

STOCKTON UNIVERSITY | MARINE FIELD STATION



Safety and Operational Procedures

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Stockton University Marine Field Station
30 Wilson Avenue
Port Republic, New Jersey

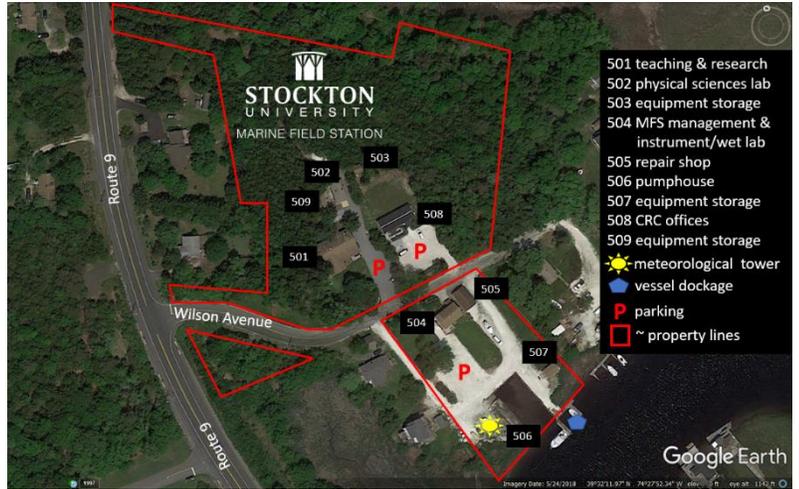
Phone; 609-652-4486
Web; www.stockton.edu/marine
E-mail; MFS@stockton.edu

PRIMARY ADDRESSES AND TELEPHONE NUMBERS

Building 504 (Field Station Management)
30 Wilson Ave
Port Republic, NJ 08241
609-652-4486

Building 501 (Research and Teaching Lab)
33 Wilson Ave
Port Republic, NJ 08241
609-652-6458

Building 508 (Coastal Research Center)
33 Wilson Ave.
Port Republic, NJ 08241
609-652-4245



Emergency and Fire

Stockton Campus Police
United States Coast Guard (Atlantic City)
Stockton Wellness Center

911

609-652-4390
609-344-6594
609-652-4701

Many resources related to the health and safety of life and environment can be found on the University's Department of Risk Management/Environment/Health/Safety webpage by typing "[safety](#)" in the Stockton University webpage search bar or by clicking on the image below.

STOCKTON UNIVERSITY

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Risk Management & EHS

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- Staff

RMEHS Welcome

SAFETY FIRST

The Department of Risk Management/ Environment/Health/Safety serves Stockton University by eliminating and/or reducing risk to our most valuable resources, our students, visitors, employees, community, and property.

The Department's purpose is to integrate risk management into University governance and operations to engage a harmonized approach by:

- POM** Protection of Minors Training
- Get CDC Travel Info
- Asbestos Awareness
- Mold Remediation
- Mold Awareness Training
- Driver's License Verification Form
- Distracted Drivers Diagram
- Register for Training
- (HCS/GHS & RTK) Online Training (BB9)
- 2020 Written Hazard Communication Program (WHCP)

STOCKTON UNIVERSITY | MARINE FIELD STATION

The following staff are associated with the management and daily operations of the Marine Field Station. Individual credentials of the support staff as well as that affiliated faculty can be found by visiting the [MFS staff and faculty website](#).

Steve Evert	Field Station Manager and Associate Director of Academic Laboratories & Field Facilities steve.evert@stockton.edu 609-652-4486

Dave Ambrose	Research Technician, 13M position 75% dave.ambrose@stockton.edu 609-652-4486
Elizabeth Bick Zimmermann	Program Assistant, Professional Services Specialist elizabeth.zimmermann@stockton.edu 609-652-4486
Marie Jelinski	Budget Officer, Professional Services Specialist marie.jelinski@stockton.edu 609-652-3619
Nate Robinson	Program Assistant, Professional Services Specialist nathan.robinson@stockton.edu 609-652-4486

Marine operations and support can be reached by e-mailing MFS@stockton.edu

Business matters for the facility can be reached by e-mailing MFSbudget@stockton.edu

GENERAL DESCRIPTION

The Stockton University Marine Field Station (MFS) is located on an 8-acre parcel in Port Republic, New Jersey and is a support facility for the School of Natural Sciences and Mathematics. The location of the MFS is central to its offerings; less than 15 minutes from the Galloway campus and only 30 minutes from the Atlantic City campus. The facility is located within the Jacques Cousteau National Estuarine Research Reserve, one of the most pristine coastal bay and river systems in the Mid-Atlantic region of the United States. The MFS is unique in its regional location, proximity to campus, primarily undergraduate status and impressive array of physical resources to support the teaching and research programs. The facility plays a significant role in the University's ability to attract top students in the marine and environmental science fields. The MFS programs provide laboratory facilities, professional staff support, research vessels, sampling equipment, and marine technology to fulfill the teaching, research and community service missions of the University in the area of marine science.

In addition to housing the University's marine operations and academic support programs for marine science, the MFS is also the physical site of the Coastal Research Center (CRC). The MFS and the CRC serve similar but distinct roles to the University and the region; the MFS as a primarily academic support program (teaching and research) and the CRC a service-oriented research center for coastal municipalities and the State of NJ. The MFS management team reports directly to the NAMS Administration and has ultimate oversight for the physical facility as whole, including the vessel safety programs regardless of departure site. The CRC has direct oversight of CRC safety programs for non-vessel-based field work (i.e. beach and land-based operations).

The Marine Field Station is a compound of several structures located on both sides of Wilson Avenue in Port Republic, NJ (Figure 1).

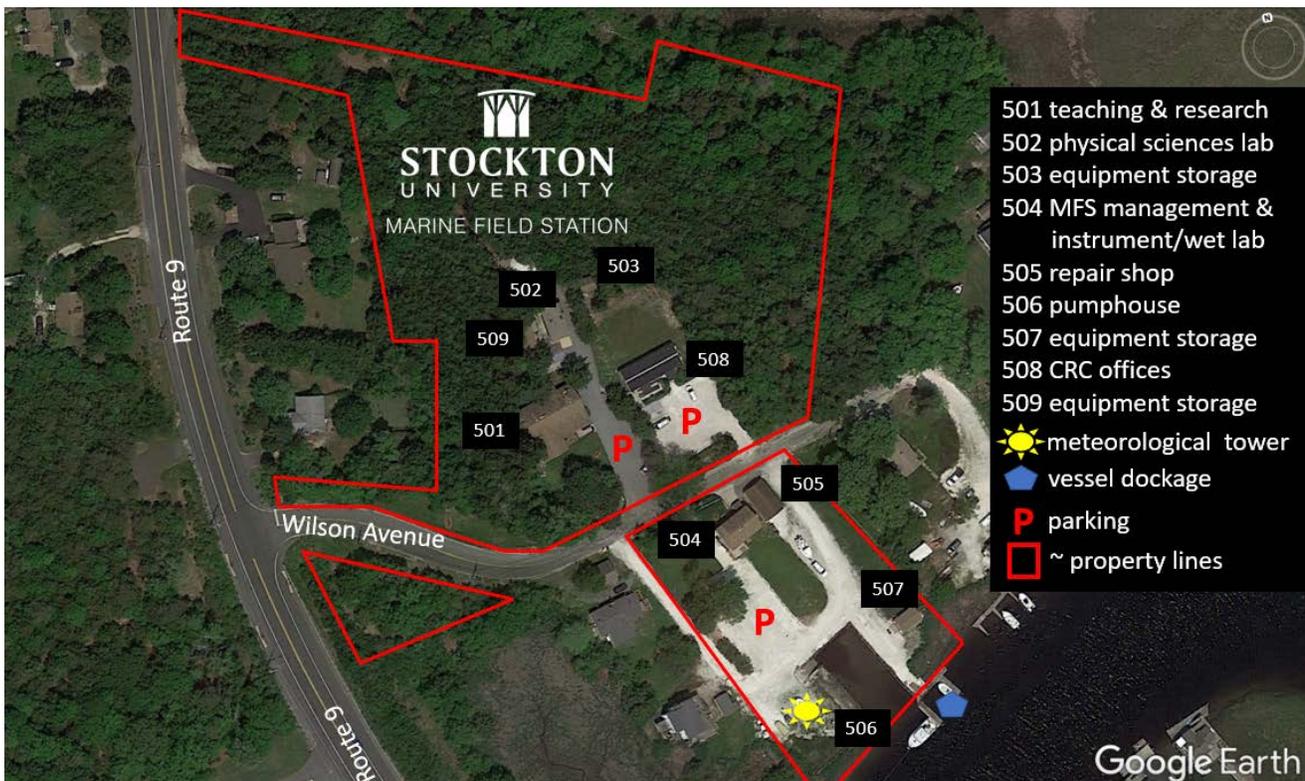


Figure 1. Overall MFS site located at 30 and 33 Wilson Ave. off Route 9 in Port Republic, NJ 08241.

Bldg. 501, Teaching and Research Laboratory

This building is a log cabin, and is often referred to as such by staff, faculty and students (the “Log Cabin”). This 2400 sq. ft. single-story building is on the north side of Wilson Avenue and is the primary structure for the academic support of faculty research and teaching activities. Inside are five individual faculty research labs, a computer lab, two general instruction areas (24 seats & 8 seats), and a small kitchenette and lounge area (Figure 2).



All areas of Building 501, with the exception of the kitchenette, fall under the University guidelines for [health and safety](#). Food and drink are not permitted without prior approval.

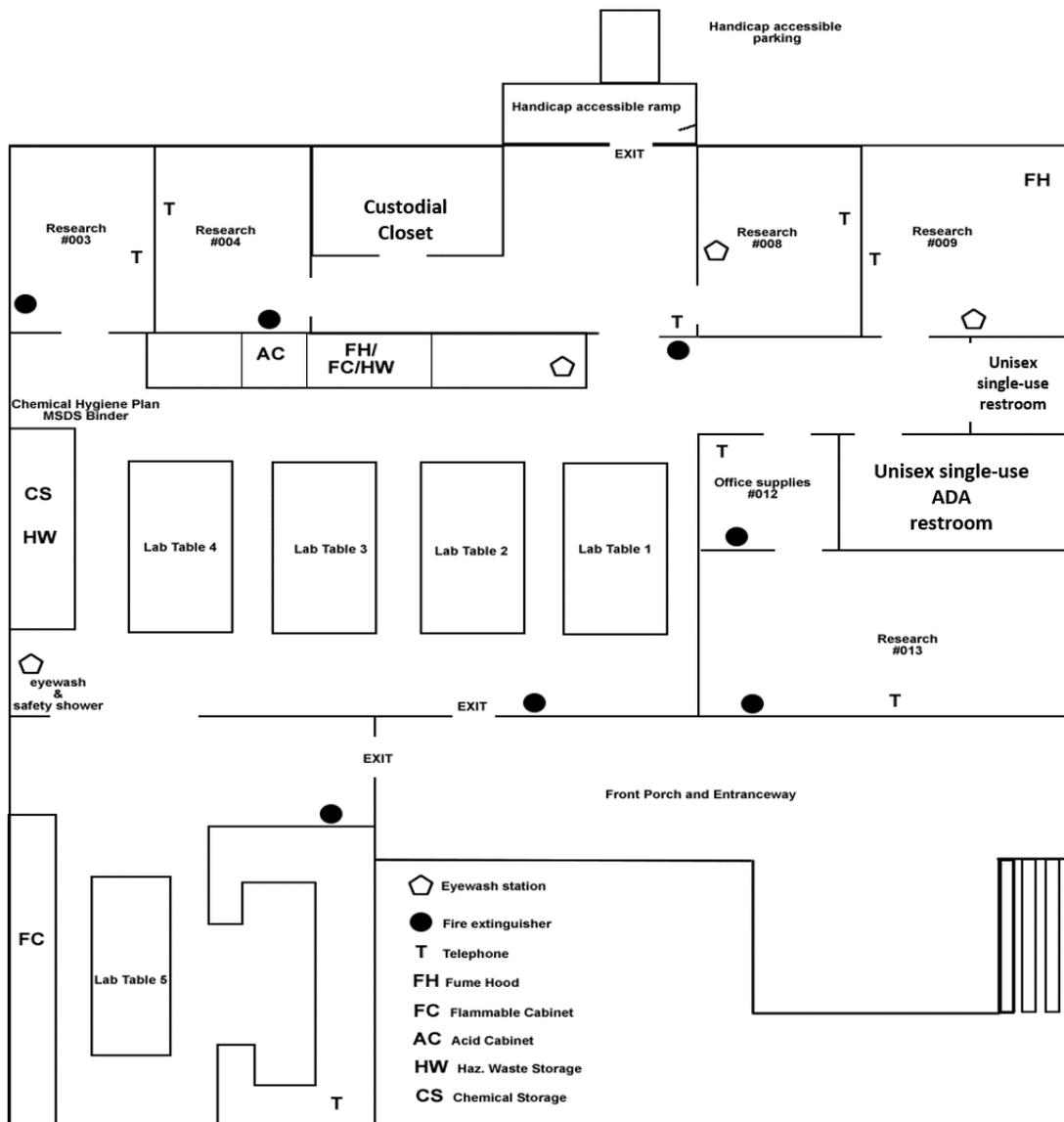


Figure 2. Building 501, Log Cabin teaching and research laboratory floor plan

Bldg. 502, Physical Sciences Laboratory

This 600 sq. ft. building is located behind the Log Cabin and is a garage-type building that has been modified to create laboratory and working space for non-chemical activities. Examples of work performed in this building include wave tank studies, sediment analysis, sample drying and combustion, and instrument deployment preparations. The building also has additional space for equipment storage and freezer space for samples not containing chemicals.

Bldg. 503, Equipment Storage

This 175 sq. ft. building is used to store field equipment and is located next to Bldg. 502 and behind the CRC office building (Bldg. 508). It is a conditioned space with a water-proof floor and floor drains, allowing for storage of wet gear. Whenever possible, gear should be dried outside prior to storage. This space is occupied and maintained by the staff at the Coastal Research Center and is often referred to as the “swimmer’s shed”.

Bldg. 504, Field Station Management and Instrument Laboratory

This two-story 1600 sq. ft. building is on the south side of Wilson Avenue and houses the office space for the Field Station management staff (upstairs) and an instrument and wet laboratory (downstairs). The instrument laboratory houses the water quality management program and much of the marine technology equipment. On the second floor a small conference and kitchenette area is available for meetings of up to 8 people.

Bldg. 505, Repair Shop

This 600 sq. ft. building is located next to Bldg. 504 on the south side of Wilson Avenue and serves as an area for vessel, equipment and facility maintenance. Both wood working and mechanical tools are available and ample floor space exists for indoor work on the smaller research vessels and other maintenance or construction projects. Student use of this area is restricted to supervised work only. The use of power tools is limited to experienced staff only. Questions about use of this space or requests for power tool or other assistance should be directed to the MFS staff in person, by phone or by e-mailing MFS@stockton.edu.

Bldg. 506, Pumphouse

This small building is located waterfront on the west side of the lagoon. It houses a pool pump and filtration system that extends into the Nacote Creek and is piped underground to the instrument and wet lab in Bldg. 504.

Bldg. 507, Equipment Storage

This 350 sq. ft. building is located waterfront on the east side of the lagoon. It is used to store equipment that is used on research vessels or to support field work. This building is not climate-controlled, only equipment that is not subject to damage by heat or cold may be stored

here. Examples include; nets, shovels, life jackets, waders, buckets, jars, measuring boards, ropes, etc.

Bldg. 508, Coastal Research Center

This 1000 sq. ft. building is located on the north side of Wilson Ave and contains office space for the staff of the Coastal Research Center (CRC). The CRC is a service-oriented research center for coastal municipalities and the State of NJ that falls within the auspices of the University and is located at the Port Republic site. The CRC and the MFS, although functionally distinct in management and oversight, have a significant amount of synergy between them that have benefits to the students, the faculty and the community.

The CRC is an autonomous group relative to their office and vehicle-based field operations, however all of the CRC marine operations support is arranged per University protocol through the office of the Marine Field Station (Manager). The CRC has full use of all MFS facilities and resources via scheduling and coordination with the MFS team to minimize conflicts with academic end-users (i.e. faculty class and research activities). Professional staff of the CRC are responsible for following University-wide and facility/vessel procedures contained here.

Bldg. 509, Equipment Storage

This 350 sq. ft. building is located behind the Log Cabin and adjacent to the Physical Sciences Laboratory (Bldg. 502). It is used to store equipment and supplies that are infrequently accessed but valuable to have on site for future needs. This building is not climate-controlled, only equipment that is not subject to damage by heat or cold may be stored here.

Waterfront areas

A series of floating and fixed dock structures provide mooring space for up to four vessels. Two 22' slips, one 32' slip and one 40' slip are available. There also exists a 5000 sq. ft. lagoon and boat ramp for occasional (high tide) use. Adjacent to the lagoon is a meteorological monitoring station. Long term weather data is collected via partnership with the Jacques Cousteau National Estuarine Research Reserve.

Maritime forest/marsh trail

Approximately four acres of undeveloped land are located onsite, providing natural salt marsh and upland habitats for a variety of plants and animals native to the region. These areas can be accessed and studied through a network of existing nature trails located behind Building 503. Precautions against ticks, chiggers and other insects or plant hazards (i.e. poison ivy) should be considered before accessing this area.

FACILITY POLICIES, PROCEDURES & INFORMATION

The Marine Field Station is an extension by location of the Stockton University campus and as such falls under the governing policies and procedures of the University. The following sections serve as highlights and site-specific policies and procedures; however, it is important to note that all University-wide policies and procedures apply to the employees, students, visitors and facilities of the Port Republic site and marine operations described here.

I. ACCESS TO THE MARINE FIELD STATION

- A. A full-time Field Station Manager, reporting to the Executive Director of Academic Laboratories and the Dean of NAMS, manages daily operations of the facility, its support staff and the marine operations program.
 - a. Arrangements for access to facilities, boats, or equipment located at the MFS must be made via e-mail with the [Field Station Manager](#) or his designee at least 24 hours in advance of anticipated usage times and preferably as soon as the use and the potential dates are identified. If the Field Station Manager is unavailable, such arrangements can be made with the on-site support staff or if necessary, the Executive Director of Academic Laboratories and Field Facilities on the main campus.
 - b. A request for facility, vessel or equipment use does not guarantee access. An initial look at the scheduling on the “mfs-operations” Outlook calendar should be the requestor’s first step. This calendar shows bookings for the primary facilities and the research vessel fleet and is accessed through the University’s Outlook client (e-mail a request to view this calendar to MFS@stockton.edu).
 - c. In the case of outside groups (non-Stockton employees) and when such use is approved by the Manager, the University initiates a contracting process that includes coordination and documentation with the Office of Event Services. No outside group shall access the Marine Field Station until an agreement or contract is signed by both parties and a Certificate of Insurance, when required, has been submitted to the Office of Risk Management.
- B. Except as described in section I.C for Public visitors, only Stockton-affiliated individuals may access the MFS facilities. These individuals generally include currently employed faculty or staff and currently registered students. Registered non-compensated volunteers and other individuals with a direct and written affiliation with the University through contract or other agreement methods may also have access with permission of the MFS management and following any guidelines required for on-site supervision (affiliates and visiting researchers, etc.).
- C. Public visitors without written affiliation are allowed during University-sponsored events and/or with direct in-person lead of an otherwise authorized employee. Common examples include multi-agency business meetings and open house events.

- D. Students are not permitted at the MFS without direct faculty or staff supervision. Exceptions may be granted for graduate students with the permission of the Manager, the Executive Director of Academic Laboratories or the Dean of NAMS. These exceptions must be made in writing via e-mail to the student and faculty advisor.
- E. Visitor and student access to the Field Station complex is generally limited to normal business hours of 8 am – 5pm. However, due to the nature of flexible hours for field work, summer hours and other reasons, it is best to check with the MFS team if your visit will require assistance or access granted by a staff member.
- F. Standard staff support hours at the MFS and CRC is limited to sunrise to sunset unless approved by the Manager or the Director of the CRC with notification to the Manager.
 - a. Authorized faculty may access the complex during weekends and after hours, though it is noted that nighttime access to the MFS should only be conducted by groups of two or more for security and safety reasons.
- G. The Field Station complex is not used for student social activities or other events without the coordination of such events via the Manager and if warranted (outside groups) the Office of Event Services.
- H. [Minors](#): Special consideration and procedures for visiting minors must be followed and can be found on the Risk Management and Event Services websites.
- I. [ADA compliance](#): the facilities and resources of the MFS follow the guidelines of the ADA compliance program at the University and as such will provide site and activity-specific reasonable accommodations to applicants, employees, students and visitors with disabilities.

II. SECURITY, FIRE ALARMS & AED locations

- A. Access to most of the Marine Field Station buildings is protected by electronic swipe card access and ADT security system. Some small storage buildings are protected by hard lock systems. Authorized users receive permission and specific access codes from the Field Station Manager. Both the ADT system and the electronic access locks record entry and exit times and persons. Access can be restricted to certain hours, days or time periods by the Field Station Manager.
- B. Fire alarms; each building is equipped with local smoke detecting alarms. If an alarm sounds exit the building and call 911. Only trained individuals should attempt to use a fire extinguisher and in all cases 911 should be called immediately.
- C. An Automatic External Defibrillator (AED), maintained and inventoried with the University health and safety program, is available in the Log Cabin (Bldg. 501). Signage outside of the Cabin indicates its presence. Additional units may be available to field teams and aboard research vessels.

III. SAFETY AWARENESS PROGRAM FOR LABORATORIES

All laboratory regulations for the Port Republic site follow those in place on campus and found on the Department of Risk Management and Environment/Health/Safety (RMEHS) websites. Type “[safety](#)” into the main webpage search engine or contact the [NAMS Lab Safety Officer](#) for copies of these regulations. Additional regulations as they pertain to the unique activities of the Marine Field Station (boating, trailering, field work, etc.) are found in the next sections.

IV. MARINE OPERATIONS STANDARD OPERATING PROCEDURES (MOSOP)

Marine operations are defined here as those activities that engage individuals in activities aboard a vessel and within the marine or extended marine environments (tidal rivers). Stockton University’s Marine Operations Standard Operating Procedures (MOSOP) generally follow, to the extent practical, the guidelines established in the [SBSA Boating Safety Program Guidelines](#). The University is a member of the Scientific Safe Boating Association (SBSA) and the University National Oceanographic Laboratories System (UNOLS).

Stockton-owned vessels (>20’ LOA) are designated by the United States Coast Guard as Oceanographic Research Vessels (ORV) under the provisions provided by [CFR 46 Subchapter A part 3 – Oceanographic Research Vessels](#). All vessels are maintained to the standards set forth for uninspected vessels designated as ORVs and are inspected by the USCG at least every two years.

Additional clarifications to the procedures outlined in the [SBSA guidelines](#) and under the provisions of the ORV process are contained in this section and are specific to University resources and programs. The table below outlines the vessels referenced with additional documentation data listed as appropriate.

R/V Name	Manufacturer	LOA	SBSA classification	Capacity passengers + crew	State Reg. #	Federal Doc. #	MMSI #	Vessel Type	Last Inspection	Inspection Due	ORV #
R/V Scoter	Privateer	21'	1	7 + 1	NJ 3554 FH	na	338357259	Open/Work	4/17/2019	4/17/2021	O.N. NJ3554FH
R/V Skimmer	Privateer	21'	1	7 + 1	NJ 3315 FL	na	338357261	Open/Work	4/17/2019	4/17/2021	O.N. NJ3315FL
R/V Osprey	Chesapeake	24'	1	9 + 1	NJ 3500 GB	na	338048845	Cabin/Work	4/17/2019	4/17/2021	O.N. NJ3500GB
R/V Willet	Crestliner	16'	A	2 + 1		na	na	Open/Work	na	na	na
R/V Zostera	Crestliner	20'	1	4 + 1	NJ 4220 HC	na	na	Open/Work	4/17/2019	4/17/2021	O.N. NJ4220HC
R/V Petrel	SW Boatworks	36'	2	14 + 2 inland 8 + 2 coastal	NJ 1400 HB	1261010	338204779	Cabin/Work	4/17/2019	4/17/2021	O.N. NJ1400HB

A. **Operation of University-owned research vessels** is limited to those individuals complying with (all) the following qualifications:

- 1) Operator must hold a current US Coast Guard Merchant Mariner Credential covering the body of water and vessel being operated **or** have a current USCG Auxiliary Safe Boating License via testing administered by USCG/NJ State Police in fulfillment of the [NJ State Boating License Requirement](#)
- 2) Operator must be at least 18 years of age and have documented the experience and physical capability of performing the necessary duties of an individual in charge of the marine operation with special attention to the specifics of that operation (i.e. inland vs. coastal waters, distances from shore and other factors).

- 3) Operator must be an authorized faculty or staff member of the University. TES and part time employees can be authorized.
 - i. Qualified and approved student workers may be permitted to operate a University owned vessel only when accompanied by authorized faculty or staff, either on the vessel or within the day's flotilla (i.e. on a second vessel traveling in convoy).
- 4) Operator must satisfactorily complete an on-the-water operators test to demonstrate vessel handling ability and familiarity with the specific University owned vessel. The Field Station Manager based on these checks will authorize or restrict vessel usage on a per vessel basis (i.e. operators may be permitted to operate only certain vessels or to engage in only certain operations). The Field Station Manager may revoke operator privileges from any faculty or staff member if that person fails to follow all State, Federal and University regulations and/or fails to enforce regulations on passengers.
- 5) Operators must sign for the receipt and understanding of the MOSOP
- 6) Operators must possess and carry on their person a NJ Boating License (this includes USCG licensed captains as not all activities are operating under the authority of their Merchant Mariner credential)

B. Training requirements and documentation;

- 1) Vessel operation credentials; must meet those found in section A and be on file and current.
- 2) First Aid/CPR certification requirements; At least one operator within the day's flotilla must hold current First Aid and CPR certification. In the case of a single vessel being operated that operator must be an authorized faculty or staff member and hold a current First Aid/CPR certification.
- 3) Public Employees Occupational Safety and Health Program; All activities on vessels must follow the guidelines set forth by the University's Department of Risk Management/Environment/Healthy/Safety, including but not limited to;
 - i. [PEOSHA's Hazard Communication Standard and Globally Harmonized System](#)
 - ii. [Stockton's Written Hazard Communication Program](#)
 - iii. [New Jersey's Right to Know program](#)
 - iv. [Stockton's Bloodborne Pathogen Procedures](#)
- 4) Any vessel operations requiring the use of chemicals require that the operator in charge and any persons directly handling the chemicals or waste be trained via the University protocols for chemical safety. Type "[safety](#)" into the main webpage search engine or contact the [NAMS Lab Safety Officer](#) for copies of these regulations.
- 5) Second-in-command training; For higher risk and offshore operations a second-in-command must be designated and trained to the level necessary to take over if the Master is incapacitated. This training must be documented on file with other required certifications (licenses, first aid, etc. as appropriate and required by the vessel and activity types).

C. Safety awareness programs for vessel operations; The Field Station Manager or vessel operator shall provide information on safe boating procedures to all persons boarding University-owned vessels. Basic boating safety information is explained in the Safe Boating Procedures and Cold-Water Survival hand-outs (Appendix). Passengers are required to sign an attendance sheet indicating their understanding of the safety regulations and are further encouraged to inform the Field Station Manager/operator of any special medical needs, including food or other allergies. The purpose of this notification is to provide the Field Station Manager or other responsible operator with relevant information in the event of medical difficulties. All persons on University-owned vessels should be made aware that professional medical assistance is generally 30-90 minutes away while engaged in marine operations.

- 1) If specific allergies or other known medical conditions are known aboard the vessel it is the responsibility of the operator to limit food types and otherwise ensure the safety of the passengers. If it is determined by the operator that the condition cannot be accounted for responsibly it is their duty to notify the Field Station Manager and to postpone the operation until the safety concern is addressed.
- 2) The faculty member teaching a course with a marine operations component is responsible for assuring that all students boarding University vessels have completed the above requirements. Special arrangements for students not present for safety overviews must be coordinated with the Field Station Manager.
- 3) In the case of staff-led marine operations not related to course support (i.e. research, survey or other operations), the authorized vessel operator leading that operation is responsible for assuring that all passengers have been provided a safety briefing relative to the vessel and the activity that includes;
 - a. the importance of disclosing existing medical conditions that could affect the passenger's safety at sea, including the potential for long response times by professional rescuers
 - b. Response procedures for;
 - i. Man Overboard
 - ii. Fire onboard
 - iii. Taking on water
 - iv. Engine loss
 - v. Sea sickness
 - vi. Working with hydraulics
 - vii. Working with overhead equipment
 - viii. Severe weather response
 - ix. Second person in charge in case of operator incapacitation

D. Compliance with safety regulations; Attention to personal safety shall be paramount in all Stockton University activities. All persons will be responsible for warning others when it is believed that they are endangered by known hazards or by their failure to

comply with applicable health and safety precautions. Safety and health precautions must never be subordinated or disregarded because of the urgency of a particular task or associated deadlines for completion.

E. **Use of drugs and alcohol;** Illegal drugs and alcohol are not permitted on University vessels during research, educational or any other standard marine operations.

- 1) Minimal alcohol use can be permitted for non-operators/deckhands during University-sponsored and Risk Management-approved events for the purposes of entertainment when said event is in the best interest of the University (i.e. fundraising cruises or other special events). This exception is only permitted when approved in writing from the University's Office of Risk Management and the Field Station Manager.
- 2) The ability to perform sensitive duties can be compromised by legal drugs. Both over the counter (OTC) as well as prescription medications are known to impair performance. Persons using such legal medications and who will be involved in safety sensitive duties, including vessel operations, are to adhere to the guidelines set forth in each drug information card with the OTC or prescription medication.

F. **Float plans;** The use of float plans and a contact list in case of an overdue vessel is required. The float plan book is located at the radio station on the second floor of Bldg. 504. For trips in remote sites and/or multiple days a communication schedule shall be established before departure.

G. **Communication methods;** Operators are required to ensure that two operating VHF radios are available as well as an adequately charged cellular phone for near-shore operations and a satellite phone for operations beyond 3 nm from shore. A list of important emergency phone numbers is contained in the logbook of each vessel.

- 1) A pre-departure check of the primary VHF radio is required to be performed. In some areas channels 24, 25, 26, 27, 28 and 84 allow for an automated check feature. Otherwise, utilize standard methods on a working channel.
- 2) In the event of an emergency the operator, at his/her discretion may choose to communicate with the USCG via VHF radio Channel 16 or directly by cell phone. In all emergency situations, the operator should be prepared to provide vessel and GPS information, number of persons aboard and the nature of the situation.
- 3) In the event of a non-emergency situation requiring vessel assistance the operator is to call Sea Tow on Channel 16 and switch to the working channel suggested by Sea Tow response. Examples for use of Sea Tow include vessel groundings where no injuries occur, and no immediate loss of life or property is imminent, mechanical failures or other reasons for requiring non-emergency assistance. Membership information is contained in the logbook for each vessel.

H. **Transfers of personnel;** The transfer of personnel from one vessel to another is an uncommon practice for the current University marine operations scope. However, when necessary, transfer must follow these guidelines for any vessels;

- 1) Only to be conducted in calm seas with winds <10 knots unless a vessel-land-vessel transfer can be utilized.
- 2) For small vessels, if possible, use adjacent lands to transfer from vessel-land-vessel.
- 3) Transfer individuals must have an approved lifejacket donned.
- 4) Transfer operators should designate crew to assist. Crew should be trained to avoid vessel to vessel contact points and use fenders or extra lifejackets to prevent direct vessel to vessel contact and the associated injury inherent to that (hands and fingers).
- 5) MOB devices should be identified and ready for use.

I. **General weather procedures;** The operator in charge is required to review the marine and atmospheric weather forecasts at all times, including the evening prior to the activity, the immediate timeframe before departure, and periodically throughout the excursion. Depending on the nature of the work and the waters of operation, these general guidelines apply to the various vessels within Stockton's fleet;

- 1) Small vessels (less than 25' LOA)
 - i. Are to avoid inland or open water operations in winds > 25 kts.
 - ii. Regardless of wind conditions are to avoid open water operations in inlets or near-shore areas in sea states > 4' short period seas (< 10 seconds) and 3' long period seas (>10 seconds).
- 2) Large vessels (>25' LOA). Operating conditions will be specific for each vessel. Currently only the *R/V Petrel* (36' x 14' cabin-forward workboat) falls into this category.
 - i. Avoid any operations in winds > 35 kts.
 - ii. Avoid any over-board operations in winds >20 kts.
 - iii. Avoid heavy-lifting or over-board deployment operations in winds > 15 kts.
 - iv. Regardless of wind conditions, avoid inlet or bar crossing in any seas > 6' and whenever a dangerous seas warning is issued by NWS/NOAA.

J. **Adverse weather procedures;** The operator in charge is required to review the marine and atmospheric weather forecasts at all times, including the evening prior to the activity, the immediate timeframe before departure, and periodically throughout the excursion. In the event of adverse weather conditions arising during an excursion the operator in charge is to follow these guidelines;

- 1) Small vessels are to seek shelter immediately in the event of high winds (>25 kts.), lightning or severe marine weather warnings issued for the operating area.
 - i. Adjust course and speed as necessary to maintain vessel stability while seeking a course leading to appropriate landside shelter.
 - ii. Switch VHF radio to Channel 16 if not already monitoring.

- iii. Check security of deck hatches.
 - iv. Secure any heavy or loose objects on deck.
 - v. Ensure all persons aboard have lifejackets donned.
 - vi. Be aware of PLB, EPIRB and handheld location and ready for deployment.
 - vii. Ensure all persons remain low in the vessel, seek cabin shelter if possible.
- 2) Large vessels operating in inland waters or near-shore waters where shelter is within a distance that makes seeking shelter feasible given the forecasted duration of the weather event are to seek shelter immediately in the event of high winds (>35 kts.), lightning or severe marine weather warnings issued for the operating area .
- i. Follow small vessel procedure (a. sections i. – vii.).
- 3) Large vessels operating in open ocean waters where seeking immediate shelter is not feasible.
- i. If safe, have a crew member check the watertight integrity of the deck hatches and secure items on deck. Once secured all persons are to stay inside the wheelhouse with the aft door securely closed.
 - ii. Ensure all persons aboard have lifejackets donned.
 - iii. Remind persons of their responsibilities if the conditions worsen and the ship needs to be abandoned – EPIRB, life raft, ditch bag and immersion suit locations. Consider having stored items brought into the open area for quicker action.
 - 1. Contact the USCG via VHF Channel 16 if there is any indication that conditions may reach a stage dangerous to the safe operation of the vessel. Be prepared to provide GPS location and number persons aboard, safety gear available and a communication schedule.
 - 2. Contact nearby vessels via AIS if appropriate. Be aware of other vessels in the area if conditions will likely limit functionality of radar. Be sure to use the rain clutter feature of the radar and appropriate ranges of operation.
 - iv. Monitor bilge pumps by observing activation as indicated by red light illumination. Investigate any consistent activation of a pump system.
 - v. Adjust course and speed as necessary to maintain vessel stability while seeking a course that minimizes the potential for danger from high seas or other hazards relative to the sea state and vessel. DO NOT use autopilot.
 - vi. If appropriate, minimize the time spent in the weather event by transiting through the event (i.e. if you cannot avoid a line of thunderstorms by altering course and speed minimize the dangerous event time by transiting into the weather's approaching direction at a safe speed and vessel direction relative to the sea and wind conditions).

K. **Personal Flotation Devices;** United States Coast Guard-approved PFD's appropriate to the activity and the operating waters shall be worn by all individuals according to the following;

- 1) On any person working on a vessel of less than 25' LOA
- 2) At all times when a person is on an open deck working with equipment or handling over-board lines of any vessel
 - i. except in cases where persons approved for water entry and wearing other means of floatation (SCUBA or wetsuit gear for shallow water) are transiting in and out of the vessel during on-site work time.
- 3) Anytime while on the open deck of any vessel at night. All vessels with non-enclosed cabins are considered to be entirely open deck.
- 4) At all times while engaged with equipment in the water from land, pier or dock.

A PFD is a USCG-approved floatation device or Approved Automatic Inflatable Life Jacket device (APFD) or an approved float jacket or suit. Manually inflated devices do not meet this requirement. All APFDs are inspected annually and maintained per the manufacturer's instructions. Records of inspections are kept on file.

- L. **Antiexposure suits** (type V PFDs) are available to those operating in high risk situations such as extreme cold weather/water conditions. Antiexposure suits shall be worn from late November through late March by all individuals on the small boat fleet when the operations have an increased risk of accidental water entry with low likelihood of an immediate recovery (i.e. inlet or surf zone work). It is up to the vessel operator based on temperatures and operations risk levels, to determine the need for the required use of antiexposure suits aboard University vessels.
- M. **Immersion suits** (USCG approved) are available to all cold-water operations and are required to be aboard (one per person) vessels operating beyond the demarcation line (inlet boundaries) when average water temperatures are below 60F. All persons operating in these conditions should be familiar with the donning of an immersion suit and cold-water survival techniques.
- N. **Man Overboard Procedure (MOB)**; MOB procedures are to be communicated to the crew prior to departure including stations and locations of life rings, ladders and other recovery tools. Upon a MOB event the immediate reactions of the crew are critical;
- 1) Call out "Man Overboard" and keep your eyes on the victim.
 - 2) If there is any delay in locating the victim report the situation to the USCG via channel 16 and continue search.
 - 3) If available, one crew should keep an eye on the victim while others prepare for recovery and to deploy the life ring. Throw any floatable objects overboard to assist in re-location (including extra PFD, small buoys or even trash).
 - 4) The operator should save a MOB waypoint on the GPS and prepare the vessel for a safe approach back to the victim. Approach from downwind or down current and be careful to avoid allowing the prevailing wind/current forces to push the boat toward the victim as you near the recovery stage.
 - 5) Retrieve the victim relative to the vessel and the condition of the victim. If the victim is coherent and able, allow them to board via ladder or open transom (vessel specific). If the victim is incapacitated in any way limit the movement of

neck and spine during recovery and immediately call the USCG for assistance. Begin any necessary first responder treatments once aboard.

- 6) Report any significant injuries to the USCG and the University chain per section U.10 in the MOSOP.

O. **Hard hats and other PPE;** It is the responsibility of the authorized vessel operator to identify the need for additional personal protection equipment (PPE) relative to the activity.

- 1) Hard hats are to be worn by all individuals working around overhead lifting equipment (gantries and davits) when the item being lifted, or the strain on a lifting line or cable, potentially exceeds 50 lbs. Examples include, but are not limited to, buoy and bottom mount deployments, oyster dredges, patent tongs, bottom grabs, otter trawls and towed sensors (i.e. side scan sonars and sub bottom profilers).
- 2) Appropriate work gloves are to be worn by all individuals assisting with lifting operations and with special attention to those with moving parts (i.e. bottom grabs and patent tongs).
- 3) Special attention to loose clothing, PFDs or other potential “snag” hazards during overboard deployments should be exercised.
- 4) Knives and other means of freeing equipment or individuals for lines or cables shall be readily available on the deck of the operation.

P. **EPIRBS or PLBs** must be carried by all research vessels. The operator is responsible for making sure an operating emergency locating device is available that is appropriate to the scope of work and the waters of operation. As a rule of thumb, the following applies;

- 1) The *R/V Osprey* and the *R/V Petrel* have individually registered and hydrostatically activated EPIRBS mounted to the topside of the cabin. Additional PLBs are available to be worn by deck workers in nighttime or higher MOB risk operations.
- 2) The smaller vessels (,22' LOA, *R/V Skimmers*, *Scoter* and *Zostera*) have ACR ResQLink 406 MHz personal locator beacons stored in the orange safety box under the console.
 - i. When required by the operating situation or by the HSE standards of a contracting organization the PLB is to be carried on the person of the operator in charge. If needed the PLB shall be activated by the operator in addition to other safety notification measures (i.e. USCG calls via VHF, DSC activations)

Q. **Fire extinguishers;** All vessels are equipped with Type BC fire extinguishers of 2 to 5lbs. The *R/V Petrel* has multiple handheld 5 lb. extinguishers as well as an engine room halon system activated by topside pull lever at the helm station. In the event of onboard fire all passengers are to don lifejackets (if not already on) and exit to the open deck. The vessel operator and designated deckhand will direct actions thereafter.

- R. **Life rafts;** Any vessel operating beyond 3 nm from shore is required to have a currently certified and hydrostatically released life raft aboard.
- S. **Signatures and copies of required credentials** (boating licenses) are required to be on file in the Field Station Manager's office for all authorized operators. The signature page indicates receipt/understanding of these policies and a commitment to their enforcement.
- T. **Shallow water operations;** shallow water (<1m) operations where individuals can stand at any time, are not near deep channels or swift currents and that are not operating under the AAUS auspices are to adhere to the guidelines set forth here;
- 1) Individuals shall be competent swimmers in appropriate physical condition for the activity.
 - 2) Individuals entering the water shall be protected by wetsuits of a thickness appropriate to the water and air temperatures and the duration of the operation. This includes a minimum of a core-covering wetsuit in the summer months and up to a full length, booties, gloves and hooded suit of 7mm thickness or greater in the winter months.
 - 3) Prior to departure the researcher in charge shall confirm the individuals intending to enter the water with details on their protective equipment including thickness and length as well as past experience with similar work in similar conditions.
 - 4) The vessel shall have aboard a hypothermia kit to include dry towels, thick head covering, heavy blankets and a thermos of warm tea or another non-alcoholic beverage. The operator and participants should know the warning signs for hypothermia and the treatment procedures (see Appendix).
- U. **Additional operator and management responsibilities;** The safe operation of a University owned vessel is the sole responsibility of the operator at that time. It is their responsibility to ensure that the vessel has the required safety gear and that all State, Federal and University policies and regulations are followed. Marine Field Station personnel are responsible for the general maintenance of the vessels and assisting the day's operators in checking vessels and safety gear. When in doubt, ask Marine Field Station staff for assistance prior to departure.
- 1) Illness or injury at sea; it is the responsibility of the operator to determine if a passenger requires medical assistance or if it is in their best interest due to seasickness or injury to return to port.
 - 2) The safe operation of a University vessel as it relates to the sea and atmospheric conditions at that time is the responsibility of the operator. When an authorized operator is engaged in marine operations on University-owned vessels it is their responsibility to determine if conditions allow for safe work.
 - 3) It is the responsibility of the operator to ensure that persons aboard the vessel follow all State, Federal, and University regulations.

- 4) It is the responsibility of the operator to determine whether a specific situation requires assistance from the USCG or from a commercial towing agency. Upon vessel grounding, if conditions appear difficult to safely un-ground without assistance, the vessel operator should immediately contact Sea Tow on channel 16. In the event of an injury or threat to life or property, the operator should hail the USCG on Ch. 16 or choose to use a cell phone to contact them via direct phone. In all cases, the operator should be prepared to provide vessel and GPS information, number of persons aboard and the nature of the situation.
- 5) It is the responsibility of the operator to manage all waste according to State and Federal regulations. All garbage on all vessels shall be bagged and returned to shore for proper disposal. Human waste is to be handled as appropriate to the vessel and may include the use of portable toilet systems and/or the return to land for use of proper facilities (i.e. when conducting close to land work). The large vessels are equipped with holding tanks. It is the responsibility of the operator to be sure holding tanks have the capacity relative to the duration of the excursion.
- 6) It is the responsibility of the Field Station Manager, or his designee, to maintain updated letters of USCG Oceanographic Research Vessel designation and any applicable State and Federal scientific collecting permits for all research vessels. However, as in all cases, it is the responsibility of the operator to ensure the presence of said permits and to conduct activities within the regulations contained in them.
- 7) Operators are required to document vessel usage through logbook entries for each boat used and each field trip conducted. Logbooks serve as an important tool for recording the vessel operator, date, time, field trip destination, and boat engine hours. Logbooks are kept on file in the Management Office.
- 8) Operators are required to complete a float plan to be left at Field Station headquarters before excursions depart from the Field Station. In addition, operators shall monitor an appropriate VHF frequency (in addition to VHF channel 16) to maintain radio contact with Marine Field Station personnel when operating in local waters.
- 9) Upon completion of daily activities at the Field Station, any individual acting as a radio operator for field headquarters must attempt to notify vessel operators that they are departing for the day.
- 10) Vessel operators must communicate with the USCG via VHF channel 16 in case of an emergency. If there are students involved, once the situation is contained and there is no immediate danger to life or property Campus Police must also be notified of an emergency at the Field Station or onboard a research vessel.

11) All safety related incidents or accidents involving faculty, staff and students must be immediately reported to the Field Station Manager and the Laboratory Safety Officer. An [incident form](#) must be completed as soon as possible.

- i. Any accident causing loss of the vessel, damage over \$2,000, requiring medical treatment beyond first aid, or loss of life shall be reported to the U.S. Coast Guard and state authorities as prescribed by the Code of Federal Regulations, 33CFR, 173, sub part C.

<http://law.justia.com/us/cfr/title33/33-2.0.1.8.38.html#33:2.0.1.8.38.3>

V. **SCUBA Diving;** All diving operations conducted from Stockton University vessels must, at a minimum, comply with the standards of the American Academy of Underwater Sciences and the Stockton University-specific [AAUS Diving Safety Manual](#).

OSHA defines scientific diving in 29 CFR 1910.402 as “diving performed solely as a necessary part of a scientific, research, or educational activity by employees whose sole purpose for diving is to perform scientific research tasks...”

Whenever diving is conducted from a Stockton University vessel, the diving occurs under Stockton University auspices and the diving activity (SCUBA) must be noted on the vessel’s float plan. The designated lead diver will be in charge of all diving operations. A Stockton University vessel operator must remain onboard at all times during diving operations. Under no circumstances should diving operations be conducted from University vessels without prior approval from the University Dive Safety Officer (DSO).

W. **Trailing research vessels;** trailing of University vessels for purposes of either service or to engage in teaching/research activities based out of a port some distance from the Field Station is permitted only by authorized individuals and via the use of a State-owned vehicle. Under no circumstances should a personal vehicle be used to tow University owned vessels. The University’s auto shop maintains trailers used to transport University vessels.

- 1) It is the responsibility of the person towing the vessel to ensure that reasonable check-out measures are taken just prior to departure. These checks include; properly functioning lights, appropriate tire pressure, safety devices attached (pin in coupler, safety chains to vehicle, emergency brake chain connected), hydraulic jack and other emergency tools are available, and the vessel is secured to the trailer via an appropriate trailer strap or rope. Marine Field Station staff are available to assist with trailering preparations.

V. USE OF VESSELS IN NON-TIDAL WATERS

There are certain safety precautions that must be taken when operating on inland non-tidal waters such as lakes, ponds and creeks. For the purposes of this section vessels include canoes, kayaks, small aluminum “jon boats” and any other watercraft. University staff and faculty must meet the following requirements and adhere to the following safety procedures in order to operate University-owned vessels on non-tidal waters:

- A. Operation of all University-owned vessels on non-tidal waters is limited to those individuals complying with all the following qualifications:
- 1) Operator must be an authorized faculty or staff member of the University. TES and part time employees can be authorized.
 - i. Qualified and approved student workers may be permitted to operate a University owned vessel only when accompanied by authorized faculty or staff, either on the vessel or within the day's flotilla (i.e. on a second vessel traveling in convoy).
 - 2) Operator must be at least 18 years of age and have documented the experience and physical capability of performing the necessary duties of an individual in charge of the operation with special attention to the specifics of that operation (i.e. distances from shore and other factors).
 - 3) Operator must hold current First Aid, CPR certification.
 - 4) Operator must sign for the receipt and understanding of these procedures.
- B. All inland and non-tidal vessels are prepared for use by the operator. The operator is responsible for ensuring that the vessel is in safe operating condition. The MFS staff will assist when needed.
- C. Personal Flotation Devices (PFDs) must be worn by all individuals at all times while on the open deck of any University-owned vessel. While life vests (type III PFDs) are normally worn throughout much of the year during warm weather periods, antiexposure suits (type V PFDs) should be worn when the air or water temperatures provided an increased risk of cold exposure. As a rule of thumb, antiexposure suits shall be worn on inland waters from late November through late March.
- D. Operators are responsible for obtaining and obeying any site-specific rules or regulations. Examples include but are not limited to waters where gas powered engines are not permitted. Other restrictions may also be in place and it is the responsibility of the operator to be aware of these restrictions, if any.
- E. Operators are required to carry a cellular phone for use in the event of an emergency.
- F. Operators are required to have site specific information available to others aboard and on the field team that includes; name of body of water, town, and nearest address or meeting point for emergency response. In the event of an emergency the 911 system is to be used. Do not contact the USCG.
- G. Operators are required to leave a note on the vehicle which transported them to the site. This note should include the name of the persons on board, the time of departure, the expected time of return and the phone number for campus police (609-652-4390).

Should dusk fall and the vehicle be found without the persons returned yet from the water this note could be used to notify emergency personnel.

VI. REFUELING PROCEDURES AND FUEL STORAGE

- A. All fuel at the Field Station must be stored in OSHA/UL approved metal containers. However, UL approved plastic containers may be used to acquire fuel for immediate filling of vessels or equipment. UL approved plastic containers are stored empty. Notify the Field Station Manager or Director of Academic Laboratories at once if a fuel spill occurs.
- B. Authorized personnel must consult the Field Station Manager before refueling any of the research vessels.
- C. Normally, boats in the water are refueled at Chestnut Neck Boatyard (near Parkway Bridge on the Mullica River), while trailered boats are refueled at the roadside gas stations. Procedures for refueling are as follows:
 - 1) Be sure ignition switches and all electronics are turned off before attempting to refuel.
 - 2) NO SMOKING
 - 3) Open aft deck plate and monitor for fuel and/or fumes.
 - 4) When available fuel with only mid to high grade fuel (89-93 octane, NOT roadside 87 octane).
 - 5) Check with MFS staff if unsure of oil requirements. All motors over 100 hp DO NOT have oil reservoirs or require pre-mixing. DO NOT add oil to any fuel without knowledge of ratios and requirements.
 - 6) Proceed with filling of tanks. Monitor fuel gauges and listen at air vent to confirm tank is full. Pump fuel SLOWLY and DO NOT OVERFILL.
 - 7) Avoid “topping off” of tanks when refueling – a gallon or two less is better than a few ounces in the water or roadside.
 - 8) Spills require you to provide containment as best as possible. If significant and dangerous to the environment or life and property notify the Field Station Manager and if deemed necessary, call emergency response at 911.

VII. PROCEDURE FOR DISCHARGES TO THE NACOTE CREEK

A. Building 504, First Floor Aquaculture Laboratory

The New Jersey Department of Environmental Protection issued the University in 1992 a Notice of Termination of Permit for discharges originated by activities of the aquaria maintenance in the Wet Lab located now in Building 504 of the Field Station. The Department determined that the Termination requirements they stipulated have been met with the University in compliance with the NJDEPS/DSW Permit NJ0027588 and reclassified such a discharge as “INACTIVE”.

The tanks of Building 504 are equipped with box drains that are permanent fixtures in the floor. The box drains empty directly into the Nacote Creek.

The following is permissible discharge to the Nacote Creek from the Box Drains:

- a) Ambient/ unaltered seawater
- b) Ambient/unaltered freshwater

The following is not permissible discharge to the Nacote Creek from the Box Drains:

- a) Disinfectants/cleaners/non-biodegradable soaps.
- b) Any chemicals/ solvents
- c) Wastewater from genetically altered specimens
- d) Remains of genetically altered specimens
- e) Water from other contaminated streams or natural waters

The floor drains and sinks of Building 504 are connected to the Septic System. Absolutely no chemicals are to be discharged to any sinks (this includes ALL buildings) at the Field Station.

B. Building 501, Teaching and Research Laboratories

All plumbing of building 501 is connected to the septic system. Although a lime pit is in line before the septic system, absolutely no chemicals should be discharged through any sinks. A seawater table in the secondary laboratory can be drained to the Nacote Creek via a capped pipe located under the nearby sink. The following is permissible discharge to the Nacote Creek from the seawater table drain:

- c) Ambient/ unaltered seawater
- d) Ambient/unaltered freshwater

The following is not permissible discharge to the Nacote Creek from the seawater table drain:

- a) Disinfectants/cleaners/non-biodegradable soaps.
- b) Any chemicals/ solvents
- c) Wastewater from genetically altered specimens
- d) Remains of genetically altered specimens
- e) Water from other contaminated streams or natural waters

Information on hazardous waste disposal is available on the [RMEHS website](#).

C. Building 506, Pumphouse

The filter/pump assembly located in the pumphouse is directly connected to the Nacote Creek. Occasionally, backflushing is necessary to maintain the efficiency of the filtration system. During backflushing the sand filter is cleansed of sediment and fine debris through the reversal

of the flow creek water. This sediment is directly discharged to the Nacote Creek. Backflushing is generally conducted once a month for a duration of ten minutes.

D. Boats and Other On-site Cleaning of Equipment

All of the boats are cleaned routinely. Wastewater that accumulates on the deck of the boats exists via the scuppers located at the stern of the boat and discharges directly into the Nacote Creek. The use of biodegradable soap only is permissible (Boat-Zoap, etc). This procedure must be followed by the cleaning of any equipment or vessels on the Marine Field Station grounds.

VIII. GUIDELINES FOR STORM PREPARATION

In the event of a coastal storm (hurricane, northeaster, or other severe weather event) the Marine Field Station, being a facility located on tidal waters, requires that precautionary measures are taken to assure personal safety and avoid loss or damage of University property. The Field Station Manager is responsible for assuring that these precautionary measures are taken. In the absence of the Field Station Manager or other management staff, the Executive Director of Academic Laboratories and Field Facilities will request the NAMS Laboratory Mechanic and Plant Management to carry out these emergency actions, as described below. The actions detailed below are prioritized and reflect the severity of an anticipated storm event.

A. Forecasted tides of 7.0 feet above Mean Low Water (MLW):

1. Secure vessels appropriately. Double check operation of bilge pumps.
2. Perform other preparations as determined by Field Station Manager or other person in charge.

B. Forecasted tides of greater than 9.0 feet above MLW and sustained winds of greater than 50 knots:

1. Lower floating dock ramps and secure as needed.
2. Move University vehicles to upland area.
3. Pull all University trailer-able vessels from the water and store in the boat yard.

C. Forecasted tides of greater than 10.0 feet above MLW and sustained winds of greater than 70 knots:

1. Follow 1 through 3 from sections B.
2. If determined necessary, move equipment and supplies in Bldg. 504 and 505 (boathouse) off ground level and sandbag ground level access doors to Bldg. 504.
3. Trailer University vessels to Plant Management for storage.
4. If possible, have the *R/V Petrel* pulled and stored at Jersey Cape marina or other suitable upland location.
5. Other precautions as determined by the Field Station Manager or person in charge of these emergency actions.

APPENDICES

Research Vessel Operator Evaluation Form

Safe Boating for Operators Handout

Safe Boating for Passengers Handout

Cold Water Survival Handout

Marine Operations Safety Briefing Record

**STOCKTON UNIVERSITY
RV OPERATOR EVALUATION FORM**

NAME _____
ADDRESS _____

DATE _____
PHONE _____
Z # _____

SCORES

- 1. VESSEL STARTUP (10%) _____
 - Engine Preparations before START
 - Logbook Entries
 - Vessel Float Plan
 - Equipment Check
 - VHF Radio Check

- 2. VESSEL HANDLING (40%) _____
 - Throttle Control / Clutch Control
 - Trim / Tilt Control
 - High Speed Steering
 - STOP Test
 - Crossing a Wake
 - Anchoring
 - Demonstrating Knowledge of Local Aids
To Navigation
 - Towing Special Equipment

- 3. DOCKING _____
 - Entering / Exiting a Slip
 - Getting Underway from a Dock
 - Positioning Side-to
 - Line Handling / Knots

- 4. EMERGENCY SITUATIONS (20%) _____
 - Person Overboard

 - Extinguishing a Fire
 - Abandoning Ship / Mayday
 - Taking on Water
 - Vessel Aground

TOTAL SCORE _____
PASS _____ FAIL _____

COMMENTS _____

Safe Boating Guideline for Passengers

I. Your safety

**** when engaged in marine field studies you are 30-90 minutes away from professional medical help. If you have a known medical condition, including allergies, consider discussing it with your professor and the Field Station Manager – arrangements for your safety will be made.**

- A. Inform your instructor and vessel operator of any special medical conditions, including ALLERGIES and any medications or devices you carry
- B. Wear your PFD and remain seated while underway.
- C. Step onto the boat, DO NOT JUMP.
- D. Wear closed toed shoes – old sneakers or boat shoes are good.
- E. Remain wary of obstructions on the deck while working, such as anchors, hydraulics and other equipment.
- F. When vessels are beached do not get off the boat until the operator indicates that it is safe to do so.
- G. Do not jump into the water, marsh or beach. Carefully slide off the side.
- H. Ask for help if you feel uncomfortable about any aspects of the trip.
- I. When approaching a dock, do not fend off unless asked to do so.
- J. Keep hands and feet in the boat while underway and when approaching docks.

II. Your comfort

- A. Dress sensibly – conditions on the water tend to be extreme
 - 1. Light colored long sleeve t-shirts during buggy season (May – October)
 - 2. Waders and other rain gear when appropriate.
- B. Eat sensibly the day of a trip, especially when the weather is hot.
- C. Bring water to drink, especially when the weather is hot.
- D. Wear sunblock, even on overcast days.
- E. Bring bug spray on the trip.

III. Your experience

- A. Get involved, learn and experience each piece of equipment and sampling technique.
- B. Ask questions, your instructors and operators have a wealth of knowledge to share.
- C. Know where you are in the estuary or coastal zone.
 - D. Consider your latest classroom knowledge as you travel through the marine environment.
- E. Form partnerships with your classmates.
- F. Record data carefully and in pencil.

Field experience is one of the best parts of your chosen course of study, do not lose your boating and field trip privileges by acting irresponsibly. Your grade and academic reputation will suffer should you have these privileges revoked.

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Cold Water Survival

You are not helpless in cold water. You can survive long periods of time in cold water. Body heat loss is a gradual process. Your body will constrict your blood vessels at the skin surface and keep valuable body heat from being lost too rapidly. The rate of body heat loss depends on water temperature, the protective clothing worn, and the manner in which the survivor conducts himself.

An abnormally low body core temperature can be recognized by a variety of symptoms. Very early during exposure, the body tries to combat the excessive heat loss both by constricting the surface blood vessels (to reduce heat transfer by blood to surface) and by shivering (to produce more body heat). If exposure is severe, the body is unable to conserve or produce enough heat. The body core temperature begins to fall, creating a condition known as hypothermia. As the body core temperature approaches 95F (35C), it starts to fall more rapidly. By then discomfort, tiredness, poor coordination, numbness, impaired speech, disorientation and mental confusion appear. As the internal temperature decreases into the 80's (below 32.2C) unconsciousness may result, as well as bluishness to the skin, collapse of the veins in the skin, and enlargement of the pupils. The heartbeat becomes irregular and the pulse is barely detectable. Although death may occur whenever the core temperature is below 90F (32.2C), it is very difficult to be sure if the patient is alive or dead when the body core temperature is below 85F (29.4C). Death is then defined as failure to revive on rewarming.

Your chances of survival are much greater if you are well prepared before you abandon ship. Even in worst cases, it usually takes 15 to 30 minutes to fully submerge a vessel. Put on as much warm clothing as possible, making sure to cover head, neck, hands and feet. Put on a life jacket and be sure to secure it correctly. If lifeboats are available, board lifeboat by ladder or rope. Unless it is unavoidable, do not jump from higher than 16 feet (5 meters) into the water. Try to minimize the shock of sudden cold immersion. Rather than jumping into cold water, try to lower yourself gradually. A sudden plunge into cold water can cause rapid death or an uncontrollable rise in breathing rate. If you must jump, keep your elbows at your sides, cover your nose and mouth with one hand while holding the wrist or elbow firmly with the other hand. Once in the water, orientate yourself to the boat and other people or objects. If unable to prepare yourself before entering the water, button up clothing now. In cold water, you may experience violent shivering and great pain. These natural body reflexes are not dangerous. While afloat in water, do not attempt to swim unless it is to reach a nearby craft, a fellow survivor or floating object. Unnecessary swimming will increase the rate of body-heat loss. It is important to remain as still as possible in cold water. This can be painful. Pain will not kill you, heat loss can.

The body position you assume in the water is also very important in conserving heat. Float as still as possible with your legs together, elbows close to your sides and arms folded across the front of your life jacket. This position minimizes the exposure of the body surface to the cold water. Try to keep your head and neck out of the cold water. If other people are in the water, huddle closely together to conserve body heat. Try to shorten your immersion time by boarding a raft or floating object, if possible. Keep a positive attitude while waiting to be rescued.

Common sense says dress appropriate for the weather, but some care in selection of clothes can make a difference in survival. If possible, wear many layers of clothing, including a waterproof outer layer. Make certain that the neck, wrist and ankle portions of the clothing are snugfitting. Woolen clothes are better insulators than cotton, especially when wet. Wear an outer garment that is bright in color.

The treatment for hypothermia will depend on both the conditions of the survivor and the facilities available. If the person is rational and capable of recounting his/her experiences, although shivering severely, remove all wet clothes, replace with dry clothes or blankets and have the victim rest in a warm environment. If the person is semi-conscious, unconscious or apparently dead, contact should be made as soon as possible with Emergency Medical Services (EMS). Administer first-aid care while waiting for help to arrive. Remove the victim from the cold and check for the presence of breathing and heartbeat. If the victim is not breathing and has no heartbeat, immediately begin cardiopulmonary resuscitation (CPR). Remove the victim's clothes with a minimum of body movement. Cut away the clothes, if necessary. Do not massage the victim. Lay the unconscious or semi-conscious victim in a level, face-up position. If vomiting occurs, turn the victim's head to one side. Be sure to check the victim's breathing and heartbeat frequently. Insulate the victim from further heat loss by wrapping the victim in a blanket. Do not attempt to aggressively rewarm the unconscious victim. Definitive rewarming should be attempted in a hospital. Do not give the victim alcohol.

Hopefully, you will never experience these situations but advanced planning, preparation and thought on your part can be the most significant factor in your successful struggle with cold water immersion.

Reference: A Pocket Guide to Cold Water Survival by US Coast Guard

For more information on Cold Water Survival visit:

<http://www.mustangsurvival.com/education/>

MARINE OPERATIONS SAFETY BRIEFING RECORD

Date: _____

Course/activity: _____

Instructor/researcher: _____

Safe working conditions are very important to the faculty and staff of the Marine Science Program. Before your initial field trip, you will receive information on Boating Safety and your instructor will discuss the importance of safe procedures in the field. **You are encouraged to inform your instructor of any special health conditions or medications that you take that might affect your field experience, including allergies and medications or devices you carry.** All students are responsible for the field equipment that they use and will be charged for equipment that is damaged, broken or lost as a result of careless use and/or improper handling.

When engaged in vessel-based activities you are 30-90 minutes away from professional medical help. Consider discussing existing medical conditions, medications, etc. with your instructors.

I understand and accept the above conditions.

I have received the Safe Boating Guideline for Passengers and the MFS staff or lead vessel operator has discussed the rules and regulations for working safely in the field. I have been encouraged to inform them of any special health conditions which may affect my field experience.

Print Name:

Sign Name:

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Safe working conditions are very important to the faculty and staff of the Marine Science Program. Before your initial field trip, you will receive information on Boating Safety and your instructor will discuss the importance of safe procedures in the field. **You are encouraged to inform your instructor of any special health conditions or medications that you take that might affect your field experience, including allergies and medications or devices you carry.** All students are responsible for the field equipment that they use and will be charged for equipment that is damaged, broken or lost as a result of careless use and/or improper handling.

When engaged in vessel-based activities you are 30-90 minutes away from professional medical help. Consider discussing existing medical conditions, medications, etc. with your instructors.

I understand and accept the above conditions.

I have received the Safe Boating Guideline for Passengers and the MFS s have discussed the rules and regulations for working safely in the field. I have been encouraged to inform the instructor of any special health conditions which may affect my field experience.

Date: _____

Course: _____