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# Barn Fires: A Deadly Threat to Farm Animals

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## Animal Welfare Institute

Since its founding in 1951, the Animal Welfare Institute has been alleviating suffering inflicted on animals by people. AWI works to improve conditions for the billions of animals raised and slaughtered each year for food in the United States. Major goals of the organization include eliminating factory farms, supporting higher-welfare family farms, and achieving humane transport and slaughter for all farm animals.



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# Barn Fires: A Deadly Threat to Farm Animals

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## About the Research •

This report presents an analysis of data compiled from barn fires that occurred over a period of five years, from 2013 to 2017. Information on barn fires was obtained via media reports. The term “barn” includes industrial confinement sheds in addition to the more traditional barns that are commonly seen on family farms. Because laws and regulations vary from state to state, and municipalities are not generally required to report barn fires and livestock losses that occur within their boundaries, we acknowledge that there are unreported fires and animal deaths that our analysis does not account for.

This report was prepared by Alicia Prygoski of the Animal Welfare Institute (AWI), who wishes to thank Dena Jones, AWI Farm Animal Program Director, for assisting in the report's preparation.

October 2018





## Executive Summary •

This report explores the prevalence and causes of farm animal deaths due to barn fires in the United States. AWI tracked and compiled information on barn fires over a five-year period in order to determine why they occur, how frequently farm animals die as a result, and how barn fires can be prevented. This report is the first ever conducted to quantify nationwide farm animal losses from barn fires.

Findings include:

- From 2013 to 2017, at least 2,763,924 farm animals died as a result of barn fires. Due to unreported fires, it is likely that the number of deaths is significantly higher.
- Weather appeared to play a significant role in the prevalence of barn fires, with more occurring when temperatures dropped. Approximately two-thirds of barn fires occurred during the colder months (October–March).

- While many animal deaths due to 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 further suggests that colder weather is a key factor in the likelihood of barn fires.
- The main cause of barn fires, when such cause could be determined, was improper use of or malfunctioning heating devices, with other electrical devices also playing a significant role.
- The number of chicken deaths per year vastly outnumbered those of other species. From 2013 to 2017, 95 percent of farm animals killed in barn fires were chickens.
- Barn fires can devastate any size farm—from the smallest backyard operation to the largest industrial complex. Some reported fires at family farms killed only one animal, while the largest reported fire killed 1 million chickens.
- There are no federal or state laws in the United States specifically designed to protect farm animals from barn fires.

## Introduction to Barn Fires in the United States •

It is horrific when an animal dies in a fire. Whether it's a pet lost in a house fire or a racehorse who didn't make it through a stable fire, the loss of life in this manner is something no one ever wants to see. However, the sad reality is that hundreds of thousands of animals die from fires every year because of the lack of mandated fire protection in barns and industrial farms. Because farm animals are raised for food, their deaths may not be publicized as widely as a fire at a zoo or an animal shelter, but barn fires wreak havoc on animals and farm owners alike.

Trapped inside burning barns and enclosures, farm animals struggle helplessly to escape as they endure unimaginable suffering. Some die almost immediately as the fire burns through the barn; others may initially survive the fire but must be euthanized because their bodies have been severely burned.

No farm is immune from the devastation that a barn fire can bring; these incidents range in size from one animal death at small, family-owned farms to large-scale fires killing hundreds of thousands of animals at an industrial facility. While many fires could be prevented with proper inspection, maintenance, and detection systems, there are currently no laws in the United States requiring fire protection measures in barns.

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, farmers and industrial farming operations are not required to report on farm animal fatalities, so there is currently very little data available.

The United States Fire Administration is part of the Federal Emergency Management Agency (FEMA). It was created under the Federal Fire Prevention and Control Act, and it collects data on fires nationwide through the National Fire Incident Reporting System (NFIRS). Local fire departments report incidents to state fire marshals, who transfer the data to NFIRS. This information is periodically released to the public.

Reporting barn fires to NFIRS is not mandatory, but most fire departments choose to do so in order to get federal grants. However, some rural fire departments are too small or have too few resources to participate in NFIRS so, in some cases, barn fires still go unreported. Every state, though, has a fire marshal's department,

responsible for investigating fires, adopting fire prevention codes, inspecting for compliance with various regulations, and reporting to NFIRS.

The National Fire Protection Association (NFPA) is a nonprofit organization that develops consensus-based codes and standards for establishing fire safety. Once the codes or standards are adopted by state or local governments, they become mandatory. One of the codes, NFPA 150, Fire and Life Safety in Animal Housing Facilities Code, was created to address fire and life safety in animal housing facilities. Chapter 17 of NFPA 150 specifically covers animals used in agriculture, although not all types of farm animals are included; it applies only to farm animals housed indoors for commercial purposes and excludes animals living on feedlots and pastures and those raised in residential-type settings. Though AWI believes these latter animals should not be excluded, implementing the NFPA 150 recommendations could still save thousands of animal lives. For example, NFPA 150 requires detection systems in certain areas of industrial barns, something most such barns currently do not have. Additionally, it requires emergency management training for employees and inclusion of a hazard assessment in emergency management plans.

Considering the many entities that have a hand in regulating, monitoring, and reporting barn fires, and the challenges associated with doing so, it is unfortunate but no surprise that farm animal fatalities have flown under the radar and have not been prioritized. However, with comprehensive data and a few significant changes, thousands of farm animals every year could avoid the terrible fate of perishing in barn fires.



## Barn Fires by the Numbers •

Per media reports, the numbers of barn fires and animal deaths that have occurred over the past five years in the United States are at right—though it is likely the actual number is much higher due to barn fires that go unreported in the media.

The total number of animals reported killed per year varied greatly; 2013 accounted for only 4 percent of the total, while 2017 accounted for 59 percent. This is likely due to several factors, including the fact that in 2017, three exceptionally large fires occurred that accounted for over 1.4 million fatalities combined. A similar situation happened in 2014: Two large fires were responsible for the deaths of 430,000 animals. Though 2013 had a significant number of barn fires, only two involved fatalities in the tens of thousands, and none killed 100,000 animals or more. This discrepancy further highlights the need for fire protection at industrial animal

housing facilities, where one fire can kill more animals in a day than all of the fires combined from another year.

### DEADLY BARN FIRES PER YEAR

2013 → 40  
 2014 → 61  
 2015 → 72  
 2016 → 67  
 2017 → 86

**Total: 326**

### FARM ANIMALS KILLED PER YEAR

2013 → 107,351  
 2014 → 582,091  
 2015 → 199,352  
 2016 → 257,469  
 2017 → 1,617,661

**Total: 2,763,924**



*The aftermath of a fire in a chicken confinement shed.*

### SPECIES OF ANIMAL

Seventeen species of farm animals were reported to have died in barn fires from 2013 to 2017. The vast majority of those animals were chickens. This is most likely because chickens raised in industrial settings are densely packed into individual sheds, whereas other animals are typically given more space, meaning fewer are likely to be killed in a single fire. During the period surveyed, there were several instances in which 100,000 to 500,000 chickens were killed in a single fire, whereas the largest number of cows killed in a single fire was 500 and the largest number of pigs was 11,000.

|   |           |      |
|---|-----------|------|
| Chickens  | 2,599,145 | 95%  |
| Turkeys   | 34,203    | 1%   |
| Other Birds<br>(Ducks, Geese, Quail,<br>Pheasants, Guinea<br>Hens, Peacocks, Emu) | 34,612    | 1%   |
| Pigs  | 71,260    | 2.5% |
| Cows  | 2,634     | <1%  |
| Goats, Sheep  | 1,088     | <1%  |
| Llamas, Alpacas,<br>Rabbits, Donkeys  | 446       | <1%  |

The total number of farm animals killed (shown on previous page) is higher than the combined totals per species of animal above. This is because reports of several fires include the number of animals who died, but do not indicate the specific species of animal. (For example, a report may only say “30 livestock died.”) Additionally, in cases where a nonspecific number of animals was reported (e.g. “several livestock” or “10–20 pigs”), the most conservative number was used when tallying animal deaths.

### MOST ANIMALS KILLED IN A SINGLE BARN FIRE

Considering how densely chickens are packed into battery cages and industrial barns, it is no surprise that the five fires killing the most animals occurred at chicken-farming operations. The extraordinary number of lives lost to these fires underscores how important barn fire prevention and protection is for industrial farming facilities. If any one of these farms had comprehensive fire prevention measures in place, hundreds of thousands of animals could have been spared tremendous suffering.

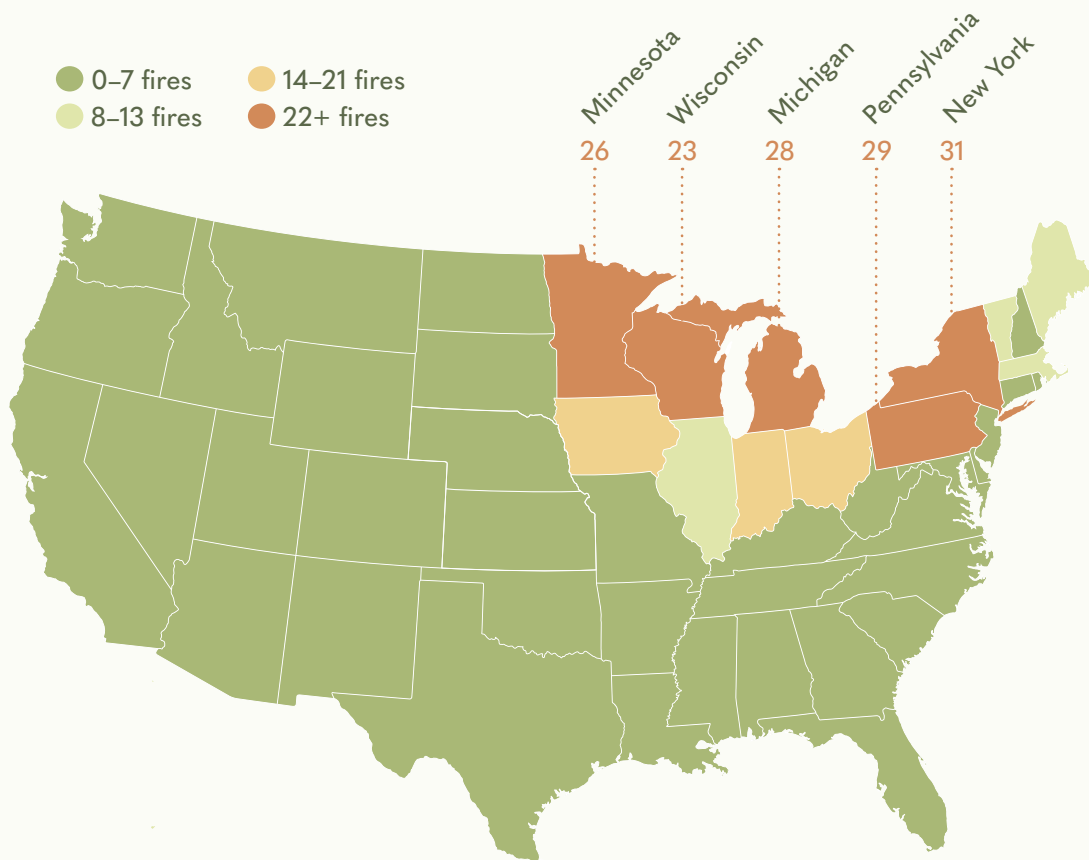
1. October 2, 2017<sup>1</sup>  
*Hi-Grade Egg Producers*  
*North Manchester, Indiana*  
**1 million chickens**
2. September 7, 2017<sup>2</sup>  
*Fassio Egg Farm*  
*Toole County, Utah*  
**300,000 chickens**
3. February 1, 2014<sup>3</sup>  
*S&R Egg Farm*  
*La Grange, Wisconsin*  
**280,000 chickens**
4. March 30, 2014<sup>4</sup>  
*Centrum Valley Farms*  
*Galt, Iowa*  
**150,000 chickens**
5. June 11, 2017<sup>5</sup>  
*Baer Poultry Co.*  
*Hawley, Minnesota*  
**134,000 chicks**



## State-By-State Reports •

Barn fires that killed farm animals were reported in 38 states from 2013 to 2017. While one might expect that the states with the most animal agriculture would have the highest number of fires, that is not generally the case. North Carolina, for instance, which has the second largest pork industry, fourth largest broiler chicken industry, and second largest turkey industry, averaged only 1.4 fatal fires a year.<sup>6</sup> Alabama, Arkansas, and Mississippi, which together account for almost a third of the total US broiler chicken production, did not have a single reported barn fire that caused animal fatalities over the five-year span.<sup>7</sup>

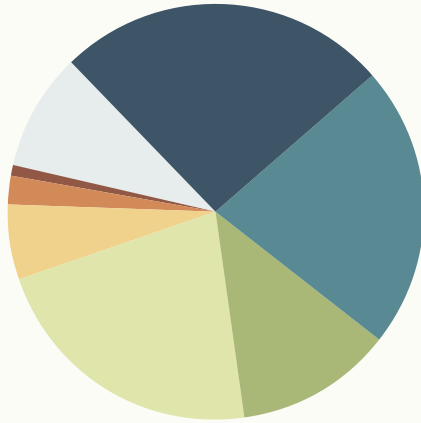
Instead, a more prominent factor appears to be that colder states experience more barn fires, regardless of whether they are top producers. For example, Michigan, which is not one of the top five producing states for any animal agriculture industry, had the third-highest number of barn fires over that same period, averaging 5.6 a year.<sup>8</sup> Similar statistics are observed for other midwestern and northeastern states, while warmer southern states with significant animal agriculture industries consistently have few or no fatal barn fires.



## Causes of Barn Fires •

Out of 326 total barn fires that caused farm animal fatalities, the cause or likely cause was reported in 106 cases. 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 known, electrical heating devices and other electrical malfunctions caused the vast majority of the fires.



- 26% Electric heating device (heat lamp, space heater)
- 22% Suspected electric heating device (heat lamp, space heater)
- 12% Other electrical malfunction
- 22% Suspected other electrical malfunction
- 6% Miscellaneous machinery (tractors, brush hogs, etc.)
- 2% Wildfire
- 1% Arson
- 9% Other (controlled burn, manure explosion, embers, lightning, candles, power lines, wildfires, car fires)



TWYLA FRANCOIS/CEITFA

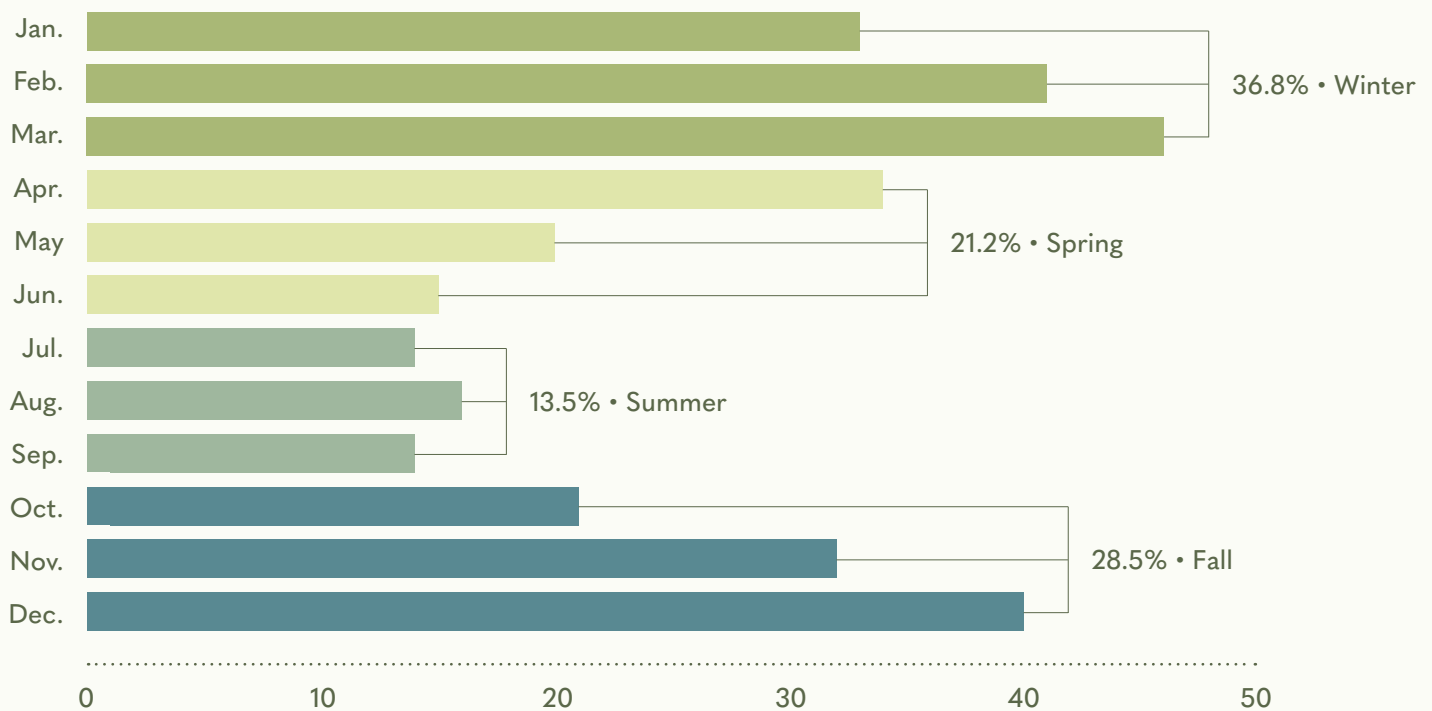
*The aftermath of a massive pig barn fire. Sows were unable to escape from their gestation crates and perished in the fire.*

## Time of Year When Fires Occurred •

More fires occurred during the colder months of the year than during the warmer months. Considering heating devices were the most common known cause of barn fires, it is likely this seasonal difference occurred due to an increased need in colder months for heating

devices to keep farm animals warm. Roughly two-thirds of fatal barn fires occurred from October to March, and almost three times as many barn fires occurred in winter (January through March) than in summer (July through September).

Number of Barn Fires per Month 2013–2017





## Financial Costs of Barn Fires •

Losing animals to barn fires can take an excruciating financial toll on farmers. It is not only the cost of the animals that is so staggering, but also the barn structures themselves and the hay, machinery, and anything else that may have been stored in the barn. Barn fires can cause millions of dollars of damage on industrial farms and it can take months to rebuild, although these farms typically have insurance and fare better than small family farms that might not be covered. Smaller farms do not have the resources to rebuild as quickly, if at all. They are either forced to make do as they try to start over, or they must give up farming altogether. One farmer, who did not have insurance and lived on a fixed income, articulated the devastating toll this took on her farm and livelihood; “Our world is crumbled, we are old, we have no money. We have no way to get anything back.”

In the majority of cases, damage estimates were not given either because the local fire department had not completed an estimate at the time of press, or simply because individual media

reports did not mention the estimated amount of damages. Of those that were reported, the highest estimated costs were as follows:

- **DECEMBER 15, 2017**  
**UNIDENTIFIED FARM IN**  
**EMMET COUNTY, IOWA**  
*\$10 million estimated damages<sup>9</sup>*
- **OCTOBER 27, 2014**  
**COUGAR RUN FARM IN**  
**TRUMAN, MINNESOTA**  
*several million dollars estimated damages<sup>10</sup>*
- **APRIL 18, 2014**  
**UNIDENTIFIED FARM IN**  
**HARTFORD, WISCONSIN**  
*over \$1 million estimated damages<sup>11</sup>*
- **JULY 8, 2015**  
**UNIDENTIFIED FARM IN**  
**SENECA COUNTY, NEW YORK**  
*over \$1 million estimated damages<sup>12</sup>*
- **OCTOBER 2, 2014**  
**DEERFIELD FARMS IN**  
**EAGLE SPRINGS, NORTH CAROLINA**  
*approximately \$1 million estimated damages<sup>13</sup>*



JACK TUMMERS

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

## Human Injuries and Deaths •

While the main goal of this report is to quantify the number of barn fires occurring in the United States that result in farm animal deaths, the lack of mandated fire suppression and prevention systems in barns harms humans, too. The following are notable instances in which humans were injured or killed while attending to farm animals or performing maintenance activities in barns that housed farm animals. These fires were not included in our analysis unless animals were killed, but they're critical in illustrating that increasing and mandating fire protection in barns protects farm animals and the farmers, agricultural employees, and firefighters who are inevitably at risk from barn fires.

- **NOVEMBER 15, 2013**  
**VERNON COUNTY, WISCONSIN**  
*A farmer suffered life-threatening injuries, including burns to his face and arms, because he was in the cow barn at the time the fire started. He was airlifted to the hospital.<sup>14</sup>*
- **AUGUST 30, 2014**  
**MOIRA, NEW YORK**  
*Four firefighters were injured at a cow barn. One had a heat-related injury, one sustained a cut, one had a head injury, and one had a potentially broken rib.<sup>15</sup>*
- **SEPTEMBER 26, 2014**  
**NEW HAMPTON, IOWA**  
*The fire occurred at a pig barn. No pigs were killed, but the farm owner, a former Iowa Pork Producers Association president, suffered second- and third-degree burns on more than 10 percent of his body.<sup>16</sup>*
- **JANUARY 8, 2015**  
**REMUS, MICHIGAN**  
*The fire occurred at High Lean Pork Farm. An employee was hospitalized with first-degree burns.<sup>17</sup>*
- **JANUARY 21, 2015**  
**BOYDEN, IOWA**  
*A methane explosion occurred at a pig farm. An employee was seriously injured and taken to a burn center hospital. No pigs were killed.<sup>18</sup>*
- **MAY 11, 2015**  
**JASPER, MINNESOTA**  
*A fire occurred at New Horizon Farms. No pigs were killed. Two employees were pressure washing inside the barn when it ignited. Both employees were killed.<sup>19</sup>*
- **JULY 8, 2015**  
**SENECA COUNTY, NEW YORK**  
*One firefighter was taken to the hospital for heat exhaustion and one was taken to the hospital for a minor neck injury.<sup>20</sup>*
- **JANUARY 19, 2016**  
**PITTSBORO, INDIANA**  
*A firefighter was treated at the hospital for a minor back injury.<sup>21</sup>*
- **JULY 2, 2017**  
**YORK SPRINGS, PENNSYLVANIA**  
*The fire occurred at Hillandale Farms. Two firefighters were treated at the scene for dehydration and one was treated at the scene for a laceration.<sup>22</sup>*
- **JULY 19, 2017**  
**BEEKMANTOWN, NEW YORK**  
*A man assisting in the rescue effort was taken to the hospital for smoke inhalation.<sup>23</sup>*
- **SEPTEMBER 17, 2017**  
**FORT ANN, NEW YORK**  
*Four firefighters were treated for heat-related injuries.<sup>24</sup>*

## Existing Fire Protection for Confined Animals •

When compared to other animals living in confinement, farm animals in the United States receive considerably less protection (see appendix). NFPA 150 is an encouraging start and offers reasonable fire protection recommendations for barns; however, the fact that it is not mandated by statute, regulations, or industry standards weakens its potential impact.

### WILD ANIMALS

The Association of Zoos and Aquariums (AZA), which accredits over 200 zoos and aquariums nationwide, requires its participating facilities to have detection systems and fire extinguishers, provide training to staff, and conduct live-action emergency drills annually.<sup>25</sup> Participation in the AZA is not required by law; rather, it serves as a voluntary way to increase accountability and, thus, many individual zoos and aquariums in the United States do indeed participate.

In the animal agriculture arena, this would be similar to an industry trade association such as the American Veal Association or the National Cattlemen's Beef Association including comprehensive fire protection in their guidelines. 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 particular trade association.

### LABORATORY ANIMALS

Many confined animals in research are automatically protected from fire because they're housed in laboratories or other areas where humans frequently work. In addition, the Association for Assessment and Accreditation of Laboratory Animal Care International (AAALAC International) is a voluntary program that research facilities can participate in, similar to the Association of Zoos and Aquariums for wild animals. While AAALAC International doesn't address fires specifically, it requires a disaster plan

and humane euthanasia of animals who cannot recover from the consequences of a disaster. It also requires that 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 typically present.<sup>26</sup>

### COMPANION ANIMALS

As is the case with farm animals, there are no national laws or regulations protecting animals in pet stores and shelters from fires. However, in the aftermath of tragic fires, local and state laws have been enacted at times to prevent such fires 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.<sup>27</sup> Additionally, in 2016, California passed a law requiring fire alarm systems and sprinklers in pet boarding facilities.<sup>28</sup> There are striking similarities between companion animals housed in animal shelters, pet stores, and pet boarding facilities and farm animals housed in cages, stalls, and crates within barns—as pets and farm animals alike are trapped in enclosures. Yet no legislation has ever been introduced to require fire prevention or suppression systems in barns, even though barn fires occur much more frequently than those in companion animal housing facilities and they kill hundreds of thousands more animals each year.

### INTERNATIONAL PROTECTIONS

While NFPA 150 is the only set of standards designed to protect farm animals from barn fires in the United States, international standards also exist. Since 2004, the World Organisation for Animal Health (abbreviated as "OIE"—its French initials) 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 OIE recommendations. The current version of the OIE Terrestrial Animal Health Code recommends



that emergency fire mitigation management plans be in place and that fire alarms and on-farm water storage be present.<sup>29</sup>

Canada also has its own set of recommendations intended to prevent barn fires, published by the National Farm Animal Care Council (NFACC). Like the OIE, the NFACC standards are not mandatory; producers can choose whether to follow them. However, the Canadian animal agriculture industry generally does follow NFACC recommendations and they help to determine what is considered standard practice. Though these have no application in the United States, it's useful to look at the recommendations as a guideline to what could be implemented here. Because the code for each type of animal is updated separately, the recommendations for each differ greatly. But the recommendations for veal calves (see appendix)—the most recent to be updated—are comprehensive and have the potential to save thousands of farm animals.

## Recommendations •

No farm animal deserves to die in a barn fire that could have been prevented. Thankfully, all farmers can take simple steps to prevent barn fires and promote fire safety. To minimize the risk of barn fires, AWI recommends farm owners implement one or more of the following fire protection methods:

### → **SPRINKLER SYSTEMS**

Though sometimes cost prohibitive, this is the most effective suppression system for putting out fires. Because a water source is required for sprinkler systems, these work best in areas where there is already one present. However, for many types of sprinkler systems, existing water tanks and pools can serve as the water source.

### → **ANNUAL INSPECTION BY FIRE DEPARTMENT**

A simple step that every farm owner can take to prevent fires is to have the local fire department do an annual inspection. Inspections are done to ensure that all of their electrical systems are working properly, that the barns are free of fire hazards, and that the best emergency plan is in place in case of a fire.

### → **FIRE EXTINGUISHERS**

Fire extinguishers should be placed strategically throughout the barn, and staff should be trained on how to use them. A variety of extinguisher models are available to meet the needs of various kinds and sizes of barns.

### → **SMOKE DETECTION SYSTEMS**

Smoke detection systems are effective in sensing fires early on, especially when they employ a system that automatically notifies farm owners and emergency responders.

### → **HEAT DETECTION SYSTEMS**

Like smoke detection systems, heat detection systems can be very effective

when combined with an alarm system alerting authorities of a fire.

→ **CARBON MONOXIDE DETECTION SYSTEMS**

All barns should be equipped with carbon monoxide detection systems, but they are particularly important in settings where farm equipment and vehicles are stored in the same or adjacent barns. The fumes from this kind of machinery can build up and become toxic, killing farm animals and humans.

→ **EMPLOYEE TRAINING AND ROUTINE FIRE DRILLS**

In certain situations, employees might be able to extinguish a fire or alert the fire department before it overwhelms the barn and becomes a threat. To increase the chances of this happening, employees should receive training on how to use fire extinguishers, what to do if they see a fire or hear an alarm go off, and where all of the exits are located. Routine fire drills are also useful to help employees practice fire safety scenarios.

In addition to these general recommendations, there are specific actions that certain entities can take and standards that can be set to minimize the occurrence of fire. AWI recommends the following for each category:

→ **GOVERNMENT**

*Municipalities should adopt NFPA 150: Fire and Life Safety in Animal Housing Facilities Code.* Adopting NFPA 150 (specifically Chapter 17: Agriculture) is a great starting point for 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. While there is room for improvement in NFPA 150, it offers several reasonable suggestions for preventing fires in barns.

→ **THIRD-PARTY CERTIFICATION PROGRAMS**

*Third-party animal welfare certification programs should include, as a minimum fire safety standard, compliance with NFPA 150: Fire and Life Safety in Animal Housing Facilities Code.* Third-party animal welfare certification programs have publicly available standards that participating producers adhere to, and compliance with the standards is verified by a third-party audit. Considering that certification programs' standards cover a wide range of welfare issues, from housing to transport to physical alterations, adding comprehensive fire safety requirements to the standards could vastly improve animal welfare. While some require emergency response protocols, going a step further and mandating compliance with NFPA 150 would be an appropriate baseline. Higher-level requirements could also be implemented, such as installing fire and smoke detection systems in the areas of barns where animals are housed or adding multi-gas detection systems that can alert farm owners or emergency responders to excess levels of a variety of hazardous gases.

→ **ANIMAL AGRICULTURE INDUSTRY**

*Industry guidelines, as a minimum fire safety standard, should include compliance with NFPA 150: Fire and Life Safety in Animal Housing Facilities Code.* Like third-party animal welfare certification programs, industry guidelines include standards for animal welfare. Because consumers care about the way farm animals are treated, and fire-related deaths cause immense pain and suffering, it would be in the best interest of animal agriculture industries to require compliance with NFPA 150 as a baseline fire protection standard.

→ **INSURANCE COMPANIES**

*Insurance companies should incentivize installation of fire prevention and suppression systems for barns that house animals.* Barn fires are expensive. Insurance claims typically run in the hundreds of thousands of dollars, and often exceed 1 million dollars. Incentivizing fire protection is a preventative measure that could benefit both farmers and insurance companies by cutting down on the astronomical damages that result from a fire.

→ **SMALL FARMS**

*All sizes and types of farms should have an emergency fire management program.* No farm is too small to be prepared for a barn fire. While industrial animal agriculture facilities have the resources and responsibility to implement extensive fire protection measures and practices, we recognize that some fire protection measures may be cost prohibitive for a number of smaller, family-owned farms. Even so, all farms should create an emergency management program to be prepared in the event of a fire. This could include regular employee training, proactively identifying strategies to get animals out of the barn safely, and placing fire extinguishers throughout the barn. The NFPA's Barn Fire Safety Checklist (see appendix) is another resource smaller farms could incorporate into their plan for additional protection from fires.



## Appendix •

|                                 |   |
|---------------------------------|---|
| <b>ENTITY</b>                   | Association of Zoos and Aquariums   |
| <b>TITLE</b>                    | Accreditation Standards and Related Policies: 2018 edition  |
| <b>MANDATORY?</b>               | Accreditation program; in order to be accredited, must comply. There are 232 AZA-accredited facilities.   |
| <b>NOTABLE LANGUAGE</b>         | <p>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.</p> <p>11.2.1. The institution must have appropriate alarms and fire extinguishers readily available and provide training to appropriate paid and unpaid staff.</p> <p>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).</p> |
| <b>KINDS OF ANIMALS COVERED</b> | Animals in accredited zoo and aquarium facilities nationwide  |

|                                 |   |
|---------------------------------|---|
| <b>ENTITY</b>                   | Canadian National Farm Animal Care Council  |
| <b>TITLE</b>                    | Codes of Practice   |
| <b>MANDATORY?</b>               | No; voluntary, but Canadian animal agriculture industry generally follows them and they have a significant role in what constitutes standard practice   |
| <b>NOTABLE LANGUAGE</b>         | <p>Beef cattle:<br/>Introduction. Producers should consider emergency preparedness for fire.</p> <p>Chickens, Turkeys, and Breeders:<br/>5.4 Emergency Management Practices. Recommended Practices: Install and maintain the appropriate number of fire extinguishers in each building housing birds. (For each category, there are “requirements” and/or “recommended practices.”)</p> <p>Dairy cattle:<br/>Introduction. Producers should consider emergency preparedness for fire.<br/>3.13 Emergencies and Safety. Recommended Best Practices: Install an effective alarm system for fire and power failure. Fire extinguishers should be available in all buildings. (For each category, there are “requirements” and/or “recommended practices.”)</p> <p>Egg-laying hens:<br/>5.9 Emergency Management and Preparedness. Recommended Practices: Install and maintain fire extinguishers in each building housing birds. Check annually for charge and working order.</p> <p>Pigs:<br/>3.10 Emergency and Safety. Recommended Practices: Ensure fire extinguishers are available in all buildings. Check annually for charge and working order.</p> <p>Sheep:<br/>Introduction. Producers should consider emergency preparedness for fire.<br/>2.1 Housing and Handling for all Sheep. When designing, building or modifying sheep facilities it is important to seek advice regarding the most suitable design for the sheep to be housed, along with any federal, provincial or regional requirements, including fire or other potential emergency situations. All facilities should have provision for the sheep to be released and evacuated quickly in the event of an emergency. Consideration should be given to installing fire alarm systems that can be heard and acted upon at any time of the day or night. Having separate storage facilities for combustible materials will help to reduce potential risk of fire in the facility.<br/>2.1 Housing and Handling for all Sheep. Requirements: Fire extinguishers and alarm systems must be inspected and cleaned regularly and kept in good working order.</p> <p>Veal cattle:<br/>Introduction. Producers should consider preparedness for emergencies such as fire.<br/>3.8 Emergency Planning. Requirement: A fire safety self-assessment must be completed annually.<br/>3.8 Emergency Planning. Recommended Practices. When designing or renovating facilities, consider emergency management protocols and seek advice on housing design as it relates to emergencies (e.g., installation of fire alarms that can be heard and responded to at any time).<br/>3.8 Emergency Planning. Recommended Practices: consult a local fire department for specific advice on fire prevention particularly before renovating an existing facility or building a new facility.<br/>3.8 Emergency Planning. Recommended Practices: Consult local fire services on the correct number of fire extinguishers for all facilities.<br/>3.8 Emergency Planning. Recommended Practices: Ensure fire extinguishers are maintained according to manufacturer’s instructions and that personnel know where they are located and are trained in their proper use.</p> |
| <b>KINDS OF ANIMALS COVERED</b> | Beef cattle, chickens, turkeys, dairy cattle, pigs, egg-laying hens, sheep, veal calves   |

|                                 |   |
|---------------------------------|---|
| <b>ENTITY</b>                   | Federation of Animal Science Societies  |
| <b>TITLE</b>                    | Guide for the Care and Use of Agricultural Animals in Research and Testing, Third Edition   |
| <b>MANDATORY?</b>               | Serves as a standard for the international accreditation program, AAALAC International.   |
| <b>NOTABLE LANGUAGE</b>         | <p>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.</p> <p>Chapter 5: 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).</p> |
| <b>KINDS OF ANIMALS COVERED</b> | Cows, horses, poultry, sheep, goats, pigs   |

|                                 |   |
|---------------------------------|---|
| <b>ENTITY</b>                   | NFPA 150  |
| <b>TITLE</b>                    | NFPA 150: Fire and Life Safety in Animal Housing Facilities Code  |
| <b>MANDATORY?</b>               | No; recommendations that municipalities can choose to adopt   |
| <b>NOTABLE LANGUAGE</b>         | <p>17.3.4.1 Fire Alarm. A fire alarm system in accordance with Section 9.3 shall be required in Class A facilities.</p> <p>17.3.4.5. Detection. An automatic detection system shall be installed in accordance with Section 9.3 in hazardous areas including, but not limited to, the following:</p> <ol style="list-style-type: none"> <li>1. Laundry areas</li> <li>2. Electrical rooms</li> <li>3. Kitchens</li> <li>4. Utility rooms</li> <li>5. Power washing rooms</li> <li>6. Storage areas greater than 50 ft<sup>2</sup> or containing flammable and combustible liquids</li> </ol> <p>17.3.4.6. Carbon Monoxide Detection Systems. For animal housing facilities with fuel-burning appliances or equipment, carbon monoxide detection shall be installed in accordance with 9.12.1.3.</p> <p>17.3.5.2. Fire Extinguishers. Fire extinguishers shall be provided in accordance with Section 9.14.</p> <p>17.4.1. Disaster/Emergency Management Program. A disaster/emergency management program complying with 4.3.4 shall be provided.</p> <p>17.4.3. Extinguisher Training.</p> <ol style="list-style-type: none"> <li>1. All designated employees shall be annually instructed in the use of portable fire extinguishers, emergency egress methods, and other site safety issues.</li> <li>2. In addition to annual training, new employees shall receive initial training within 30 days of hire.</li> </ol> |
| <b>KINDS OF ANIMALS COVERED</b> | Farm animals housed indoors for commercial use. Does not apply to agricultural animals housed outdoors or agricultural animals in residential-type housing.   |



|                                 |   |
|---------------------------------|---|
| <b>ENTITY</b>                   | National Research Council of the National Academies   |
| <b>TITLE</b>                    | Guide for the Care and Use of Laboratory Animals: Eighth Edition  |
| <b>MANDATORY?</b>               | Serves as a standard for the international accreditation program, AAALAC International. It is also required by the United States Public Health Service Policy.  |
| <b>NOTABLE LANGUAGE</b>         | <p>2. Animal Care and Use Program. Disaster Planning and Emergency Preparedness. Facilities must therefore have a disaster plan. The plan should define the actions necessary to prevent animal pain, 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.</p> <p>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.</p> |
| <b>KINDS OF ANIMALS COVERED</b> | Any vertebrate animal produced for or used in research, testing, or teaching.   |

|                                 |  |
|---------------------------------|--|
| <b>ENTITY</b>                   | World Organisation for Animal Health   |
| <b>TITLE</b>                    | Terrestrial Animal Health Code - Section 7   |
| <b>MANDATORY?</b>               | No; international recommendations  |
| <b>NOTABLE LANGUAGE</b>         | <p>79.5. 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.</p> <p>710.4. 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.</p> <p>711.7. 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.</p> |
| <b>KINDS OF ANIMALS COVERED</b> | Beef cattle, broiler chickens, dairy cows  |



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](http://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

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