UNIVERSITY of WEST FLORIDA

STANDARDS FOR SCIENTIFIC DIVING MANUAL

Marine Services Center
UNIVERSITY of WEST FLORIDA

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SECTION 1.00 GENERAL POLICY

1.10 Scientific Diving Standards

Purpose

The purpose of these Scientific Diving Standards is to ensure scientific diving is conducted in a manner that will maximize the protection of scientific divers from accidental injury and/or illness, and to set forth standards for training and certification that will allow a working reciprocity between the University of West Florida (UWF) and other AAUS American Academy of Underwater Sciences (AAUS) Organizational Members (OMs or OM). Fulfillment of these purposes shall be consistent with the furtherance of research and safety, and facilitation of collaborative opportunities between AAUS OMs.

This Manual sets minimum standards for the establishment of AAUS recognized scientific diving programs, the organization for the conduct of these programs, and the basic regulations and procedures for safety in scientific diving operations. It also establishes a framework for reciprocity between AAUS OMs that adhere to these minimum standards.

Historical Perspective

This Manual was developed and written by UWF and AAUS by compiling the policies set forth in the diving manuals of several university, private, and governmental scientific diving programs. These programs share a common heritage with the scientific diving program at the Scripps Institution of Oceanography (SIO). Adherence to the SIO standards has proven both feasible and effective in protecting the health and safety of scientific divers since 1954.

In 1982, OSHA exempted scientific diving from commercial diving regulations (29CFR1910, Subpart T) under certain conditions that are outlined below. The final guidelines for the exemption became effective in 1985 (Federal Register, Vol. 50, No.6, p.1046). AAUS is recognized by OSHA as the scientific diving standard setting organization.

Scientific Diving Definition

Scientific diving is defined (29CFR1910.402) 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. Scientific diving does not include performing any tasks usually associated with commercial diving such as: placing or removing heavy objects underwater; inspection of pipelines and similar objects; construction; demolition; cutting or welding; or the use of explosives."

Scientific Diving Exemption

The two elements that a diving program must contain as defined by OSHA in 29 CFR 1910 Subpart T 1910.401(a)(2)(iv) are:

a) Diving safety manual, which includes at a minimum: Procedures covering all diving operations specific to the program; procedures for emergency care, including recompression and evacuation; and criteria for diver training and certification.
b) Diving control (safety) board, with the majority of its members being active divers, which must at a minimum have the authority to: Approve and monitor diving projects; review and revise the diving safety manual; assure compliance with the manual; certify the depths to which a diver has been trained; take disciplinary action for unsafe practices; and, assure adherence to the buddy system (a diver is accompanied by and is in continuous contact with another diver in the water) for SCUBA diving.

OSHA has granted an exemption for scientific diving from commercial diving regulations under the following guidelines (Appendix B to 29 CFR 1910 Subpart T):

- The Diving Control Board consists of a majority of active scientific divers and has autonomous and absolute authority over the scientific diving program's operation.
- The purpose of the project using scientific diving is the advancement of science; therefore, information and data resulting from the project are non-proprietary.
- The tasks of a scientific diver are those of an observer and data gatherer. Construction and trouble-shooting tasks traditionally associated with commercial diving are not included within scientific diving.
- Scientific divers, based on the nature of their activities, must use scientific expertise in studying the underwater environment and therefore, are scientists or scientists-in-training.

Review of Standards

As part of UWF's annual report, any recommendations for modifications of this Manual shall be submitted to AAUS for consideration.

1.20 Operational Control

University of West Florida's Auspices and Responsibilities

University of West Florida auspices include any scientific diving operation in which the University of West Florida is connected because of ownership of life support equipment used, locations selected, or relationship with the individual(s) concerned. This includes all cases involving the operations of authorized individuals of the University of West Florida or auxiliary organizations, where such individuals are acting within the scope of their authorization.

It is the University of West Florida's responsibility to adhere to the AAUS Standards for Scientific Diving Certification and Operation of Scientific Diving Programs. The administration of the local diving program will reside with the University of West Florida's Diving Control Board (DCB).

The regulations herein must be observed at all locations where scientific diving is conducted.

Meeting AAUS minimum standards is a requirement for organizational membership in the Academy. Each OM must develop and maintain a diving safety manual that includes wording on how the OM defines specific policies and procedures required for the proper function of a scientific diving program. The OM manual must address environmental and working conditions unique to the program's operations. The OM diving manual must meet or exceed the AAUS standards.

AAUS standards must be the foundation for the development of an OM's scientific diving safety manual. The order and formatting of the OM manual does not have to conform to the AAUS template. The information contained in Volume 1, Sections 1.00 through 5.00 and the Appendices are required for all manuals. Volume 2, Sections 6.00 through 12.00 are required only when the OM conducts the specifically referenced diving mode or activity. Deviations or significant changes to AAUS minimum standards may require justification before approval is granted by the AAUS Standards Committee.

Diving Control Board

- The University of West Florida Diving Control Board (UWF DCB) must consist of a majority of active scientific divers. Voting members include the Diving Safety Officer (DSO), and other representatives of the diving program such as qualified divers and members selected by procedures established by UWF. A chairperson and a secretary may be chosen from the membership of the board according to local procedure.
- Has autonomous and absolute authority over the UWF Scientific Diving Program's operation.
- The UWF DCB must:
    - Establish additional standards, protocols, and operational procedures beyond the AAUS minimums to address specific needs and concerns.
    - Approve and monitor diving projects.
    - Review and revise the diving safety manual.
    - Ensure compliance with the diving safety manual.
    - Approve the depth to which a diver has been authorized to dive.
    - Take disciplinary action for unsafe practices.
    - Ensure adherence to the buddy system for scientific diving.
    - Act as the official representative of UWF in matters concerning the scientific diving program.
    - Act as a board of appeal to consider diver-related problems.
    - Recommend the issue, reissue, or the revocation of diving authorizations.
    - Recommend changes in policy and amendments to AAUS and UWF's diving safety manual as the need arises.
    - Establish and/or approve training protocols or standards through which the applicants for authorization can satisfy the requirements of UWF's diving safety manual.
    - Suspend diving operations considered to be unsafe or unwise.
    - Establish criteria for equipment selection and use.
    - Recommend new equipment or techniques.

- Establish and/or approve facilities for the inspection and maintenance of diving and associated equipment.
- Ensure that UWF's air station(s) meet air quality standards as described in Section 3.60.
- Periodically review the DSO's performance and program.
- Investigate diving incidents within UWF's diving program or violations of UWF's diving safety manual.

- The UWF DCB may delegate operational oversight for portions of the program to the DSO; however, the UWF DCB may not abdicate responsibility for the safe conduct of the diving program.

Diving Safety Officer

The Diving Safety Officer (DSO) serves as a voting member of the UWF DCB, and should be designated one of UWF's Representatives to AAUS. This person should have broad technical and expertise in research-related diving.

Qualifications:

1. Must be an active scuba instructor from an internationally recognized certifying agency.

2. Must be appointed by the responsible administrative officer or designee, with the advice and counsel of the UWF DCB.

3. Must qualify as a Full Voting Member of AAUS, as defined by AAUS Bylaws.

    a. "Holds a diving certification from a recognized national certifying agency or equivalent, and
    b. Has engaged in sustained or successive scientific diving activities during the past two years, or
    c. Has completed a course in scientific diving that meets the minimum requirements as specified by the most current edition of the AAUS Standards for Scientific Diving"

4. Must attend an AAUS DSO Orientation within one year of accepting a position, unless he/she has served as a DSO for another current AAUS OM within the last year.

Duties and Responsibilities

1. Answers, through the UWF DCB, to the appropriate administrative officer or designee, for the conduct of the scientific diving program at UWF.

2. If delegated by the UWF DCB, the routine operational authority for this program rests with the DSO. This oversight includes, but is not limited to: training, diver authorizations, approval of dive plans, maintenance of diving records, and ensuring compliance with this Manual.

3. May permit some duties and responsibilities to be carried out by a qualified delegate, with

the approval of the UWF DCB.

4. Must be guided in the performance of the required duties by the advice of the UWF DCB, but operational responsibility for the conduct of the scientific diving program will be retained by the DSO.

5. Must suspend diving operations determined to be unsafe or unwise.

Instructional Personnel Qualifications

All personnel involved in diving instruction under the auspices of UWF must be reviewed and authorized by the UWF DCB.

UWF Lead Diver

For each dive, one individual will be designated as the Lead Diver, generally the diver who is most knowledgeable about the area, environmental hazards, and the task to be accomplished. Ideally, the Lead Diver will not be the Research Leader. In all decisions regarding dive operations, the Lead Diver will make safety the top priority.

The Lead Diver shall be responsible for:

- Ensuring dives are conducted in accordance with Section 2.00.
- Submitting the project dive proposal (Appendix 10).
- Ensuring all dive team members possess current authorization and are qualified for the type of diving operation.
- Holding a briefing session prior to the initiation of diving activities and holding a de-briefing at the conclusion.
- Practicing complex operations on land prior to conducting these operations underwater.
- Coordination with other known activities in the vicinity that are likely to interfere with diving operations.
- Ensuring safety and emergency equipment is in working order and at the dive site.
- Suspending diving operations if in their opinion conditions are not safe.
- Ensuring that the UWF Master Dive Log is completed for each dive (see Appendix 10).
- Reporting to the UWF DCB, through the DSO, any physical problems or adverse physiological effects including symptoms of pressure-related injuries.

Experienced scientific divers who demonstrate leadership skills and mature attitudes with regard to diving safety may be trained by the Diving Safety Officer to assume Lead Diver authority in controlling a scientific dive.

Lead Diver training requirements (in addition to scientific diver requirements):

- Minimum of 50 logged scientific dives

- Minimum of 1 year participation in the UWF Scientific Diving Program
- Approval by the UWF Diving Control Board

Reciprocity and Visiting Scientific Diver

When UWF and another AAUS OM are engaged jointly in diving activities, or engaged jointly in the use of diving resources, one of the OMs must designate one of the participating DCBs to govern the joint dive project. However, responsibility for individual divers ultimately resides with the home OM.

A Scientific Diver from another OM must apply for permission to dive under the auspices of the UWF Scientific Diving Program by submitting to the UWF DSO a document containing all the information list in Appendix 6, signed by the DSO or designee of the home DCB. A UWF Scientific Diver who wishes to dive with another scientific diving program shall follow that program's procedures for reciprocity.

A visiting Scientific Diver may be asked to demonstrate their knowledge and skills for the planned dive.

If the UWF DCB denies a visiting Scientific Diver permission to dive, the UWF DCB must notify the visiting Scientific Diver and their DCB with an explanation of all reasons for the denial.

Waiver of Requirements

The UWF Diving Control Board may grant a waiver for specific requirements of training, examinations, depth authorizations, and minimum activity to maintain authorizations. AAUS medical standards may not be waived.

1.30 Consequence of Violation of Regulations by Scientific Divers

Failure to comply with the regulations of the UWF's Standards for Scientific Diving Manual may be cause for the restriction or revocation of the diver's scientific diving authorization by action of the UWF DCB.

1.40 Consequences of Violation of Regulations by UWF

Failure to comply with the regulations of this Manual may be cause for the restriction or revocation of UWF's recognition by AAUS.

1.50 Record Maintenance

UWF shall maintain consistent records for its diving program and for each participant. These records include but are not limited to: diving safety manual; equipment inspection, testing, and maintenance records; dive plans (project and/or individual); records of dive (project and/or individual); medical approval to dive; diver training records; diver authorization(s); individual dive log; dive incident reports; reports of disciplinary actions by the UWF DCB; and other pertinent information deemed necessary by UWF.

Availability of Records

- Medical records must be available to an attending physician of a diver or former diver when released in writing by the diver.
- Records and documents required by this Manual must be retained by the University of West Florida for the following period:

1. UWF Standards for Scientific Diving Manual - current document only.

2. Equipment inspection and testing records – Minimum current entry or tag.

3. Records of Dive – Minimum of 1 year, except 5 years where there has been an incident of pressure-related injury.

4. Medical approval to dive – Minimum of 1 year past the expiration of the current document, except 5 years where there has been an incident of pressure-related injury.

5. Diver training records – Minimum of 1 year beyond the life of the diver's program participation.

6. Diver authorization(s) – Minimum of 1year beyond the life of the diver's program participation.

7. Pressure-related injury assessment - 5 years.

8. Reports of disciplinary actions by the UWF DCB – Minimum of 1 year beyond the life of the diver's program participation.

SECTION 2.00 DIVING REGULATIONS

2.10 Introduction

No person shall engage in scientific diving operations under the auspices of the UWF Scientific Diving Program authorized pursuant to the provisions of this Manual.

2.20 Pre-Dive Procedures

Dive Plans

Before conducting any diving operations under the auspices of UWF, a dive plan for the proposed project or dive must be formulated and submitted for approval by the UWF DCB or designee. Dives should be planned around the competency of the least experienced diver. The dive plan (project or individual) should include the following:

- Diving Mode(s) and Gas(es)
- Divers' authorizations
- Approximate number of proposed dives
- Location(s) of proposed dives
- Estimated depth(s) and bottom time(s) anticipated
- Decompression status and repetitive dive plans, if required
- Proposed work, equipment, and boats to be employed
- Any hazardous conditions anticipated
- Emergency Action Plan (Appendix 7)
- In water details of the dive plan should include:
    - Dive Buddy assignments and tasks
    - Goals and objectives
    - Maximum depth(s) and bottom time
    - Gas management plan
    - Entry, exit, descent and ascent procedures
    - Perceived environmental and operational hazards and mitigations
    - Emergency and diver recall procedures

Diver Responsibility and Refusal to Dive

The decision to dive is that of the diver. The ultimate responsibility for safety rests with the individual diver. It is the diver's responsibility and duty to refuse to dive, without fear of penalty, if in his/her judgment, conditions are unsafe or unfavorable, or if he/she would be violating the precepts of regulations in this Manual.

No dive team member will be required to be exposed to hyperbaric conditions against his/her will.

No dive team member may dive for the duration of any known condition, which is likely to adversely affect the safety and health of the diver or other dive team members.

Pre-dive Safety Checks

- Prior to commencing the dive, the team must assure that every team member is healthy, fit, and trained for the type of dive that is being attempted.
- Scientific divers must conduct a functional check of their diving equipment in the presence of the dive buddy or tender. They must ensure the equipment is functioning properly and suitable for the type of diving operation being conducted.
- Each diver must have the capability of achieving and maintaining positive buoyancy at the surface.
- Environmental conditions at the site will be evaluated prior to entering the water.

Pre-dive Briefings

Before conducting any diving operations under the auspices of UWF, the dive team members must be briefed on:

- Dive Buddy assignments and tasks
- Dive objectives.
- Maximum depth(s) and bottom time
- Turn around pressure and required surfacing pressure
- Entry, exit, descent and ascent procedures
- Perceived environmental and operational hazards and mitigations
- Emergency and diver recall procedures

2.30 Diving Procedures

Solo Diving Prohibition

All diving activities must assure adherence to the buddy system. This buddy system is based upon mutual assistance, especially in the case of an emergency.

Decompression Management

- On any given dive, both divers in the buddy pair must follow the most conservative dive profile.
- A safety stop performed during the ascent phase of the dive should be conducted on any dive that exceeds 30 feet (9.14 meters).

Termination of the Dive

Any dive must be terminated while there is still sufficient cylinder pressure to permit the diver to safely reach the surface, including decompression time, or to safely reach an additional air source

at the decompression station.

It is the responsibility of the diver to terminate the dive that he/she considers unsafe, without fear or reprisal, in a way that does not compromise the safety of another diver already in the water.

Emergencies and Deviations from Regulations

Any diver 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 physical harm, or major environmental damage. A written report of such actions must be submitted to the UWF DCB explaining the circumstances and justifications.

2.40 Post-Dive Procedures

Post-Dive Safety Checks

After the completion of a dive, each diver must report any physical problems, symptoms of decompression sickness, or equipment malfunctions to the Lead Diver, DSO, and/or UWF DCB.

2.50 Emergency Procedures

The UWF Scientific Diving Program will develop emergency procedures, which follow the standards of care of the community and must include procedures and implementation criteria for emergency care, recompression, and evacuation, and incident reporting.

2.60 Flying After Diving or Ascending to Altitude (Over 1000 feet/304 meters)

- Following a Single No-Decompression Dive: Divers should have a minimum preflight surface interval of 12 hours.
- Following Multiple Dives per Day or Multiple Days of Diving: Divers should have a minimum preflight surface interval of 18 hours.
- Following Dives Requiring Decompression Stops: Divers should have a minimum preflight surface interval of 24 hours.
- Before Ascending to Altitude above 1000 feet (304 meters): Divers should follow the appropriate guideline for preflight surface intervals unless the decompression procedure used has accounted for the increase in elevation.

2.70 Record Keeping Requirements

Personal Diving Log

Each authorized scientific diver must log every dive made under the auspices of the UWF scientific diving program, and is encouraged to log all other dives. UWF may allow dives to be logged in any format of UWF's choosing. Log must be submitted per local protocol and must

remain in the diver's file. Details of the submission procedures are left to the discretion of the Diving Safety Officer. The dive log must include at least the following:

- Name of diver and buddy
- Date, time, and location.
- Diving modes used.
- General nature of diving activities.
- Approximate surface and underwater conditions.
- Maximum depth and dive time.
- Diving tables or computers used.
- Detailed report of any near or actual incidents.

Required Incident Reporting

All diving incidents requiring recompression treatment or resulting in moderate or serious injury or death must be reported to UWF DCB and AAUS in a timely manner. UWF must record and report occupational injuries and illnesses in accordance with requirements of the appropriate Labor Code section. UWF must investigate and document any incident of pressure-related injury and prepare a report that is to be forwarded to AAUS during the annual reporting cycle.

- If pressure-related injuries are suspected, or if symptoms are evident, the following additional information must be recorded and retained by UWF, with the record of the dive, for a period of 5 years:
    - Written descriptive report to shall include:
        - Name, address, phone numbers of the principal parties involved.
        - Summary of experience of divers involved.
        - Location, description of dive site, and description of conditions that led up to incident.
        - The circumstances of the incident and the extent of any injuries and illnesses.
        - Description of symptoms, including depth and time of onset.
        - Description and results of treatment.
        - Disposition of case.
        - Recommendations to avoid repetition of incident.
    - Incident requirements specific to UWF include:
        - The DSO shall investigate and document any incident of pressure-related injury and prepare a report, which is to be forwarded to the UWF DCB.
        - The injured diver(s)' diving gear must be left connected and set aside for inspection by the DSO.

The UWF Scientific Diving Program shall also record and report occupational injuries and illnesses in accordance with requirements of the Workman's Compensation section 440.01-449.59. F.S., and Section 6C-5.803, FAC.

- "It is the responsibility of employees to immediately report all work-related injuries/illnesses to their supervisor. The employee should obtain an injury report form from their department, fill it out, and submit it to the supervisor. If the supervisor is not available, the report should be given to the department head.
- If the injury requires emergency treatment, the immediate supervisor should fill out the report.
- When medical attention is required, the employee should bring the completed injury report form to the human resources office, where medical treatment will be coordinated. Employees are not allowed to use personal physicians for work-related injuries/illnesses. If personal physicians are used, payment for medical treatment cannot be guaranteed under Worker's Compensation, and because the injury is work-related, the claim may be rejected by personal health insurance. (For Worker's Compensation purposes, the term "employees" includes A & P employees, USPS employees, faculty, OPS employees, and student employees.)
- Employees must obtain medical authorization and receive medical treatment if they are unable to work as a result of a work-related injury/illness.
- A return to work determination form must be submitted to the immediate supervisor and human resources immediately after treatment, including each time the employee returns for additional treatment.
- Emergency/life-threatening situations: Call campus police at (850)-474-2415. Immediate medical assistance will be provided. If required, the police will summon an ambulance or "Life Flight" helicopter transportation.
- After-hours, holidays, weekend, and non-emergency injuries: Call campus police, (850)-474-2415 to report an injury. Police will direct medical treatment. Follow up by reporting the injury to your immediate supervisor, filling out report of injury form, and reporting to the human resources office for follow-up treatment arrangements on the first workday after the injury."

In addition to requirements specific to UWF, all diving incidents will be reported to AAUS. This report must first be reviewed and released by the UWF DCB and at minimum contain:

- Complete AAUS Incident Report.
- Summary of experience of divers involved.
- Description of dive site, and description of conditions that led up to incident.
- The circumstances of the incident and the extent of any injuries or illnesses.
- Description of symptoms, including depth and time of onset.
- Description and results of treatment.
- Disposition of case.
- Recommendations to avoid repetition of incident

SECTION 3.00 DIVING EQUIPMENT

3.10 General Policy

All equipment must meet standards as determined by the DSO and the UWF DCB. All equipment shall be regularly examined by the person using it and serviced according to manufacturer recommendations. Equipment that is subjected to extreme usage under adverse conditions should require more frequent testing and maintenance. The DSO shall approve any personal equipment used.

3.20 Equipment

The UWF DCB must establish the minimum of equipment configuration of all dives.

Regulators and Gauges

- Scuba regulators and gauges must be inspected and tested prior to each use and serviced, at a minimum, according to manufacturer's recommendations
- Standard open circuit (OC) regulator configuration is:
    - A first stage
    - Primary 2nd stage
    - Back up 2nd stage
    - Submersible Pressure Gauge (SPG)
    - Inflator hose for a Buoyancy Compensator Device
- A Full Face Mask may be used in place of the primary 2nd stage according to manufacturer's recommendations

Equipment for Determination of Decompression Status

- Each member of the buddy team must have an underwater timing device and depth indicator, or dive computer
- If dive tables are being used a set must be available at the dive location
- If a dive computer is used the diver must use the same computer used on repetitive dives.
- In an aquarium or other manmade structure of a known maximum obtainable depth:
    - A depth indicator is not required, except when a diver's decompression status must be taken into consideration on repetitive dives.
    - Only one buddy must be equipped with a timing device.
    - The maximum obtainable depth of the aquarium must be used as the diving depth.

Scuba Cylinders

- Scuba cylinders must be designed, constructed, and maintained in accordance with the applicable provisions of the Unfired Pressure Vessel Safety Orders.
- Scuba cylinders must be hydrostatically tested in accordance with DOT standards.
- Scuba cylinders must have an internal and external inspection at intervals not to exceed 12

months.
- Scuba cylinder valves must be functionally tested at intervals not to exceed 12 months.

Buoyancy Compensation Devices (BCD)

- Each diver must have the capability of achieving and maintaining neutral buoyancy underwater and positive buoyancy at the surface.
- BCDs, dry suits, or other variable volume buoyancy compensation devices must be equipped with an exhaust valve.
- These devices must be functionally inspected and tested at intervals not to exceed 12 months.

Backpacks

- Backpacks without integrated flotation devices and weight systems shall have a quick-release device designed to permit jettisoning with a single motion from either hand.

Timing Devices, Depth and Pressure Gauges

- Both members of the buddy team must have an underwater timing device, an approved depth indicator, and a submersible pressure gauge.

Dive Lights

- Dive lights are required by all divers on night dives, including a primary, back-up, and cylinder light. All lights shall be maintained in working order.

Cutting Devices

- All divers are required to carry on their person a primary cutting device; additional devices may be required depending on environment and dive site.

Signaling Devices

- All divers are required to carry on their person, at minimum, a signaling whistle attached to their BC and an inflatable safety marker buoy (SMB) of no less than 4 feet; additional devices may be required depending on environmental conditions and dive site.

3.25 Diving Vessels

A diving vessel is construed as any vessel of any size that conducts diving operations, or that acts as a diving platform.

- The propellers of the vessel shall be stopped before divers enter or exit the water.
- All diving operations will cease upon the orders of the Lead Diver when in his/her opinion it is unsafe to continue.
- All diving operations will cease when thunderstorms and/or lightning are within a range of 6 miles or less.
    - Use the 30-30 rule where visibility is good and there is nothing obstructing your view of the thunderstorm. When you see lightning, count the time until you hear thunder. If that time is 30 seconds or less, the thunderstorm is within 6 miles of you and is dangerous; seek shelter immediately. The threat of lightning continues for a much longer period than most realize. Wait at least 30 minutes after the last lightning flash before leaving shelter. Don't be fooled by sunshine or blue sky. If in a small boat, move to the center of the boat and crouch down. Try to avoid metal surfaces. Do not use any electronics equipment unless it is an absolute emergency. (National Weather Service, Office of Climate, Weather, and Water Services)
- All diving operations will cease if there is a sea current of >2 knots.
- All diving operations will cease in bays and inland waters in the event there is a sea state greater than 2 ft. (wave height no greater 3 ft.).
- All diving operations will cease in offshore and coastal waters in the event there is a sea state greater than 3 ft. (wave height no greater 4 ft.).

3.30 Auxiliary Equipment

Handheld Underwater Power Tools

- Power tools and equipment used underwater must be specifically approved for this purpose.
- Tools and equipment supplied with power from the surface must be de-energized before being placed into or retrieved from the water.
- Handheld power tools must not be supplied with power from the dive location until requested by the diver.

3.40 Support Equipment

First Aid Supplies

- A first aid kit and emergency oxygen appropriate for the diving being conducted must be available at the dive site.

Diver's Flag

- A diver's flag must be displayed prominently whenever diving is conducted under circumstances where required or where water traffic is probable.

Emergency Communications

- All dive operations shall include a method for communication with shore in case of emergency, such as radio or cell phone.
- All dive operations shall include a method for emergency recall of divers in the water.

Compressor Systems - UWF-Controlled

The following will be considered in design and location of compressor systems:

- Low-pressure compressors used to supply air to the diver if equipped with a volume tank must have a check valve on the inlet side, a relief valve, and a drain valve.
- Compressed air systems over 500 psig must have slow-opening shut-off valves.
- All air compressor intakes must be located away from areas containing exhaust or other contaminants.

3.50 Equipment Maintenance

Record Keeping

Each equipment modification, repair, test, calibration, or maintenance service must be logged, including the date and nature of work performed, serial number of the item (if applicable), and the name of the person performing the work for the following equipment:

- Regulators
- Gauges (SPG, Depth Gauges, Timers, and Dive Computers)
- BCDs
- Dry suits
- Scuba cylinders and valves
- Full face masks
- Compressors, air filtration systems, gas control panels, and storage banks
- Surface supplied equipment
- Rebreather systems
- Additional equipment categories as determined by the UWF DCB

Compressor Operation and Air Test Records

Gas analyses and air tests must be performed on each UWF-controlled breathing air compressor at regular intervals of no more than 100 hours of operation or 6 months, whichever occurs first. The results of these tests must be entered in a formal log and be maintained.

3.60 Air Quality Standards

Breathing gas must meet the following specifications as set forth by the Compressed Gas Association (CGA Pamphlet G-7.1; see table below).

CGA Grade E	
Component	**Maximum**
Oxygen	20 - 22%/v
Carbon Monoxide	10 PPM/v
Carbon Dioxide	1000 PPM/v
Condensed Hydrocarbons	5 mg/m3
Total Hydrocarbons as Methane	25 PPM/v
Water Vapor ppm	(2)
Objectionable Odors	None

For breathing air used in conjunction with self-contained breathing apparatus in extreme cold where moisture can condense and freeze, causing the breathing apparatus to malfunction, a dew point not to exceed -50°F (63 pm v/v) or 10 degrees lower than the coldest temperature expected in the area is required.

Remote Operations

For remote site operations using gas sources not controlled by UWF, every effort should be made to verify breathing gas meets the requirements of this standard. If CGA Grade E gas is not verifiable, the UWF DCB must develop a protocol to mitigate risk to the diver.

SECTION 4.00 SCIENTIFIC DIVER CERTIFICATION AND AUTHORIZATIONS

This section describes the training and performance standards for UWF Scientific Divers and represents the minimum required level of knowledge and skills presented in a generalized format. Individual diving programs are encouraged to expand upon and augment these requirements, develop or utilize appropriate educational materials, and optimize instructional programs to suit and reflect their specific needs.

4.10 Prerequisites

Administrative

The candidate must complete all administrative and legal documentation required by UWF.

Entry Level Diver Certification

The applicant/candidate must, at minimum, show documented proof of Diver Certification or equivalent from an internationally recognized training agency. If the UWF Scientific Diving Program wishes to train and certify entry-level divers, it may do so under the standards of the most current version of the RSTC/WRSTC and/or IS entry-level diver standard. Entry-level diver training is a prerequisite to scientific diver training and therefore no part of entry-level training may be counted in any way toward scientific diver training.

1. "Minimum Course Content for Open Water Diver Certification." World Recreational Scuba Training Council (WRSTC), <www.wrstc.com>.

2. "Safety related minimum requirements for the training of recreational scuba divers -- Part 2: Level 2 -- Autonomous diver." ISO 24801-2:2007, International Organization for Standardization (ISO) <www.iso.org>.

Medical Examination

The candidate must be medically qualified for diving as described in Section 5.0 and Appendices 1-4 of this Manual. AAUS medical standards may not be waived.

Swimming/Watermanship Evaluation

The candidate must demonstrate the following in the presence of the DSO or designee. All tests are to be performed without swim aids. However, where exposure protection is needed, the candidate must be appropriately weighted to provide for neutral buoyancy.

1. Swim underwater for a distance of 25 yards (23 meters) without surfacing.
2. Swim 400 yards (366 meters) in less than 12 minutes.
3. Tread water for 10 minutes, or 2 minutes without the use of hands.

4. Transport a passive person of equal size a distance of 25 yards (23 meters) in the water.

4.20 Training

The candidate must successfully complete prerequisites, theoretical aspects, practical training, and examinations for a minimum cumulative time of 100 hours and a minimum of 12 open water dives. Theoretical aspects must include principles and activities appropriate to the intended area of scientific study. Formats for meeting the 100-hour training requirement include the UWF developed formalized training course, or a combination of formalized and on the job training.

When a diver's resume provides clear evidence of significant scientific diving experience, the diver can be given credit for meeting portions of the 100-hour course requirements. The UWF DCB will identify specific overlap between on-the-job training, previous scientific diving training/experience and course requirements, and then determine how potential deficiencies will be resolved. However, UWF cannot "test-out" divers, regardless of experience, when they have no previous experience in scientific diving.

Any candidate who does not convince the UWF DCB, through the DSO, that they possess the necessary judgment, under diving conditions, for the safety of the diver and his/her buddy, may be denied UWF scientific diving privileges.

Theoretical Training/Knowledge Development

Required Topics:	**Suggested Topics:**
Diving Emergency Care Training • Cardiopulmonary Resuscitation (CPR) • AED • Standard or Basic First Aid • Recognition of DCS and AGE • Accident Management • Field Neurological Exam • Oxygen Administration	Specific Dive Modes (methods of gas delivery) • Open Circuit • Hookah • Surface Supplied diving • Rebreathers (closed and/or semi-closed)
Dive Rescue • To include procedures relevant to UWF protocols. (See water skills below)	Specialized Breathing Gas • Nitrox • Mixed Gas
Scientific Method	Small Boat Operation
Data Gathering Techniques (Only items specific to area of study required) • Transects and Quadrats • Mapping • Coring • Photography • Tagging • Collecting • Animal Handling	Specialized Environments and Conditions • Blue Water Diving • Altitude • Ice and Polar Diving (Cold Water Diving) • Zero Visibility Diving • Polluted Water Diving • Saturation Diving • Decompression Diving

• Archaeology • Common Biota • Organism Identification • Behavior • Ecology • Site Selection, Location, and Re-location • Specialized Data Gathering Equipment	• Overhead Environments • Aquarium Diving • Night Diving • Kelp Diving • Strong Current Diving • Potential Entanglement/Entrapment • Live boating
Required Topics:	**Suggested Topics:**
Navigation	HazMat Training • Chemical Hygiene, Laboratory Safety (Use of Chemicals)
HazMat Training • HP Cylinders	
Decompression Management Tools • Dive Tables • Dive Computers • PC Based Software	Specialized Diving Equipment • Full face mask • Dry Suit • Communications • Dive Propulsion Vehicle (DPV) • SMBs/Lift Bags • Line Reels
AAUS Scientific Diving Regulations and History • Scientific Dive Planning • Coordination with other Agencies • Appropriate Governmental Regulations	
Hazards of breath-hold diving and ascents	
Dive Physics (Beyond entry level scuba)	Other Topics and Techniques as Determined by the DCB
Dive Physiology (Beyond entry level scuba)	
Dive Environments	
Decompression Theory and its Application	

Practical Training/Skill Development

Confined Water	At the completion of training, the trainee must satisfy the DSO or UWF DCB-approved designee of their ability to perform the following, as a minimum, in a pool or in sheltered water: • Enter water fully equipped for diving • Clear fully flooded face mask • Demonstrate air sharing and ascent using an alternate air source, as both donor and recipient, with and without a face mask • Demonstrate buddy breathing as both donor and recipient, with and without a face mask • Demonstrate understanding of underwater signs and signals • Demonstrate ability to remove and replace equipment while submerged • Demonstrate acceptable watermanship skills for anticipated scientific diving conditions

Open Water Skills	The trainee must satisfy the DSO, or UWF DCB-approved designee, of their ability to perform at least the following in open water: • Surface dive to a depth of 10 feet (3 meters) without scuba* • Enter and exit water while wearing scuba gear* ^^ • Kick on the surface 400 yards (366 meters) while wearing scuba gear, but not breathing from the scuba unit* • Demonstrate proficiency in air sharing ascent as both donor and receiver* • Demonstrate the ability to maneuver efficiently in the environment, at and below the surface* ^^ • Complete a simulated emergency swimming ascent* • Demonstrate clearing of mask and regulator while submerged* • Underwater communications^^ • Demonstrate ability to achieve and maintain neutral buoyancy while submerged* • Demonstrate techniques of self-rescue and buddy rescue* • Navigate underwater ^ • Plan and execute a dive^ • Demonstrate judgment adequate for safe scientific diving* ^^
	Rescue Skills: • Rescue from depth and transport 25 yards (23 meters), as a diver, a passive simulated victim of an accident: surface diver, establish buoyancy, stabilize victim • Demonstrate simulated in-water mouth-to-mouth resuscitation • Removal of victim from water to shore or boat • Stressed and panicked diver scenarios • Recommendations For Rescue Of A Submerged Unresponsive Compressed-Gas Diver – Appendix 9
	Successfully complete a minimum of one checkout dive and at least eleven additional open water dives in a variety of dive sites, for a cumulative surface-to-surface time of 6 hours. Dives following the checkout dive(s) may be supervised by an active Scientific Diver holding the necessary depth authorization experienced in the type of diving planned, and with the knowledge and permission of the DSO
	The eleven dives (minimum) following the initial checkout dive may be conducted over a variety of depth ranges as specified by the UWF DCB. Depth progression must proceed shallower to deeper after acceptable skills and judgment have been demonstrated, and are not to exceed 100 feet (30 meters) during the initial 12 dive cycle
	* Checkout dive element ^^ Evaluated on all dives ^ Evaluated at some point during the training cycle

Examinations

Examinations	
Equipment	The trainee will be subject to examination/review of: • Personal diving equipment

	• Task specific equipment • Function and manipulation of decompression computer to be employed by the diver (if applicable)
Written Exams	The trainee must pass a written examination reviewed and approved by the UWF DCB that demonstrates knowledge of at least the following: • Function, care, use, and maintenance of diving equipment • Advanced physics and physiology of diving • Diving regulations • Applicable diving environments • Emergency procedures for UWF dive mode(s) and environments, including buoyant ascent and ascent by air sharing • Currently accepted decompression theory and procedures • Proper use of dive tables • Hazards of breath-hold diving and ascents • Planning and supervision of diving operations • Navigation • Diving hazards & mitigations • Cause, symptoms, treatment, and prevention of the following: near drowning, air embolism, hypercapnia, squeezes, oxygen toxicity, nitrogen narcosis, exhaustion and panic, respiratory fatigue, motion sickness, decompression sickness, hypothermia, and hypoxia/anoxia • Applicable theoretical training and knowledge development from the Required and Suggested Topics (above)

4.30 Diver Certifications and Authorizations

Only a person under the auspices of UWF, a member that subscribes to the practices of AAUS, is eligible for a scientific diver certification.

Diver-In-Training (DIT) Authorization

This is an authorization to dive, usable only while it is current and for the purpose intended. This authorization signifies that a diver has completed and been certified as at least an entry level diver through an internationally recognized certifying agency and has the knowledge skills and experience necessary to commence and continue training as a scientific diver under supervision, as approved by the UWF DCB. DIT status must only be used when the diver is on his/her way to becoming certified as a scientific diver. While it is recommended for DITs to have hands-on scientific diver experience during their training, the DIT status is intended to be a temporary authorization, not a substitute for Scientific Diver Certification.

Scientific Diver Certification

Signifies a diver has completed all requirements in Section 4.20 and is certified by UWF to engage in scientific diving without supervision, as approved by the UWF DCB through the DSO.

Submission of documents and participation in aptitude examinations does not automatically result in certification. To be certified, the applicant must demonstrate to the UWF DCB, through the DSO, that s/he is sufficiently skilled and proficient, and possess the necessary judgment for their safety and/or that of the dive team. Scientific Diver Certification is only active when required authorizations are in place and current.

Scientific Aquarium Diver Certification

Scientific Aquarium Diver is a certification authorizing the diver to participate in scientific diving solely in the aquarium environment.

All requirements set forth for Scientific Diver certification must apply, except follows:

- Practical training must include at least 12 supervised aquarium dives for a cumulative bottom time of 6 hours.
- Training requirements for navigation and 400-yard (366-meter) surface swim in scuba gear may be waived at the discretion of the UWF DCB.

Night Diving Certification

All divers participating in night diving operations shall have appropriate training based on World Recreational Scuba Training Council (WRSTC) standards.

Temporary Diver Authorization

Only a diver not under the auspices of an AAUS OM may be granted a Temporary Diver Authorization. The individual in question must demonstrate proficiency in diving and can contribute measurably to a planned dive. A Temporary Diver Authorization constitutes a waiver of selected requirements of Section 4.00 and is valid only for a limited time, as approved by the UWF DCB. A Temporary Diver Authorization must be restricted to the planned diving operation and must comply with all other policies, regulations, and standards of this Manual, including medical requirements. This authorization is not to be utilized as a repeated mechanism to circumvent existing standards set forth in this Manual.

4.40 Depth Authorizations

Depth Certifications and Progression to Next Depth Level

Indicates the maximum depth in which a diver can conduct science and may supervise other divers holding a lesser depth authorization. A scientific diver requires a valid depth authorization to be considered active.

A diver may be authorized to the next depth level after successfully completing the requirements for that level. A diver may exceed his/her depth authorization when accompanied and supervised by a dive buddy holding a depth authorization greater or equal to the intended depth. Dives must be planned and executed with the permission of the UWF DCB or designee.

a) Authorization to 30 Foot Depth - Initial science diver depth authorization, approved upon the successful completion of training listed in Section 4.00. Cumulative minimum supervised dives: 12.
b) Authorization to 60 Foot Depth - A diver holding a 30-foot authorization may be authorized to a depth of 60 feet after successfully completing and logging 12 supervised dives to depths between 31 and 60 feet under supervision of a diver authorized by the UWF DCB, for a minimum total time of 4 hours. Cumulative minimum supervised dives: 24.
c) Authorization to 100 Foot Depth - A diver holding a 60-foot authorization may be authorized to a depth of 100 feet after successfully completing and logging 6 supervised dives to depths between 61 and 100 feet under supervision of a dive buddy authorized by the UWF DCB. The diver must also demonstrate proficiency in the use of the appropriate decompression profiling method. Cumulative minimum supervised dives: 30.
d) Authorization to 130 Foot Depth - A diver holding a 100-foot authorization may be authorized to a depth of 130 feet after successfully completing and logging 6 supervised dives to depths between 100 and 130 feet under supervision of a dive buddy authorized by the UWF DCB. The diver must also demonstrate proficiency in the use of the appropriate decompression profiling method. Cumulative minimum supervised dives: 36.
e) Authorization to 150 Foot Depth - A diver holding a 130-foot authorization may be authorized to a depth of 150 feet after successfully completing and logging 6 supervised dives to depths between 130 and 150 feet under supervision of a dive buddy authorized by the UWF DCB. The diver must also demonstrate knowledge of the special problems of deep diving and of special safety requirements. Cumulative minimum supervised dives: 42.
f) Authorization to 190 Foot Depth - A diver holding a 150-foot authorization may be authorized to a depth of 190 feet after successfully completing and logging 6 dives to depths between 150 and 190 feet under supervision of a dive buddy authorized by the UWF DCB. The diver must also demonstrate knowledge of the special problems of deep diving and of special safety requirements. Cumulative minimum supervised dives: 48.

Diving on air is not permitted beyond a depth of 190 feet. Dives beyond 190 feet require the use of mixed gas.

g) Authorization to 250 Foot Depth - A diver holding a 190-foot authorization may be authorized to a depth of 250 feet after successfully completing and logging 6 supervised dives to depths between 190 and 250 feet under supervision of a dive buddy authorized by the UWF DCB. The diver must also demonstrate knowledge of the special problems of deep diving and of special safety requirements.
h) Authorization to 300 Foot Depth - A diver holding a 250-foot authorization may be authorized to a depth of 300 feet after successfully completing and logging 6 supervised dives to depths between 200 and 250 feet under supervision of dive buddy authorized by the UWF DCB. The diver must also demonstrate knowledge of the special problems of deep diving and of special safety requirements.
i) Authorizations deeper than 300 Feet – Depth authorizations deeper than 300 feet progress in 50-foot depth/6 dive increments. A diver holding a 300 foot, or deeper authorization may be authorized to the next depth authorization increment after successfully completing and logging 6 supervised dives under supervision of dive buddy authorized by the UWF DCB. The diver must also demonstrate knowledge of the special problems of deep diving and of special safety requirements.

4.50 Maintaining Active Status

Minimum Activity to Maintain Authorizations

During any 12-month period, each scientific diver must log a minimum of 12 scientific, scientific training, or proficiency dives. At least one dive must be logged near the maximum depth, as defined by the UWF DCB, of the diver's authorization during each 6-month period. Divers authorized to 150 feet or deeper may satisfy these requirements with dives to 130 feet or deeper. Failure to meet these requirements will result in revocation or restriction of authorization by the DSO under procedures established by the UWF DCB.

Re-qualification of Authorization

Once the initial requirements of Section 4.00 are met, divers whose depth authorization has lapsed due to lack of activity may be re-qualified by procedures adopted by the UWF DCB.

Medical Examination

All scientific divers must pass a medical examination at the intervals specified in Section 5.00. A medically cleared diver experiencing any Conditions Which May Disqualify Candidates From Diving (Appendix 1) must receive clearance to return to diving from a physician before resuming diving activities. This medical examination requirement cannot be waived for any diver.

Emergency Care Training

The scientific divers must current training in the following:

- Adult CPR and AED
- Emergency oxygen administration
- First aid for diving accidents

4.60 Revocation of Authorization

An individual's scientific diver certification can be restricted or revoked for cause by the DCB. Authorizations associated with an individual's scientific diver certification may be restricted or suspended for cause by the DSO. Restrictions or suspensions issued by the DSO may be rescinded by the DSO; these issues will be reported to and reviewed by the UWF DCB, and the outcomes or actions resulting from this review will be documented in the diver's UWF record. Violations of regulations set forth in this Manual or other governmental subdivisions not in conflict with this Manual, or demonstration of poor judgment, may be considered cause. The UWF DCB or designee must inform the diver in writing of the reason(s) for revocation. The diver will be given the opportunity to present their case in writing to the UWF DCB for reconsideration. Following revocation, the diver may be reauthorized after complying with

conditions the UWF DCB may impose. All such written statements and requests, as identified in this section, are formal documents, and therefore part of the diver's file.

SECTION 5.00 MEDICAL STANDARDS

5.10 Medical Requirements

General

- All medical evaluations required by this Manual must be performed by, or under the direction of, a licensed physician of the applicant-diver's choice, preferably one trained in diving/undersea medicine.
- The diver should be free of any chronic disabling disease and any conditions contained in the list of conditions for which restrictions from diving are generally recommended. (Appendix 1)
- The must verify that divers have been declared by the examining medical authority to be fit to engage in diving activities.

5.20 Frequency of Medical Evaluations

Medical evaluation must be completed:		
Before Age 40	After age 40 Before Age 60	After Age 60
Before a diver may begin diving, unless an equivalent initial medical evaluation has been given within the preceding 5 years	Before a diver may begin diving, unless an equivalent initial medical evaluation has been given within the preceding 3 years	Before a diver may begin diving, unless an equivalent initial medical evaluation has been given within the preceding 2 years
At 5-year intervals	At 3-year intervals	At 2-year intervals
Clearance to return to diving must be obtained from a healthcare provider following a medically cleared diver experiencing any Conditions Which May Disqualify Candidates From Diving (Appendix 1), or following any major injury or illness, or any condition requiring chronic medication. If the condition is pressure related, the clearance to return to diving must come from a physician trained in diving medicine.		

5.30 Information Provided Examining Physician

UWF shall provide a copy of the medical evaluation requirements of this Manual to the examining physician (Appendices 1, 2, and 3).

5.40 Content of Medical Evaluations

Medical examinations conducted initially and at the intervals specified in Section 5.20 shall consist of the following:

1. Diving physical examination (Appendix 2). Modifications or omissions of required tests are not permitted
2. Applicant agreement for release of medical information to the Diving Safety Officer and the UWF DCB (Appendix 2b).

3. Medical history (Appendix 3).

5.50 Physician's Written Report

- A Medical Evaluation of Fitness For Scuba Diving Report signed by the examining physician stating the individual's fitness to dive, including any recommended restrictions or limitations will be submitted to UWF for the diver's record after the examination is completed.
- The Medical Evaluation of Fitness For Scuba Diving Report will be reviewed by the UWF DCB or designee and the diver's record and authorizations will be updated accordingly.
- A copy of any physician's written reports will be made available to the individual.
- It is the diver's responsibility to provide to UWF with a written statement from the examining medical authority listing any restrictions, limitations, or clearances to dive resulting from medical examinations obtained by the individual outside of their normal diving medical examination cycle. The UWF DCB or designee will review these statements and the diver's record and authorizations will be updated accordingly.

VOLUME II

Sections 6.00 through 12.00

SECTION 6.00 NITROX DIVING STANDARDS

This section describes the requirements for authorization and use of nitrox for Scientific Diving.

6.10 Requirements for Nitrox Authorization

Prior to authorization to use nitrox, the following minimum requirements must be met:

Prerequisites

Only a certified Scientific Diver or DIT diving under the auspices of UWF is eligible for authorization to use nitrox.

Application for authorization to use nitrox must be made to the UWF DCB. Submission of documents and participation in aptitude examinations does not automatically result in authorization to use nitrox. The applicant must convince the UWF DCB through the DSO that they are sufficiently knowledgeable, skilled and proficient in the theory and use of nitrox for diving.

Training

In lieu of writing/promulgating UWF-specific training standards for Nitrox divers, UWF references the standards for Nitrox diver training as defined by the WRSTC and/or ISO. UWF to train Nitrox divers may do so using one of the following options:

a) Under the auspices and standards of an internationally recognized diver training agency.

b) Under the auspices of AAUS using the minimum guidelines presented by the most current version of the RSTC/WRSTC and/or ISO Nitrox diver training standards.

References:
"Minimum Course Content for Enriched Air Nitrox Certification" - World Recreational Scuba Training Council (WRSTC), www.wrstc.com.

“Recreational diving services- Requirements for training programs on enriches air nitrox (EAN) diving". ISO 11107:2009 - International Organization for Standardization (ISO), www.iso.org

Practical Evaluation

- Oxygen analysis of nitrox mixtures.
- Determination of MOD, oxygen partial pressure exposure, and oxygen toxicity time limits, for various nitrox mixtures at various depths.
- Determination of nitrogen-based dive limits status by EAD method using air dive tables, and/or using nitrox dive tables, as approved by the UWF DCB.
- Nitrox dive computer use may be included, as approved by the UWF DCB.

- A minimum of two supervised open water dives using nitrox is required for authorization.

Written Evaluation

- Function, care, use, and maintenance of equipment cleaned for nitrox use.
- Physical and physiological considerations of nitrox diving (e.g.: O_2 and CO_2 toxicity)
- Diving regulations, procedures/operations, and dive planning as related to nitrox diving
- Equipment marking and maintenance requirements
- Dive table and/or dive computer usage
- Calculation of: MOD, pO_2, and other aspects of Nitrox diving as required by the UWF DCB

6.20 Minimum Activity to Maintain Authorization

The diver should log at least one nitrox dive per year. Failure to meet the minimum activity level may be cause for restriction or revocation of nitrox authorization.

6.30 Operational Requirements

Oxygen Exposure Limits

- The inspired oxygen partial pressure experienced at depth should not exceed 1.6 ATA.
- The maximum allowable exposure limit should be reduced in cases where cold or strenuous dive conditions, or extended exposure times are expected.

Calculation of Decompression Status

- A set of UWF DCB approved nitrox dive tables should be available at the dive site.
- Dive computers may be used to compute decompression status during nitrox dives. Manufacturers' guidelines and operation instructions should be followed.
- Dive computers capable of pO_2 limit and fO_2 adjustment should be checked by the diver prior to the start each dive to ensure conformity with the mix being used.

Gas Mixture Requirements

- Only nitrox mixtures and mixing methods approved by the UWF DCB may be used.
- UWF personnel mixing nitrox must be qualified and approved by the UWF DCB for the method(s) used.
- Oxygen used for mixing nitrox should meet the purity levels for "Medical Grade" (U.S.P.) or "Aviator Grade" standards.

- In addition to the AAUS Air Purity Guidelines outlined in Section 3.60, any air that may come in contact with oxygen concentrations greater than 40% (i.e.. during mixing), must also have a hydrocarbon contaminant no greater than .01 mg/m^3.
    - For remote site operations using compressors not controlled by UWF where this is not verifiable, the UWF DCB must develop a protocol to mitigate risk to the diver.

Analysis Verification by User

- Prior to the dive, it is the responsibility of each diver to analyze the oxygen content of his/her scuba cylinder and acknowledge in writing the following information for each cylinder: fO_2, MOD, cylinder pressure, date of analysis, and user's name.
- Individual dive log reporting forms should report fO_2 of nitrox used, if different than 21%.

6.40 Nitrox Diving Equipment

Required Equipment

All of the designated equipment and stated requirements regarding scuba equipment required in this Manual apply to nitrox operations. Additional minimal equipment necessary for nitrox diving operations includes:

- Labeled SCUBA Cylinders in Accordance with Industry Standards
- Oxygen Analyzers
- Oxygen compatible equipment as applicable

Requirement for Oxygen Service

- All equipment, which during the dive or cylinder filling process is exposed to concentrations greater than 40% oxygen, should be cleaned and maintained for oxygen service.
- Any equipment used with oxygen or mixtures containing over 40% by volume oxygen must be designed and maintained for oxygen service. Oxygen systems over 125 psig must have slow-opening shut-off valves.

Compressor system

- Compressor/filtration system must produce oil-free air, or
- An oil-lubricated compressor placed in service for a nitrox system should be checked for oil and hydrocarbon contamination at least quarterly.

Section 7.00 Surface Supplied Diving Technologies

Surface supplied diving technologies include any diving mode in which a diver at depth is supplied with breathing gas from the surface.

7.10 Prerequisites

All surface supplied and hookah divers must be certified scientific divers or divers in training and have completed system specific training as authorized by UWF.

7.20 Surface Supplied Diving

Surface Supply Definition

A mode of diving using open circuit, surface supplied, compressed gas delivered by means of a pressurized umbilical hose. The umbilical generally consists of a gas supply hose, strength member, pneumofathometer hose, and communication line. The umbilical supplies a helmet or full-face mask, often with voice communications.

Procedures

- Each diver must be continuously tended while in the water.
- A diver must be stationed at the underwater point of entry when diving is conducted in enclosed or physically confined spaces.
- Each diving operation must have a primary breathing gas supply sufficient to support divers for the duration of the planned dive including decompression.
- For dives deeper than 100 feet (30 meters) or outside the no-decompression limits:
    - A separate dive team member must tend each diver in the water;
    - A standby diver must be available while a diver is in the water;
- A diver using Surface Supply may rely on surface personnel to keep the diver's depth, time and diving profile.
- Surface supplied air diving must not be conducted at depths deeper than 190 feet (57.9 meters).
- The UWF DCB is responsible for developing additional operational protocols.

Manning Requirements

The minimum number of personnel comprising a surface supplied dive team is three. They consist of: a Designated Person-In-Charge (DPIC), a Diver, and a Tender. Additional dive team members are required when a diving operation or dive site is considered complex, or when the task loading of a dive team member is deemed excessive. It is the UWF DCB's responsibility to define when the surface supplied dive team must be expanded beyond the minimum manning requirements.

Equipment

- The diver will wear a positive buckling device on the safety harness to which the umbilical hose will be secured. The attachment must be of sufficient strength to prevent any strain on the helmet/full face mask hose connections and equipment must be configured to allow retrieval of the diver by the surface tender without risk of interrupting air supply to the diver.

- Each diver must be equipped with a diver-carried independent reserve breathing gas supply containing sufficient volume to complete the ascent to the surface, including all required decompression and safety stops.

- Masks and Helmets
    - Surface supplied and mixed gas masks and helmets must have:
        - A non-return valve at the attachment point between the mask/helmet and hose which must close readily and positively; and
        - An exhaust valve
    - Surface-supplied masks and helmets must have a minimum ventilation rate capability of 4.5 actual cubic feet per minute (acfm) at any depth at which they are operated or the capability of maintaining the diver's inspired carbon dioxide partial pressure below 0.02 atmospheres absolute (ATA) when the diver is producing carbon dioxide at the rate of 1.6 standard liters per minute
    - Helmets or masks connected directly to the dry suit or other buoyancy-changing equipment must be equipped with an exhaust valve

- Air supplied to the diver must meet the air quality standards outlined in Section 3.60

Surface Supplied in Aquariums

- In an aquarium habitat where the maximum depth is known, a pneumofathometer is not required.
- The maximum obtainable depth of the aquarium may be used as the diving depth
- One tender may line-tend multiple divers, provided the tender is monitoring only one air source, there is mutual assistance between divers, there are no overhead obstructions or entanglements, or other restrictions as defined by the UWF DCB.
- The UWF DCB is responsible for developing additional operational protocols for surface supplied diving specific to the aquarium environment.

7.30 Hookah

Hookah Definition

Hookah is an open circuit diving mode comprised of a remote gas supply, a long hose, and a standard scuba second stage or full face mask. Hookah is generally used in shallow water (30 feet or less), though the configuration has been used to supply breathing gas from a diving bell, habitat, or submersible/submarine.

Equipment Requirements

- The air supply hose must be rated for a minimum operating pressure of 130psi.
- Air supplied to the hookah diver must meet the air quality standards outlined in section 3.60
- Hookah supply systems must be capable of supplying all divers breathing from the system with sufficient gas for comfortable breathing for the planned depth and workload.
- Hookah system second stage should be capable of being attached to the diver in a way to avoid pulling stress on the second stage mouthpiece and affords easy release if the diver must jettison the regulator and hose.
- An independent reserve breathing gas supplied will be carried by each hookah diver:
    - When the diver does not have direct access to the surface or
    - At depths or distance from alternate breathing gas source determined by the UWF DCB.

Operational Requirements

- Hookah diving must not be conducted beyond depths or distance from alternate breathing gas source as determined by the UWF DCB.
- A diver's independent reserve breathing gas supply, if worn, must contain sufficient volume to allow the diver(s) to exit to the surface or alternate breathing gas source
- Hookah divers not supported by diving bell, or underwater habitat must not be exposed to dives that require staged decompression.
- The UWF DCB is responsible for developing additional operational protocols.

Hookah Diving in Aquariums

- In an aquarium habitat where the maximum depth is known and planned for, a depth gauge is not required.
- The maximum obtainable depth of the aquarium may be used as the maximum diving depth.
- A hookah configured diver may operate without an in-water buddy in an aquarium provided the diver is tended from the surface; has visual, line pull, or voice communication with the tender; the diver carries an independent reserve breathing gas source containing sufficient volume to allow the diver to exit to the surface or alternate breathing gas source; and under other operational conditions as determined by the UWF DCB.
- The UWF DCB is responsible for developing additional operational protocols for hookah diving specific to the aquarium environment.

Section 8.00 STAGED DECOMPRESSION DIVING

Decompression diving is defined as any diving during which the diver cannot perform a direct return to the surface without performing a mandatory decompression stop to allow the release of inert gas from the diver's body.

UWF does not engage in dive operations that require decompression diving.

Section 9.00 MIXED GAS DIVING

Mixed gas diving is defined as dives done while breathing gas mixes containing proportions greater than 1% by volume of an inert gas other than nitrogen.

UWF does not engage in dive operations that require mixed gas diving.

Section 10.00 SPECIALIZED DIVING ENVIRONMENTS

Certain types of diving, some of which are listed below, require equipment or procedures that require training. Supplementary guidelines for these technologies are in development by the AAUS. In order for University of West Florida's scientific divers to use these equipment or procedures, the UWF DCB must establish guidelines. Divers shall comply with all scuba diving procedures in this Manual unless specified.

10.10 Blue Water Diving

Blue water diving is defined as diving in open water where the bottom is generally greater than 200 feet deep. It requires special training and the use of multiple-tethered diving techniques. Specific standards that should be followed are outlined in "Blue Water Diving Guidelines" (California Sea Grant Pub. No. T-CSGCP-014).

10.20 Ice and Polar Diving

Divers planning to dive under ice or in polar conditions should use the following: "PESH-POL_2000.08 Standards for Conduct of Scientific Diving," National Science Foundation, Division of Polar Programs, 2015.

10.30 Overhead Environments

Overhead environments include water filled Caverns, Caves, Flooded Mines and Ice diving, as well as portions of Sunken Shipwrecks and other manmade structures.

For the purposes of this *Manual*, Ice diving is a specialized overhead environment addressed in Section 10.20 and supplemented by requirements and protocols established by the UWF DCB.

UWF does not engage in dive operations that require overhead environments.

10.40 Saturation Diving

Overhead environments include water filled Caverns, Caves, Flooded Mines and Ice diving, as well as portions of Sunken Shipwrecks and other manmade structures.

UWF does not engage in dive operations that require saturation diving.

10.50 Aquarium Diving

An aquarium is an artificial, confined body of water, which is operated by or under the control of an institution and is used for the purposes of specimen exhibit, education, husbandry, or research.

It is recognized that within scientific aquarium diving there are environments and equipment that fall outside the scope of those addressed in this Manual. In those circumstances, it is the responsibility of the UWF DCB to establish the requirements and protocol under which diving will be safely conducted.

Section 11.00 REBREATHERS

Rebreathers are defined as any device that recycles some or all of the exhaled gas in the breathing loop and returns it to the diver. Rebreathers maintain levels of oxygen and carbon dioxide that support life by metered injection of oxygen and chemical removal of carbon dioxide. These characteristics fundamentally distinguish rebreathers from open-circuit life support systems, in that the breathing gas composition is dynamic rather than fixed.

UWF does not engage in dive operations with rebreathers.

Section 12.00 SCIENTIFIC CAVE AND CAVERN DIVING

A dive team must be considered to be cave or cavern diving if at any time during the dive they find themselves in a position where they cannot complete a direct, unobstructed ascent to the surface because of rock formations. In addition to blocking direct access to surfacing, underwater caves have additional environmental hazards including but not limited to:

- The absence of natural light.
- Current or flow that vary in strength and direction. Of particular note is a condition known as siphoning. Siphoning caves have flow or current directed into the cave. This can cause poor visibility as a result of mud and silt being drawn into the cave entrance.
- The presences of silt, sand, mud, clay, etc. that can cause visibility to be reduced to nothing in a very short time.
- Restrictions – Any passage through which two divers cannot easily pass side by side while sharing air make air sharing difficult.
- Cave-Ins – Cave-Ins are a normal part of cave evolution; however experiencing a cave-in during diving operations is extremely unlikely.

UWF does not engage in dive operations that require cave or cavern diving.

APPENDICES

Appendices 1 through 11

APPENDIX 1
UWF DIVING MEDICAL EXAM OVERVIEW FOR THE EXAMINING PHYSICIAN

TO THE EXAMINING PHYSICIAN:
This person, _____, requires a medical examination to assess their fitness for certification as a Scientific Diver for the UWF Scientific Diving Program. Their answers on the Diving Medical History Form (attached) may indicate potential health or safety risks as noted. Your evaluation is requested on the attached Scuba Diving Fitness Medical Evaluation Report. If you have questions about diving medicine, you may wish to consult one of the references on the attached list or contact one of the physicians with expertise in diving medicine whose names and phone numbers appear on an attached list, the Undersea Hyperbaric and Medical Society, or the Divers Alert Network. Please contact the undersigned Diving Safety Officer if you have any questions or concerns about diving medicine or the UWF Scientific Diving Program standards. Thank you for your assistance.

_____ _____
UWF Diving Safety Officer Date

_____ _____
Printed Name Phone Number

Scuba and other modes of compressed-gas diving can be strenuous and hazardous. A special risk is present if the middle ear, sinuses, or lung segments do not readily equalize air pressure changes. The most common cause of distress is Eustachian insufficiency. Recent deaths in the scientific diving community have been attributed to cardiovascular disease. Please consult the following list of conditions that usually restrict candidates from diving (adapted from Bove 1998: bracketed numbers are pages in Bove).

CONDITIONS THAT MAY DISQUALIFY CANDIDATES FROM DIVING

1. Abnormalities of the tympanic membrane, such as perforation, presence of a monomeric membrane, or inability to autoinflate the middle ears. [5, 7, 8, 9]
2. Vertigo, including Meniere's Disease. [13]
3. Stapedectomy or middle ear reconstructive surgery. [11]
4. Recent ocular surgery. [15, 18, 19]
5. Psychiatric disorders including claustrophobia, suicidal ideation, psychosis, anxiety states, untreated depression. [20 - 23]
6. Substance abuse, including alcohol. [24 - 25]
7. Episodic loss of consciousness. [1, 26, 27]
8. History of seizure. [27, 28]
9. History of stroke or a fixed neurological deficit. [29, 30]
10. Recurring neurologic disorders, including transient ischemic attacks. [29, 30]
11. History of intracranial aneurysm, other vascular malformation or intracranial hemorrhage. [31]
12. History of neurological decompression illness with residual deficit. [29, 30]
13. Head injury with sequelae. [26, 27]
14. Hematologic disorders including coagulopathies. [41, 42]
15. Evidence of coronary artery disease or high risk for coronary artery disease. [33 - 35]
16. Atrial septal defects. [39]
17. Significant valvular heart disease - isolated mitral valve prolapse is not disqualifying. [38]
18. Significant cardiac rhythm or conduction abnormalities. [36 - 37]
19. Implanted cardiac pacemakers and cardiac defibrillators (ICD). [39, 40]
20. Inadequate exercise tolerance. [34]
21. Severe hypertension. [35]
22. History of spontaneous or traumatic pneumothorax. [45]
23. Asthma. [42 - 44]
24. Chronic pulmonary disease, including radiographic evidence of pulmonary blebs, bullae, or cysts. [45, 46]
25. Diabetes mellitus. [46-47]
26. Pregnancy. [56]

SELECTED REFERENCES IN DIVING MEDICINE

Available from Best Publishing Company (PO Box 30100, Flagstaff, AZ 86003-0100 or bestpub.com), the Divers Alert Network (DAN - www.diversalertnetwork.org), or the Undersea and Hyperbaric Medical Society (UHMS - www.uhms.org).

- Elliott, D.H. ed. 1996. *Are Asthmatics Fit to Dive?* Kensington, MD: Undersea and Hyperbaric Medical Society.
- Bove, A.A. 2011. The cardiovascular system and diving risk. *Undersea and Hyperbaric Medicine* 38(4):261-269.
- Thompson, P.D. 2011. The cardiovascular risks of diving. *Undersea and Hyperbaric Medicine* 38(4):271-277.
- Douglas, P.S. 2011. Cardiovascular screening in asymptomatic adults: Lessons for the diving world. *Undersea and Hyperbaric Medicine* 38(4):279-287.
- Mitchell, S.J., and A.A. Bove. 2011. Medical screening of recreational divers for cardiovascular disease: Consensus discussion at the Divers Alert Network Fatality Workshop. *Undersea and Hyperbaric Medicine* 38(4):289-296.
- Grundy, S.M., Pasternak, R., Greenland, P., Smith, S., and Fuster, V. 1999. Assessment of Cardiovascular Risk by Use of Multiple-Risk-Factor Assessment Equations. AHA/ACC Scientific Statement. *Journal of the American College of Cardiology* 34:1348-1359. <http://content.onlinejacc.org/cgi/content/short/34/4/1348>
- Bove, A.A. and Davis, J. 2003. *Diving Medicine*, Fourth Edition. Philadelphia: W.B. Saunders Company.
- Edmonds, C., Lowry, C., Pennefather, J. and Walker, R. 2002. *Diving and Subaquatic Medicine*, Fourth Edition. London: Hodder Arnold Publishers.
- Bove, A.A. ed. 1998. *Medical Examination of Sport Scuba Divers*. San Antonio, TX: Medical Seminars, Inc.
- *NOAA Diving Manual*, NOAA. Superintendent of Documents. Washington, DC: U.S. Government Printing Office.
- *U.S. Navy Diving Manual*. Superintendent of Documents, Washington, DC: U.S. Government Printing Office.

APPENDIX 2
UWF MEDICAL EVALUATION OF FITNESS FOR SCUBA DIVING REPORT

_____ _____
Name of Applicant (Print or Type) Date of Medical Evaluation (Month/Day/Year)

To The Examining Physician
Scientific divers require periodic scuba diving medical examinations to assess their fitness to engage in diving with self-contained underwater breathing apparatus (scuba). Their answers on the Diving Medical History Form may indicate potential health or safety risks as noted. Scuba diving is an activity that puts unusual stress on the individual in several ways. Your evaluation is requested on this Medical Evaluation form. Your opinion on the applicant's medical fitness is requested. Scuba diving requires heavy exertion. The diver must be free of cardiovascular and respiratory disease (see references, following page). An absolute requirement is the ability of the lungs, middle ears, and sinuses to equalize pressure. Any condition that risks the loss of consciousness should disqualify the applicant. Please proceed in accordance with the AAUS Medical Standards (Sec. 6.00). If you have questions about diving medicine, please consult with the Undersea Hyperbaric Medical Society (www.uhms.org) or Divers Alert Network (www.diversalertnetwork.org).

TESTS: THE FOLLOWING TESTS ARE <u>REQUIRED</u>:

DURING ALL INITIAL AND PERIODIC RE-EXAMS (UNDER AGE 40):

- Medical history
- Complete physical exam, with emphasis on neurological and otological components
- Urinalysis
- Any further tests deemed necessary by the physician

ADDITIONAL TESTS DURING FIRST EXAM OVER AGE 40 AND PERIODIC RE-EXAMS (OVER AGE 40):

- Chest x-ray (Required only during first exam over age 40)
- Resting EKG
- Assessment of coronary artery disease using Multiple-Risk-Factor Assessment[1] (age, lipid profile, blood pressure, diabetic screening, smoking)
  Note: Exercise stress testing may be indicated based on Multiple-Risk-Factor Assessment[2]

PHYSICIAN'S STATEMENT:
I have evaluated the above-mentioned individual according to the tests listed above. I have discussed with the patient any medical condition(s) that would not disqualify him/her from diving but which may seriously compromise subsequent health. The patient understands the nature of the hazards and the risks involved in diving with these conditions.

_____ I find no medical conditions that may be disqualifying for participation in scuba diving.
Diver **<u>IS</u>** medically qualified to dive for:
_____2 years (over age 60)
_____3 years (age 40-59)
_____5 years (under age 40)

_____ Diver **<u>IS NOT</u>** medically qualified to dive: Permanently_____ Temporarily_____

_____ MD or DO _____

Signature Date

_____
Name (Print or Type)

_____
Address

_____ _____
Telephone Number Email Address

My familiarity with applicant is: _____This exam only _____Regular physician for _____ years

My familiarity with diving medicine is: _____

APPENDIX 2b
UNIVERSITY OF WEST FLORIDA
SCIENTIFIC DIVING PROGRAM

UWF MEDICAL EVALUATION OF FITNESS FOR SCUBA DIVING REPORT: APPLICANT'S RELEASE OF MEDICAL INFORMATION FORM

_____

Name of Applicant (Print or Type)

I authorize the release of this information and all medical information subsequently acquired in association with my diving to the UWF Diving Safety Officer and Diving Control Board or their designee at (place)

_____ on (date) _____

Signature of Applicant _____ Date_____

REFERENCES

[1] Grundy, S.M., Pasternak, R., Greenland, P., Smith, S., and Fuster, V. 1999. Assessment of Cardiovascular Risk by Use of Multiple-Risk-Factor Assessment Equations. AHA/ACC Scientific Statement. *Journal of the American College of Cardiology,* 34: 1348-1359. http://content.onlinejacc.org/cgi/content/short/34/4/1348

APPENDIX 3
UNIVERSITY OF WEST FLORIDA
SCIENTIFIC DIVING PROGRAM

UWF SCIENTIFIC DIVING MEDICAL HISTORY FORM

(To Be Completed By Applicant-Diver)

Name _____ DOB:_____ Age _____ Wt.___ Ht. ___

Sponsor _____ Date ___/___/___
Dept./Project/Program/School, etc.) Mo/Day/Yr)

TO THE APPLICANT:

Scuba diving places considerable physical and mental demands on the diver. Certain medical and physical requirements must be met before beginning a diving or training program. Your accurate answers to the questions are more important, in many instances, in determining your fitness to dive than what the physician may see, hear, or feel as part of the diving medical certification procedure.

This form must be kept confidential by the examining physician. If you believe any question amounts to invasion of your privacy, you may elect to omit an answer, provided that you must subsequently discuss that matter with your own physician who must then indicate, in writing, that you have done so and that no health hazard exists.

Should your answers indicate a condition that might make diving hazardous, you will be asked to review the matter with your physician. In such instances, their written authorization will be required in order for further consideration to be given to your application. If your physician concludes that diving would involve undue risk for you, remember that they are concerned only with your well-being and safety.

	Yes	No	Please indicate whether or not the following apply to you:	Comments
1			Convulsions, seizures, or epilepsy	
2			Fainting spells or dizziness	
3			Been addicted to drugs	
4			Diabetes	
5			Motion sickness or sea/air sickness	
6			Claustrophobia	
7			Mental disorder or nervous breakdown	
8			Are you pregnant?	
9			Do you suffer from menstrual problems?	
10			Anxiety spells or hyperventilation	
11			Frequent sour stomach, nervous stomach, or vomiting spells	
12			Had a major operation	
13			Presently being treated by a physician	
14			Taking any medication regularly (even non-prescription)	
15			Been rejected or restricted from sports	
16			Headaches (frequent and severe)	
17			Wear dental plates	
18			Wear glasses or contact lenses	
19			Bleeding disorders	
20			Alcoholism	

	Yes	No	Please indicate whether or not the following apply to you:	Comments
21			Any problems related to diving	
22			Nervous tension or emotional problems	
23			Take tranquilizers	
24			Perforated ear drums	
25			Hay fever	
26			Frequent sinus trouble, frequent drainage from the nose, post-nasal drip, or stuffy nose	
27			Frequent earaches	
28			Drainage from the ears	
29			Difficulty with your ears in airplanes or on mountains	
30			Ear surgery	
31			Ringing in your ears	
32			Frequent dizzy spells	
33			Hearing problems	
34			Trouble equalizing pressure in your ears	
35			Asthma	
36			Wheezing attacks	
37			Cough (chronic or recurrent)	
38			Frequently raise sputum	
39			Pleurisy	
40			Collapsed lung (pneumothorax)	
41			Lung cysts	
42			Pneumonia	
43			Tuberculosis	
44			Shortness of breath	
45			Lung problem or abnormality	
46			Spit blood	
47			Breathing difficulty after eating particular foods, after exposure to particular pollens or animals	
48			Are you subject to bronchitis	
49			Subcutaneous emphysema (air under the skin)	
50			Air embolism after diving	
51			Decompression sickness	
52			Rheumatic fever	
53			Scarlet fever	
54			Heart murmur	
55			Large heart	
56			High blood pressure	
57			Angina (heart pains or pressure in the chest)	

	Yes	No	Please indicate whether or not the following apply to you:	Comments
58			Heart attack	
59			Low blood pressure	
60			Recurrent or persistent swelling of the legs	
61			Pounding, rapid heartbeat or palpitations	
62			Easily fatigued or short of breath	
63			Abnormal EKG	
64			Joint problems, dislocations, or arthritis	
65			Back trouble or back injuries	
66			Ruptured or slipped disk	
67			Limiting physical handicaps	
68			Muscle cramps	
69			Varicose veins	
70			Amputations	
71			Head injury causing unconsciousness	
72			Paralysis	
73			Have you ever had an adverse reaction to medication?	
74			Do you smoke?	
75			Have you ever had any other medical problems not listed? If so, please list or describe below.	
76			Is there a family history of high cholesterol?	
77			Is there a family history of heart disease or stroke?	
78			Is there a family history of diabetes?	
79			Is there a family history of asthma?	
80			Date of last tetanus shot? Vaccination dates?	

Please explain any "yes" answers to the above questions.

I certify that the above answers and information represent an accurate and complete description of my medical history.

Signature Date

APPENDIX 4
UNIVERSITY OF WEST FLORIDA
SCIENTIFIC DIVING PROGRAM

RECOMMENDED PHYSICIANS WITH EXPERTISE IN DIVING MEDICINE

A List of Medical Doctors that have training and expertise in diving and undersea medicine can be found through the Undersea and Hyperbaric Medical Society or Divers Alert Network. See links below:
https://www.uhms.org/resources/diving-medical-examiners-list.html
https://www.diversalertnetwork.org/medical/physicians.asp

Gregory L. Moore, MD
West Florida Immediate Care Clinic
850-474-8572

Donald R. Mason, MD
West Florida Immediate Care Clinic
850-474-8572

Mickey Daum, MD
Baptist Medical Group Family Medicine-Westside
6715 Hwy 98 W
Pensacola, FL 32506
850-453-6737

J. Ole Olsen III, MD
Baptist Occupational Medicine
Nine Mile Road and University Parkway
850-208-6400

APPENDIX 5
UNIVERSITY OF WEST FLORIDA
SCIENTIFIC DIVING PROGRAM

DEFINITION OF TERMS

Air sharing - Sharing of an air supply between divers.

ATA(s) - "Atmospheres Absolute", Total pressure exerted on an object, by a gas or mixture of gases, at a specific depth or elevation, including normal atmospheric pressure.

Alternate Gas Supply - Fully redundant system capable of providing a gas source to the diver should their primary gas supply fail.

Authorization-The DCB authorizes divers to dive using specialized modes of diving, and the depth they may dive to.

Breath-hold Diving - A diving mode in which the diver uses no self-contained or surface-supplied air or oxygen supply.

Bubble Check **-** Visual examination by the dive team of their diving systems, looking for O-ring leaks or other air leaks conducted in the water prior to entering a cave. Usually included in the "S" Drill.

Buddy Breathing - Sharing of a single air source between divers.

Buddy System -Two comparably equipped scuba divers in the water in constant communication.

Buoyant Ascent - An ascent made using some form of positive buoyancy.

Cave Dive - A dive, which takes place partially or wholly underground, in which one or more of the environmental parameters defining a cavern dive are exceeded.

Cavern Dive **-** A dive that takes place partially or wholly underground, in which natural sunlight is continuously visible from the entrance.

Certified Diver - A diver who holds a recognized valid certification from an AAUS OM or internationally recognized certifying agency.

(Scientific Diver) Certification- A diver who holds a recognized valid certification from an AAUS OM

Controlled Ascent - Any one of several kinds of ascents including normal, swimming, and air sharing ascents where the diver(s) maintain control so a pause or stop can be made during the ascent.

Cylinder - A pressure vessel for the storage of gases.

Decompression Sickness - A condition with a variety of symptoms, which may result from gas, and bubbles in the tissues of divers after pressure reduction.

Designated Person-In-Charge – Surface Supplied diving mode manning requirement. An individual designated by the OM DCB or designee with the experience or training necessary to direct, and oversee in the surface supplied diving operation being conducted.

Dive - A descent into the water, an underwater diving activity utilizing compressed gas, an ascent, and return to the surface.

Dive Computer - A microprocessor based device which computes a diver's theoretical decompression status, in real time, by using pressure (depth) and time as input to a decompression model, or set of decompression tables, programmed into the device.

Dive Location - A surface or vessel from which a diving operation is conducted.

Dive Site - Physical location of a diver during a dive.

Dive Table - A profile or set of profiles of depth-time relationships for ascent rates and breathing mixtures to be followed after a specific depth-time exposure or exposures.

Diver – A person who stays underwater for long periods by having compressed gas supplied from the surface or by carrying a supply of compressed gas.

Diver-In-Training - An individual gaining experience and training in additional diving activities under the supervision of a dive team member experienced in those activities.

Diving Mode - A type of diving required specific equipment, procedures, and techniques, for example, snorkel, scuba, surface-supplied air, or mixed gas.

Diving Control Board (DCB) - Group of individuals who act as the official representative of the membership organization in matters concerning the scientific diving program (See Diving Control Board under Section 1.00).

Diving Safety Officer (DSO) - Individual responsible for the safe conduct of the scientific diving program of the membership organization (See Diving Safety Officer under Section 1.00).

DPIC – See Designated Person-In-Charge.

EAD - Equivalent Air Depth (see below).

Emergency Swimming Ascent - An ascent made under emergency conditions where the diver may exceed the normal ascent rate.

Enriched Air (EANx) - A name for a breathing mixture of air and oxygen when the percent of oxygen exceeds 21%. This term is considered synonymous with the term "nitrox" (Section 6.00).

Equivalent Air Depth (EAD) - Depth at which air will have the same nitrogen partial pressure as the nitrox mixture being used. This number, expressed in units of feet seawater or saltwater, will always be less than the actual depth for any enriched air mixture.

Flooded Mine Diving - Diving in the flooded portions of a man-made mine. Necessitates use of techniques detailed for cave diving.

fO_2 - Fraction of oxygen in a gas mixture, expressed as either a decimal or percentage, by volume.

FSW - Feet of seawater.

Gas Management - Gas planning rule which is used in cave diving environments in which the diver reserves a portion of their available breathing gas for anticipated emergencies (See Rule of Thirds, Sixths).

Gas Matching – The technique of calculating breathing gas reserves and turn pressures for divers using different volume cylinders. Divers outfitted with the same volume cylinders may employ the Rule of Thirds for gas management purposes. Divers outfitted with different volume cylinders will not observe the same gauge readings when their cylinders contain the same gas volume, therefore the Rule of Thirds will not guarantee adequate reserve if both divers must breathe from a single gas volume at a Rule of Thirds turn pressure. Gas Matching is based on individual consumption rates in volume consumed per minute. It allows divers to calculate turn pressures based on combined consumption rates and to convert the required reserve to a gauge based turn pressure specific to each diver's cylinder configuration.

Guideline - Continuous line used as a navigational reference during a dive leading from the team position to a point where a direct vertical ascent may be made to the surface.

Hookah - While similar to Surface Supplied in that the breathing gas is supplied from the surface by means of a pressurized hose, the supply hose does not require a strength member, pneumofathometer hose, or communication line. Hookah equipment may be as simple as a long hose attached to a standard scuba cylinder supplying a standard scuba second stage. The diver is responsible for the monitoring his/her own depth, time, and diving profile.

Hyperbaric Chamber - See recompression chamber.

Hyperbaric Conditions - Pressure conditions in excess of normal atmospheric pressure at the dive location.

Independent Reserve Breathing Gas - A diver-carried independent supply of air or mixed gas (as appropriate) sufficient under standard operating conditions to allow the diver to reach the surface, or another source of breathing gas, or to be reached by another diver.

Jump/Gap Reel - Spool or reel used to connect one guide line to another thus ensuring a continuous line to the exit.

Life Support Equipment – Underwater equipment necessary to sustain life.

Lead Diver - Certified scientific diver with experience and training to conduct the diving operation.

Organizational Member (OM) - An organization which is a current member of the AAUS, and which has a program, which adheres to the standards of the AAUS as, set forth in the *AAUS Manual*.

Manifold with Isolator Valve - A manifold joining two diving cylinders, that allows the use of two completely independent regulators. If either regulator fails, it may be shut off, allowing the remaining regulator access to the gas in both of the diving cylinders.

Mixed Gas - Breathing gas containing proportions of inert gas other than nitrogen greater than 1% by volume.

Mixed Gas Diving - A diving mode in which the diver is supplied in the water with a breathing gas other than air.

MOD - Maximum Operating Depth, usually determined as the depth at which the pO_2 for a given gas mixture reaches a predetermined maximum.

Nitrox - Any gas mixture comprised predominately of nitrogen and oxygen, most frequently containing between 22% and 40% oxygen. Also be referred to as Enriched Air Nitrox, abbreviated EAN.

Normal Ascent - An ascent made with an adequate air supply at a rate of 30 feet per minute or less.

OTU - Oxygen Toxicity Unit

Oxygen Compatible - A gas delivery system that has components (O-rings, valve seats, diaphragms, etc.) that are compatible with oxygen at a stated pressure and temperature.

Oxygen Service - A gas delivery system that is both oxygen clean and oxygen compatible.

Oxygen Toxicity - Any adverse reaction of the central nervous system ("acute" or "CNS" oxygen toxicity) or lungs ("chronic", "whole-body", or "pulmonary" oxygen toxicity) brought on by exposure to an increased (above atmospheric levels) partial pressure of oxygen.

Penetration Distance - Linear distance from the entrance intended or reached by a dive team during a dive at a dive site.

Pressure-Related Injury - An injury resulting from pressure disequilibrium within the body as the result of hyperbaric exposure. Examples include: decompression sickness, pneumothorax, mediastinal emphysema, air embolism, subcutaneous emphysema, or ruptured eardrum.

Pressure Vessel - See cylinder.

pO_2 - Inspired partial pressure of oxygen, usually expressed in units of atmospheres absolute.

Primary Reel - Initial guideline used by the dive team from open water to maximum penetration or a permanently installed guideline.

Psi - Unit of pressure, "pounds per square inch.

Psig - Unit of pressure, "pounds per square inch gauge.

Recompression Chamber - A pressure vessel for human occupancy. Also called a hyperbaric chamber or decompression chamber.

Restriction - Any passage through which two divers cannot easily pass side by side while sharing air.

Rule of Thirds - Gas planning rule which is used in cave diving environments in which the diver reserves 2/3's of their breathing gas supply for exiting the cave or cavern.

Rule of Sixths - Air planning rule which is used in cave or other confined diving environments in which the diver reserves 5/6's of their breathing gas supply (for DPV use, siphon diving, etc.) for exiting the cave or cavern.

Safety Drill - ("S" Drill) - Short gas sharing, equipment evaluation, dive plan, and communication exercise carried out prior to entering a cave or cavern dive by the dive team.

Safety Reel - Secondary reel used as a backup to the primary reel, usually containing 150 feet of guideline that is used in an emergency.

Safety Stop – A stop made between 15-20 feet (5-6 meters) for 3-5 minutes during the final ascent phase of a dive.

Scientific Diving - Scientific diving is defined (29CFR1910.402) 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.

Scuba Diving - A diving mode independent of surface supply in which the diver uses open circuit self-contained underwater breathing apparatus.

Side Mount - A diving mode utilizing two independent SCUBA systems carried along the sides of the diver's body; either of which always has sufficient air to allow the diver to reach the surface unassisted.

Siphon - Cave into which water flows with a generally continuous in-current.

Standby Diver - A diver at the dive location capable of rendering assistance to a diver in the water.

Surface Supplied Diving - Surface Supplied: Dives where the breathing gas is supplied from the surface by means of a pressurized umbilical hose. The umbilical generally consists of a gas supply hose, strength member, pneumofathometer hose, and communication line. The umbilical supplies a helmet or full-face mask. The diver may rely on the tender at the surface to keep up with the divers' depth, time and diving profile.

Swimming Ascent - An ascent, which can be done under normal or emergency conditions accomplished by simply swimming to the surface.

Tender - Used in Surface supplied and tethered diving. The tender comprises the topsides buddy for the in-water diver on the other end of the tether. The tender must have the experience or training to perform the assigned tasks in a safe and healthful manner.

Turn Pressure – The gauge reading of a diver's open circuit scuba system designating the gas limit for terminating the dive and beginning the exit from the water.

Umbilical - Composite hose bundle between a dive location and a diver or bell, or between a diver and a bell, which supplies a diver or bell with breathing gas, communications, power, or heat, as appropriate to the diving mode or conditions, and includes a safety line between the diver and the dive location.

UWF Department – Any group or organization engaging in scientific SCUBA diving under the auspices of the University of West Florida.

APPENDIX 6
UWF REQUEST FOR DIVING RECIPROCITY FORM
VERIFICATION OF DIVER TRAINING AND EXPERIENCE

Diver: _____ Date: _____

This letter serves to verify that the above-named person has met the training and pre-requisites as indicated below, and has completed all requirements necessary to be certified as a *Scientific Diver / Diver-In-Training* as established by the UWF Standards for Scientific Diving Manual, and has demonstrated competency in the indicated areas. UWF is an AAUS OM and meets or exceeds all AAUS training requirements.

The following is a brief summary of this diver's personnel file regarding dive status at _____
Date

_____ Original diving authorization
_____ Written scientific diving examination
_____ Last diving medical examination Medical examination expiration date: _____
_____ Most recent checkout dive
_____ Scuba regulator/equipment service/test
_____ CPR training (agency) _____ CPR Exp: _____
_____ Oxygen administration (agency) _____ 02 Exp: _____
_____ First aid for diving _____ 1st A Exp. _____
_____ Date of last dive _____ Depth _____
Number of dives completed within previous 12 months _____ Depth Authorization _____ feet
Total number of career dives: _____

Any restrictions or Waivers of Requirements? (Y/N)_____ If yes, explain:

Please indicate any pertinent authorizations or training:

Emergency Information:

Name: _____ Relationship: _____

Telephone: (work)_____ (home)_____ (cell)_____

Address:

This is to verify that the above information is complete and correct.

Diving Safety Officer:

_____ _____

Signature Date

_____

Printed Name

APPENDIX 7
UNIVERSITY OF WEST FLORIDA
SCIENTIFIC DIVING PROGRAM

UNIVERSITY OF WEST FLORIDA
DIVING EMERGENCY MANAGEMENT ACTION PLAN

Introduction

A diving accident victim could be any person who has been breathing compressed gas underwater regardless of depth. It is essential that emergency procedures are pre-planned and that medical treatment is initiated as soon as possible. It is the responsibility of each dive project lead diver or dive supervisor to develop procedures for diving emergencies including evacuation and medical treatment for each dive location.

General Procedures

Depending on, and according to, the nature of the diving accident:

1) _____Make appropriate contact with the injured diver, rescue as required.

2) ____ Establish ABCs (Airway, Breathing, Circulation or Circulation, Airway, Breathing) as appropriate.

3) ____ Stabilize the victim.

4) ____ Administer 100% oxygen, if appropriate (in cases of Decompression Illness or Near Drowning).

5) ____ Contact local Emergency Medical System (EMS) for transport to the nearest medical treatment facility. Explain the circumstances of the dive incident to the evacuation teams, medics, and physicians. Do not assume that they understand why 100% oxygen may be required for the diving accident victim or that recompression treatment may be necessary.

6) ____ Call appropriate Diving Accident Coordinator for contact with diving physician and recompression chamber, etc.

7) ____ Notify the DSO or designee: **work 850-475-5438 cell 850-565-7168**

8) ____ Review On-Site Neurological Exam Information

9) ____ Complete Four Minute Neuro Exam Checklist (one copy to be sent with injured diver, one copy to DSO)

10) ____ Complete First Responder Baseline History (one copy to be sent with injured diver, one copy to DSO).

11) ____ Complete and submit a Diving Accident Log.

12) ____ Complete and submit Witness Statements.

13) ____ Complete and submit Incident Report Form (www.aaus.org) to the UWF DCB and to AAUS.

14) ____ Complete and submit UWF Employee Report of Injury (for employees, volunteers, and visiting professionals).

Missing Diver General Procedures

If a diver is separated from their dive buddy or has not surfaced ten minutes past estimated return to surface time the Top-Side Supervisor will:

1) Recall all active divers.

2) Contact the appropriate local authorities.

3) Contact the active DSO.

4) Assess the situation and determine if it is safe to deploy divers to search for lost diver.

5) Remain on scene until emergency personnel arrive.

6) Ensure all necessary record keeping is complete.

7) The search will remain active until the command emergency authorities feel that is appropriate to terminate the search.

UNIVERSITY OF WEST FLORIDA
DIVING ACCIDENT EMERGENCY NOTIFICATION LIST

DAN Emergency Hotline	**919-684-9111** **919-684-2948 (non-emergency)**
MARINE OPERATOR	**VHF CH 26**
U.S. COAST GUARD	**VHF CH 16/22A**
U.S.C.G. MOBILE GROUP	**251-441-6215**
U.S.C.G. PENSACOLA	**850-453-8282**

RECOMPRESSION CHAMBERS

Mobile, Springhill Medical Center	251-344-9630 (general hospital) 251-460-5461 (recompression chamber)

POLICE

Area/Local Police	911 or *911
Alabama Marine Police (Orange Beach)	888-903-2583
Florida Fish and Wildlife Commission	850-265-3676 (NW FL Region)

UNIVERSITY OF WEST FLORIDA MARINE SERVICES CENTER

UWF Marine Services Center	850-475-5438
MSC Director DJ Johnson	850-449-7577 (cell)
DSO Fritz Sharar	850-565-7168 (cell)
Archaeology Institute (Bldg 89) Admin. Office	850-474-3015
Dr. Elizabeth Benchley	850-857-6317 (office) 850-449-1601 (cell)
Dr. John Bratten	850-474-2706 (office) 850-748-4817 (cell)
Dr. Greg Cook	850-474-2186 (office) 850-377-5641 (cell) 850-937-4652 (home)
Marine Biology Admin. Office	850-474-2748
Dr. Christopher Pomory	850-857-6028 (office) 850-479-6028 (home)

UNIVERSITY OF WEST FLORIDA
SCIENTIFIC DIVING PROGRAM

ON-SITE NEUROLOGICAL EXAMINATION INFORMATION
DIVERS ALERT NETWORK MEDICAL CENTER

By Ed Thalmann, MD, Assistant Medical Director of DAN

Information regarding the injured diver's neurological status will be useful to medical personnel in not only deciding the initial course of treatment but also in the effectiveness of treatment. Examination of an injured diver's central nervous system soon after an accident may provide valuable information to the physician responsible for treatment. The On-Site Neuro Exam is easy to learn and can be done by individuals with no medical experience. Perform as much of the examination as possible, **but do not let it interfere with evacuation to a medical treatment facility.**

Perform the following steps in order, and record the time and results.

1. Orientation
- Does the diver know his/her own name and age?
- Does the diver know the present location?
- Does the diver know what time, day, year it is?

Note: Even though a diver appears alert, the answers to these questions may reveal confusion. Do not omit them.

2. Eyes
- Have the diver count the number of fingers you display, using two or three different numbers.
- Check each eye separately and then together.
- Have the diver identify a distant object.
- Tell the diver to hold head still, or you gently hold it still, while placing your other hand about 18 inches/0.5 meters in front of the face. Ask the diver to follow your hand. Now move your hand up and down, then side to side. The diver's eyes should follow your hand and should not jerk to one side and return.
- Check that the pupils are equal in size.

3. Face
- Ask the diver to purse the lips. Look carefully to see that both sides of the face have the same expression.
- Ask the diver to grit the teeth. Feel the jaw muscles to confirm that they are contracted equally.
- Instruct the diver to close the eyes while you lightly touch your fingertips across the forehead and face to be sure sensation is present and the same everywhere.

4. Hearing
- Hearing can be evaluated by holding your hand about 2 feet/0.6 meters from the diver's ear and rubbing your thumb and finger together.
- Check both ears moving your hand closer until the diver hears it.
- Check several times and compare with your own hearing.

Note: If the surroundings are noisy, the test is difficult to evaluate. Ask bystanders to be quiet and to turn off unneeded machinery.

5. Swallowing Reflex

- Instruct the diver to swallow while you watch the "Adam's apple" to be sure it moves up and down.

6. Tongue

- Instruct the diver to stick out the tongue. It should come out straight in the middle of the mouth without deviating to either side.

7. Muscle Strength

- Instruct the diver to shrug shoulders while you bear down on them to observe for equal muscle strength.
- Check diver's arms by bringing the elbows up level with the shoulders, hands level with the arms and touching the chest. Instruct the diver to resist while you pull the arms away, push them back, up and down. The strength should be approximately equal in both arms in each direction.
- Check leg strength by having the diver lie flat and raise and lower the legs while you resist the movement.

8. Sensory Perception

- Check on both sides by touching lightly as was done on the face. Start at the top of the body and compare sides while moving downwards to cover the entire body.

Note: The diver's eyes should be closed during this procedure. The diver should confirm the sensation in each area before you move to another area.

9. Balance and Coordination

Note: Be prepared to protect the diver from injury when performing this test.

- First, have the diver walk heel to toe along a straight line while looking straight ahead.
- Have the diver walk both forward and backward for 10 feet or so. Note whether movements are smooth and if balance is maintained without having to look down or hold onto something.
- Next, have the diver stand up with feet together and close eyes and hold the arms straight out in front with the palms up. The diver should be able to maintain balance if the platform is stable. Your arms should be around, but not touching, the diver. Be prepared to catch the diver who starts to fall.
- Check coordination by having the diver move an index finger back and forth rapidly between the diver's nose and your finger held approximately 18 inches/0.5 meters from the diver's face. The diver should be able to do this, even if you move your finger to different positions.
- Have the diver lie down and slide the heel of one foot down the shin of the other leg, while keeping eyes closed. The diver should be able to move the foot smoothly along the shin, without jagged, side-to-side movements.
- Check these tests on both right and left sides and observe carefully for unusual clumsiness on either side.

Important Notes:

- Tests 1, 7, and 9 are the most important and should be given priority if not all tests can be performed.
- The diver's condition may prevent the performance of one or more of these tests. Record any omitted test and the reason. If any of the tests are not normal, injury to the central nervous system should be suspected.

- The tests should be repeated at 30 to 60-minute intervals while awaiting assistance in order to determine if any change occurs. Report the results to the emergency medical personnel responding to the call.
- Good diving safety habits would include practicing this examination on normal divers to become proficient in the test.
- Examination of an injured diver's central nervous system soon after an accident may provide valuable information to the physician responsible for treatment.
- The On-Site Neuro Exam is easy to learn and can be done by individuals with no medical experience at all.

***Remarks for On-site Neurological Examination (to be completed and given to DSO):

1)_____
_____

2)_____
_____

3)_____
_____

4)_____
_____

5)_____
_____

6)_____
_____

7)_____
_____

8)_____
_____

9)_____
_____

UNIVERSITY OF WEST FLORIDA
SCIENTIFIC DIVING PROGRAM

FOUR MINUTE NEURO EXAM CHECKLIST **(SEND WITH VICTIM)**

A. Head
   1. Orientation to time, place, person. Ask if any numbness or tingling anywhere in body.
   2. Eyes – remember to check for peripheral vision, nystagmus, and pupil size.
   3. Ears – hearing
   4. Forehead
      a. Sensation
      b. Furrow brow
      c. Shut eyes tight

B. Shoulders
   1. Sensation
   2. Strength – shrug

C. Arms
   1. Sensation
   2. Strength
      a. Squeeze fingers
      b. Thumbs down, resist pushing arms together
      c. Thumbs up, resist forcing arms apart.

D. Chest
   1. Sensation (front and back)

E. Legs
   1. Sensation
   2. Strength
      a. Extend or raise leg and try to force down
      b. Bend leg and try to extend
      c. Bend feet up and down with resistance.
   3. Babinski Reflex. Normally, when the sole of the foot is tickled, the big toe points downward. If the big toe points upward, this reflex indicates probable neurological damage.

Place an X in front of any test that was abnormal or questionable and write a comment.

SEND THIS FORM WITH VICTIM

UNIVERSITY OF WEST FLORIDA
SCIENTIFIC DIVING PROGRAM

FOUR MINUTE NEURO EXAM CHECKLIST **(DSO COPY)**

A. Head
   1. Orientation to time, place, person. Ask if any numbness or tingling anywhere in body.
   2. Eyes – remember to check for peripheral vision, nystagmus, and pupil size.
   3. Ears – hearing
   4. Forehead
      a. Sensation
      b. Furrow brow
      c. Shut eyes tight

B. Shoulders
   1. Sensation
   2. Strength – shrug

C. Arms
   1. Sensation
   2. Strength
      a. Squeeze fingers
      b. Thumbs down, resist pushing arms together
      c. Thumbs up, resist forcing arms apart.

D. Chest
   1. Sensation (front and back)

E. Legs
   1. Sensation
   2. Strength
      a. Extend or raise leg and try to force down
      b. Bend leg and try to extend
      c. Bend feet up and down with resistance.
   3. Babinski Reflex. Normally, when the sole of the foot is tickled, the big toe points downward. If the big toe points upward, this reflex indicates probable neurological damage.

Place an X in front of any test that was abnormal or questionable and write a comment.

GIVE THIS FORM TO DSO

UNIVERSITY OF WEST FLORIDA
SCIENTIFIC DIVING PROGRAM

FIRST RESPONDER BASELINE HISTORY (SEND WITH VICTIM)

Time_____ Date_____

Accident Victim's Name _____ Sex_____ Age _____
Type of Accident Diving _____ or Non-diving _____
Victim's Present Condition:

Bleeding _____
Conscious _____ Unconscious _____
Breathing _____ Pulse? _____
CPR being administered? _____

Does the Victim have any allergies? _____
Any other symptoms?
_____
_____
_____

What treatment has been administered?
_____
_____
_____

Transport Buddy Diver for Medical Check out!!!
Approximate Time of Accident _____
Location of Accident _____
Approximate Transport Time _____

Diving Accident Profile:
Number of Dives in the Past 3 days _____
Bottom Time _____
Max Depth _____
Surface Intervals _____

Rescuer _____ Victim Released to _____
Person Recording_____
Witnesses _____

Attention Emergency Medical Personnel
A Diving Medical Physician is standing by to help you.
Please Call: Divers Alert Network (DAN) ***1-919-684-9111***
SEND THIS FORM WITH VICTIM

UNIVERSITY OF WEST FLORIDA
SCIENTIFIC DIVING PROGRAM

FIRST RESPONDER BASELINE HISTORY (DSO COPY)

Time_____ **Date_____**

Accident Victim's Name _____ Sex _____ Age _____
Type of Accident: Diving _____ Non-diving _____
Victim's Present Condition:

Bleeding _____
Conscious _____ **Unconscious _____**
Breathing _____ **Pulse rate _____**
CPR being administered? _____
Does the Victim have any allergies? _____
Any other symptoms?
_____
_____
_____

What treatment has been administered?
_____
_____
_____
Transport Buddy Diver for Medical Check out!!!

Approximate Time of Accident _____
Present Location of Accident _____
Approximate Transport Time _____

Diving Accident Profile:
Number of Dives in the Past 3 days _____
Bottom Time _____
Max Depth _____
Surface Intervals _____

Rescuer _____ Victim Released to _____
Person Recording _____
Witnesses _____

Attention Emergency Medical Personnel
A Diving Medical Physician is standing by to help you.
Please Call: Divers Alert Network (DAN) ***1-919-684-9111***

GIVE THIS FORM TO DSO

UNIVERSITY OF WEST FLORIDA
SCIENTIFIC DIVING PROGRAM

DIVING ACCIDENT LOG

Date: _____ Location: _____

Name of Victim(s): _____
_____
Name Field Director: _____
Name Lead Diver: _____

This dive accident log will be completed and all significant events logged and submitted to the DSO.

TIME	EVENT

UNIVERSITY OF WEST FLORIDA
SCIENTIFIC DIVING PROGRAM

WITNESS STATEMENT

DATE: _____

MY NAME IS: _____
(Please Print)

I first became aware of the incident when:
(What brought your attention to the incident?)

At the time of the incident, I was:
(What were you doing? Where were you?)

I observed the following:
(Involved person's condition and appearance: Alert? Unconscious? Responsive? Other?)
(Activities on board the boat or in the water☺

The Persons in charge took the following action:
(Describe rescue efforts in detail.)

I heard the victim say:

I would like to add the following comments:
(Please ask for additional paper if necessary)

I can be reached at:

Home Telephone number with area code: _____

Work Telephone number with area code: _____

Street Address: _____

City, State, and Zip Code: _____

SIGNATURE: _____

DATE: _____

APPENDIX 8
UNIVERSITY OF WEST FLORIDA
SCIENTIFIC DIVING PROGRAM

AAUS and UWF STATISTICS COLLECTION CRITERIA AND DEFINITIONS

COLLECTION CRITERIA:

The "Dive Time in Minutes," "The Number of Dives Logged," and the "Number of Divers Logging Dives" will be collected for the following categories.

- Dive Classification
- Breathing Gas
- Diving Mode
- Decompression Planning and Calculation Method
- Depth Ranges
- Specialized Environments
- Incident Types

Dive Time in Minutes is defined as the surface-to-surface time including any safety or required decompression stops.

A Dive is defined as a descent underwater utilizing compressed gas and subsequent ascent/return to the surface with a minimum surface interval of 10 minutes.

Dives will not be differentiated as open water or confined water dives. But open water and confined water dives will be logged and submitted for AAUS statistics classified as either scientific or training/proficiency.

A "Diver Logging a Dive" is defined as a person who is diving under the auspices of the UWF Scientific Diving Program. Dives logged by divers from another AAUS Organization will be reported with the diver's home organization. Only a diver who has actually logged a dive during the reporting period is counted under this category.

Incident(s) that occur during the collection cycle: Only incidents that occurred during, or resulting from, a dive where the diver is breathing a compressed gas will be submitted to AAUS.

DEFINITIONS:

Dive Classification:

- Scientific Dives: Dives that meet the scientific diving exemption as defined in 29 CFR 1910.402. Diving tasks traditionally associated with a specific scientific discipline are considered a scientific dive. Construction and trouble-shooting tasks traditionally associated with commercial diving are not considered a scientific dive.
- Training and Proficiency Dives: Dives performed as part of a scientific diver-training program, or dives performed in maintenance of a scientific diving certification/authorization.

Breathing Gas:

- Air: Dives where the bottom gas used for the dive is air.
- Nitrox: Dives where the bottom gas used for the dive is a combination of nitrogen and oxygen percentages different from those of air.
- Mixed Gas: Dives where the bottom gas used for the dive is a combination of oxygen, nitrogen, and helium (or other inert gas), or any other breathing gas combination not classified as air or nitrox.

Diving Mode:

- Open Circuit SCUBA: Dives where the breathing gas is inhaled from a self-contained underwater breathing apparatus and all of the exhaled gas leaves the breathing loop.
- Surface Supplied: Dives where the breathing gas is supplied from the surface by means of a pressurized umbilical hose. The umbilical generally consists of a gas supply hose, strength member, pneumofathometer hose, and communication line. The umbilical supplies a helmet or full-face mask. The diver may rely on the tender at the surface to monitor the divers' depth, time and diving profile.
- Hookah: While similar to Surface Supplied in that the breathing gas is supplied from the surface by means of a pressurized hose, the supply hose does not require a strength member, pneumofathometer hose, or communication line. Hookah equipment may be as simple as a long hose attached to a standard scuba cylinder supplying a standard scuba second stage. The diver is responsible for monitoring his/her own depth, time, and diving profile.
- Rebreathers: Dives where the breathing gas is repeatedly recycled in a breathing loop. The breathing loop may be fully closed or semi-closed. Note: A rebreather dive ending in an open circuit bailout is still logged as a rebreather dive.

Decompression Planning and Calculation Method:

- Dive Tables
- Dive Computer
- PC Based Decompression Software

Depth Ranges:

Depth ranges for sorting logged dives are: 0-30, 31-60, 61-100, 101-130, 131-150, 151-190, 191-250, 251-300, and 301->. Depths are in feet seawater (when measured in meters: 0-10, >10-30, >30-40, >40-45, >45-58, >58-76, >76-92, and >92->). A dive is logged to the maximum depth reached during the dive. Note: Only "The Number of Dives Logged" and "The Number of Divers Logging Dives" will be collected for this category.

Specialized Environments:

- Required Decompression: Any dive where the diver exceeds the no-decompression limit of the decompression planning method being employed.
- Overhead Environments: Any dive where the diver does not have direct access to the surface due to a physical obstruction.
- Blue Water Diving: Openwater diving where the bottom is generally greater than 200 feet deep and requires the use of multiple-tethers diving techniques.
- Ice and Polar Diving: Any dive conducted under ice or in polar conditions. Note: An Ice Dive would also be classified as an Overhead Environment dive.

- Saturation Diving: Excursion dives conducted as part of a saturation mission are to be logged by "classification", "mode", "gas", etc. The "surface" for these excursions is defined as leaving and surfacing within the Habitat. Time spent within the Habitat or chamber must not be logged by AAUS.
- Aquarium: An aquarium is a shallow, confined body of water, which is operated by or under the control of an institution and is used for the purposes of specimen exhibit, education, husbandry, or research (Not a swimming pool).

Incident Types:

- Hyperbaric: Decompression Sickness, AGE, or other barotrauma requiring recompression therapy.
- Barotrauma: Barotrauma requiring medical attention from a physician or medical facility, but not requiring recompression therapy.
- Injury: Any non-barotrauma injury occurring during a dive that requires medical attention from a physician or medical facility.
- Illness: Any illness requiring medical attention that can be attributed to diving.
- Near Drowning/ Hypoxia: An incident where a person asphyxiates to the minimum point of unconsciousness during a dive involving a compressed gas. But the person recovers.
- Hyperoxic/Oxygen Toxicity: An incident that can be attributed to the diver being exposed to too high a partial pressure of oxygen.
- Hypercapnea: An incident that can be attributed to the diver being exposed to an excess of carbon dioxide.
- Fatality: Any death accruing during a dive or resulting from the diving exposure.
- Other: An incident that does not fit one of the listed incident types

Incident Classification Rating Scale:

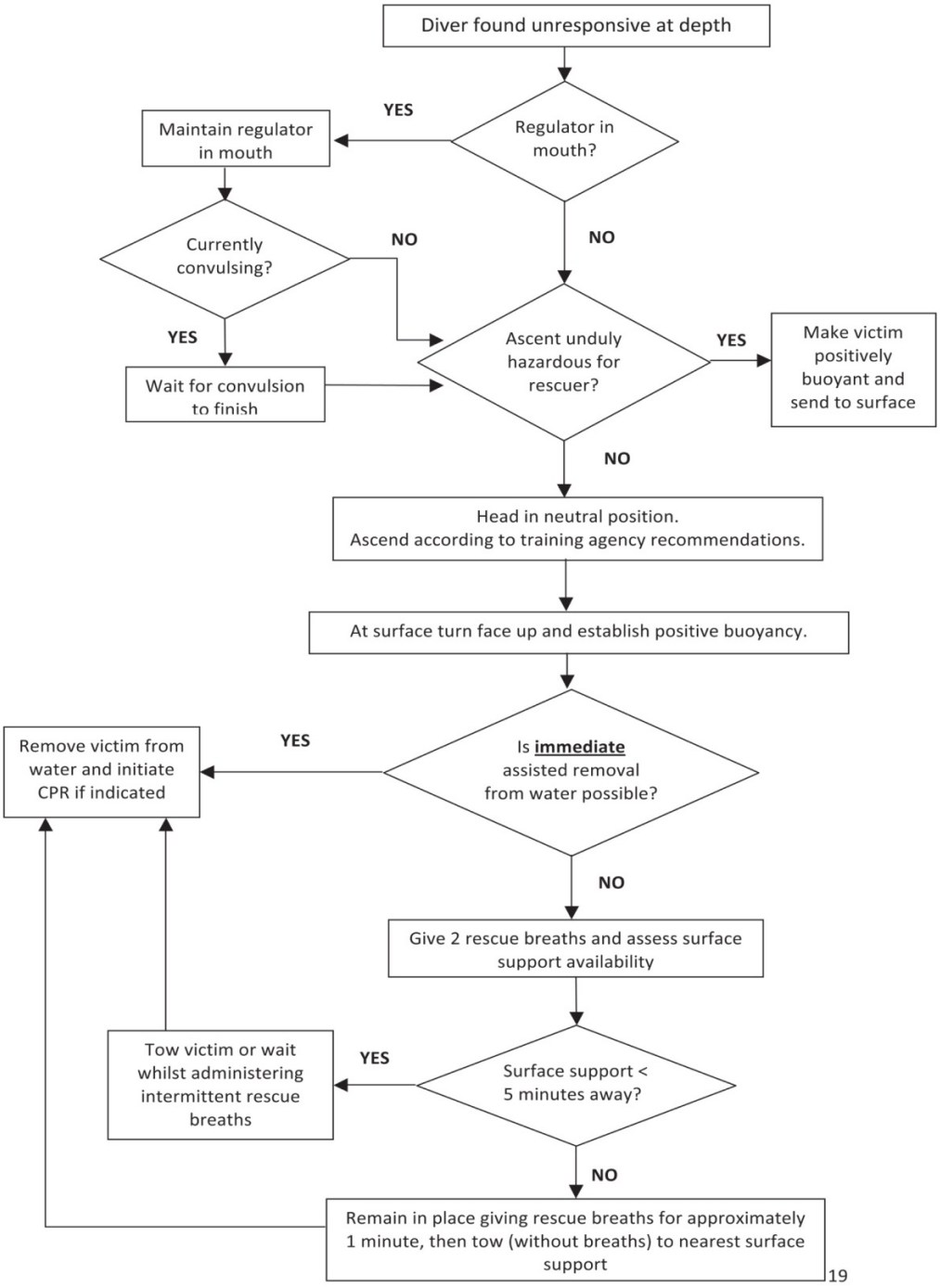
- Minor: Injuries that the OM considers being minor in nature. Examples of this classification of incident would include, but not be limited to:
    - Mask squeeze that produced discoloration of the eyes.
    - Lacerations requiring medical attention but not involving moderate or severe bleeding.
    - Other injuries that would not be expected to produce long-term adverse effects on the diver's health or diving status.
- Moderate: Injuries that the OM considers being moderate in nature. Examples of this classification would include, but not be limited to:
    - DCS symptoms that resolved with the administration of oxygen, hyperbaric treatment given as a precaution.
    - DCS symptoms resolved with the first hyperbaric treatment.
    - Broken bones.
    - Torn ligaments or cartilage.
    - Concussion.
    - Ear barotrauma requiring surgical repair.
- Serious: Injuries that the OM considers being serious in nature. Examples of this classification would include, but not be limited to:
    - Arterial Gas Embolism.
    - DCS symptoms requiring multiple hyperbaric treatment.
    - Near drowning.

- Oxygen Toxicity.
- Hypercapnea.
- Spinal injuries.
- Heart attack.
- Fatality.

APPENDIX 9
UNIVERSITY OF WEST FLORIDA
SCIENTIFIC DIVING PROGRAM

RECOMMENDATIONS FOR RESCUE OF A SUBMERGED UNRESPONSIVE COMPRESSED-GAS DIVER

From: S.J. Mitchell et al., Undersea and Hyperbaric Medicine 2012, Vol. 39, No. 6, pages 1099-1108



APPENDIX 10
UNIVERSITY OF WEST FLORIDA
SCIENTIFIC DIVING PROGRAM

OPERATIONAL CHECKLIST

_____ Proposal for Scientific Diving and Snorkeling Operations

_____ University of West Florida General Dive Log

_____ UWF Project Dive Brief – SCUBA

_____ U.S. Navy Doppler NO-D Dive Tables

_____ Diving First Aid Kit Supply List (Divers Alert Network)

_____ Diving Equipment Request Form

_____ Boat Load-Out List

_____ Common Diver Hand Signals

UNIVERSITY OF WEST FLORIDA
SCIENTIFIC DIVING PROGRAM

Marine Services Center
850-475-5438

PROPOSAL FOR SCIENTIFIC DIVING AND SNORKELING OPERATIONS

Project Name:_____
Researcher:_____ UWF ID #:_____
Department or Institute:_____ Project Dates:_____
Project Director:_____ Dive Leader:_____
Project Location:_____ Intended Vessel:_____
Staff/Divers:_____

Description of planned diving research (brief description of project, # of dives planned, special equipment needed, potential hazards, etc.):_____

_____ _____
Signature Date

_____ _____
Diving Safety Officer Approval Date

Dive plan was accomplished without incident and was cleared. _____
Date _____

University of West Florida
Scientific Diving Program
DIVING TEAM PROFILE LOG

Project Name:	**Date:**	**Dive Supervisor:**
Platform:	**Weather:**	**Current:**
Air Temp:	**Water Temp:**	**Visibility:**
Bottom Type:	**Environment**	**Tanks on Site /New /Used**

Diver Name	Tank #	Air In	Time In	Time Out	Air Out	Bottom Time	Max Depth	Task	Buddy

UNIVERSITY OF WEST FLORIDA
SCIENTIFIC DIVING PROGRAM

DIVE BRIEF
SCUBA BOAT/SHORE DIVING

Welcome aboard.
Introduce self and crew.
All dives will be no decompression dives and non-penetration dives.
Buddy Assignments – Stay with your buddy!!
Is this anybody's first salt-water dive? Fresh-water dive?
Does everyone feel OK to dive today?
Is anyone taking ANY medications that might preclude you from diving today?

Area Orientation
Facilities (location of emergency vehicle, first aid kit, oxygen kit, and drinking water)
Dive site (shore, boat, platform, entries and exits, specific hazards of the local environment)
Daily conditions (weather, sea state, tides and currents, water temperature, visibility)

Requirements of Project Director, Lead Diver, Safety Diver, and buddy teams
Equipment (mask, snorkel, fins, weight belt, BC, regulator with alternate air source, pressure gauge, time keeping device per team, and compass [recommended])

Objectives
- Length and max depth of dives
- Dive boat/shore preparations
- Schedule

Communications
- Hand-held VHF radios, cell phones
- Diver recall – Primary: underwater horn Secondary: safety diver

Dive Rules
- 500 psi on the surface!
- Hand signals (OK, distress or in trouble, out of air, share air, go up, go down, low on air, stop, let's buddy breathe, danger)
- Do not leave the dive site unless you let the DSO, Project Director(s), and Lead Diver know.
- Buddy teams: plan your dive and dive your plan.
- Check each other's gear prior to entering the water; know the location of your buddy's alternate air source (hoses properly connected, air on, test breath primary and alternate regulators)
- If dive computers are used, both buddy team members must have a dive computer; if one team member's computer malfunctions, the buddy team must abort the dive.
- Boat entry – back roll, side entry.
  Boat exit – at dive ladder remove weight belt, remove fins, climb up ladder with regulator and mask in place.
- Shore entry – equipment on, backward walking entry until submerged
  Shore exit – remove fins when in knee-deep water, stand up, exit the water

Descent Procedures (Boat)

- Remain on descent line controlling descent to avoid squeezes to reach bottom.
- Reach bottom/check gauges/time/air pressure/depth.
- No visibility situations - buddy line with float to the surface will be employed.

Ascent Procedures (Boat)

- Make a controlled ascent of 30 feet per minute above 60 feet and make a three minute stop at 15 feet; five minute stop at 15 feet if greater than 60 feet.

Descent Procedures (Shore)

- After shore entry, remain on bottom, swim into the current, or follow compass course.

Ascent Procedures (Shore)

- Make controlled ascent of 30 feet per minute; follow compass course or bottom back to shore.
- Make a three minute stop at 15 feet; five-minute stop at 15 feet if greater than 60 feet.

Diver Emergency Procedures

- Initiate Emergency Recall.
- If at any time during the dive, you feel uncomfortable or feel anxiety, discontinue the dive.
- If problems are encountered STOP, BREATHE, THINK, AND ACT.
- If you lose your buddy, search the immediate area for 15 to 30 seconds; surface if do not find.
- Join each other on the surface; if ample time and air are remaining, continue dive.
- If your buddy does not surface, notify Dive Leader immediately.
- Any time you surface, inflate your BC as a positive floatation device; if distressed drop your weight belt and give the proper hand signals.
- If caught in heavy current, make a controlled ascent to the surface, give proper hand signals, and do not try to swim against the current. A safety boat will pick you up.
- Listen for boat traffic and do not surface if boat is overhead.
- Remember the two most important factors are AIR and TIME.
- If an accident occurs the dive team not involved shall rendezvous and wait for further instructions.

CLOSING COMMENTS – IS EVERYONE STILL FEELING OK TO DIVE TODAY?????
If you are asked to do something contrary to the way you have been trained, bring it to the attention of the DSO, Project Directors, and Lead Diver.
ANY QUESTIONS??????

NOAA NO-DECOMPRESSION AIR TABLE

CHART 1 - DIVE TIMES WITH END-OF-DIVE GROUP LETTER

WARNING: EVEN STRICT COMPLIANCE WITH THESE CHARTS WILL NOT GUARANTEE AVOIDANCE OF DECOMPRESSION SICKNESS. CONSERVATIVE USAGE IS STRONGLY RECOMMENDED.

RNT RESIDUAL NITROGEN TIME
+ABT ACTUAL BOTTOM TIME
ESDT EQUIVALENT SINGLE DIVE TIME

(USE ESDT TO DETERMINE END-OF-DIVE LETTER GROUP)

DEPTH MSW	DEPTH FEET	00	MAXIMUM NO-STOP TIME													
12	40	5	15	25	30	40	50	70	80	100	110	130	150	170	200	
15	50		10	15	25	30	40	50	60	70	80	90	100			
18	60		10	15	20	25	30	40	50	55	60					
22	70		5	10	15	20	30	35	40	45	50					
25	80		5	10	15	20	25	30	35	40						
28	90		5	10	12	15	20	25	30							
31	100		5	7	10	15	20	22	25							
34	110			5	10	13	15	20								
37	120			5	10	12	15									
40	130			5	8	10										

msw	12	15	18	22	25	28	31	34	37	40	GROUP
fsw	40	50	60	70	80	90	100	110	120	130	Letter
	7	6	5	4	4	3	3	3	3	3	
	193	94	55	46	36	27	22	17	12	7	A
	13	11	9	8	7	7	6	6	6		
	183	87	48	41	32	23	18	14	9	4	B
	25	21	17	15	13	11	10	10	9	8	
	175	79	43	35	27	19	15	10	6	2	C
	37	29	24	20	18	16	14	13	12		
	163	71	36	30	22	14	11	7	3		D
	45	38	30	26	23	20	18	16			
	151	62	30	24	17	10	7	4			E
	61	47	36	31	26	24	22				
	139	53	24	19	12	6	3				F
	73	56	44	37	32	29					
	127	44	16	13	8	1					G
	87	66	52	43	36						
	113	34	8	7	2						H
	101	76									
	99	24									I
	116	87									
	84	13									J
	138	95									
	62	1									K
	161										
	39										L
	187										
	13										M
											N

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
	12:00	12:00	12:00	12:00	12:00	12:00	12:00	12:00	12:00	12:00	12:00	12:00	12:00	12:00
	0:10	3:21	4:30	5:49	6:35	7:06	7:36	8:00	8:22	8:51	8:39	9:13	9:29	9:44
		3:20	4:49	5:48	6:34	7:05	7:35	7:59	8:21	8:50	8:38	9:12	9:28	9:43
		0:10	1:40	2:39	3:25	3:58	4:26	4:50	5:13	5:41	5:49	6:08	6:19	6:33
			1:39	2:38	3:24	3:57	4:25	4:49	5:12	5:40	5:48	6:02	6:18	6:32
			0:10	1:10	1:58	2:29	2:59	3:21	3:44	4:03	4:20	4:36	4:50	5:04
				1:09	1:57	2:28	2:58	3:20	3:43	4:02	4:19	4:35	4:49	5:03
				0:10	0:55	1:30	2:00	2:24	2:45	3:05	3:22	3:37	3:53	4:05
					0:54	1:29	1:59	2:23	2:44	3:04	3:21	3:36	3:52	4:04
					0:10	0:46	1:16	1:42	2:03	2:21	2:39	2:54	3:09	3:23
						0:45	1:15	1:41	2:02	2:20	2:38	2:53	3:08	3:22
						0:10	0:41	1:07	1:30	1:48	2:04	2:20	2:35	2:48
							0:40	1:04	1:29	1:47	2:03	2:19	2:34	2:47
							0:10	0:37	1:00	1:20	1:36	1:50	2:06	2:19
								0:34	0:59	1:19	1:35	1:49	2:05	2:18
								0:10	0:34	0:55	1:12	1:26	1:36	1:54
									0:33	0:54	1:11	1:25	1:35	1:53
									0:10	0:32	0:50	1:05	1:19	1:31
										0:31	0:49	1:04	1:18	1:30
										0:10	0:29	0:44	1:00	1:12
											0:28	0:45	0:59	1:11
											0:10	0:27	0:43	0:55
												0:26	0:42	0:54
												0:10	0:26	0:40
													0:25	0:39
													0:10	0:25
														0:24
														0:10

CHART 3 - REPETITIVE DIVE TIME

00 RED NUMBERS (TOP) ARE RESIDUAL NITROGEN TIMES (RNT)
00 BLACK NUMBERS (BOTTOM) ARE ADJUSTED NO-STOP REPETITIVE DIVE TIMES. ACTUAL DIVE TIME SHOULD NOT EXCEED THIS NUMBER.

CHART 2 - SURFACE INTERVAL TIME

NATIONAL PARK SERVICE

U.S. NAVY DIVE TABLES

Table 9-6. *Unlimited/No-Decompression Limits and Repetitive Group Designation Table for Unlimited/No-Decompression Air Dives.*

Depth t)	No-Decompression Limits (min)	Group Designation														
		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
10	unlimited	60	120	210	300	797	*									
15	unlimited	35	70	110	160	225	350	452	*							
20	unlimited	25	50	75	100	135	180	240	325	390	917	*				
25	595	20	35	55	75	100	125	160	195	245	315	361	540	595		
30	405	15	30	45	60	75	95	120	145	170	205	250	310	344	405	
35	310	5	15	25	40	50	60	80	100	120	140	160	190	220	270	310
40	200	5	15	25	30	40	50	70	80	100	110	130	150	170	200	
50	100		10	15	25	30	40	50	60	70	80	90	100			
60	60		10	15	20	25	30	40	50	55	60					
70	50		5	10	15	20	30	35	40	45	50					
80	40		5	10	15	20	25	30	35	40						
90	30		5	10	12	15	20	25	30							
100	25		5	7	10	15	20	22	25							
110	20			5	10	13	15	20								
120	15			5	10	12	15									
130	10			5	8	10										
140	10			5	7	10										
150	5			5												
160	5				5											
170	5				5											
180	5				5											
190	5				5											

* Highest repetitive group that can be achieved at this depth regardless of bottom time.

Residual Nitrogen Timetable for Repetitive Air Dives.

* Dives following surface intervals of more than 12 hours are not repetitive dives. Use actual bottom times in the Standard Air Decompression Tables to compute decompression for such dives.

** If no Residual Nitrogen Time is given, then the repetitive group does not change.

Repetitive group at the beginning of the surface interval

	Z	O	N	M	L	K	J	I	H	G	F	E	D	C	B	A
Z	0:10	0:23	0:35	0:49	1:03	1:19	1:37	1:56	2:18	2:43	3:11	3:46	4:30	5:28	6:57	10:06
	0:22	0:34	0:48	1:02	1:18	1:36	1:55	2:17	2:42	3:10	3:45	4:29	5:27	6:56	10:05	12:00*
O	0:10	0:24	0:37	0:52	1:08	1:25	1:44	2:05	2:30	3:00	3:34	4:18	5:17	6:45	9:55	
	0:23	0:36	0:51	1:07	1:24	1:43	2:04	2:29	2:59	3:33	4:17	5:16	6:44	9:54	12:00*	
N	0:10	0:25	0:40	0:55	1:12	1:31	1:54	2:19	2:48	3:23	4:05	5:04	6:33	9:44		
	0:24	0:39	0:54	1:11	1:30	1:53	2:18	2:47	3:22	4:04	5:03	6:32	9:43	12:00*		
M	0:10	0:26	0:43	1:00	1:19	1:36	2:06	2:35	3:09	3:53	4:50	6:19	9:29			
	0:25	0:42	0:59	1:18	1:35	2:05	2:34	3:08	3:52	4:49	6:18	9:28	12:00*			
L	0:10	0:27	0:46	1:05	1:26	1:50	2:20	2:54	3:37	4:36	6:03	9:13				
	0:26	0:45	1:04	1:25	1:49	2:19	2:53	3:36	4:35	6:02	9:12	12:00*				
K	0:10	0:29	0:50	1:12	1:36	2:04	2:39	3:22	4:20	5:49	8:59					
	0:28	0:49	1:11	1:35	2:03	2:38	3:21	4:19	5:48	8:58	12:00*					
J	0:10	0:32	0:55	1:20	1:48	2:21	3:05	4:03	5:41	8:51						
	0:31	0:54	1:19	1:47	2:20	3:04	4:02	5:40	8:50	12:00*						
I	0:10	0:34	1:00	1:30	2:03	2:45	3:44	5:13	8:22							
	0:33	0:59	1:29	2:02	2:44	3:43	5:12	8:21	12:00*							
H	0:10	0:37	1:07	1:42	2:24	3:21	4:50	8:00								
	0:36	1:06	1:41	2:23	3:20	4:49	7:59	12:00*								
G	0:10	0:41	1:16	2:00	2:59	4:26	7:36									
	0:40	1:15	1:59	2:58	4:25	7:35	12:00*									
F	0:10	0:46	1:30	2:29	3:58	7:06										
	0:45	1:29	2:28	3:57	7:05	12:00*										
E	0:10	0:55	1:58	3:25	6:35											
	0:54	1:57	3:24	6:34	12:00*											
D	0:10	1:10	2:39	5:49												
	1:09	2:38	5:48	12:00*												
C	0:10	1:40	4:50													
	1:39	4:49	12:00*													
B	0:10	3:21														
	3:20	12:00*														
A	0:10															
	12:00*															

Repetitive Dive Depth — New Repetitive Group Designation

feet	Z	O	N	M	L	K	J	I	H	G	F	E	D	C	B	A
10	**	**	**	**	**	**	**	**	**	**	**	797	279	159	88	39
20	**	**	**	**	**	**	917	399	279	208	159	120	88	62	39	18
30	†	†	†	349	279	229	190	159	132	109	88	70	54	39	25	12
40	257	241	213	187	161	138	116	101	87	73	61	49	37	25	17	7
50	169	160	142	124	111	99	87	76	66	56	47	38	29	21	13	6
60	122	117	107	97	88	79	70	61	52	44	36	30	24	17	11	5
70	100	96	87	80	72	64	57	50	43	37	31	26	20	15	9	4
80	84	80	73	68	61	54	48	43	38	32	28	23	18	13	8	4
90	73	70	64	58	53	47	43	38	33	29	24	20	16	11	7	3
100	64	62	57	52	48	43	38	34	30	26	22	18	14	10	7	3
110	57	55	51	47	42	38	34	31	27	24	20	16	13	10	6	3
120	52	50	46	43	39	35	32	28	25	21	18	15	12	9	6	3
130	46	44	40	38	35	31	28	25	22	19	16	13	11	8	6	3
140	42	40	38	35	32	29	26	23	20	18	15	12	10	7	5	2
150	40	38	35	32	30	27	24	22	19	17	14	12	9	7	5	2
160	37	36	33	31	28	26	23	20	18	16	13	11	9	6	4	2
170	35	34	31	29	26	24	22	19	17	15	12	10	8	6	4	2
180	32	31	29	27	25	22	20	18	16	14	11	10	8	6	4	2
190	31	30	28	26	24	21	19	17	15	13	10	10	8	6	4	2

Residual Nitrogen Times (MInutes)

† Read vertically downward to the 40/12.2 (feet/meter) repetitive dive depth. Use the corresponding residual nitrogen times (minutes) to compute the equivalent single dive time. Decompress using the 40/12.2 (feet/meter) standard air decompression table.

UNIVERSITY OF WEST FLORIDA
SCIENTIFIC DIVING PROGRAM

DIVE FIRST AID KIT SUPPLY LIST (Divers Alert Network):

_____ Sunscreen - waterproof SPF 15 or greater
_____ Sunglasses - UV protection 100%
_____ Hat
_____ Lip balm with sunscreen
_____ Water, drinkable
_____ Space blanket
_____ DAN Underwater Accident Standards
_____ Pen or pencil
_____ Writing pad
_____ Tongue Depressors
_____ Crash Scissors
_____ Bandage Scissors
_____ Sam Splint
_____ Latex Gloves
_____ Sterile 4 x 4s and 2 x 2s
_____ Vaseline gauze
_____ Hypoallergenic tape
_____ Nylon tape
_____ Cotton swabs
_____ Sterile eye patches
_____ Ace wrap 3" and 4"
_____ Kling Wrap 2" and 3"
_____ Kerlex
_____ Betadine or Povidine solution
_____ Alcohol swab (isopropyl 70%)
_____ Sterile eyewash
_____ Large bottle vinegar (acetic acid)
_____ Band-aids

UNIVERSITY OF WEST FLORIDA
SCIENTIFIC DIVING PROGRAM

DIVING EQUIPMENT CHECKOUT FORM

Scientific Diver Name_____ UWF ID #_____

Address _____
Street City State Zip

Phone number_____ Email address_____

Project Information

Project/Department Name_____ Supervisor_____

Location of Dives_____

Request Date_____ Pick up Date/Time_____

Approved: MSC Name _____ Signature_____

Equipment Requested

Tanks (# & qty)_____ Regulator (UWF #)_____

BC (UWF # & size)_____ Weight Belt (UWF #)_____

Weight (lbs)_____X2_____X4_____X5 Total Weight_____

Divemaster Kit (UWF #)_____ Oxygen Rescue Kit (UWF #)_____

Return Information

Return Date/Time_____ Signature_____

Approved: MSC Name _____ Signature_____

Comments, Maintenance & Parts Needed, or Problems Encountered:_____

Authorization Information

By signing here, I _____ agree to assume all responsibility for loss or damage of the UWF equipment while in my possession. I further agree to use this equipment ***only*** for the purpose for which it was checked out.

_____ _____
Signature Date

_____ _____
Request Approved Date

*****This form must be submitted at least 24 hours in advance of intended pick up date/time. Each individual diver must submit a separate request for gear. Requests are filled on a first come, first served basis.*****

UNIVERSITY OF WEST FLORIDA
SCIENTIFIC DIVING PROGRAM

BOAT LOAD-OUT LIST FOR SCIENTIFIC DIVING OPERATIONS

____ RELEASE FORMS SIGNED
____ BOAT KEYS
____ EMERGENCY PROCEDURES LIST
____ LIFE JACKETS UNLOCKED & ENOUGH FOR ALL PASSENGERS
____ FLARES
____ EMERGENCY HORN
____ FIRST AID KITS
____ DAN 0_2 KIT
____ ELECTRONICS (VHF, CELL PHONE, DGPS)
____ CHARTS, MAPS, & DIVE TABLES
____ ANCHOR, CHAIN, & LINE
____ OIL (4- & 2-cycle)
____ SPARE FUEL FILTER
____ DOCK LINES (Minimum of four)
____ EXTRA LINE
____ 300' RESCUE LINE WITH LARGE FLOAT
____ 350' STAND-BY DIVERS LINE
____ BUOYS & DRIFT LINE
____ RESCUE PADDLE BOARD
____ TOWELS, PAPER TOWELS, OR RAGS
____ BOAT HOOK
____ PADDLE
____ BINOCULARS
____ TOOL BOXES AND BUCKETS (DUCK TAPE)
____ FLAGS (ALPHA, DIVER DOWN, UWF)
____ DIVE GEAR (mask, fins, snorkel, weight belt, BC, regulator, depth gauge, spg, computer, wetsuit)
____ DIVE TANKS
____ DIVE SPARE PARTS KIT (o-rings, spare mask and fin straps, divemaster tool, bottle gauge, pencil, paper)
____ AIR CYLINDER RACKS
____ BROWNIE COMPRESSOR & HOSES
____ EXCAVATION EQUIPMENT (dredge pumps, heads, hoses, screens) SAMPLING EQUIPMENT (pumps, nets)
____ LEAD WEIGHTS
____ WORK GLOVES (Kevlar)
____ EAR WASH
____ JELLYFISH STING SPRAY BOTTLE (½ vinegar & ½ water)
____ RINSE BUCKET WITH FRESH WATER
____ PHOTO GEAR (digital video, digital still, Nikonos, land camera)
____ MAPPING EQUIPMENT (tapes & rules, slates, mylar, datums, protractor, plumb bobs, stakes, compass)
____ SPECIAL EQUIPMENT (magnetometer, sonar, etc.)
____ WATER COOLER
____ ICE CHEST
____ FOOD & WATER

UNIVERSITY OF WEST FLORIDA
SCIENTIFIC DIVING PROGRAM

COMMON DIVER HAND SIGNALS

APPENDIX 11
UNIVERSITY OF WEST FLORIDA
SCIENTIFIC DIVING PROGRAM

LEGAL RELEASES, INFORMATION SHEETS, TRAINING LOGS, AND FORMS

UWF Complete Liability Release for Diving Operations

UWF Complete Liability Release for Snorkeling Operations

UWF Scientific Diving Standards Agreement

UWF Scientific Diver Application Information

UWF Workmen's Compensation Form (to be completed by all scientific divers)

Scientific Diver Authorization and Training Log

UNIVERSITY OF WEST FLORIDA
SCIENTIFIC DIVING PROGRAM

STATEMENT OF ASSUMPTION OF RISK, INFORMED CONSENT, AND RELEASE OF LIABILITY FOR DIVING OPERATIONS

1. IN CONSIDERATION OF MY PARTICIPATION, I AGREE TO HOLD HARMLESS, RELEASE, COVENANT NOT TO SUE, AND FOREVER DISCHARGE THE STATE OF FLORIDA, THE FLORIDA BOARD OF GOVERNORS, THE UNIVERSITY OF WEST FLORIDA BOARD OF TRUSTEES, THE UNIVERSITY OF WEST FLORIDA, AND THEIR RESPECTIVE OFFICIALS, EMPLOYEES, AGENTS, ASSIGNS, VOLUNTEERS, AND GUESTS (HEREINAFTER REFERRED TO AS "RELEASED PARTIES") FROM ANY AND ALL LIABILITY RESULTING FROM THE ORDINARY NEGLIGENCE OF THOSE INVOLVED, INCLUDING RELEASED PARTIES. I FURTHER SAVE AND HOLD HARMLESS THE RELEASED PARTIES FROM ANY CLAIM OR LAWSUIT BY ME, MY SPOUSE, MY FAMILY, ESTATE, HEIRS OR ASSIGNS, ARISING OUT OF MY PARTICIPATION IN DIVING OPERATIONS OFFERED OR SPONSORED BY THE UNIVERSITY OF WEST FLORIDA.

2. I UNDERSTAND THAT THERE ARE INHERENT RISKS INVOLVED WITH SNORKELING AND BOATING, including but not limited to equipment failure, perils of the sea, acts of other participants, and adverse sea and weather conditions, and I HEREBY ASSUME SUCH RISKS.

3. I acknowledge that the activities I will be participating in may involve strenuous physical activity, physical interaction with other participants, travel, exposure to inclement weather and other dangers, which may result in injuries to me, ranging from minor to severe, including serious permanent disability, paralysis, or death. These types of injuries may result from my own actions, the actions or inactions of others or a combination of both.

4. I understand that certain activities require a minimum level of fitness for safe participation. I warrant that I am in good health and have no physical condition that would prevent me from participating. I acknowledge that it is my responsibility to secure appropriate personal medical insurance and no such coverage is provided or implied by the University of West Florida.

5. I am a certified diver and have been taught and understand diving and associated underwater activities have inherent risks and dangers associated herewith including, but not limited to, risk associated therewith equipment failure, perils of the sea, acts of fellow divers and I specifically assume such risks.

6. I acknowledge that I am physically fit to engage in underwater diving and snorkeling and I will not hold any of the above named responsible if I am injured as a result of heart problems, lung problems, or other illnesses or medical problems which occur while diving and or snorkeling.

7. I do not have in my possession any illegal drugs, nor am I taking, nor have I recently taken any drugs or medication that would contraindicate diving.

8. Prior to leaving the dock, I will inspect all equipment to be used, personal or equipment belonging to the University of West Florida, and I will notify the Diving Safety Officer, Project Director or Lead Diver (Dive Master) if any of my equipment is not functioning properly.

9. I will be present at and attentive to the safety briefing given on the dive station/boat and if there is anything that I do not understand or have been taught differently, I will notify the Diving Safety Officer, Project Director or Lead Diver (Dive Master) immediately.

10. I understand I have a duty to plan and carry out my own dive and to be responsible for my own safety and the safety of my buddy. I will remain with my buddy at all times.

11. I will start my ascent at the end of each dive with enough air to perform a proper ascent with a safety stop and guarantee being on the surface with a minimum of 500 PSI remaining in the tank.

12. I will immediately stop my dive if:
    [1] I feel uncomfortable with my diving abilities; and/or
    [2] Diving conditions are worse than those for which I have been trained or for which I have experience.

13. I am aware of the dangers of holding my breath while diving and of the dangers associated with rapid ascents.

14. If I become distressed on the surface, I will immediately drop my weight belt and inflate my BC for permanent flotation assistance and if I want or need assistance from the boat/dive platform or shore, I will give the proper "diver in trouble" signal.

15. I fully understand and am aware that the dive station/boat is equipped only with first aid supplies and that in the event of illness or injury appropriate medical help must be summoned by radio and that treatment will be delayed until I can be transported to a proper medical care facility.

16. IT IS MY INTENTION BY THIS INSTRUMENT TO RELEASE THE UNIVERSITY OF WEST FLORIDA, AND ITS EMPLOYEES, AGENTS AND DIVE BOATS (WHETHER OWNED, OPERATED, LEASED OR CHARTERED) AND TO HOLD THESE ENTITIES HARMLESS FROM ANY AND ALL LIABILITY FOR PERSONAL INJURY, PROPERTY DAMAGE OR WRONGFUL DEATH OR GROSS NEGLIGENCE AND I ASSUME ALL RISK IN CONNECTION WITH SCUBA DIVING AND SNORKELING ACTIVITIES. I FURTHER SAVE AND HOLD HARMLESS THE RELEASED PARTIES FROM ANY CLAIM OR LAWSUIT BY ME, MY SPOUSE, MY FAMILY, ESTATE, HEIRS, OR ASSIGNS, ARISING OUT OF MY PARTICIPATION IN THE PROGRAM OFFERED OR SPONSORED BY THE UNIVERSITY OF WEST FLORIDA. I EXPRESSLY AGREE THAT THIS RELEASE AND WAIVER IS INTENDED TO BE AS BROAD AND INCLUSIVE AS PERMITTED BY THE LAWS OF FLORIDA AND THAT IF ANY PORTION IS HELD TO BE INVALID, IT IS AGREED THAT THE BALANCE OF THE AGREEMENT SHALL CONTINUE IN FULL LEGAL FORCE AND EFFECT.

17. I HAVE READ THE FOREGOING IN ITS ENTIRETY AND AGREE TO THE TERMS AND CONDITIONS HEREIN ABOVE SET FORTH ON BEHALF OF MYSELF, MY HEIRS, AND MY PERSONAL REPRESENTATIVES.

Signature_____ **Date**_____

Diver Last Name_____ **First Name**_____ **MI**___

Home/Cell Phone #_____ **Email**_____

Work Phone #_____

Address_____

 # & Street **City** **State** **Zip**

STATE OF _____

COUNTY OF _____

The foregoing instrument was acknowledged before me this _____day of _____, 20___, by:

_____

(Signature of Notary Public-State of Florida)

_____

(NOTARY SEAL) (Name of Notary Typed, Printed, or Stamped)

Personally Known _____ OR Produced Identification _____

Type of Identification Produced: _____

UNIVERSITY OF WEST FLORIDA
SCIENTIFIC DIVING PROGRAM

STATEMENT OF ASSUMPTION OF RISK, INFORMED CONSENT, AND RELEASE OF LIABILITY FOR SNORKELING OPERATIONS

1. IN CONSIDERATION OF MY PARTICIPATION, I AGREE TO HOLD HARMLESS, RELEASE, COVENANT NOT TO SUE, AND FOREVER DISCHARGE THE STATE OF FLORIDA, THE FLORIDA BOARD OF GOVERNORS, THE UNIVERSITY OF WEST FLORIDA BOARD OF TRUSTEES, THE UNIVERSITY OF WEST FLORIDA, AND THEIR RESPECTIVE OFFICIALS, EMPLOYEES, AGENTS, ASSIGNS, VOLUNTEERS, AND GUESTS (HEREINAFTER REFERRED TO AS "RELEASED PARTIES") FROM ANY AND ALL LIABILITY RESULTING FROM THE ORDINARY NEGLIGENCE OF THOSE INVOLVED, INCLUDING RELEASED PARTIES. I FURTHER SAVE AND HOLD HARMLESS THE RELEASED PARTIES FROM ANY CLAIM OR LAWSUIT BY ME, MY SPOUSE, MY FAMILY, ESTATE, HEIRS OR ASSIGNS, ARISING OUT OF MY PARTICIPATION IN SNORKELING OPERATIONS OFFERED OR SPONSORED BY THE UNIVERSITY OF WEST FLORIDA.

2. I UNDERSTAND THAT THERE ARE INHERENT RISKS INVOLVED WITH SNORKELING AND BOATING, including but not limited to equipment failure, perils of the sea, acts of other participants, and adverse sea and weather conditions, and I HEREBY ASSUME SUCH RISKS.

3. I acknowledge that the activities I will be participating in may involve strenuous physical activity, physical interaction with other participants, travel, exposure to inclement weather and other dangers, which may result in injuries to me, ranging from minor to severe, including serious permanent disability, paralysis, or death. These types of injuries may result from my own actions, the actions or inactions of others or a combination of both.

4. Other specific risks that may arise from my participation in these activities may also include, but are not limited to abrasions, amputation, asphyxiation, asthma, bites, bruises, burns, cardiomyopathy, concussions, cuts, dehydration, dental/oral injury, dislocations, electric shock, eye injury, fungal/bacterial infection, fractures, head injury, heat illness, lacerations, ligament tears, muscle strain, poisoning, punctures, scalds, scratches, spinal injury, sprains, and vision loss.

5. I understand that certain activities require a minimum level of fitness for safe participation. I warrant that the participant is in good health and has no physical condition that would prevent the participant from participating. I acknowledge that it is my responsibility to secure appropriate personal medical insurance and no such coverage is provided or implied by the University of West Florida.

6. I UNDERSTAND THAT I HAVE A DUTY TO EXERCISE REASONABLE CARE FOR MY OWN SAFETY AND I AGREE TO DO SO.

7. I assert that I am physically fit to snorkel and ride on a boat and I will not hold the University of West Florida and its employees, agents and dive boats (whether owned, operated leased or chartered) responsible if I am injured as a result of ANY problems (medical, accidental or otherwise) which occur while snorkeling, riding on the boat or otherwise participating in the trip.

8. If determined necessary by the UWF diving Safety Officer, I agree to wear a snorkeling vest while engaged in snorkeling activities. Such vests can provide a means of emergency positive buoyancy.

9. I fully understand that the involved boat has no medical facilities and that in the event of illness or injury, appropriate medical care must be summoned by radio and treatment will be delayed until I can be transported to a proper medical care facility.

10. In the event I show signs of distress or call for aid, I would like assistance and will not hold the University of West Florida, its employees, agents and dive boats (whether owned, operated leased or chartered) responsible for their actions in attempting the performance of rescue or first aid.

11. I expressly agree that this release and waiver is intended to be as broad and inclusive as permitted by the laws of Florida and that if any portion is held to be invalid, it is agreed that the balance of the agreement shall continue in full legal force and effect.

12. Finally, I hereby declare and represent that in making, executing and tendering this Waiver and Release of Liability, I have read this statement, understand its contents and sign it of my own free will.

I _____ HAVE READ THIS AGREEMENT, UNDERSTAND IT, AND AGREE TO BE BOUND BY IT.

Signature_____ **Date**_____

Diver Last Name_____ **First Name**_____ **MI**___

Home/Cell Phone #_____ **Email**_____

Work Phone #_____

Address_____

 # & Street **City** **State** **Zip**

STATE OF _____

COUNTY OF _____

The foregoing instrument was acknowledged before me this _____day of _____, 20___, by:

_____
(Signature of Notary Public-State of Florida)

(NOTARY SEAL) _____
(Name of Notary Typed, Printed, or Stamped)

Personally Known _____ OR Produced Identification _____
Type of Identification Produced: _____

UNIVERSITY OF WEST FLORIDA
SCIENTIFIC DIVING PROGRAM

SCIENTIFIC DIVING STANDARDS AGREEMENT

Your signature on this statement is required as proof that you have read and agree to adhere to the regulations and procedures for scientific diving established detailed in the University of West Florida's (UWF) Scientific Diving Standards. Please read this document carefully and direct any questions you may have to the Diving Safety Officer (DSO) before signing.

I, _____, understand that as a Scientific Diver I must:

1. Read and understand the UWF Standards for Scientific Diving.
2. Adhere to the regulations and procedures established for scientific diving at UWF. This includes, but is not limited to:
   - Diving within my certification limits unless on a training dive with an authorized instructor.
   - Refusing to dive, or terminating a dive, if any conditions are or become unfavorable.
   - Reporting any unsafe practices to the DSO.
   - Reporting all injuries and incidents to the DSO and proper authorities immediately, and seeking appropriate treatment.
   - Abiding by basic safe diving practices, including but not limited to: listening intently to dive briefings and debriefings, following dive plans, maintaining proper buoyancy, **NEVER** holding my breath, being proficient in dive table use.
   - Maintaining personal dive gear correctly, including annual service requirements.
   - Adhering to the Buddy system (as defined in the UWF Standards for Scientific Diving) on **ALL** scuba dives.
   - Carrying the appropriate equipment for every dive, including an alternate air source (octopus).
   - Conducting functional checks of diving equipment (both mine and my buddy's) prior to entry.
   - Never ascending faster than 30 feet per minute on **ANY** dive.
   - Carrying out a safety stop (3-5 minute stop at 15 feet) on every dive below 60 feet.
   - Terminating all dives with enough air in my tank to surface with at least **500 PSI**.
   - Ensuring that I understand the proper emergency procedures for each dive that I undertake, and staying current in First Aid and CPR.
   - Never using UWF equipment for any purpose other than its intended and approved use.
3. Not engage in dive activities in an open water environment with special conditions (such as an overhead restriction back to the surface) without express consent of the DSO.
4. Understand that I can deviate from the requirements of the UWF Scientific Diving Standards **ONLY** to the extent necessary to prevent or minimize a situation that is likely to result in death, serious physical harm, or major environmental damage.

Scuba diving is an inherently risky activity. The ultimate responsibility for safety rests with the individual diver. It is my responsibility to and duty to refuse to dive if, in my judgment, conditions are unsafe or unfavorable, or if I would be violating the precepts of my training or the regulations of the UWF Standards for Scientific Diving.

I have read the above statements and have had any questions answered to my satisfaction.

_____ _____

Diver Signature **Date**

_____ _____

Witness **Date**

Diver Last Name_____ **First Name**_____**MI**____

Home Phone #_____ **Email**_____

UNIVERSITY OF WEST FLORIDA
SCIENTIFIC DIVING PROGRAM

SCIENTIFIC DIVER APPLICATION INFORMATION

Scientific Diver Information

Last Name_____First Name_____MI_____

Address_____
& Street City State Zip

Home Phone #_____ Email_____

Work Phone #_____

University Information

UWF ID #_____Date of Birth_____Gender_____

University Status: F S J S Graduate Faculty Staff Volunteer

Department/Institute:_____Professor/Supervisor:_____

Emergency Contact Information

Name:_____Relationship:_____

Home Phone #_____Work Phone #_____

Address_____
& Street City State Zip

Certifications

Certifications (list): Attach copies of certification cards or records of training, agency, diver #, and dates.

_____
_____
_____
_____
_____
_____
_____

Diving Information

Total # of logged dives_____Maximum recorded depth_____

Average depth_____Self-imposed depth limit_____

Dives in the past 12 months_____

Date and location of most recent SCUBA dive_____
_____
_____

Diving experience (geographic areas, recreation, research, photography, specialty):_____
_____
_____
_____
_____

Types of Diving (estimated # of dives):

_____ Beach
_____ Jetties
_____ Rivers
_____ Lakes
_____ Springs
_____ Quarries
_____ Boats (<30')
_____ Ships (>31')
_____ Night Diving
_____ Blue Water
_____ Nitrox
_____ Cold Water
_____ Black Water
_____ Saltwater
_____ Mud or Silt Bottom
_____ Kelp Forrest
_____ Coral Reef
_____ Current/Drift
_____ Dry Suit
_____ Commercial
_____ Military
_____ Scientific
_____ Other _____
_____
_____

UNIVERSITY OF WEST FLORIDA
SCIENTIFIC DIVING PROGRAM

WORKMEN'S COMPENSATION
SPECIAL DISABILITY TRUST FUND 440.49 F.S.

Chapter 440, Florida Statutes, provides for recovery from the Special Disability Trust Fund where an injury merges with a pre-existing permanent physical impairment to cause a greater disability than would have resulted from the injury alone. However, in order to recover from the Special Disability Trust Fund, it is required that the State have knowledge of this impairment prior to the occurrence of the compensable injury. In addition to a general category of impairments there are certain specific impairments outlined by the above statutes. Therefore, the following questions are to be answered by each employee as defined in Section 110.501. F.S.

1. Have you ever had a serious illness, injury, or operation? Yes_____ No_____

2. Have you ever received Workmen's Compensation benefits for an injury? Yes_____ No_____

3. Do you now have or have you ever had any disability rating, either temporary or permanent, assigned to you by an insurance company or governmental agency either Federal, State, County, or City? Yes_____ No_____

4. Do you now or have you ever had any physical handicap or disability including the following? If so, please circle.

Epilepsy	Diabetes	Cardiac Disease
Cerebral Palsy	Vascular disorder	Parkinson's Disease
Hemophilia	Hyperinsulinism	Muscular Dystrophy
Thrombophlebitis	Total Deafness	Mental Retardation
Multiple Sclerosis	Chronic Ostecayelitis	Maris-Strumpell Disease

5. Have you ever had or do you now have back trouble or complaints? Yes_____ No_____

6. Have you ever had:

   Amputation of foot, leg, arm, or hand. Yes_____ No_____

   Total loss of sight or one or both eyes or a partial loss of corrected vision of more than 75% bilaterally. Yes_____ No_____

   Herniated intervertebral disc. Yes_____ No_____

   Surgical removal of an intervertebral disc or spinal fusion. Yes_____ No_____

   Residual disability from policaryelitis. Yes_____ No_____

   Psychoneurotic, emotional or nervous disorder. Yes_____ No_____

   Ankylosis of major weight-bearing joint. Yes_____ No_____

   Any permanent physical condition, which constitutes a 20% impairment of a member or of the body as a whole. Yes_____ No_____

Explain any YES answers:

_____
_____
_____
_____
_____

Signed:_____ Date:_____
Employee

Reviewed by:_____ Date:_____
Supervisor

UNIVERSITY OF WEST FLORIDA
SCIENTIFIC DIVING PROGRAM

SCIENTIFIC DIVER AUTHORIZATION & TRAINING LOG

Scientific Diver: _____
Scuba Certification Agency # and Date: _____
Diving Medical Exam Date: _____
First Aid/CPR Cert. Date: _____
Oxygen Administrator Cert. Date: _____
Scientific Diver in Training Cert. Date: _____
Rescue Diver Cert. Date: _____
Scientific Diver/Lead Diver Cert. Date: _____

Final Exam Date: _____ Grade: _____

Depth of Training SCUBA: _____ Cert. Date: _____
Depth of Training NITROX: _____ Cert. Date: _____

Remarks:
_____
_____
_____
_____

Confined water check out date: _____ Demonstrate
Skills (YES/NO) Open water check out date: _____ Demonstrate
Skills (YES/NO) Remarks:_____
SCUBA

NITROX Authorization
Cert. Date: _____ Cert. Number: _____ Training Agency: _____
Diver has read and agreed to Section 7 of Standards: _____

Remarks:
_____
_____
_____

DSO Signature: _____ Date: ____ DSO Signature: _____ Date: _____
DSO Signature: _____ Date: ____ DSO Signature: _____ Date: _____
DSO Signature: _____ Date: ____ DSO Signature: _____ Date: _____
DSO Signature: _____ Date: ____ DSO Signature: _____ Date: _____