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**Scope**

This plan describes steps taken to prepare before and respond during and after hurricanes and other emergencies/disasters that require campus closure.

**Definition Chain of Authority**

The Animal Resource Manager is responsible for managing aspects of animal care on campus before, during and after a hurricane under supervision of Attending Veterinarian and Institutional Official (IO). Due to the specialized nature of animal care, the role should be an employee of the University who is familiar with large animal care requirements and has established relationships in the community. RUSVM animals are the responsibility of faculty and colleagues (not students) until the all-clear notice is given and campus is re-opened (See Hurricane Playbook Roles Document, August 2020)

**Preparation before and response after hurricane has passed**


Preparations and recovery efforts are detailed per species within this standard operating procedure.

**Response in hurricane passing**

- The Animal Resource Manager, in consultation with the AV, will determine the minimum care requirements needed during any hurricane or inclement weather event that limits access to campus. While ensuring personnel safety, the Animal Resource Manager will use essential employees (See Appendix 1) to provide these services.
- Begin to plan anticipated recovery activities and prioritize support and supply needs for when the storm is passing the island in collaboration with ICT and Security.
- If video monitoring is available, monitor animal enclosures throughout the storm and identify issues that will need to be mitigated as soon as the storm passes
- Final authority on decisions regarding hurricane/disaster response of Animal Care and Use Areas lies with IO and, in consultation with the Animal Resource Manager, essential personnel will respond as required for maintaining animal welfare.

**Response during emergencies other than hurricanes**

When applicable, below detailed preparations and recovery efforts will be observed. When not feasible, the AV in consultation with the Manager Animal Resources will assess the best means for caring for the animals, ensuring welfare is maintained as required under AAALAC accreditation and US animal welfare regulations (USDA/OLAW) and to mitigate any need to report deficiencies to AAALAC or OLAW or to mitigate risk of being unable to meet animal needs for the curriculum. The essential personnel (see Appendix 1) and others to be designated on an as needed basis will be used to serve these needs and how these resources will be used to ensure compliance communicated to the IO and IC, to ensure all relevant personnel are informed. See also IACUC policy Emergency Procedures for Mandatory Evacuations for guidance on mandatory human and animal evacuation procedures and IACUC Continuity of Services Plan for guidance on how to maintain basic level of care during significant staffing issues.

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## 1. Plan for the Pasture Animals

### *Chain of Authority*

Name	Position	Cell Phone Number
Dr. Harut Avsaroglu	Attending Veterinarian	869-662-3822
Julia Carter	Manager Animal Resources	869-662-2389
Larry Rawlins	Pasture Assistant II	869-663-9945
Chauncey Archibald	Pasture Assistant I/truck driver	869-664-7721
Dave Charles	Veterinary Technician II	869-667-8535


- The Attending Veterinarian and Manager Animal Resources is to inform relevant faculty and colleagues of this plan and of whom is responsible for it in advance.
- Priority order
  - Human health, well-being and safety (includes employees' families)
  - Animal welfare, safety and health
    - Animal containment (fences and gates intact, animals appropriately grouped in paddocks and kennels)
    - Animal water
    - Animal food
    - Animal triage and treatment assisted by Attending Veterinarian, clinicians and veterinary technicians
  - Resource conservation and recovery
  - Repairs
  - Clean up
  - Evaluation of response efforts for plan revisions and future mitigation efforts.

### ***1.1. Pre-Hurricane Season Preparation***

The following steps will be taken in preparation for the "hurricane" season.

#### Personnel, Preparation, Communication and Responsibilities

- Animal Resources Colleagues meeting with the Manager Animal Resources in May
- The Disaster Plan will be reviewed annually in a general meeting including all Animal Resources colleagues. Faculty coordinators for various species populations will be invited to review the needs of their animals related to a disastrous event and should attend this meeting.
- Pasture Assistant II is the coordinator of Pasture disaster preparations in case of absence of the Manager Animal Resources

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### On site Preparation Activities

- Fill water storage tanks
  - 3 Water storage tanks, plastic, 2000-2500 gal capacity for 3-4 days' supply
  - Siting of water tanks, pre-placed permanently
  - Upper paddock- 2 tanks servicing LARP reserve donkeys, sheep and cattle
  - Horse paddock- servicing horses, surgery donkeys, surgery sheep and Low Paddock
  - Kennel- Behind Kennel Block B
  - Truck-mounted water tank for distribution to other sites as needed
- Hoses for tank-to-trough transfer, stored in Pasture Storage
  - Assure these tanks are plumbed for immediate use (Pasture Assistant II)
  - Assure sufficient hoses for emergency water distribution are available and serviceable in Pasture storage (Pasture Assistant II)

### **1.2. Hurricane Watch**

The following actions will be taken once a hurricane watch has been declared:

- Water storage tanks: Fill all water storage tanks (animal caretakers assigned in each tank's zone)
- Emergency feed supply
  - Arrange for advanced delivery of grass by vendors if a hurricane warning is issued (Manager Animal Resources)
    - Plan storage in box stalls, sheep sheds and grass boxes to secure it against wind
    - Pasture colleagues to receive and receipt grass delivered
- Shade sheds
  - Remove shade cloth from below mentioned non-essential shade sheds for remainder of hurricane season which are stored in the Pasture storage container. Collect all cords and properly store (Pasture Assistants):
    - Reserve sheep and donkey shades
    - Cattle shades
- Cattle, horses, sheep and donkeys to remain loose in their respective paddocks.
- Teaching Faculty to alert their students of students' role in disaster event responses.
  - Students to seek and remain in shelter as directed
  - RUSVM animals are the responsibility of Faculty and colleagues until the all-clear notice is given and campus is re-opened
  - All pasture animal teaching labs will be suspended until the all-clear notice is given and campus is re-opened
- Assure labor for recovery, cleanup, repairs, feeding and watering (Manager Animal Resources)
  - Manager Animal Resources
  - Animal Caretakers
  - Pasture Assistants
  - Tractor Driver
  - Facilities colleagues

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- Assure that on-call clinicians are available for triage and treatment of injured animals in the aftermath of a disaster event (Attending Veterinarian, veterinary technicians, & Department Heads of Clinical Sciences and Biomedical Sciences)

### 1.3. *Hurricane Warning*

- Assure that on-call clinicians are available for triage and treatment of injured animals in the aftermath of a disaster (Attending Veterinarian, veterinary technicians & Department Heads of Clinical Sciences and Biomedical Sciences)
- Cattle, horses, sheep and donkeys to remain loose in their respective paddocks
- Animal Feed
  - Advanced deliveries of grass (Pasture Assistants)
  - Brewer's grain, all available (Pasture Assistants)
- Animal Resources office
  - Window plywood screwed in place (Pasture Assistant II)
    - Pre-cut plywood stored in Palpation Barn Closet
  - Computer, plastic cover (IT)
  - Desk and files (Manager Animal Resources)
    - Files and perishable materials placed into double plastic bags and placed in inner closet of office for greater protection from water damage
- Shade sheds
  - Remove shade cloth from below mentioned essential shade sheds which are stored in the Pasture storage container. Collect all cords and properly store (Pasture Assistants):
    - Labor shades over forage chopper and over Reserve Sheep Facility drive
    - Horse shades
    - Surgery sheep and donkey shades
    - Shades at the Large Animal Research Park
- Secure trucks, tractor, implements, other equipment, tools and materials against damage (Pasture Assistants)

### 1.4. *Hurricane All-Clear (no hit)*

- Advance extra feed
  - Extra forage fed promptly, before spoiling
  - Extra stocks of pellets/grain ordered in advance to be held in storage as a reserve for the continuing hurricane season, then fed out when season is deemed to have ended (December)
- Water tanks
  - Drain emergency water storage tanks within 24 hours of campus re-opening
- Shade Sheds
  - Replace shade cloth on below mentioned essential shade sheds:
    - Labor shades over forage chopper and over Reserve Sheep Facility drive
    - Horse shades
    - Surgery sheep and donkey shades
    - LARP shades

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## 2. Plan for RUSVM Dog Teaching Colony

### *Chain of Authority*

Name	Position	Cell Phone Number
Dr. Harut Avsaroglu	Attending Veterinarian	869-662-3822
Julia Carter CVT	Manager Animal Resources	869-662-2389
Dr. Andrea Peda	Kennels Clinician	869-663-8475
Dr. James Fairs	RUVC Director	869-662-9486
Kurt Roman	Kennels Technician	869-664-5094
Samuel Phipps	Kennels Animal Caretaker	869-760-2052


Kennels Technician is the coordinator of kennels disaster preparations in case of absence of the Manager Animal Resources.

### *2.1. Hurricane Warning*

- All dog labs will be suspended until the all-clear notice is given and campus is re-opened
- Kennels Technician and Animal Caretakers will carry out the following:
  - Secure dogs in their respective kennels
  - Remove any potentially dangerous objects from each kennel including shade covers
  - Close and secure aluminum shade panels on the front (east end) of Kennels block A & B
  - Secure kennel doors and check locks
  - Secure implements and any other equipment against damage
  - Clean and fill from local water supply the 1000 gallon water tank to capacity (Kennels Technician and Animal Caretaker)
  - Stock sufficient dog food for 3 to 4 days in waterproof containers in the Kennels SOAP room. Additional food will be stored in the Pasture Feed Container.

### *2.2. Hurricane All-Clear (no hit)*

- Kennels Technician, in consultation with the Kennels Clinician, will assess all dogs for any signs of injury, excessive stress, and treat identified issues promptly
- Emergency feeding and watering after hurricane by Animal Care Colleagues
  - The 1000-gallon capacity water storage tank located in the back of the kennels will provide a 3-4 day supply. **The tank content is for animal use only.**
  - **Emergency food supply.** A 3-4 day supply of food will be stored in waterproof containers in the SOAP room. Additional food will be stored in the Pasture Feed Container.
- Re-open aluminum shade panels on the from (east end) of Kennels block A & B to allow normal ventilation.

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### 3. Plan for the Security Canines

#### *Chain of Authority*

Name	Position	Cell Phone Number
Dr. Harut Avsaroglu	Attending Veterinarian	869-662-3822
Zenric Hanley	Safety and Security Interim Director	869-662-2077

#### 3.1. Hurricane Warning

- Security canines will be taken to the residence of one of their two respective handlers for the duration of the storm/emergency, once dismissed from duty by the Safety & Security shift supervisor.
- Handlers will secure enough food and water for a two week period in air/water tight containers provided by RUSVM for this purpose.

#### 3.2. Hurricane All-Clear (no hit)

- Canines will return to campus as soon as it is reopened and the security canine kennels have been inspected for any harm and deemed safe and secure by Safety & Security canine handlers.


### 4. Plan for Avians

#### *Chain of Authority*

Name	Position	Cell Phone Number
Dr. Harut Avsaroglu	Attending Veterinarian	869-662-3822
Julia Carter CVT.	Manager Animal Resources	869-662-2389
Dr. Luis Cruz-Martinez	Coordinator for Aviary	869-663-5181

#### 4.1. Hurricane Warning

- All avian related student activities will be suspended until the all-clear notice is given and campus is re-opened
- RUSVM colleagues will place the T111 side inserts on the North and South side of the aviary building (these slide-ins are kept in storage by the colleagues).
- Under the direction of Dr. Luis Cruz-Martinez, the Avian Club, the president and vice president and assigned fourth semester students will:
- Move the birds into cages and maintain caged birds in the middle enclosure area for better protection or to the Multipurpose Animal Facility depending on hurricane severity.
- Unplug the storeroom freezer and material that could be damaged covered and placed on top of the freezer by the Avian Club.
- Place extra locks on the inside enclosure doors.
- Place enough extra food and water in the cages to maintain the birds for a three-day period.

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#### 4.2. Hurricane All-Clear (no hit)

- As soon as it is safe to travel, the responsible clinician will administer any treatments needed and members of the Avian Club and 4th semester students (EVS-D) assigned to the aviary for that period will check on the animals and assist with husbandry procedures.
- Any damage will be assessed and reported to the Manager Animal Resources.
- Clean-up will be performed as needed.
- Under the direction of the Aviary Coordinator, the birds can be returned to their enclosures.
- RUSVM colleagues will remove and store the T111 siding once it is dry.

#### 5. Plan for Sliders and Tortoises

##### *Chain of Authority*

Name	Position	Cell Phone Number
Dr. Harut Avsaroglu	Attending Veterinarian	869-662-3822
Julia Carter CVT.	Manager Animal Resources	869-662-2389
Dr. Kimberly Stewart	Coordinator for Turtles/Tortoises	869-669-4268

In the event of a hurricane or heavy rains, aquatic chelonians less than 100 pounds will need to be moved indoors into the Chelonian Laboratory in plastic containers. Aquatic species larger than this will need to be left in their tanks and the tanks moved further inland to a covered area outside of a potential storm surge path. Tortoises will need to be placed stalls in the large animal area, one stall for females and one stall for males.


If the storm comes during a semester break, the Animal Care Team, coordinated by the Manager of Animal Resources, will be responsible for moving the animals, cleaning the bins and giving water and food to them. There is a week worth of food supply available.

If the storm comes during a semester, the Student Coordinators for the tortoises and sliders, facilitated by Dr. Kimberly Stewart (869-669-4268), will be responsible for moving the animals, cleaning the bins and giving water and food to them.

#### 6. Plan for Aquatic Animals

##### *Chain of Authority*

Name	Position	Cell Phone Number
Dr. Harut Avsaroglu	Attending Veterinarian	869-662-3822
Julia Carter CVT.	Manager Animal Resources	869-662-2389
Dr. Mark Freeman	Coordinator for Aquatic Species	869-667-5481
Damon Perron	Marine Lab Technician	869-766-9143

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## I. Marine Lab

Access to the Marine Lab is allowed only under supervision of the Coordinator for Aquatic Species or by the research technician or graduate student working in the specific project. Access is limited to fish due to potential biosafety issues.

### 6.I.1. Hurricane Warning

- Experiments may require temperature in tank higher than room temperature, so heaters may be needed.
- In case of a power outage greater than 2 hours, emergency generators will be needed in the Marine Laboratory.
- The Marine Lab emergency generator is stored in the Hurricane Supplies container.
- The Marine Lab emergency generator will be sited, connected, fueled and serviced by the Facilities department.

In case of heavy rains and campus remains open, the technician or graduate student in charge will monitor the laboratory every 2 hours and will adjust the filters to improve water flow.

- The fish are secure for approximately 4 hours without water flow, if oxygenation is given (via air stones).
- In case of a power outage and complete blockage of water flow at the same time, an emergency generator must be provided.
- As a back-up, the Marine Lab is connected to the UPS system of the Lower Auditorium.

In case of flooding, all the materials in the Marine lab are waterproof and the floor has drainage.

Absolutely NO movement of live fish out of the Marine Lab racks is allowed, unless specifically instructed by the coordinator of aquatic species or Lab Technician of the lab.

### 6.I.2. Hurricane All-Clear (no hit)


- In case all of the systems fail (water flow, electricity, UPS and emergency power generation) the fish will be cared for and if necessary euthanized following the Marine Lab SOPs as soon as the all-clear is given.
- In regards to feeding:
  - If water flow is hampered (not flowing at all) feeding will be restricted for up to 4 days.
  - When water flow resumes, feeding protocols will continue as presented in the SOPs. However, if after 4 days, the flow of water has not been resumed, half the water volume in each tank will be replaced daily and feeding limited to 3 times per week, feeding 1% of total fish weight per tank per feeding session.

## II. Fish Ponds

If there are fish in the pond and electricity goes off the only system that will be directly affected is the filtration system.

- These ponds are not completely reliant on the filters to keep the fish inside alive and can be off for hours if not days before endangering the fish inside.
- If the filter goes out, the fish will be left where they are until the filters turn back on. The water quality will be checked every few days if possible.



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In case of heavy rains and campus remains open, the technician, graduate students, or WAVMA club member in charge will monitor once a day and will monitor the filters to improve water flow.

- In regards to feeding:
  - Feeding can be restricted for up to 5 days.
  - Once feeding resumes, the feeding of the fish should be 5% of the total fish weight.

### III. SKA Nursery

Access to the SKA nursery is allowed only under supervision of the Coordinator for Aquatic Species or by the research technician or graduate student working in the specific project. Access is limited to fish due to potential biosecurity issues.

#### 6.III.1. Hurricane Warning

- Depending on the species of fish in the tanks may require temperature in tank higher than room temperature, so heaters may be needed.
- In case of a power outage greater than 2 hours, emergency generators will be needed in the SKA nursery.
- The SKA nursery emergency generator is stored in the Hurricane Supplies container.
- The SKA nursery emergency generator will be sited, connected, fueled and serviced by the Facilities department.

In case of heavy rains and campus remains open, the technician or graduate student in charge will monitor the laboratory every 2 hours and will adjust the filters to improve water flow.


- The fish are secure for approximately 4 hours without water flow, if oxygenation is given (via air stones).
- In case of a power outage and complete blockage of water flow at the same time, an emergency generator must be provided.
- As a back-up, the SKA Nursery is connected to the UPS system of the Lower Auditorium.

In case of flooding, all the materials in the SKA Nursery are waterproof and the floor has drainage.

Absolutely NO movement of live fish out of the SKA nursery holding tanks is allowed, unless specifically instructed by the coordinator of aquatic species or Lab Technician of the lab.

#### 6.III.2. Hurricane All-Clear (no hit)

- In case all of the systems fail (water flow, electricity, UPS and emergency power generation) the fish will be cared for and if necessary euthanized following the Marine Lab SOPs as soon as the all-clear is given.
- In regards to feeding:
  - If the normal feeding schedule is interrupted (automatic feeders error) then the PI or Lab technician of the lab will have to feed them by hand at their scheduled time.
  - The Fish in the nursery are under a constant watch and the fish have automatic feeders setup and should be constantly feeding the fish at predetermined times.

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## 7. Plan for Vivarium

### *Chain of Authority*

Name	Position	Cell Phone Number
Dr. Harut Avsaroglu	Attending Veterinarian	869-662-3822
Julia Carter CVT.	Manager Animal Resources	869-662-2389
Kurt Roman	Laboratory Animal Technician	869-664-5094


Access to the vivarium is only allowed by authorized personnel. Authorized personnel include the Principal Investigators, Manager Animal Resources, Laboratory Animal Caretakers, and the Attending Veterinarian.

### *7.1. Hurricane Warning*

- All rodent related student activities will be suspended until the all-clear notice is given and campus is re-opened
- Animals should be provided between 12 and 24 hrs before landfall with fresh cage boxes, bedding, food, and water as per the Bedding Change SOP.
- Fill distilled water reservoir in the animal room in the event that clean water cannot be collected post-hurricane.
- Portable thermometers should be placed in the animal room to monitor air temperature.
- The vivarium is on a back-up generator located outside the building as well as the general campus generator which is checked on a regular basis.
- Any animals being housed on the lower level of the IVC rack should be moved to higher rows if possible.
- The food storage container should be filled to capacity.
- Stock Personal Protective Equipment (PPE) necessary for the rodent animal room.
- Secure and protect RUSVM equipment following protocols already established, e.g.:
  - o Unplug and cover with plastic the Biosafety Cabinet and disconnect any electrical appliances

### *7.2. Hurricane All-Clear (no hit)*

- Inventory animal population and examine all animals for injuries or illness after a disaster event.
- Any animals that have injuries should be humanely euthanized as per the euthanasia SOP.
- Animal cages should be changed if heavily soiled or flooded.
- Food and water should be checked and refilled as needed. If food or water appears to be contaminated, fresh food and water should be provided.
- Room temperature should be measured and recorded.

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This Policy is subject to annual review.


**Policy Approval:**



Signed

19OCT20


Date



Signed

20 October 2020

Date

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Appendix 1 List of Essential Personnel

<b>Name</b>	<b>Position</b>	<b>Cell Phone Number</b>	
Julia Carter CVT	Manager Animal Resources	869-662-2389	
Kurt Roman	Laboratory Animal Technician	869-664-5094	
On Call Vets	See On Call Faculty Schedule		
Dave Charles	Veterinary Technician II	869-667-8535	
Larry Rawlins	Pasture Assistant II	869-663-9945	
Chauncey Archibald	Pasture Assistant I/truck driver	869-664-7721	
Samuel Phipps	Kennels Animal Caretaker	869-760-2052	
Dora Casey	Grass Vendor	664-9026	
Leroy Pantlitz		663-3150	
Leroy Williams		763-7534	
Eugene Bedford		660-3139	
George Douglas		765-6019	
Curtis Romney / Frenchie		669-8436	
Zion		660-9636	
Dion Weekes		663-4652	
Dr. Harut Avsaroglu		Attending Veterinarian	869-662-3822
Dr. Amy Beierschmitt		Back Up Attending Vet	662-4410
Dr. Ricaldo Pike	Over the Break On Call Vet	869-669-8000	