC International (guide published by the National Research Council of the National Academies)
TITLE	*Guide for the Care and Use of Laboratory Animals* (8th ed.) ("*Guide*")
MANDATORY?	Voluntary accreditation program: Compliance with the *Guide* is required for accreditation by AAALAC International, but accreditation is not required by law. However, research institutions that receive federal funds are required under Public Health Service Policy to base their programs of animal care and use on the *Guide* (as evidenced by AAALAC International accreditation or internal Institutional Animal Care and Use Committee evaluation).
NOTABLE LANGUAGE	Chapter 2: Animal Care and Use Program; Disaster Planning and Emergency Preparedness. Facilities must … have a disaster plan. The plan should define the actions necessary to prevent animal pain, distress, and deaths due to loss of systems such as those that control ventilation, cooling, heating, or provision of potable water. Animals that cannot be relocated or protected from the consequences of the disaster must be humanely euthanized. Chapter 3: Environment, Housing, and Management; Terrestrial Management: Husbandry: Emergency, Weekend, and Holiday Care. In the event of an emergency, institutional security personnel and fire or police officials should be able to reach people responsible for the animals. (Fire alarm systems are referenced throughout the document, but primarily in reference to noise control and minimizing the impact of noise on animals.)
ANIMALS COVERED	Any vertebrate animal produced for or used in research, testing, or teaching

ENTITY	World Organisation for Animal Health
TITLE	Terrestrial Animal Health Code - Section 7
MANDATORY?	No; international recommendations
NOTABLE LANGUAGE	7.9.5. Beef Cattle, Recommendations. (3)(h) Where the failure of power, water and feed supply systems could compromise animal welfare, beef producers should have contingency plans to cover the failure of these systems. These plans may include the provision of fail-safe alarms to detect malfunctions, backup generators, access to maintenance providers, ability to store water on farm, access to water cartage services, adequate on-farm storage of feed and alternative feed supply. Plans should be in place to minimise and mitigate the effects of natural disasters or extreme climatic conditions, such as heat stress, drought, blizzard, fire and flooding. 7.10.4. Broiler Chicken, Recommendations. (2)(p) Broiler houses should be constructed and electrical and fuel installations should be fitted to minimise the risk of fire and other hazards. 7.11.7. Dairy Cattle, Recommendations. 16. Disaster management. Plans should be in place to minimise and mitigate the effect of disasters (e.g. earthquake, fire, drought, flooding, blizzard, hurricane). Such plans may include evacuation procedures, identifying high ground, maintaining emergency feed and water stores, destocking and humane killing when necessary. 7.13.26. Pig, Recommendations. Disaster management. Plans should be in place to minimise and mitigate the effect of disasters (e.g. earthquake, fire, flooding, blizzard and hurricane)
ANIMALS COVERED	Beef cattle, broiler chickens, dairy cows, pigs

Barn Fire Safety Checklist

Mrs. O'Leary's Cow may have gotten a bad rap but the folktale reminds us fire safety is an important part of farm life. People, animals, and property are in danger when fire breaks out on the farm. Inspect your barn and outbuildings for fire hazards to reduce the risk of tragic loss.

- ✔ Heat lamps and space heaters are kept a safe distance from anything that can burn.
- ✔ Heaters are on a sturdy surface and cannot fall over.
- ✔ Electrical equipment is labeled for agricultural or commercial use.
- ✔ All wiring is free from damage.
- ✔ Extension cords are not used in the barn.
- ✔ Lightbulbs have covers to protect them from dust, moisture, and breakage.
- ✔ Damage is identified quickly and repairs are completed with safety in mind.
- ✔ Dust and cobwebs around electrical outlets and lights are removed.
- ✔ Oily rags are stored in a closed, metal container away from heat.
- ✔ Feed, hay, straw, and flammable liquids are stored away from the main barn.
- ✔ The barn is a smoke-free zone.
- ✔ Exits are clearly marked and pathways are clear.
- ✔ Fire drills are held frequently with everyone who uses the barn.
- ✔ Workers are trained to use fire extinguishers.
- ✔ Everyone in the barn knows personal safety is the first priority if a fire breaks out.
- ✔ Hazard checks take place on a set schedule.

Required Equipment

The following safety equipment may be required by local building codes and will help protect your barn. Install and maintain:

- ABC-type fire extinguishers near every exit and within 50 feet from any point in the barn.
- Fire alarm system
- Sprinkler system
- Carbon monoxide detection system

Talk with your local fire department to address safety concerns unique to your farm.

Go to www.nfpa.org/farms to learn more about fire safety on the farm.

NATIONAL FIRE PROTECTION ASSOCIATION
The leading information and knowledge resource on fire, electrical and related hazards

nfpa.org/education

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