



# Emergency Animal Transportation: Evacuation Considerations

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Zoological Disaster Response, Rescue, & Recovery (ZDR3)



# ZDR3 Mission & Overview

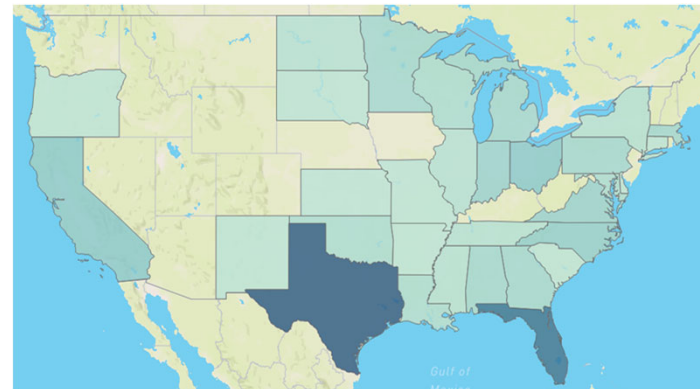
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*Zoological Disaster Response, Rescue, and Recovery (ZDR3) provides support to zoos, aquariums, sanctuaries, and other exotic animal businesses before, during, and after significant incidents. All network participants sign a Memorandum of Understanding (MOU).*

*ZDR3 responds upon request, independent of affiliation.*

*ZDR3 was established in 2019, and is incorporated as a 501(c)(3) non-profit organization.*

**135+ Facilities**  
**31 States**  
**All FEMA Regions**



# About ZDR3

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**ZDR3 helps coordinate peer-to-peer support**

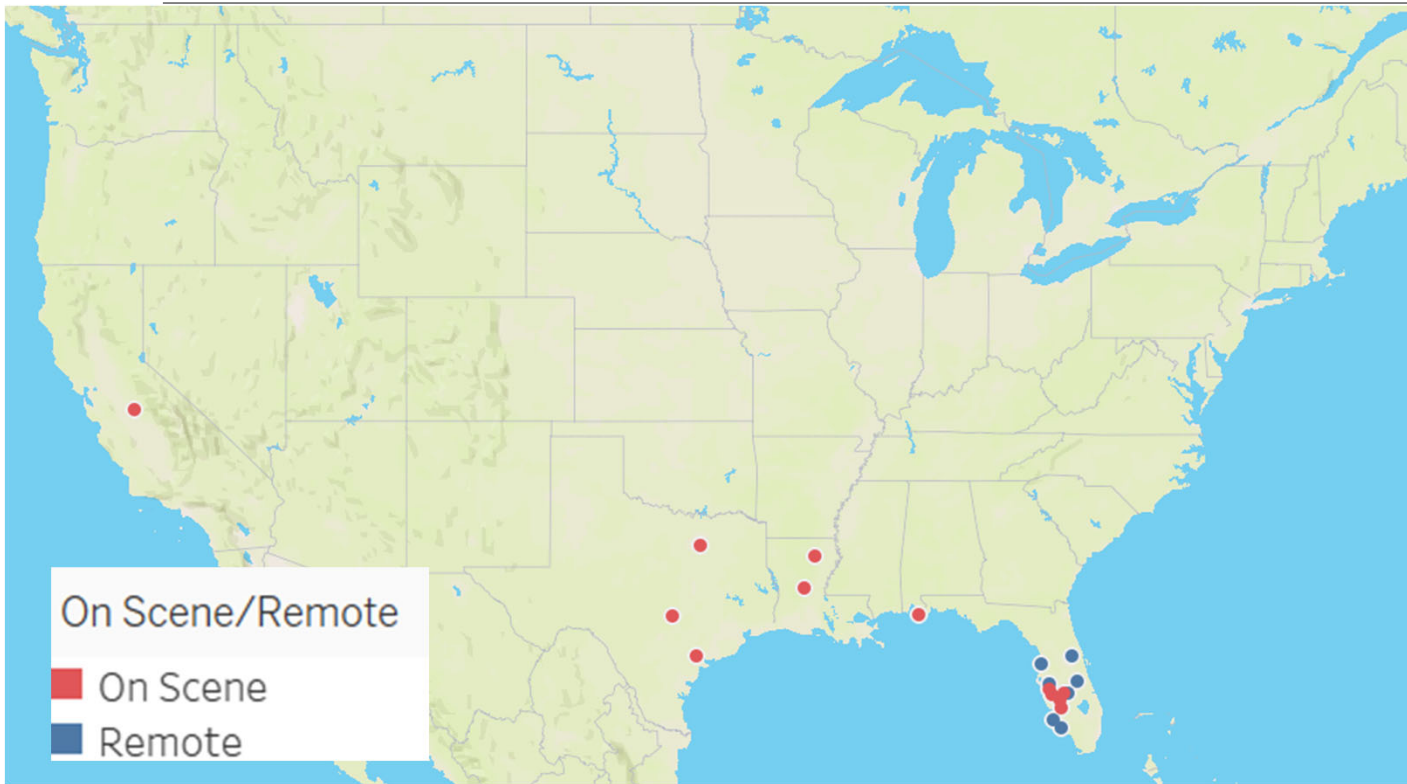
**No cost to join, no obligation to provide support**

**Works in collaboration with multiple agencies and other entities, including USDA-APHIS, ZAHP, and industry associations**

Services Rendered:

- Response Support
  - Consultation
  - Animal placement (temporary housing or permanent relocation)
  - Promoting the response effort
- Assessments (needs and risk)
- Resource Management
- **Animals**
  - **Evacuation/removal/transport**
  - Husbandry assistance
  - Immobilization
  - Veterinary care
- Facilities/Operations
  - Demolition
  - Repairs (carpentry, electrical, fencing, plumbing)
  - Debris/Tree Removal
  - Equipment Operations (heavy machinery, chainsaw, welding)
- Incident Command (IC)/Impacted Facility Support
  - IC administrative support
  - Communications
  - Critical incident stress management (CISM/Psychological first aid (PFA))
- Recovery Support

# ZDR3 Response Activities (2020-2/2023)



20 Impacted Facilities

5 States

- Alabama
- California
- Florida
- Louisiana
- Texas

# ZDR3 Response Activities (8/2020-2/2023)

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## Locations Responders Dispatched From



- 87 responders
- 265+ responder days

10 Facilities & ZDR3 Personnel  
7 States

- California
- Colorado
- Florida
- Indiana
- Louisiana
- North Carolina
- Texas

# This Has Never Happened Before...



Does your plan address  
"what if" evacuation is  
required?

- The process of planning matters.
  - Is your plan accurate to your risks?
- Reach out to subject matter experts
- Understand the timelines required for each steps
- Prepare for reaction from media/public



# Reasons for Evacuation

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**Fire**



**Flood**



**Wind  
Damage**



**Earthquake**



**Hazardous  
Materials**



**Power  
Outage**



**Tsunami**

# Evacuation Types



## Internal

Moving animals within the property (aka: shelter in place)

## Partial

Some animals moved off site, some shelter in place

## Full


Entire collection relocated








# Stages When Animal Evacuations Occur




**PRE-EVENT**

Evacuation in anticipation of potential damage



**EMERGENCY**

Evacuation in response to a present and ongoing risk



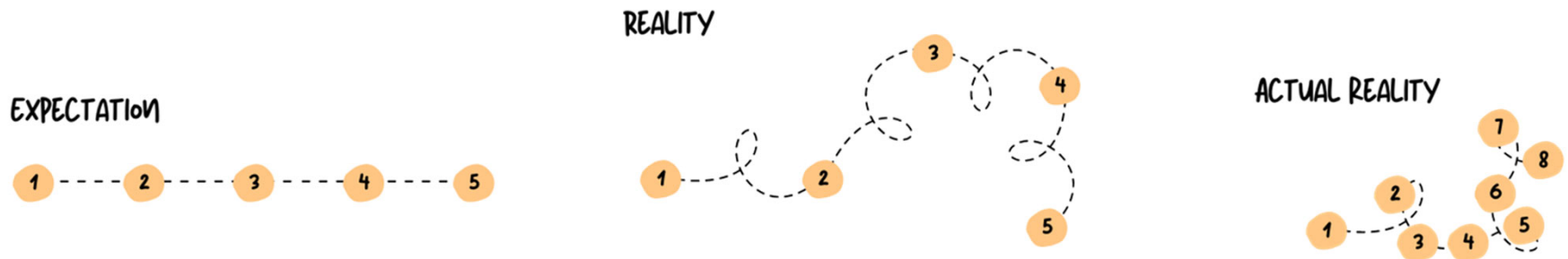
**POST-EVENT**

Movement of animals as a result of an adverse event, but stabilized situation allows for less compressed timelines

Expectation to conduct animal movement in a manner that is legal, and that promotes public safety and animal welfare



# Timelines



Compressed and rapidly shifting timelines should be expected

- Anticipate shifting conditions (eg, storm trajectory shifts, shift in wind direction associated with fire, levee breaches)

Coordinating and communicating with all parties during off hours with impending incident or during an incident will add increased difficulty

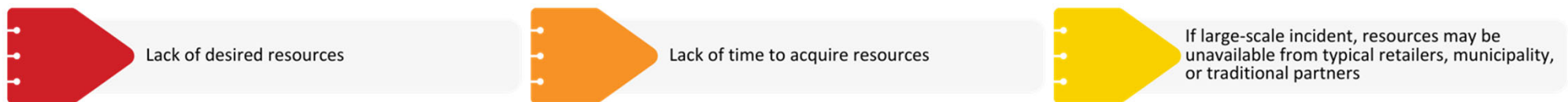
Some animals may not get loaded and out

- Determine the highest priority animals
- Priority must be placed on public safety risk posed, then triaged based on personnel safety and animal welfare, followed by additional considerations (eg, conservation value)
- Determine how to handle remaining animals







# Resources & Transit Challenges

## Resource Deprivation



## Transit

-  Transit patterns/routes may be altered based on the incident, resulting in delays or other disruptions
-  Ambient temperature conditions may not be ideal (implement mitigation strategies)
-  Fueling and other typical stops may be challenging in area impacted by adverse event
-  Understand and adhere to curfews, re-entry requirements, or other requirements to be in the area



# Risks

*Risk assessments should be performed, and operations conducted in a manner that is safe for the public, personnel, and animals*

## ANIMALS

- Escape
- Vehicular Accident
- Hyperthermia
- Hypothermia
- Injury/Death from Capture/ Immobilization
- Smoke Inhalation
- Drowning
- Electrocution
- Exacerbation of Health/Medical Issue

## PERSONNEL

- Putting themselves in harms way
- Adverse interaction with animal
- Exacerbation of Health/Medical Issue
- Vehicular Accident
- Smoke Inhalation
- Hyperthermia
- Hypothermia
- Drowning
- Electrocution

## FACILITY

- Negative public relations impact
  - Loss of faith in facility & future capacity
  - Hoaxes & rumors
- Vulnerability to bad actors
- Cost

## PUBLIC

- Dangerous Animal Escape



# Challenges

*The unique nature of species involved and the required resources can limit who can provide support.*

## ANIMALS

- Additional skillsets/teams may be required
- Vet unavailable
- Institution unable to take animals back (permanent relocation required)
- Medical issues
- Ownership issues
- Death from immobilization or transport
- More immobilization required than desired

## PERSONNEL

- May not be available due to personal matters (also impacted by event)
- May not be trained on how to perform necessary tasks
- Stress and exhaustion can lead to compromised decision making/lack of strategy (eg, how to triage animals)

## HOUSING

- Evacuation location(s) compromised or unavailable (eg, widespread incident impacts other local facilities)
- Limited housing options for species, especially those with unique needs (eg, dangerous, require life support systems)

## RESOURCES

- Possibility of limited and/or compromised fuel supplies - need plan for understanding where refueling stops can occur en route
- Needed resources (eg, crates) may not be available, or lines of communication to identify resources not extant



# External Entities

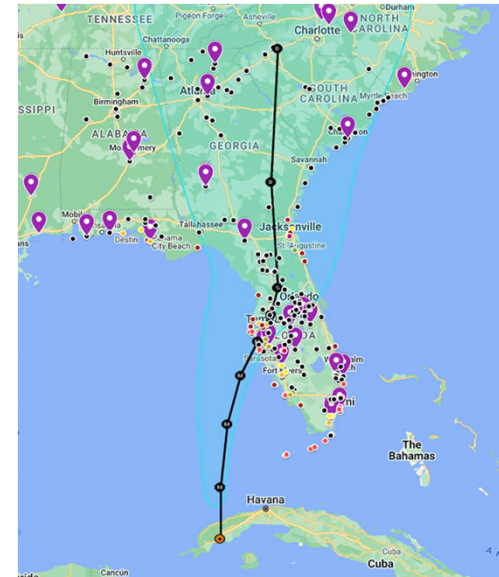
*Based on severity of incident, the ability to contact individuals may be compromised (eg, communications down, people dealing with personal issues)*

## Land Owner/Governing Bodies

- Is everyone aligned on how the incident will be managed and who is permitted to be involved?

## Agencies

- Alerting agencies, as appropriate, about anticipated concerns, active concerns, and other areas pertaining to species relevant to agency scope of coverage
- Incumbent upon animal holder, transporter, and receiver to understand required certificates and permitting
  - Waivers may be instituted, based on scale of incident
- Not just situation at current location, but need to appropriately alert for transit and regarding off-site housing locations





# External Entities (cont.)

## Responders

- Having a loose network, “knowing a guy,” or having a call down list of other facilities, without specific arrangements or planning, does not constitute a plan
- Mutual aid agreements should address:
  - Housing
  - Transport
  - Equipment/Resources
  - Other areas of potential collaboration

## Associations/Membership Groups

- Maintain contact as appropriate

## Media/Public

- The public will want to know what’s happening, plan to communicate
- Tell your story, or someone will tell it for you





# Animal Considerations

Likely more stressed than usual, making loading, capture, immobilization, and all other aspects possibly more challenging

- This can become a feedback loop for personnel. Have strategies to identify and address when a situation is becoming non productive (eg, repeated attempts to load the same animal)



## Husbandry Needs/Medical

- Aquatic vs Terrestrial
- Who is the veterinarian? Needs to be part of the decision making process
- Husbandry needs - Typical or unique?

## Safety

- Are conditions being monitored appropriately for responder, as well as animal, safety?

## Transport

- Consider alternative vehicle options if optimal not available (eg, rent a box truck)
- Anticipated load times - stressed animals are less predictable
  - Are personnel trained on capture/restraint?
- Consider what can (and cannot) be cohoused for movement and/or in placement, based on all regulations
- Documentation (eg, diet sheets, medicine logs)
- Temperatures - consider night driving to reduce risk
- Consider driver hours and adherence to regulations



# Resources



What you can accomplish will be largely dictated by your resources - personnel and physical

Requires not just staff to manage animals, but appropriate transporters and off site housing, as well as those who can off load and manage animals in that location

\*This is not an exhaustive list

\*This does not account for specific needs if encountering flood water, downed trees, and other obstacles and hazards

## THINGS NOT TO FORGET:

- Documentation required to have in hand for transport (eg. health, medical)
- Emergency go-bags (flashlight, radio, duct tape, first-aid kit)
- Fencing panels
- Zip-ties (steel depending on species)
- Baffle boards
- Clips/Ties
- Rope
- Visual barrier materials



# Resources - Crates

*Proper crates for an entire population is a consistent challenge*

## Important considerations

- Many facilities do not have enough for entire collection
  - Can arrange for resources from other facilities
- Containment appropriate for taxa
  - Label with basic animal information
  - Questions to consider
    - Door type?
    - Material?
    - Locking?
    - Ventilation holes?
    - Dividers for multiple animals?





# Resources - Vehicles

## Vehicles capable of transporting animals

- Initial removal may be different than transport (eg, animal may be boated out of location before being loaded into land transport)
- How many crates can fit safely?
- Highwater/boats
  - Licensed operators and all considerations associated with water operations

## Passenger vehicles for additional personnel

- Functioning seatbelts and other necessary safety features





# Resources (cont.)

## Husbandry Supplies

- Appropriate supplies for transport (eg, bedding, water)
- Animal food
- Bowls, buckets
- Capture PPE, nets, bite gloves, catch poles
- Immobilization equipment, associated drugs



## Trailers

- Climate control considerations
- Understand what is appropriate for large animals vs crates of small animals.

## Equipment

- Heavy equipment, based on site conditions, size/weight of animals (eg, forklift)

## Personnel

- Understand their role and appropriately trained?
- Understanding of compensation and expectations during adverse events (eg, lengthened work times)?

## Money

- **Anticipate this will be costly; begin considering:**
  - Insurance claims
  - Fundraising efforts
  - FEMA reimbursement



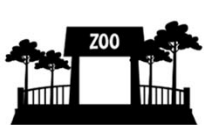


# Housing Locations

- Where are you taking the animals?
- Just because a facility houses a certain type of species does not mean they are willing and/or able to house more of them
- Options limited for some species, important to understand who can help address these concerns in advance
  - Large animals
  - Unique needs
  - Unique risks
  - Volume of individuals
- Is it appropriate in terms of animal welfare, regulatory, and public safety?

- Consider impact to extant collection (eg, disease considerations, additional workload for personnel)
- Local options may also be compromised, based on the event
  - Concern of distance associated with transporting animals

## Alternative Housing Options



Other  
Zoos/Aquariums



Livestock &  
Fairgrounds



Staff Homes



Veterinary Clinics



Warehouses



Airplane Hangars



Equine Facilities



# Mutual Aid in Evacuation

- Resulted in development of ZDR3
- Responding without mutual aid agreements introduces additional risk for all parties
- Response should be only at the request of the impacted institution
  - Spontaneous volunteers can create more risks than already present
- If large scale effort/multiple teams, centralized coordination and understanding of the overall strategy are essential
- Are you part of a coordinated effort? If not, why not? Is it a group that has activated before or has demonstrated capacity?
- Outside support will not be immediate - you need to plan for self-sufficiency (plan for 72 hours, ideally help arrives within 24-36)





# Receiving Outside Support

*Receiving support can sometimes feel more difficult than rendering support.*

## Tips to make things smoother:

- Sign an agreement for temporary placement, which stipulates all areas of concern (eg, how and when animals are to be returned, anticipated timeline until they are returned, communications expectations during holding)
  - Address whether boarding fees are part of the arrangement
- Provide clear points of contact for responding facilities to coordinate with and report to
- Document as much as possible (photography and notes)
- Know your limits in what type of help you and do not want





# Rendering Outside Support

- Be prepared to encounter a challenging scene (eg, potential animal fatalities)
- The people you are helping are likely not okay, may not be making good decisions, and may not appropriately identify risks
  - Team should know who the Safety Officer is for the scene (if one identified)
  - Everyone should have their own safety plan in place (never assume others are considering your safety)
- Expect to transport animals (and possibly people and resources) you were not anticipating
- Be prepared to hold animals indefinitely
- Request/require information regarding animal husbandry/veterinary and other needs
- Establish communications between appropriate staff at both facilities
- Communicate with regulatory, as appropriate
- Consider disease transfer (eg, animals coming from one collection to another)
- Consider costs
  - Staff time (evacuation and care while housed)
  - Supplies
  - Fuel
- Respect communications strategy of impacted institution





# Silver Linings



## We are doing better as an industry

- Helping our own builds relationships and shares knowledge across institutions
- We want to help each other, we just need to better coordinate that vision

## For the impacted institution

- Knowing there is help is a psychological boost
- Use lessons learned to enhance your future preparedness
- Consider how to rebuild damaged portions of facility to be more resilient

## For the institution(s) providing support

- Your help makes a huge difference to those in need of assistance - and to our industry
- Responding together enhances team building
- Skills learned/developed/honed foster professional development
- Your team will be better prepared to provide support at your facility

“

I thank you for including us on this project under the umbrella of ZDR3. It was educational, fulfilling, and exciting at times. At the end of the day, I wouldn't hesitate participating in future similar adventures—nor do I believe any zoo should.

-Director of Responding Facility



FROM CONCEPT TO COMPLETION



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