

Agricultural Operations and Emergency Preparedness

Safety through Response Planning

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Acknowledgement

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- Its content is solely the responsibility of the authors and does not necessarily represent the official views of CDC/NIOSH or the Utah Agricultural Experiment Station.



Effects on Livestock



- Direct Impacts
 - Burn injuries and fatalities
 - Pasture Loss
- Indirect Impacts
 - Smoke exposure
 - Stress from evacuation
 - Weight loss
 - Reproductive loss

Photo Credit: <https://www.utahfarmbureau.org/Article/Western-farmers-and-ranchers-urge-administration-toward-better-land-management-policies>



UTAH

Protect Yourself from Wildland Fire Smoke

Did you know?

- Wildfires are on the rise nationally.
- Wildland fire smoke is harmful to your health.

Fine particles in the smoke penetrate deep into your body and can damage your lungs, heart, and other vital organs.

If you have heart or lung disease, you are at higher risk from smoke exposure. Young children and the elderly are especially at risk from smoke exposure.

Take these steps to get informed and protect yourself!

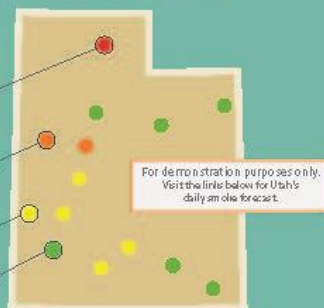
Know Your Air Quality Index (AQI)

301-500	Hazardous	Health warning! Everyone should avoid outdoor activities and reduce exposure to smoke even when indoors.
201-300	Very Unhealthy	Health alert! Avoid outdoor activities. If you must be outdoors, protect yourself.
151-200	Unhealthy	Everyone may experience adverse effects from smoke exposure. Protect yourself when you're outdoors.
101-150	Unhealthy for Sensitive Groups	Anyone with heart and lung disease may experience health effects from smoke exposure. Older adults and children should avoid exposure.
51-100	Moderate	If you are sensitive to air pollution, you may experience health effects from exposure.
0-50	Good	Air quality is Good! Go enjoy the outdoors.

The AQI is an index for reporting daily air quality. It tells you how clean or polluted your air is and what associated health effects might be a concern for you.

Resource: <https://airnow.gov/index.cfm?action=aqibasics.aqi>

Know Your Daily Smoke Forecast



For Utah's smoke forecast:

Utah Department of Environmental Quality - Air Quality:
<https://air.utah.gov>

AirNow Utah Current Air Quality Index:
<http://bit.ly/2BqRpzb>

IN COLLABORATION WITH:

High Plains Intermountain Center for Agriculture, Health and Safety
Partnership for Air Quality, Climate, and Health
School of Global Environmental Sustainability
The Mountain and Plains Education and Research Center
Extension Forestry, Montana State University



COLORADO STATE UNIVERSITY

Effects on Human Health

- Respiratory Hazard
- Heat related illness
 - Burns/fatalities
- Exposure during:
 - Evacuations
 - Monitoring and/or Care

EXTENSION.USU.EDU

Extension
UtahStateUniversity.



Effects on Environment

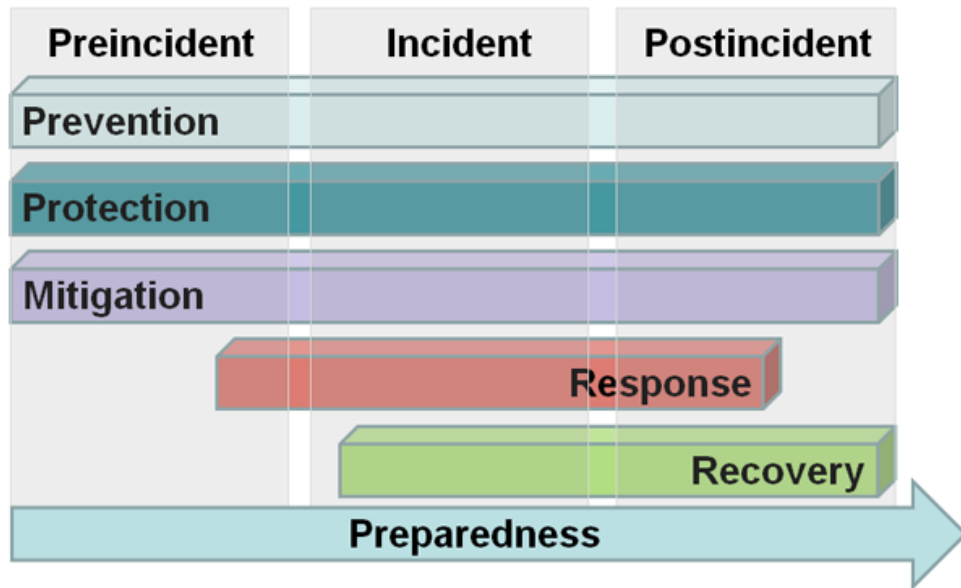
- Degraded water quality
- Exposure to chemicals
- Flood and landslide risk



Photo credit: USGS, Steve Ackley, El Dorado National Forest after the 2014 King Fire



Safety through Response Planning



- Preparedness is a continuous cycle
- These efforts help to ensure effective coordination during incident response.

Without preparation and leadership...

- Crisis becomes Chaos

Graphic supplied by FEMA, “Five Key Areas of Emergency Management” from IS-0111.a Livestock in Disasters
<https://training.fema.gov/is/courseoverview.aspx?code=is-111.a&lang=en>





AGRICULTURAL HEALTH AND SAFETY IN UTAH

Utah workers and employers benefit from the National Institute for Occupational Health and Safety's (NIOSH) Agricultural Safety Center Program

PREPARING RANCHES FOR WILDFIRE EMERGENCIES

Hosting wildfire response tabletop exercises at family dinner safety nights in Cache County.

Key partners included: Cache Cattleman's Association and Cache County Extension



This work is being conducted through the grant:
"AGRICULTURAL SAFETY TRAINING THROUGH EMERGENCY PREPAREDNESS"
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EXPANDING AG CAREER FIELD OPPORTUNITIES FOR YOUTH

Teaching youth safe business management skills, building a sound future workforce, and providing exposure to new career pathways in agriculture through the My Preparedness Initiative (MyPI). Currently active in San Juan County and Cache County



WHO IS HICAHS?

At the High Plains Intermountain Center for Agricultural Health and Safety, we believe that a safe and healthy agricultural workforce is the foundation of a productive and sustainable food system.

Every day, we partner with regional stakeholders to respond to the most pressing worker health and safety threats in our region through research, education, and prevention programs. Because when we do, we improve the safety and well-being of those working in agriculture, forestry, and fishing, so that our communities and businesses can thrive.

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Interested in Better Preparing Your Community for Emergencies through a Teen-Focused Emergency Preparedness and Leadership Program?



MyPI National, the National Youth Preparedness Initiative is an innovative, multi-faceted program facilitated by trained and certified instructors within your community.

MyPI Graduates complete:

- FEMA's CERT Training
- "PREP + 6" Community Service Project
- CPR and AED Certification
- Specialized Technology and Career Tracks
- Disaster Simulation

MyPI Graduates enhance:

- Leadership Qualities
- Communication Skills
- Teamwork Abilities
- Civic Responsibility
- Decision Making



"Fostering Emergency Preparedness, Civic Responsibility, and Leadership in Teens"

2014 & 2017 FEMA National Award Winner:
"Outstanding Achievement in Youth Preparedness"

2018 FEMA National CERT Award Winner:
"Preparing the Whole Community"

2019 NAE4-HA National Award Winner:
MyPI Georgia: "Citizenry in 4-H Youth Development"



Proud Affirmor of the
NATIONAL STRATEGY
SUPPORTING YOUTH PREPAREDNESS NATIONWIDE

For more information, contact
Dr. Ryan Akers, National Project Director,
cra20@msstate.edu or 662.325.5914

MyPI Participants Learn Skills in the following Areas:

- Disaster Preparedness
- Fire Safety & Suppression
- Disaster Medical Ops
- Treatment of Injuries
- Search and Rescue
- Disaster Psychology, etc.

MyPI Helps Teens:

- Build Life Saving Skill Sets
- Give Back to Their Communities
- Be Empowered
- Be Safe in Schools
- Identify Hazards
- Be Weather Aware
- Develop Emergency Kits and Communication Plans

MyPI National Program Website:
mypinational.extension.msstate.edu

Facebook: "My PI National"

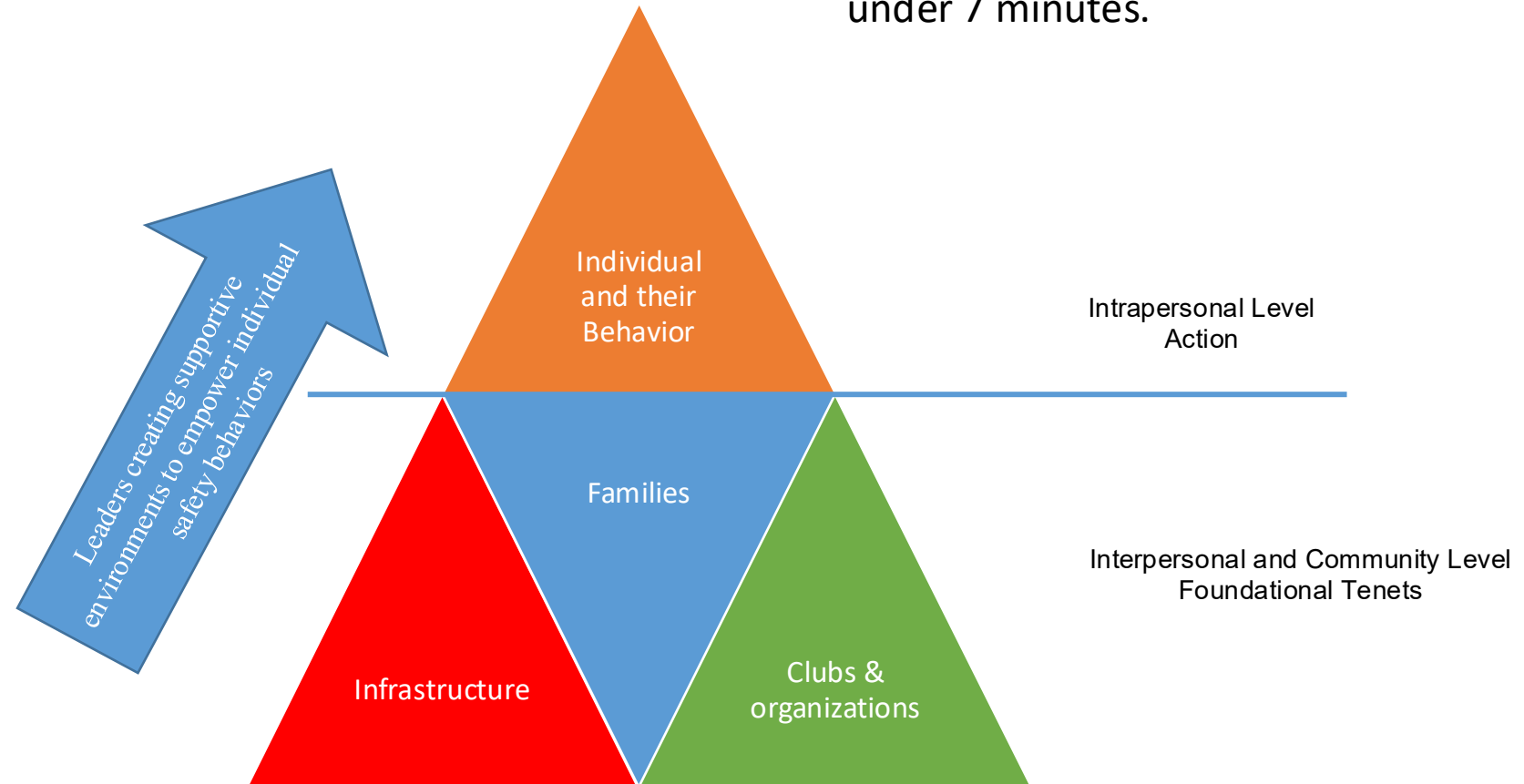
Twitter: "@MyPI_National"

Youth Development

- Our objective is to promote **Positive Youth Development** by equipping young people with essential skills in emergency preparedness, animal safety, and community involvement—particularly in situations affecting Utah residents.

Ag S.T.E.P. Model

Response times of 12 minutes or more were associated with a 1.46 times higher mortality rate compared to response times under 7 minutes.



Safety Leadership



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How do you...

- Make safety and health a core organizational value?
- Show commitment to eliminating hazards, protecting workers, and continuously improving workplace safety and health?
- Provide sufficient resources to implement and maintain the safety and health program?
- Visibly demonstrate and communicate their safety and health commitment to workers and others?
- Set an example through their own actions?





Transformational Leadership

- Praise for safe performance
- Proactively anticipating and attending to safety issues
- Consistently leading by example with safety
- Committed to continuous improvement with safety
- Listen and discuss safety issues
- Empower others to practice safety



Emergency Pre-Plan

- Keep records and assess liabilities
 - Head count, location, and movement schedule
 - Knowing where and how many animals to move
 - Who is in the know about the details?
- Supplies and Access
 - Feed, water, medication, handling equipment and tools for triage
 - Keeping an inventory and share the location with other individuals
 - Roads and points of evacuation
 - How will you remove? (trailers, trucks, etc.)
 - Where will you load to remove?
 - Reconnaissance of allotments
 - Wind directions
 - Topography
 - Arrangement of Evacuation Sites
 - Who do you contact?
 - Location, conditions, and size of facility
 - Shared? (Biosecurity, Identification of Animal Ownership, etc.)



Emergency Pre-Plan

- Safe Handling Preparation

- Do handlers follow low stress techniques?

- Always have an escape route, establish a routine, avoid quick movement and loud noises
 - One of the more common causes of death in fires and in the days afterward are complications from smoke inhalation. All animals exposed to fire should be monitored for smoke inhalation pneumonia.

- Have individuals been trained in pressure zone handling?

- Signs of aggressive behavior (Pinned ears, raised tail or rapidly lashing tail, pawing the ground, stiff-legged gate or posture, snorting.
 - Be extra cautious around females with young and mature intact males

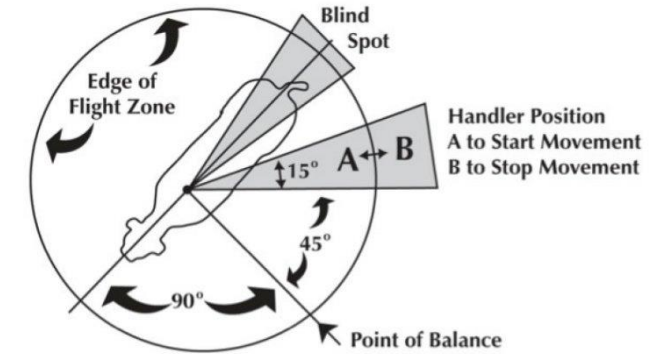


Figure 1. Flight zone
Taken from "The Cattle Industry's Guidelines for the Care and Handling of Cattle", National Cattlemen's Beef Association.





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Trailers

- Have individuals been trained on trailer safety? (backing, hitching, and loading/weight distribution)
- Have trailers been serviced or maintained?
 - Bearings
 - Brakes
 - Hitches
 - Safety Chains
 - Lights
 - Tires
 - Floors
- Have individuals been trained on hauling?
 - Speed
 - Braking distance
- Fire extinguishers (ABC)
 - Training?
 - Serviced?

Personal Leadership Action

- Routine Home Maintenance & Defensible Space
- Emergency Readiness & Family Evacuation Planning
 - ✓ 72-Hour Kits
 - ✓ Communication Plan
- Monitoring Weather and Daily Activity Adjustments



Resources



- [Emergency Action Plan: Home, Family, Pets, and Livestock](#)
- [Safety and Health Management Planning for Veterinarians](#)
- [Rural Firefighters Deliver Agricultural Safety and Health](#)
 - Engaging your local fire and rescue in preplanning
 - Engaging Community Animal Response Team Program
 - Engaging Community Emergency Response Team Program
- [Farm Mapper](#)
 - Mapping program for emergency responders
- [SaferFarm.org](#)
 - Hazard analysis and corrective action planning

