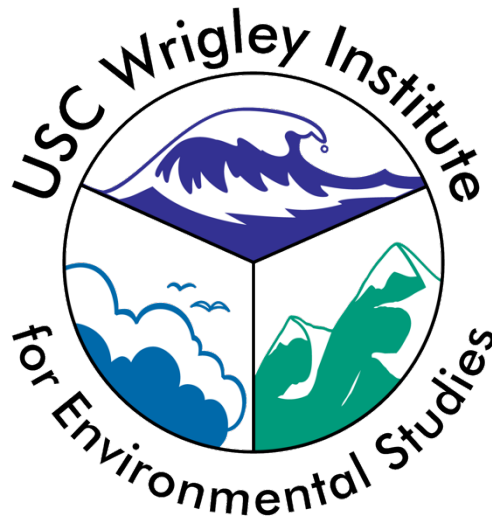


University of Southern California
Wrigley Institute for Environmental Studies

Boating Safety Manual



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October 2020

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USC/WIES BOATING SAFETY MANUAL

SECTION 1.0

OVERVIEW

1.1 PURPOSE

The purpose of this manual is to facilitate safe boating under the auspices of the University of Southern California Wrigley Institute for Environmental Studies (USC/WIES). These policies and procedures are set forth with an intention to promote research boating activities in a safe, prudent, efficient manner, and to familiarize participants with the basic activities that affect their safety as well as the safety of their fellow users.

All personnel designated as USC/WIES small boat operators are required to observe the provisions of this manual.

1.2 CONTENTS

The Boating Safety Manual includes:

1. Policy and procedures that pertain to vessels engaged in scientific boating operations under the auspices of USC/WIES.
2. Requirements for obtaining and maintaining operator certification.
3. Administrative procedures for conducting the USC/WIES boating program.
4. Vessel equipment and maintenance procedures.
5. Regulations for compliance with applicable Federal and State laws and USC/WIES rules.

1.3 AUSPICES

The provisions of this manual apply whenever personnel are using small boats for scientific or other purposes under USC/WIES auspices, whether or not the institution owns the boat.

Specific examples of boat operations under USC/WIES auspices include but are not limited to: persons engaged in research; employees acting within the scope of their employment; students engaged in any research operation, including those receiving boat operation instruction or involved in boat checkouts; and boat operations conducted during educational programs sponsored by USC/WIES.

1.31 SMALL BOAT DEFINITION

For the purpose of this manual, a small boat is defined as- **Any vessel less than 26 feet in length** (United States Coast Guard (USCG) Class 1 or Smaller). In order to be approved for use by USC/WIES personnel, a small boat must be numbered in accordance with the regulations of the State of California, in accordance with applicable Federal Law or with a federally approved numbering system of another state.

Small boats used under USC/WIES auspices fall into five categories:

1. Boats owned and operated by USC/WIES.
2. Boats owned by individual USC programs.
3. Privately owned boats used for USC/WIES research.
4. Boats chartered by USC/WIES personnel for the purpose of conducting research, education or training.
5. Boats from visiting institutions or entities operating from the USC/WIES facility known as the Wrigley Marine Science Center (WMSC) for USC/WIES research.

Boat operations conducted in accordance with University policies from recreational or other university programs not under the auspices of USC/WIES are exempt from this manual. It is recommended that these programs have their own boating safety manuals and procedures.

SECTION 2.0

RESPONSIBILITY

2.1 DEAN, USC DORNSIFE COLLEGE OF LETTERS, ARTS AND SCIENCES

The Dean of the College has the ultimate authority for the small boat program and its related activities. The Dean is responsible for overseeing the administration of the program.

2.2 BOATING CONTROL BOARD

The USC/WIES Boating Control Board (BCB) is responsible for recommending changes to the Boating Safety Manual and general oversight of the small boat operations at USC/WIES. This includes: reviews of accidents involving injury, loss of life, or damage to equipment, disciplinary action for unsafe practices, act as a board of appeal, review Boating Safety Officer's performance and program, and approval of exceptions to this manual.

The Boating Control Board will consist of:

1. Boating Safety Officer (BSO)- He/she has the ultimate responsibility for the boating program and its related activities.
2. WIES Director of Operations
3. The Marine Operations Manager (MOM)
4. USC/WIES Diving Safety Officer (DSO)
5. Board Members- Board Members should consist of a majority of persons who are involved and knowledgeable with boating operations and WIES administration.

2.3 BOATING SAFETY OFFICER

The Boating Safety Officer is responsible to the Dean and Boating Control Board for the conduct of the Boating Safety Program. Routine operational authority for the USC/WIES Boating Safety Program, including certification of operators, approval of boat request forms/float plans, maintenance of boats, and ensuring compliance with this manual by all operators under the auspices of USC/WIES rests with the BSO.

The BSO may permit portions of this program to be carried out by a qualified delegate, although the BSO may not delegate responsibility for the safe conduct of the USC/WIES Boating Safety Program.

The BSO shall suspend boating operations that are considered unsafe. He/she will ensure that all boats operating under USC/WIES auspices shall be in compliance with USCG

laws and requirements with respect to equipment and safety procedures.

The BSO is responsible for explaining procedures to be used by USC personnel who wish to charter a non-institutional boat. The procedures are to be consistent with the USC/WIES and USCG guidelines.

2.4 PRINCIPAL INVESTIGATOR

Principal Investigators are personally responsible for assuring that all boat operations at the WMSC which are part of a program under their direction are conducted in accordance with this manual. Principal Investigators who operate boats that are either owned by individual USC programs, privately owned, or chartered OUPV/Six-pack vessels used for USC/WIES research purposes are required to meet the same safety standards as USC/WIES boats as described in this manual. All vessels must have the onboard safety equipment as outlined in the USC/WIES Boating Safety Manual (See *APPENDIX VIII*).

2.5 BOAT OPERATOR

Only authorized USC/WIES boat operators may operate small boats under USC/WIES auspices, whether or not the boat is owned by USC/WIES. Exceptions may be granted by the BSO for vessels operated by non-USC/WIES owners/operators.

In US waters, non-USC/WIES owner/operators must comply with USCG, State, and local regulations covering chartered vessels. In foreign waters, the responsible USC/WIES representative shall ensure the vessel meets the equipment requirements of this manual (See *APPENDIX VIII*).

The designated boat operator is responsible for all aspects of boating operations, regardless of any senior personnel present on the boat. These responsibilities include, but are not limited to:

1. Safety of the vessel and all persons onboard.
2. The safe operation of all equipment involved in either the handling of the vessel or collection of data.
3. Safe transport of the vessel to and from the launch site.
4. Ensuring that all required operational and safety equipment is onboard before getting underway, and properly cleaned and stowed upon return (See *APPENDIX VIII*).
5. Ensuring that crew are familiar with the location and function of lifesaving equipment.
6. Operators are responsible to abort the trip if weather conditions become hazardous to safe operations, the proper required equipment is not onboard, mechanical or equipment issues arise that affect safe boat operations, or any other potentially hazardous conditions emerge.

Failure to comply with the provisions of the Boating Safety Manual may be cause for the revocation or restriction of the operator's authorized boating activities by the BSO or BCB. However, any operator may deviate from the requirements of this manual to the extent necessary to prevent or minimize a situation that is likely to cause death, serious harm, major environmental deterioration, or damage to the vessel. A written report of such actions must be submitted within 24 hours to the BSO explaining the circumstances and justifications.

SECTION 3.0

ADMINISTRATIVE PROCEDURES

3.10 GENERAL

The regulations in this manual must be observed whenever small boat operations are carried out under the auspices of USC/WIES. All operators must follow the provisions of this manual and all equipment used must conform to USCG requirements.

All administrative procedures must be followed to the specifications of this manual and maintained in accordance by the BSO.

3.20 AUTHORIZATION OF BOAT OPERATORS

In order to become a USC/WIES authorized boat operator one must demonstrate proficiency in safe boat operations, knowledge of the “Rules of the Road” and a familiarity with the operation of safety equipment. USC/WIES maintains two authorized levels of boat operators dependent upon each individual’s qualifications (See 3.21 OPERATOR LEVEL). All operators are required to:

1. Complete a State of California and National Association of State Boating Law Administrators (NASBLA) approved boating safety course, apply for a California Boaters Card and provide documentation of receipt of the card to the BSO. See: <https://californiaboatercard.com/> for questions.
2. Carry a CA Boaters Card during boat operations per California State Law.
3. Complete a shore based Small Boat Orientation (SBO) which covers float plans, familiarization with boating procedures, as well as locations and proper use of required boating equipment by the BSO or other approved USC/WIES personnel (See *APPENDIX I*).
4. Complete a Small Boat Operator Training (SBOT) which demonstrates proficiency in the safe operation of small boats through hands on boat handling exercises while accompanied by the BSO or other approved USC/WIES personnel (See *APPENDIX II*).
5. Portions of both the SBO as well as the SBOT may be omitted under the discretion of the BSO for individuals who provide documentation of having previously been trained in the pertaining sections.

3.21 OPERATOR LEVEL

Small Boat operators are classified into two distinctions:

1. **Trainee:** Meets all the above listed requirements. **Trainees** are limited to USC/WIES designated “Small Vessels” which are from 11 to 21 feet in length tiller driven vessels which possess no greater than 50 horsepower outboard motors. **Trainee** boating activities shall be

conducted entirely within the Small Boat Boundary (SBB) (See *APPENDIX III*). Voyages outside the SBB must be approved by the BSO or other approved USC/WIES personnel on an as needed basis. Voyages outside the SBB must show justification for doing so and distances outside will be limited to reasonable lengths dependent upon vessel load, weather conditions, experience, etc.

2. ***Motorboat Operator***: In addition to the above listed requirements for ***Trainee, Motorboat Operators*** must complete one of the following:
 1. Maintain a USCG Operator of Uninspected Passenger Vessel (OUPV)/6-Pack Captain's license or greater.
 2. Complete a USC/WIES Scientific Boating Safety Association (SBSA) approved Motorboat Operator Training Course (MOTC).
 3. Complete a SBSA MOTC from another SBSA approved institution and provide proof of completion to the USC/WIES BSO.
 4. Apply for an exemption to the above requirements to become a USC/WIES ***Motorboat Operator*** based off boating experience. Applications and status shall be accessed and determined by the BSO. Applications will require completion of all ***Trainee*** requirements in addition to logged sea-time of at least 50 days on the water and description of boating experience.

Motorboat Operators are able to conduct boating activities in USC/WIES designated "Large Vessels" which are from 16 to 23 feet in length and possess 60 to 150 horsepower outboard engines. Boating activities for Motorboat Operators may be conducted outside of the SBB in an area known as the Large Boat Boundary (LBB) (See *APPENDIX IV*). The LBB consists of the leeward side of Catalina Island within 1 nautical mile from shore between the West End, which is the western most tip of the island, to Seal Rocks on the eastern end of the island. Voyages outside of this demarcated area must be approved by the BSO or other BSO appointed USC/WIES personnel on an as needed basis. Voyages outside the LBB must show justification for doing so and distances outside will be limited to reasonable lengths dependent upon vessel load, weather conditions, experience, etc.

3.22 VISITING BOAT OPERATOR

In order to be approved to operate USC/WIES vessels a ***Visiting Boat Operator*** must provide the USC/WIES BSO with proof of practical experience and operator training through either:

1. Verification of Training (VOT) letter from the home institutions Boating Safety Officer or equivalent, or
2. SBSA Motorboat Operators Training Course certificate, or
3. Equivalent information detailing boating experience to be evaluated and approved by the USC/WIES BSO.

Visiting Boat Operators must also:

1. Provide the USC/WIES BSO with a copy of their CA Boaters Card and maintain the card on all voyages on USC/WIES vessels.
2. Complete applicable portions of the USC/WIES Small Boat Orientation (See APPENDIX I).
3. Complete applicable portions of the USC/WIES Small Boat Operator Training (See APPENDIX II).

Visiting Boat Operators may receive an exemption to the above listed requirements to operate USC/WIES vessels based on acceptance of liability for boating activities of the ***Visiting Boat Operator*** by the home institution. In order to be approved for this exemption a detailed Memorandum of Understanding shall be submitted and agreed upon by both the USC/WIES BSO and BCB.

3.23 MAINTAINING AUTHORIZATION

USC/WIES Boat operators of both operator levels are required to maintain authorization by correctly following all USC/WIES Boating Safety Manual procedures and regulations while completing at least 5 voyages in a calendar year. Operators not reaching this quota will be required to review boating activities with the BSO or approved USC/WIES personnel prior to the continuation of boating activities. Additional practical training may be required at the discretion of the BSO.

3.24 REVOCATION OF AUTHORIZATION

A boat operator's authorization may be revoked for any action deemed unsafe, unlawful, or for not meeting the procedural requirements of the USC/WIES Boating Safety Manual. Revocation will be determined by the BSO.

3.25 REAUTHORIZATION

If a boat operator's authorization is revoked, he/she may re-qualify after the operator complies with the conditions imposed by the USC/WIES BSO. The operator shall be given the opportunity to present his/her case to the BCB before conditions for re-authorization are stipulated.

3.30 BOAT RESERVATIONS

Boat reservations will be approved by the BSO or designee on a first come, first serve basis. The BSO reserves the right to modify any boating reservation. All boat reservations must be received at least 24 hours prior to the date of the scheduled voyage. Same day requests may or may not be approved and fall under an as-available basis.

3.40 FLOAT PLAN- (See *APPENDIX V*)

All boat operators conducting boat operations under the auspices of USC/WIES are required to file a Float Plan with the BSO or delegate prior to departure. All Float Plans must be filled out in their entirety in order to comply with the USC/WIES Boating Safety Manual.

Float Plans will be used as an invoice for billing purposes, (See *APPENDIX VI*), as well as documentation of sea-time.

Float Plans must be closed out upon termination of boating activities. Failure to fulfill these requirements may result in disciplinary action by the BSO or BCB.

Failure to completely fill out the time information on the Float Plan upon termination of boating activities may result in the operator being charged a Full Day vessel use fee (See *APPENDIX VI*).

3.41 FLOAT PLAN CRITERIA DEFINED

To assist individuals in completing Float Plans in their entirety the criteria listed on the Float Plans is defined below:

1. **Affiliation-** Which institution (University, Federal or State Agency, Aquarium, etc.) best describes under which direction the user is conducting work.
2. **Status-** Current status level in the University system (Faculty, Staff, Graduate, Undergraduate) or “Other” being not involved in University programs.
3. **Project-** Which title best defines the scope of work being conducted.
4. **Purpose of the Trip-** What best describes the activity or activities that will take place during the boating trip.

Research- Active research with an end goal of being published in an academic journal or the like.

Collecting- Collecting specimens for research or similar activity under a CA Dept. or Fish and Wildlife approved scientific collecting permit.

Diving- Conducting AAUS Scientific Diver SCUBA diving activities.

Instruction- Trip is conducted by individuals who are actively enrolled in courses which purpose is to obtain credit in a university system.

Training- Includes both vessel operations or SCUBA diving training activities.

Other- Trips that do not fall into any of the above categories and may be for activities such as: (Education & Outreach, Recreational use, Passenger Transport, etc.)

3.50 RECORD KEEPING

3.51 ROUTINE RECORDS

The USC/WIES BSO is responsible for routine record keeping for the boating program. The BSO or designee shall keep on file records for:

1. Boat use activities for the current calendar year.
2. Boat use for the prior calendar year for reference.
3. Logs of scheduled and unscheduled maintenance for each USC/WIES vessel in the fleet.

3.52 BILLING (See APPENDIX VI)

The BSO or delegate shall be responsible for collecting Float Plans for billing purposes on a no less than monthly basis. Boat use by each user group shall be forwarded in the appropriate manner to the appropriate USC/WIES staff.

3.53 ANNUAL REPORT

The BSO shall be responsible for the annual statistics report outlining boat use for the calendar year. The report shall be submitted to the BCB, SBSA and appropriate USC personnel.

3.54 ACCIDENT REPORTING- (See APPENDIX VII)

All accidents and incidents involving boats must be reported to the Boating Safety Officer within 24 hours.

The USC/WIES BSO shall review all accidents and incidents and will circulate a report concerning all accidents to BCB, WIES Director and USC Environmental Health and Safety.

Accidents vs. Incidents Defined:

Accidents are defined as events that result in serious injury requiring medical attention beyond basic first aid, or serious damage to property with an estimated value over \$200.

Incidents are defined as events that result in minor injuries (cuts and scrapes) or insignificant commonly called “cosmetic” damage to vessels (dents and scratches that don’t affect the operations of the vessel).

Accident reports shall be held by the BSO on file for five years.

Any accident causing loss of life, loss of the vessel, damage over \$2,000, or requiring medical treatment beyond first aid must be reported to the USCG.

Reporting Resources and Guidelines:

1. Any accident or incident must be reported to the USC/WIES Boating Accident Report Form (See *APPENDIX VII*).
2. Any accident resulting in a serious injury or damage to property must be reported to:

USC/WIES Boating Safety Officer: Office (310) 510-4024,
Cell (213) 447-5396, toudin@usc.edu

USCG Sector Los Angeles: (310) 521-3815

USC Environmental Health and Safety: (323) 442-2200

SECTION 4.0

OPERATIONAL PROCEDURES

4.10 BOATS AND EQUIPMENT

All boats and equipment used by USC/WIES authorized operators in U.S. waters, regardless of ownership, will at minimum, conform to USCG, CA State, and local standards set forth in this manual.

All boats operated outside of USCG jurisdiction shall at a minimum comply with USCG regulations in addition to any applicable local requirements and to the standards set forth in this manual.

4.11 VESSEL DISTINCTION

The USC/WIES owned and operated vessels are divided into two size classifications by outboard engine horsepower for designated use by the appropriate operator level. The two groups consist of:

Small Boats: Tiller driven vessels under 21 feet in length and with a maximum of 50 horsepower which are restricted to use inside the Small Boat Boundary (SBB) unless prior approval of the Float Plan has been granted by the BSO or USC/WIES designated personnel to exit the SBB (See *APPENDIX III*).

Large Boats: Center Console driven vessels from 16 to 23 feet in length ranging from 60 to a maximum of 50 horsepower which are permitted to exit the SBB, but are limited to voyages within the Large Boat Boundary (LBB) unless prior approval of the Float Plan has been granted by the BSO or USC/WIES designated personnel to exit the LBB (See *APPENDIX IV*).

4.12 STABILITY

All motorboats used by USC/WIES personnel shall follow the number of personnel allowed and weight capacity designated on the vessel's capacity plate. It is the responsibility of the operator to stay within the limits found on the capacity plate and to have all weight distributed so that the boat will trim properly. If a capacity plate is not present use the formula:

$$\text{Boat Length X Boat Width}/15 = \# \text{ of persons onboard.}$$

For vessel information (See APPENDIX IX- Vessel Inventory).

4.13 SAFETY EQUIPMENT- (See *APPENDIX VIII*)

It is the responsibility of the operator to ensure that all required equipment is serviceable and onboard any USC/WIES vessel prior to departure. The operator shall be familiar in the function and use of all safety equipment and shall make all crew members aware of the location and use of said equipment prior to departure. The operator shall notify the BSO in the event that any equipment was damaged or malfunctioned during operation.

All required safety equipment will be introduced and a demonstration of function shall be explained during the Small Boat Orientation by the BSO or approved USC/WIES personnel unless the operator has documented proof of prior training in the use of such equipment (See *APPENDIX I*).

USCG approved Personal Floatation Devices (PFDs) must be worn at all time by each person participating in trips conducted on vessels operating under USC/WIES auspices, unless the person is currently wearing thermal protective floatation wear that can provide immediate floatation in case one was to fall overboard. Examples of these include: Wetsuits, donned Dry suits, Float Coats, etc.

4.20 EMERGENCY PROCEDURES

Emergencies onboard a vessel are unforeseen in nature and can be life-threatening, thus it is the responsibility of every operator to ensure that all crew know what actions are needed in order to react to emergencies at sea. All crew must be briefed with emergency procedures so that they are comfortable enough to effectively receive help or remove the vessel from a dangerous situation.

At the first indication of trouble or developing emergency, always call for assistance. Assistance can be the nearest US Coast Guard Station, local authorities, another vessel or shore support by VHF radio, cell phone or voice. All persons should don PFDs if not already being worn.

In case of emergency onboard a vessel, in order to call for help via VHF radio, switch to VHF channel 16. State slowly, clearly, and calmly:

“MAYDAY, MAYDAY, MAYDAY!
GIVE YOUR NAME, LOCATION, AND NATURE OF EMERGENCY

Wait for further instructions from the authorities. If no response is heard, repeat steps.

Help can also be called by cell phone by dialing 911.

4.21 FOUL WEATHER

The BSO or authorized USC/WIES personnel shall suspend all boating activities when the National Weather Service (NWS) marine forecasts reach Gale Force level. Marine forecasts for Small Craft Advisories shall be determined by the BSO whether or not conditions are safe enough to allow boating activities to continue.

It is the responsibility of the operator to check the weather forecast before all voyages. The operator must decide prior to departure whether the weather forecast outlines safe conditions for boating activities (See 4.50 Weather).

In the event that wind or waves start to build to dangerous levels or are forecast to become hazardous, the operator in charge shall:

1. Have all passengers don PFDs.
2. Cancel all research activities, suspend voyage and begin travel back to port.
3. Call for help on VHF channel 16 and give your name, location and nature of distress if you foresee losing control of the vessel.
4. If the engine fails, immediately deploy the anchor or any other object that can create drag and make fast to the bow in order to hold the bow into the waves to avoid capsizing.
5. In the event that travel back to the homeport is not possible due to the weather conditions, locate the nearest safe harbor, head for that location, secure the vessel and stay there until the weather subsides or help arrives.

4.22 CAPSIZE

Most capsized small boats will still float even with the outboard motor attached. In case of a vessel capsizing:

1. Don PFDs.
2. At first notice of potential capsizing, if possible, call for help on VHF channel 16 and give your name, location and nature of distress.
3. Stay with the boat. It is easier to be seen by rescue personnel than if separated from the boat. The vessel also provides floatation and if possible the ability to get out of the water.
4. Right the boat if possible. Get in and bail it out or use paddles and/or hands to get closer to shore and safety.

4.23 FIRE

Fire is one of the most dangerous situations onboard a vessel. In case of fire:

1. Immediately call for help on VHF channel 16 and give your name, location and nature of distress.
2. Throw all burning materials overboard if possible.
3. Slow the boat to idle and change heading to keep the fire and smoke downwind if possible.
4. Don PFDs as soon as possible.
5. Turn off electricity if fire is deemed electrical.
6. Shut off fuel supply, close all hatches, doors ports and ventilators that will confine the fire to the smallest place and reduce its oxygen supply. Only open doors if a fire extinguisher is ready to be discharged. Direct hand-held fire extinguisher at the base of the flames, engage extinguisher and sweep side to side. PASS- Pull, Aim, Shoot, Sweep.
7. Direct Discharge fixed fire system if available.
8. Jettison any materials likely to catch fire in order to reduce potential further fuel or fire.
9. Only use available water on burning wood, fiberglass or other non-petroleum-based materials. Never use water on fuel, oil or grease , or electrical fires.

4.24 SUBMERGED OBJECT STRUCK

If the vessel strikes a submerged object it is important to take the following steps to keep the vessel from sinking:

1. Stop the engines instantly, then drift and/or set anchor.
2. Inspect the vessel throughout for incoming water.
3. If the vessel is taking on water, immediately call for help on VHF channel 16 and give your name, location and nature of distress.
4. Determine the source of the incoming water and take steps to stem water flow by either closing valves, clogging hole(s) with objects on hand or any other feasible means to keep the vessel afloat.
5. Engage manual bilge pump, hand pump, or hand bail with buckets.
6. If there is no serious leak, or it is under control, slowly try to get underway to the nearest harbor with haul-out facilities.

4.25 GROUNDED

If the vessel were to become grounded:

1. Stop the engine
2. Check the tide, bottom composition, and direction as well as proximity to deep water.

3. Determine what part of the boat is aground and whether there are any leaks. If leaking, refer to the steps in section 4.24 SUMERGED OBJECT STRUCK.
4. To refloat the boat, do not start the engine, try shifting weight in the boat and pushing off the bottom with oars or other available objects.
5. The anchor can be used to pull the vessel out into to deeper water if it can be set out in deeper water.
6. If all steps fail to refloat the vessel standby for the next incoming tide to float the vessel.

4.26 ABANDONING SHIP

Before abandoning ship due to fire, swamping, capsizing or another emergency:

1. Call for help on VHF channel 16 and give your, vessel name, location and nature of distress.
2. Don PFDs, immersion suits or other thermal protective floatation wear (wet or dry suits) if available.
3. Use any available signaling devices to attract the attention of potential help that is seen, whether it is with flares, sound making devices, signal mirrors or waving of hands.
4. Retain any potential lifesaving equipment, food, and water. Place anything which needs to stay dry in a dry bag if possible.
5. Stay with the vessel if it is still afloat and remain in one group.

4.27 SINKING

If the vessel is taking on water that bilge pumps, hand pumps, or hand bailing cannot keep up with:

1. Call for help on VHF channel 16 and give your name, location, and nature of distress. The closest authorities such as lifeguard boats, harbor patrol or USCG vessels usually carry portable engine driven high-volume pumps to keep vessels afloat.
2. Make way to the nearest accessible land or docking location in order to prevent the vessel from sinking.
3. Most small boats usually maintain enough buoyancy within the hull so that they will not sink completely.

4.30 NON-EMERGENCY ASSISTANCE

In any instance in which a vessel is disabled and there is no immediate threat to life or safety of the vessel and is deemed “Non-emergency” or any situation in which there is an injury onboard that requires more than basic first aid, but needs medical attention, attempt to reach the contacts listed below for appropriate assistance:

1. USC/WIES BSO or Waterfront Personnel (VHF channel 9 or 16) or Phone (310)510-4024, BSO Cell (213)447-5396. Front Desk (310)510-0811.
2. Two Harbors Harbor Patrol (VHF channel 9) or Phone (310)510-4210.
3. BoatUS Vessel Assist (VHF channel 16) or Phone (800)391-4869. Card and account information located inside the Boat Box.
4. Baywatch Isthmus or Avalon (VHF channel 16) or Baywatch Isthmus Phone (310)510-0341
5. US Coast Guard Sector Los Angeles (VHF channel 16) or Phone (310)521-3815.

4.40 COMMUNICATION

Small boat operators must maintain a shore contact during ALL voyages whether that be the USC/WIES BSO, designated personnel or other approved responsible party. The operator must communicate with the designated shore contact at an agreed upon frequency during their voyage. To initiate any changes to the approved Float Plan the BSO, designated personnel or responsible party must be notified by either VHF radio or cell phone and the changes confirmed. If the boat operator is unable to notify the shore contact the Float Plan must be adhered to. Failure to follow procedures may be the cause for suspension or revocation of the operator's authorization.

4.50 WEATHER

Prior to all boating activities the vessel operator must review the National Weather Service (NWS) (<https://marine.weather.gov>) marine forecast for the period of the proposed trip. Use of any vessel is always contingent upon weather conditions, See 4.21 FOUL WEATHER. When the NWS forecasts for Gale Force Winds are issued for the waters of the proposed trip, operations shall be postponed until the conditions become more favorable or special permission to operate has been granted by the USC/WIES BSO. NWS forecasts for Small Craft Advisories shall be reviewed by the BSO to determine whether or not boating activities may continue on a case by case basis.

For further information on weather conditions in your area, additional resources are listed below for reference:

1. <https://www.windy.com>
2. <https://www.windfinder.com>
3. <https://www.sailflow.com/>
4. www.buoyweather.com
5. VHF WX channels 1-9 depending on location.

4.60 SCUBA DIVING

Any persons SCUBA diving from USC/WIES boats are required to adhere to any and all provisions of the USC Diving Safety Manual. The DSO must approve all dives conducted under the auspices of USC. The designated lead diver will be in charge of all dive

operations. See USC Diving Safety Manual for requirements on boat based SCUBA diving operations.

4.61 SCUBA DIVING REQUIRED EQUIPMENT

In addition to standard boat operation required equipment, ALL voyages conducting SCUBA diving activities shall bring onboard and use as appropriate:

1. Dive Flag
2. O2 Kit (when exiting SBB for SCUBA activities)
3. Dive Ladder (if any participant has difficulty re-entering vessel)

4.70 TRAILERING

The trailering of vessels shall be conducted solely by USC/WIES staff or personnel approved to conduct such activities by the USC/WIES BSO.

4.80 SPECIAL OPERATIONS

Special operations such as night operations, equipment deployment, live boating, operation in foreign waters or other activities not described in this manual shall be reviewed and conducted only with the consent of the USC/WIES BSO.

APPENDIX I

USC/WIES Small Boat Orientation

Vessel Sign-out Area:

- Sign-out Board-** Quick glance information to see:
 - Which boats are available
 - Who has which vessel
 - Where they are boating
 - Number of individuals participating
 - Date, time of departure, and estimated return time
 - General Notes- Notes from BSO, future boat requests, weather updates, etc.
- Float Plans**
 - Operator fills out float plan
 - Operator's affiliation (USC, CSU, etc.), Status (Faculty, Undergrad, etc.)
 - Vessel- Explain which boats can be used (i.e. no center consoles)
 - Date of request (For future trips, also place note on Sign-out board)
 - Date of Trip
 - Cell Phone #- Explain cell coverage
 - Radio- Explain line of sight
 - Destination or route (A to B to C)
 - Departure time (When filling out float plan)
 - Estimated time of return (Don't underestimate time, realistic return times)
 - Actual time of return (Close float plan and erase Sign-out board)
 - Times provided above are used for billing purposes
 - Purpose of trip (Circle all applicable)
 - Participants (All additional users, Affiliation/Status/Boat Checkout/Diving?)
- Read Statement** and explain
 - Fuel (Make sure there is enough)
 - Weather (Check NWS online before boating)
 - Required equipment (see list on additional info page)
 - Participants signed USC liability waiver (Location of Waivers)
 - Operator signature and date for agreeing to rules/terms
- Approval by waterfront staff for trips outside SBB (See map on additional info page) and any nighttime activities**
- Additional info page-** Small boat capacity limits, other notes.

VHF Radio Location and Function

- Radio Location**-Show location of charger station return DRY!!!
 - Turn on radio to make sure its charged and take outside to explain use
 - On/Off, Volume, Squelch
 - Channels: 16 Hailing and Distress (Coast Guard, Baywatch)
 - Channels: 9/12 (public, ship to ship, etc.)
 - WX
 - Lock Mechanism (Explain what the key symbol means)
 - Laminated card of channels (located I under lid in Boat Box)
 - Keep radio Off if not being used to save battery for emergency
- Use:**
 - Hailing vs. Emergencies on Channel 16
 - Emergency: Mayday-Mayday-Mayday, this is Boat Name, I am Located _____, state nature of emergency, wait for instructions from Coast Guard or Baywatch
 - Hail, then switch to a working channel (69)
 - Listen before using (No stepping on others communication)
 - Repeat 3x
 - Release key after speaking
 - Line of sight for use
 - Setting up a relay

Required Equipment:

- Equipment Shed**- Show location and contents
 - PFDs (Type I if wearing thermal protective floatation “wetsuit”, type V “vest” if working without thermal protective wear)
 - Type IV (One or more throwables per vessel)
 - Other equipment- Bilge pumps, dive flags, ladders
- Boat Box**-Locations and contents
 - Flares (How to use)
 - Fire Extinguisher (How to use)
 - Storm Whistle (Example or not....)
 - First Aid Kit (Call for help if serious injury, return to WMSC)
 - Radio slot (Where to keep radio when not in use, return to charger when finished!!!!)
 - Documents under lid (Vessel registration, emergency info card, BoatUS Vessel Assist info)
- Extras**- Anchor and rode, dock lines, paddle (located in boat), Fuel!!!
- Fuel Shed**- Show location and explain how to swap tanks
- USC/WIES Boating Safety Manual**- I have read, understand, and am familiar with USC/WIES Boating Safety Manual.

Signature: _____ Date: _____

Print Name: _____

APPENDIX II

USC/WIES Small Boat Operator Training

Dock:

- Marlinspike Seamanship**
 - Boating Terminology- Review (Bow, Stern, Fore, Aft, Port, Starboard, Gunwale, Transom, Freeboard, Draft, Tiller, Throttle, etc.)
 - Lines- Anchor, bow, stern
 - Knots- Cleat hitch, bowline
 - Weight capacity and distribution (Demonstrate)
- Dock skiff**
 - Never leaves cove (Only out for a few minutes)
 - Used to get out to other vessels
 - Always wear PFD
 - How to secure (Loops)
 - Intro to tilt/engine start
 - Retrieve small boat (Waterfront Staff)
 - How to tow back to dock
 - Explain how to return back to moored position (No-man's land)

Boat:

- Fuel**
 - Fuel- Check quantity
 - Check connections
 - Show fuel filter (Explain fluids)
 - Prime fuel line using vacuum bulb
 - Air vent (Explain)
- Motor**
 - Tilt Switch
 - Kill Switch in place (Wear on wrist)
 - Shifter (Neutral to start, won't start in Forward or Reverse)
 - Start Motor (Electric start button vs. pull start)
 - Stop Motor (Kill switch vs. key switch)
 - Throttle- Always use left hand (Explain)
 - Steering- Counterintuitive (Explain)
- Other Equipment-** (Check to make sure its present)
 - Bilge pump
 - Paddle
 - Anchor
 - Diving related gear (Dive Flag, O2, Dive Ladder, etc.)
- Safety Concerns**
 - Docking (Slow vs. Fast approach)
 - Traffic
 - Divers, Swimmers, Meaning of the Dive Flag
 - Conditions

On water Training:

- Getting Underway**
 - Load vessel (Check for all required equipment and load evenly)
 - Engine on (Never untied w/o engine on)
 - Area clear to maneuver
 - Conditions check (Reading wind, untie using wind to help rather than hurt)
 - Communicate with deckhands
 - Line handling (Don't throw lines)
 - Proceed away from dock
 - Get comfortable with boat operations in open water

- Boat Handling Circuit**
 - Serpentine mooring (Steering control)
 - Pickup regular mooring (Bow out, Stopping on location)
 - Docking (Pulling up to and pulling away)
 - Mooring (Pickup and pull away)
 - PFD overboard (MOB simulation)
 - Anchoring (Drop, Set, Scope, Raise)

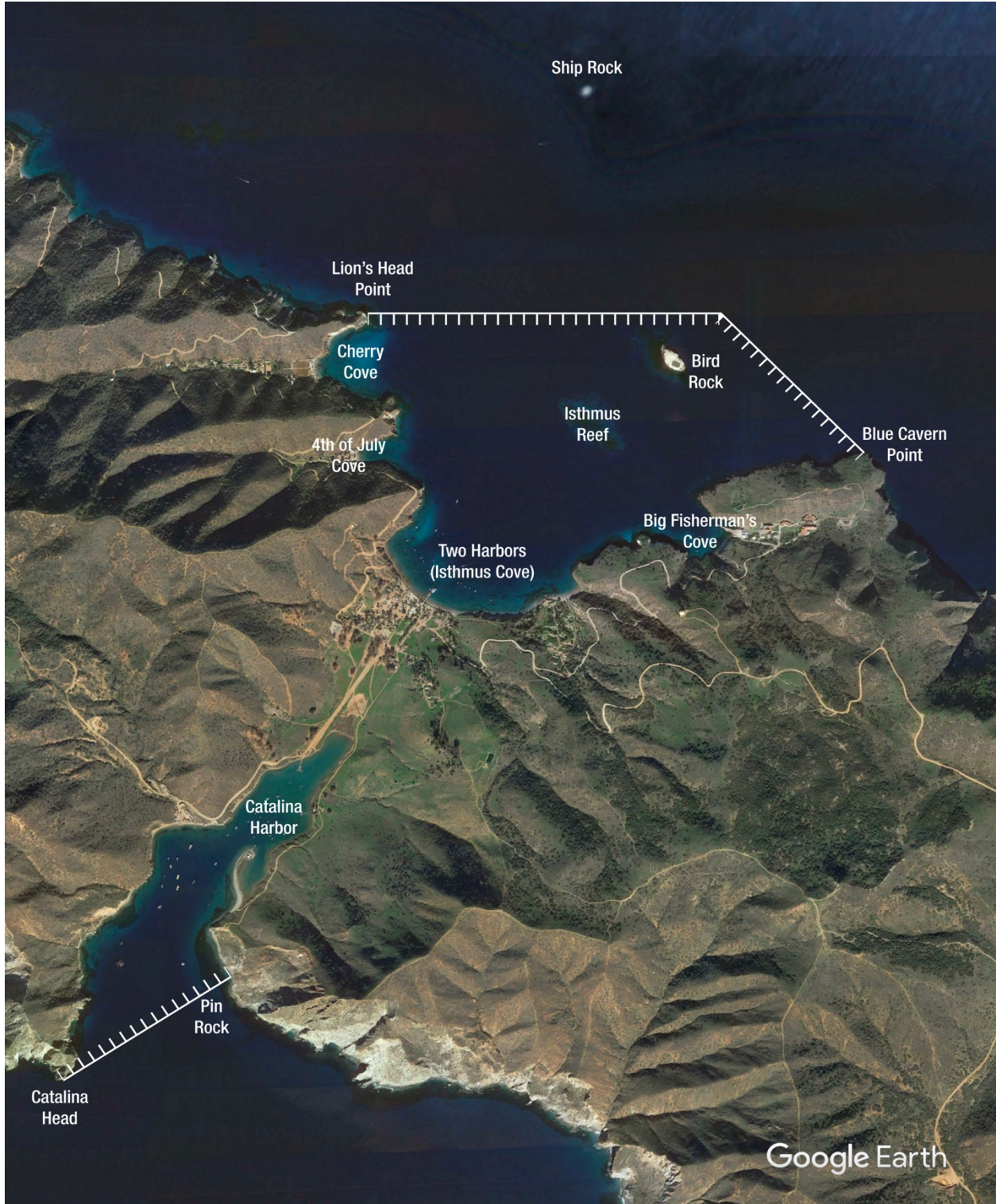
- Discussion Topics**
 - Kelp and Lines (How to untangle prop)
 - Waves (Such as Boat Wakes- approach head on)
 - Traffic (Steer clear)
 - Weather (Normal prevailing conditions)
 - Stay off rail/gunwale while underway (CA law)
 - No full throttle
 - 5 mph zones (Inside mooring fields)
 - Emergency procedures (Get EMS started)

Signature: _____ Date: _____

Print Name: _____

APPENDIX III

Small Boat Boundary



APPENDIX IV

Large Boat Boundary



APPENDIX V

Small Boat Request - Float Plan – Manifest University of Southern California - Wrigley Marine Science Center

Complete this form for **each day** (Multiple out & back runs in one day with the same participants is one trip.)

Please print clearly

Operator: _____ Affiliation : _____ Faculty Staff Grad Undergrad Other

Vessel: _____ Date of request: _____ Date of trip _____

Cell Phone Number: _____ Radio: _____

Destination/Route: _____

Departure Time 1: _____ Estimated Time of Return 1: _____ Actual Time of Return 1: _____

Departure Time 2: _____ Estimated Time of Return 2: _____ Actual Time of Return 2: _____

Project: _____

Purpose of trip: (*circle all that apply*)

Research	Collecting	Diving	Instruction	Training	Other: _____		
Crew/Participants:	Affiliation	Status (<i>circle one</i>)			Vessel Checkout/Diving (Y/N)/(Y/N)		
_____	_____	Faculty	Staff	Grad	Undergrad	Other	_____/_____
_____	_____	Faculty	Staff	Grad	Undergrad	Other	_____/_____
_____	_____	Faculty	Staff	Grad	Undergrad	Other	_____/_____
_____	_____	Faculty	Staff	Grad	Undergrad	Other	_____/_____
_____	_____	Faculty	Staff	Grad	Undergrad	Other	_____/_____
_____	_____	Faculty	Staff	Grad	Undergrad	Other	_____/_____
_____	_____	Faculty	Staff	Grad	Undergrad	Other	_____/_____

I have read, understand and am familiar with the USC/WIES Boating Safety Manual. In signing this form I agree to have correctly followed all Federal, State and USC/WMSC rules and protocols including, but not limited too; Ensuring there is sufficient fuel, Observing the weather forecast, Obtaining all required equipment, Ensuring all participants have signed the USC “Release of Liability” Form, Cleaning any mess made and de-watering boat, and Receiving approval from the waterfront staff for trips conducted outside the Small Boat Boundary or trips during nighttime hours. Furthermore, I accept all fees for small boat use based on the hours I provided above.

Operator Signature: _____ Date: _____

Trips beyond the Small Boat Boundary or operating at night require waterfront staff approval.

WaterfrontStaffApproval: _____ Date: _____

APPENDIX VI



USC Wrigley Marine Science Center Rates for USC Dornsife Groups

For more information about our facility and offerings, please visit: wrigley.usc.edu
All accommodations are subject to availability. Rates subject to change without notice.

<p>HOUSING:</p> <table style="width: 100%; border-collapse: collapse;"> <tr><td>Daily</td><td></td></tr> <tr><td>Residence Hall, Dorm (2-3ppl)</td><td style="text-align: right;">\$58</td></tr> <tr><td>Residence Hall, 1 BR Apartment (2ppl)</td><td style="text-align: right;">\$85</td></tr> <tr><td>Residence Hall, 2 BR Apartment (4ppl)</td><td style="text-align: right;">\$125</td></tr> <tr><td>Peregrine and Cortney Dorm Cottage (8ppl)</td><td style="text-align: right;">\$68</td></tr> <tr><td>Rose Hills and Aoun Cottage, Boone (5-6ppl)</td><td style="text-align: right;">\$210</td></tr> <tr><td>Gold Apartment / Residence Hall (2ppl)</td><td style="text-align: right;">\$95</td></tr> <tr><td>Boone Center, 1 BR Boone Center (2ppl)</td><td style="text-align: right;">\$160</td></tr> <tr><td>Boone Center, 2 BR Boone Center (4-5ppl)</td><td style="text-align: right;">\$210</td></tr> </table> <p>MEALS:</p> <table style="width: 100%; border-collapse: collapse;"> <tr><td>Daily</td><td></td></tr> <tr><td>Breakfast</td><td style="text-align: right;">\$10</td></tr> <tr><td>Lunch</td><td style="text-align: right;">\$10</td></tr> <tr><td>Dinner</td><td style="text-align: right;">\$15</td></tr> <tr><td>Appetizers</td><td style="text-align: right;">\$10</td></tr> <tr><td>Coffee Breaks — \$5/pp</td><td></td></tr> </table> <p>EDUCATIONAL ACTIVITIES:</p> <table style="width: 100%; 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Additional Discounts

1. USC Dornsife-funded groups will not be charged instructional staff time, lecture space, or administrative fees.
2. Stays of five nights or more will receive a 15% discount on housing and lecture/conference spaces.
For stays exceeding two weeks, a 20% housing discount will be applied.

To reserve space for your group, please contact Karen Erickson at klericks@usc.edu or (310) 510-4016.

For more information on Conference Groups, please contact Katie Chvostal at chvostal@usc.edu or (310) 510-4015.



APPENDIX VII



BOATING ACCIDENT REPORT FORM

(To be returned to Trevor Oudin, toudin@usc.edu)

Date of Accident: _____

Your Name: _____

How can we contact you? _____

Vessel: _____

Location of Accident: _____

The USC Wrigley Institute for Environmental Studies is very interested in the well-being of all boat operators using USC vessels. Please inform us of *any* malfunction, difficulty, scary situation, incident or accident that occurred while conducting boating activities under USC auspices. Please, in detail, describe the incident to the best of your knowledge. Don't be afraid to let us know if something was broken or you think it may have been broken as this will help to ensure the safety of our marine operations and improve our service.

Please provide detail of the Accident here:

APPENDIX VIII

REQUIRED EQUIPMENT CHECKLIST

All USC/WIES motorboats operating under the auspices of USC/WIES shall carry at least the following equipment:

- **Type I, II, III or V Personal Floatation Device-** 1 for each person on board.
- **Type IV Throwable Personal Floatation Device-** 1 per vessel

BOAT BOX- Located inside Boat Box:

- **Signal Flares-** At least 3 day/night pyrotechnic flares.
- **Fire Extinguisher(s)-** will meet or exceed those required by law.
- **Audible Signaling Device-** Horn, Storm Whistle, Bell, etc.
- **First Aid Kit-** At least 1 per vessel.
- **Vessel Registration-** State registration or USCG documentation for vessel.
- **BoatUS Vessel Assist Card-** USC/WIES account #, document located under lid.
- **Emergency Contact Information Card-** Located under lid.

- **VHF Radio-** At least 1 per vessel.
- **Paddle-** At least 1 per vessel.
- **Hand Bilge Pump-** At least 1 per vessel.
- **Anchor and Rode-** To be kept attached to each vessel.
- **Dock Lines-** To be kept attached to each vessel.

Additional Equipment for Diving

- **Dive Flag-** At least 1 per vessel.
- **Oxygen Kit-** For trips outside the Small Boat Boundary or if required by DSO.
- **Ladder-** Or other means to re-enter vessel.

Suggested additional equipment as appropriate for vessel and operations:

- **Cell Phone**
- **GPS**
- **Compass**
- **EPIRB**
- **Running Lights**
- **Boat Hook**
- **Water**
- **Extra Food Rations**
- **Emergency Repair Kit and Tools**
- **Spare Fuel or Oil if needed**
- **Spare Parts including propeller, nut, etc.**

APPENDIX IX

WMSC VESSEL INVENTORY (UNDER CONSTRUCTION)

“Small Vessels”-

Chromis: 1997 13ft Boston Whaler, 4 persons maximum. (3 SCUBA Divers)

Features: 20 Horsepower tiller operated Honda outboard, Anchor/Rode, Hand Bilge Pump, Paddle, Boat Box*.

Description: Chromis is the smallest research vessel in the fleet. Typically used to shuttle 1 buddy pair of SCUBA divers to nearby research sites. Chromis is limited to trips within the Small Boat Boundary.

Dalli (aka Dockskiff): 1975 11ft Boston Whaler, 3 persons maximum.

Features: 15 Horsepower tiller operated Honda Outboard, Hand Bilge Pump, Paddle.

Description: The dockskiff is primarily used to shuttle boat operators out to moored vessels or for short trips inside Big Fishermen’s Cove. The features are limited due to the compact space onboard and the nature of all trips being conducted inside Big Fishermen’s Cove.

Loper: 1971 19ft Marshall- Custom Built, 8 persons maximum. (6 SCUBA Divers)

Features: 50 Horsepower tiller operated Honda Outboard, Anchor/Rode, Paddle, self-flushing deck with scuppers, Boat Box*.

Description: Loper is one of the largest vessels in the Small boat category and is typically used to shuttle larger dive groups or researchers with significant amounts of gear to locations within the Small Boat Boundary. Loper is a favorite as a dive platform because she is very stable and spacious with low freeboard for re-entering the vessel.

Nautilus: 1990 17ft Boston Whaler, 6 persons maximum. (4 Divers)

Features: 40 Horsepower tiller operated Honda Outboard, Anchor/Rode, Hand Bilge Pump, Paddle, Boat Box*.

Description: Nautilus is a spacious platform for conducting research. The center console from this Boston Whaler has been removed to open-up space for extra research equipment or SCUBA gear, which allows more divers to fit in the vessel. Nautilus is limited to trips within the Small Boat Boundary.

Ostrea: 1985 20ft California Sport Panga, 7 persons maximum. (6 Divers)

Features: 50 Horsepower tiller operated Honda Outboard, Anchor/Rode, Hand Bilge Pump, Paddle, Boat Box*.

Description: The Ostrea is a long spacious Panga style vessel that can carry SCUBA divers or researchers to sites within the Small Boat Boundary. Ample deck space makes it a useful vessel for larger groups or those with extra research equipment. Ostrea also has a convenient dry storage area in the bow to protect items from getting wet.

Triakis: 1997 15ft Boston Whaler, 5 persons maximum. (4 Divers)

Features: 30 Horsepower tiller operated Honda Outboard, Anchor/Rode, Hand Bilge Pump, Paddle, Boat Box*.

Description: The Triakis is a medium sized “Small” boat used to typically carry a buddy pair of SCUBA divers to close sites within the Small Boat Boundary. Low freeboard makes this vessel easy to enter and exit for dive activities.

“Large” Vessels:

Cetacea- 1979 23ft Boston Whaler, 7 persons maximum. (6 Divers)

Features: 135 Horsepower Honda outboard, remote center console steering, 2 selectable group 27 marine batteries, VHF radio, GPS, 12-volt power, compass, running lights, fixed auto/manual bilge pump, boat box*.

Description: Cetacea is a newly refurbished “Large” vessel with adequate horsepower making it capable of moving enough persons and gear to conduct research activities along the leeward side of Catalina within the Large Boat Boundary.

Mercury- 1991 17ft Boston Whaler, 4 persons maximum (3 Divers).

Features: 75 Horsepower Honda outboard, remote center console steering, 2 selectable group 24 marine batteries, VHF radio, GPS, 12-volt USB power, running lights, fixed auto/manual bilge pump, compass, boat box*.

Description: Mercury is a smaller example of WMSC “Large” vessels and is best suited to take a lesser number of persons quickly to more distant locations inside the Large Boat Boundary. Ideally suited for a SCUBA buddy pair with/without operator to conduct quicker research activities that don’t require extensive SCUBA gear or research equipment.

Vibrio- 1980 25ft Radon Craft, 7 persons maximum (1 Operator, 6 passengers) (6 Divers)(Captain required).

Features: Twin 150 Horsepower Honda Outboards, remote console steering, 2 selectable group 27 starting batteries, 1 group 27 house battery, 2 VHF radios, GPS, AIS, 12-volt USB power, running lights, fixed auto/manual bilge pump, Anchor/Rode, J-Arm with motorized wench, boat hook, oil spill kit, Boat Box*.

Description: Vibrio is the largest vessel in the small boat fleet. A licensed OUPV captains license or greater is required to operate Vibrio without prior approval from the Boating Control Board. Vibrio is best suited for accessing research sites or taking larger groups to more distant locations. Vibrio is a great dive platform and can also conduct small scale research cruises thanks to the mountable J-arm that can be installed upon request. Vibrio availability is based upon available operators.

***Boat Box includes:** Fire Extinguisher, Signal Flares, Sound Making Device, First Aid Kit, Vessel Registration, Emergency Info Card, WMSC BoatUS Vessel Assist Account Information Card.

Currently Inactive Vessels:

Navanax: 1997 13ft Boston Whaler, 4 persons maximum. (3 SCUBA Divers) **(Currently Inactive)**
Features: 20 Horsepower tiller operated Honda outboard, Anchor/Rode, Hand Bilge Pump, Paddle, Boat Box*.

Description: Navanax is one the smallest research vessel in the fleet. Typically used to shuttle 1 buddy pair of SCUBA divers to nearby research sites. Navanax is limited to trips within the Small Boat Boundary.

Torpedo: 1997 15ft Boston Whaler, 4 persons maximum. **(Currently Inactive)**

Features: 30 Horsepower Honda Outboard, Anchor/Rode, Hand Bilge Pump, Paddle, Boat Box*.

Description: The Torpedo is a medium sized “Small” boat used to typically carry a buddy pair of SCUBA divers to close sites within the Small Boat Boundary. Low freeboard makes this vessel easy to enter and exit for dive activities.

Beagle: 1965 17” Fisher Pierce (Prior company to Boston Whaler), 4 persons maximum. (3 SCUBA Divers) **(Currently Inactive)**

Features: 60 Horsepower Honda Outboard, VHF Radio, GPS, 12-volt USB power, Fixed Auto/Manual Bilge pump, Boat Box*.

Description: Beagle is a newly refurbished WMSC “Large” vessel and is best suited to take a lesser number of persons quickly to more distant locations inside the Large Boat Boundary. Ideally suited for a SCUBA buddy pair with/without operator to conduct quicker research activities that don’t require extensive SCUBA gear or research equipment.

Tony Johnson- 1983 20ft Boston Whaler, 7 persons maximum. (6 SCUBA Divers) **(Currently Inactive)**

Features: 150 Horsepower Honda outboard, remote center console steering, 2 selectable group 27 marine batteries, VHF radio, GPS, 12 USB volt power, compass, Boat Box*, AM/FM & Bluetooth stereo.

Description: Tony Johnson is a WMSC “Large” vessel capable of carrying adequate research equipment or SCUBA gear to conduct boat-based research within the Large Boat Boundary.

***Boat Box includes:** Fire Extinguisher, Signal Flares, Sound Making Device, First Aid Kit, Vessel Registration, Emergency Info Card, WMSC BoatUS Vessel Assist Account Information Card.