

East Carolina University

Severe Weather and Emergency Plan

Boating Safety Control Board Approved 8/15/07

Introduction

East Carolina University (ECU) currently operates and maintains twenty pooled research vessels in the university boat pool and six research vessels assigned to specific campus units. Because activities related to the ECU research fleet take place on and off campus, this document outlines required actions that must be taken during Severe Weather and Emergencies.

Objective

The Severe Weather and Emergency Plan outlines specific requirements and actions required by ECU employees who have responsibility for one or more university owned research vessels. As of July 2007, responsible units include: Diving and Water Safety (DWS); Department of History; Interdisciplinary Institute for Coastal Science and Policy (IICSP); Coastal Studies Institute (CSI).

Scope

This plan establishes procedures and organizational structure for response(s) to Hurricane, High and Low Water, Fire, and Explosion. The plan does **not** cover training requirements for captains and operators facing at-sea emergencies nor is it intended to limit the use of good judgment in matters not covered in this document.

Hurricanes

Hurricane season in the North Atlantic, Caribbean and the Gulf of Mexico normally extends from June through the end of November. Hurricane damage, personal injury, loss of life and loss of access to critical facilities can result from high winds, localized flooding due to heavy rains, and especially from higher than normal tides called “storm surge”.

Based on reports from the National Hurricane Center and NC Emergency Management, emergency actions will be taken by East Carolina University (ECU) officials to ensure the safety of all vessels in the ECU boat fleet.

Pre-Season Planning and Preparedness:

Between January and April of each year DWS will review the storm readiness of all vessels in the ECU boat fleet in preparation for the upcoming Hurricane Season. This review will at a minimum include:

1. Reassessing and updating ECU’s Severe Weather and Emergency Preparedness Plan.
2. Inventorying/pre-staging all equipment necessary to secure vessels during a hurricane. In lieu of a file for each boat, a chart or spreadsheet covering all vessels will be created and distributed that contains appropriate columns for specific actions and inspections. Selected items for inspection include but are not limited to:
 - a. All storm mooring equipment including ground tackle, lines of sufficient length and strength, and the chafing gear needed based on a specific hurricane plan for each vessel,
 - b. The strength of cleats and/or Samson posts on all vessels,
3. The Director of DWS will conduct an annual assessment and publish a notice on the:

- a. Structural status of local marinas, docks, or piers where non-trailerable boats can be docked during the hurricane season,
 - b. Identity and contact information of individuals responsible for executing hurricane preparations, and
 - c. Appropriate locations for anchoring vessels during hurricane conditions.
4. The Director of DWS will review the ECU boat fleet table shown below annually, adding or deleting vessels as appropriate and publishing specifications regarding how each boat in the fleet is to be handled.

ECU Boat Fleet	Responsible Unit	Trailer and Store	Secure at Dock	Secure at Dock or Anchorage	Primary Contact
Jaws	DWS	X			Baker / Diaddorio
Pinfish	DWS	X			Baker / Diaddorio
Canoe (3)	DWS	X			Baker / Diaddorio
Roughneck	DWS	X			Baker / Diaddorio
Blade Runner	DWS	X			Baker / Diaddorio
Little Skimmer	DWS	X			Baker / Diaddorio
Alumacraft	DWS	X			Baker / Diaddorio
Electric Eel	DWS	X			Baker / Diaddorio
Jones Brothers	DWS	X			Baker / Diaddorio
Seeker	DWS	X			Baker / Diaddorio
Flounder	DWS	X			Baker / Diaddorio
Tom Cat	DWS	X			Baker / Diaddorio
Sound Bite	DWS	X			Baker / Diaddorio
Beeliner	DWS	X			Baker / Diaddorio
Work Barge	DWS	X			Baker / Diaddorio
Cutting Edge	DWS	X			Baker / Diaddorio
18' Parker	IICSP	X			Laura McKenna
25' Parker	CSI	X			Mike Muglia
21' Parker	CSI	X			Mike Muglia

5. The Director of DWS will report the state of readiness (as related to ECU's Severe Weather and Emergency Preparedness Plan) to the Director of IICSP prior to June 1 each year.

Hurricane or Winter Storm Advisories:

When the National Hurricane Center issues a Hurricane or Winter Storm Advisory [expected landfall within 72 hours (3 days)], **the following plan will be executed by responsible employees at a pace facilitating completion within 48 hours.** If this advisory occurs while ECU research vessels are at sea, the Captain or Certified Operator will maintain communications with the DWS office at no more than six-hour intervals to evaluate each situation for appropriate actions.

- ✦ *The Director of Diving and Water Safety has the authority and responsibility for the ECU Boat Fleet and may officially suspend boat operations when conditions warrant. If such suspension be deemed necessary, ECU units operating vessels in the boat fleet will be notified, recalled, or rescheduled.*

Trailerable Vessels:

- 1) Acquire trailers (if needed), remove vessels from the water, and secure them in a safe/protected location.
- 2) Fuel all vessels. This procedure adds to the stability of the vessel during high winds events.
- 3) Secure all loose external canvas, gear, and equipment on the vessels and in the boat yard.
- 4) Remove scientific/capital equipment where possible/practical and transport to a secure warehouse.
- 5) Block tires of trailers being left outdoors and/or secure as deemed appropriate. Lighter vessels, if not secured indoors, should be secured with tie-downs and appropriate anchoring systems.

Non-trailerable Vessels

1. Currently all of the vessels in the ECU fleet are trailerable. However, if a situation arises where it is not possible to place a vessel on its trailer (e.g. due to the non-availability of a suitable ramp) complete the following safety procedures:
 - a) Completely fill vessel fuel tanks and fill potable water tanks to at least 75%. This procedure adds to the stability of the vessel during high winds events.
 - b) Test all systems including bilge pumps and associated portable pumps. Fully charge all onboard battery banks and ensure that they have sufficient capacity to pump for the duration of a hurricane event. Install fresh batteries or supplement existing battery bank if necessary.
 - c) Ensure all watertight compartments on vessels are secure.
 - d) Where practical, remove all non-essential sensitive portable scientific and navigational equipment from vessels.
 - e) Secure all loose external canvas, gear, and equipment on the vessels and in the boat yard with particular attention to wind driven hazards, floatable items and hazardous materials.
 - f) Secure power to all nonessential electrical circuits, machinery, and equipment to minimize potential damage, shock and fire hazards to the pier side shore power connections.
- 2) Recommended hurricane anchorages in the local area include: Adams Creek between the Neuse River and the Turning Basin, and Blount's Bay just east of the Washington, NC RR Bridge. In the event that a vessel is being utilized in other geographic areas (South Carolina, Virginia, etc.), the vessel operator is required to include hurricane planning as part of the float plan in the event that a hurricane threatens the area in which the vessel is operating. In these instances, prearrangements with a marina to haul and block the boat (out of the water) in advance of a hurricane may be desirable.
- 3) Anchor vessels away from the dock utilizing storm mooring equipment and double all mooring lines.
 - a) If possible, move the vessel out of the marina.
 - b) Select a hurricane mooring location where the vessel can be tied to both sides (banks) of a waterway with multiple lines long enough to allow the boat to ride-out a substantial storm surge without hitting shore, other boats, or structures.

- c) If the vessel is moored in a creek or canal, it should be moored far enough inside that waterway to avoid interfering with the navigation of other vessels, especially when mooring lines extend to both sides of the waterway.
- d) The vessel should be moored with bow pointed toward the greatest fetch, i.e. that line of sight with the greatest over-water distance.
- e) If anchors are used, select a location that provides solid mooring points. In addition, anchors should be oversized, multiple, have good chafe gear, and sufficient chain to securely moor the vessel.
- f) At the anchorage, ensure that your vessel is not obstructed by other objects, vessels, etc. through a 360 degree swing around your anchor.
- g) Anchors should be set with long lines in the direction of the fetch, if secure mooring points are not available in that direction.
- h) Anchor lines should be long enough to allow at least a 10 to 1 scope (anchor line length to water depth ratio, i.e. 80' line is required for 8' water depth).
- i) Lines to solid mooring points such as trees should be at least 30 feet long, preferably more, allowing the vessel to be positioned so that potential damage from trees is minimized.
- j) The vessel may be left at home location only if above criteria can be met at that location.

Hurricane Warning or Winter Storm Warning:

When the National Hurricane Center upgrades their notification to a Hurricane Warning or Winter Storm Warning [expected landfall within 48 hours (2 days)], **all activities describe above (under Hurricane or Winter Storm Advisory) including the three items listed below must be completed within 24 hrs.**

- 1) All vessel operations are to be assumed canceled unless notified otherwise.
- 2) Ensure that all elements of the Hurricane or Winter Storm Advisory plan (noted above) have been fully implemented.
- 3) Notify the Diving and Water Safety office (252-328-4041) that all Hurricane or Winter Storm Advisory plan preparations have been completed.

After Storm Passes:

Initiate when storm has passed and sustained wind speeds are below 40 mph.

- 1) Render assistance to campus and local authorities as necessary to save human life, prevent suffering, and mitigate destruction and further damage to property.
- 2) Compile a damage assessment, with particular attention to major safety and pollution concerns.
- 3) Use extreme caution when entering vessels or buildings due to possible shifting of equipment and other hazards created by the passing of the storm.
- 4) Commence clean up operations as needed and as safety permits.
- 5) See "ECU Spill Prevention, Control and Countermeasure Plan Based on Best Management Practices".

High & Low Water (All Vessels to Remain in the Water)

Higher or lower than normal water levels can and do occur in eastern North Carolina. This is caused by prolonged winds “pushing” water into or out of an area within the sound. Prolonged wind driven swells and seas caused by the effect of fetch can also lead to localized flooding in low-lying areas.

Particular attention must be given to equipment and items that can either be damaged by submersion or that might float away causing hazards or pollution. Low water situations can cause extensive damage to vessels propellers, shafts, rudders and hulls. Depending on the forecasted high or low water predictions, extra precautions may be necessary to abate possible damage to the vessels, the docks and surrounding facilities.

- ✦ Vessels that must remain in the water during these periods of low water must be moved to locations where there is sufficient draft for the vessel to prevent damage.

It is the responsibility of the employee(s) designated as “in charge of a particular vessel” to monitor these situations and take appropriate action.

Other Natural Disasters

1. See ECU Office of Environmental Health and Safety web page for further information. <http://www.ecu.edu/oehs/EmergencyProcedures/severeweather.htm#police>
2. In the event of a “Tornado Warning” all staff and crews will seek refuge in the nearest available shelter.
3. Actions after a tornado will be in accordance with those prescribed for hurricanes.

Fire and Explosions

The basic watchword for fires and explosions is PREVENTION. At the boatyard, dock, and onboard vessels numerous ignition sources and various types of combustibles are present that could start a fire that spreads out of control.

1. Fire science has shown that a fire can double in size every one minute. Good housekeeping is the single best method of prevention. Good housekeeping practices include:
 - a) Store flammable materials in proper and sealed containers.
 - b) Secure all portable fuel tanks and fuel containers onboard vessels.
 - c) Store previously opened flammables in flammable storage lockers.
 - d) Store all used waste oil, paints, solvents, thinners, filters, absorbent pads and oily rags in properly labeled and sealed metal containers both onboard and at the dock.
 - e) Be cautious and cognizant of open flames, sparks and heat from torches, welders, grinders, saws and drills and of open and running motors and all other ignition sources when handling flammable liquids.
 - f) Know where fire extinguishers and onboard fire suppression systems are located and how to use them (in the event of a fire).
2. The US Coast Guard requires that vessel captains are trained in basic maritime fire fighting techniques and in the use of all onboard fire fighting equipment. In addition to combating shipboard fires while at sea, this training provides a first responder fire fighting capability.

3. In the event a fire breaks out in a boat yard or storage area on land:
 - a. Immediately sound the alarm, make initial notification to 911 and the University police, and safely attempt initial action to contain and extinguish the fire before it grows or spreads.
 - b. At no time will ECU employees put themselves in a compromising situation that would endanger them or anyone around them. Personal safety will always be paramount over safety of property.
 - c. When the Fire/Rescue Department arrives they will take charge of the fire scene.
4. In the event a fire breaks out on one of the vessels while in the water dockside, the following action should be taken:
 - a. If the vessel is manned:
 1. Immediately begin fire fighting procedures via fire extinguishers and onboard fire suppression systems in the engine room.
 2. Notify the US Coast Guard, 911, the University police, and Director of DWS as appropriate.
 3. If manpower and equipment are available; the shore side fire station will be manned and charged to help cool the perimeter and other vessels provided it can be accomplished safely.
 4. When the Fire/Rescue Department arrives they will take charge of the fire scene and ECU employees will provide support if required.
 5. If a boom is available to prevent oil spills, notify the Fire/Rescue department that this equipment is available and assist with deployment as needed.
 6. **At no time will an ECU employee jeopardize themselves or anyone else.**
 5. If the vessel is unmanned:
 1. Notify the US Coast Guard, 911, the University police, and Director of Diving and Water Safety.
 2. If resources are available, shore side fire equipment should be used to cool the perimeter and other vessels - provided that it can be done safely.
 3. If a boom is available to prevent oil spills, notify the Fire/Rescue department that this equipment is available and assist with deployment as needed.
 4. At no time will any ECU employees jeopardize themselves or anyone else.
 5. When the Fire/Rescue Department arrives they will take charge of the fire scene.

Emergency Contact List

ECU Police: 252-328-6787
ECU Environmental Health and Safety: 252-328-6166

Name	Department	Office	Home	Cell
Steve Sellers	Diving & Water Safety	252-328-4041	252-830-9294	252-916-9595
Eric Diaddorio	Diving & Water Safety	252-744-1303		252-916-5578
Mike Baker	Diving & Water Safety	252-744-1302		252-916-5709

24' Cabin Seahawk, 18' center console Parker (McCotters Marina, Washington, NC; East Campus boat yard)

Lisa Clough Biology 252-328-1834

Laura McKenna ICMR 252-328-1754

25' Parker, 21' Parker: (Coastal Studies Institute, Manteo, NC).

Michael Muglia Coastal Studies Institute 252-480-8582

252-916-4627
252-305-0500
(wife) 252-599-1246