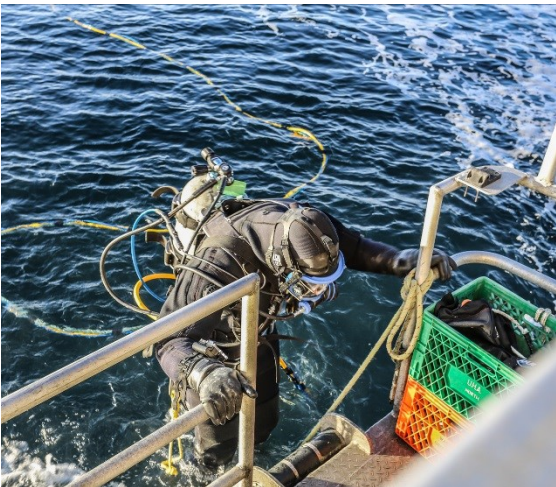




DIVE FISHERY

SAFETY BEST PRACTICES





WHY BEST PRACTICES?

Fishermen recognize there is the potential for serious injury and fatalities if safety best practices are not followed.

This best practices document is a collaborative effort by fishermen and members of the Underwater Harvesters Association (UHA), Pacific Urchin Harvesters Association (PUHA) and Pacific Sea Cucumber Harvesters Association (PSCHA) in an effort to assist fishermen in improving safety procedures with the goal of **EVERYONE COMING HOME SAFELY.**



TOP TEN CHECKLIST

1. Check all equipment—have new crew get involved in this process with supervision of the vessel master.
2. Conduct an orientation of vessel mechanics and engine with all crew.
3. Create (or update) the Muster List. Ensure all crew know what their responsibility is in the event of an emergency.
4. Ensure all crew know how to operate the boat in an emergency.
5. Perform a hazard analysis at each new dive site and discuss as a crew.
6. In each dive environment discuss real-time risks including wind and current change and hazards posed by other vessels in the vicinity.
7. Ensure all dive crew carry a knife in a readily accessible location.
8. Tenders and all on deck: Be sure to wear your PFD when on deck.
9. Perform drills and document who participated.
10. It is important that everything is documented in case there is an investigation.



GENERAL

- Know your crew. Wherever possible, try to get a resume from a prospective dive worker. Find out what kind of experience and training they have.
- Dive supervisors must know the limitations of their crew – they are ultimately responsible for their crew.

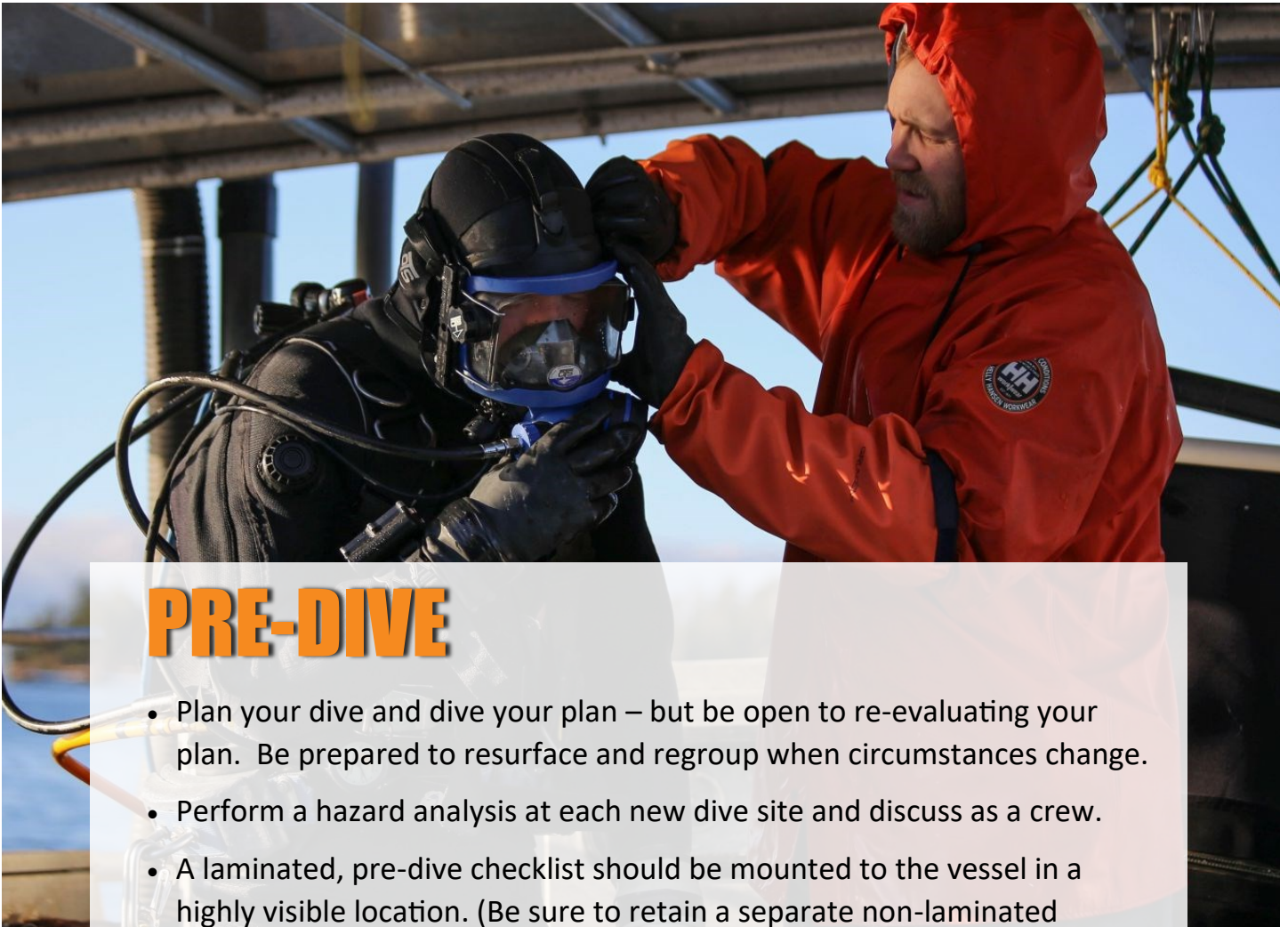
VESSEL PREPARATION

- Arrange for a free Fish Safe *Safest Catch* vessel visit (includes crew drills, safety equipment orientation and assistance with documentation).
- Make sure you have O2, hose and positive pressure mask on board.
- Consider purchase of a defibrillator.
- Consider purchase of an EpiPen for crew who might suffer a sudden and severe allergic reaction.
- Although no employer endorses illicit drug-use, this problem is a reality in society in general. Consider obtaining a Narcan (naloxone) kit.
- Check all equipment – have new crew get involved in this process with supervision of the vessel master.
- Conduct an orientation of vessel mechanics and engine with all crew.
- All compressors should have a CO monitor installed to detect the presence of CO entering the intake. (These are very cheap and easy to install. Using the colour changing discs is sufficient.)
- Make sure vessels can clearly identify that diving operations are being performed. Make sure flags are visible and lit if diving in low light conditions.





- Create (or update) the Muster List. Ensure all crew know what their responsibility is in the event of an emergency.
- Discuss radio protocol – keep messages simple and to the point.
- Ensure all crew know how to properly tie up the boat.
- If dive operators spot deficiencies in new dive crew knowledge and/or skills, let local dive trainers like DiveSafe and the BC College of Diving know, so improvements can be made.
- Ensure all crew know how to operate the boat in an emergency.



PRE-DIVE

- Plan your dive and dive your plan – but be open to re-evaluating your plan. Be prepared to resurface and regroup when circumstances change.
- Perform a hazard analysis at each new dive site and discuss as a crew.
- A laminated, pre-dive checklist should be mounted to the vessel in a highly visible location. (Be sure to retain a separate non-laminated checklist for record keeping in the event of an investigation.)
- Establish communication methods and the meaning of hand-signals before entering the water.
- Dive supervisors should encourage all crew to speak freely during orientations.
- Conduct a tailboard meeting each day before operations begin.
- In each dive environment discuss real-time risks including wind and current change and hazards posed by other vessels in the vicinity.
- Discuss anchoring procedures in detail.
- Ensure all dive crew carry a knife in a readily accessible location.
- All crew need to know they have the right to refuse work they deem to be unsafe.
- The vessel master/dive supervisor is ultimately responsible for assessing crew fitness to dive.



PRE-DIVE (continued)

- Verbalize all checklist items. Establish redundancy: The tender should call-out items and the diver should verify verbally.
- Discuss harvesting strategy for each dive and ensure crew recovery measures are well understood.
- Discuss 'what if' scenarios – ideally at the wharf whenever possible.
- Once a dive site is established, assess the grounds as a team for risks.
- As a team, help the tender identify risks. The tender may not have as much experience as the divers.
- Be on the lookout for sea lions.



Scuba specific:

- Discuss overdue and missing diver procedures.
- Supervisor/tender should double-check the diver's air pressure before they enter the water.
- Ensure divers carry a whistle that can serve as a diver alert signal.
- Ensure divers carry a deployable signal buoy should they become disconnected from the surface buoy.



Surface-supply specific:

- Make sure crew know and agree on line pull signals. Even if comms are being used, they often fail.

DIVE OPERATIONS

- Tenders and all on deck: Be sure to wear your PFD when on deck.
- Divers: If you lose your knife and are entangled in kelp, remember you can bite kelp quite easily.
- Divers: If entangled in the bag – don't panic – just go to the surface and have your tender assist.
- Tenders: Bring a bag up slowly one foot per second – assume that a diver is attached.
- Supervisor/Tenders: Assess the condition/fitness of divers when they return to the surface.
- Tenders should be aware of the location of the compressor intake to ensure it is receiving clean air free of exhaust.
- If diving in low light situations make sure there is sufficient light on the deck and the ladder.



Scuba specific:

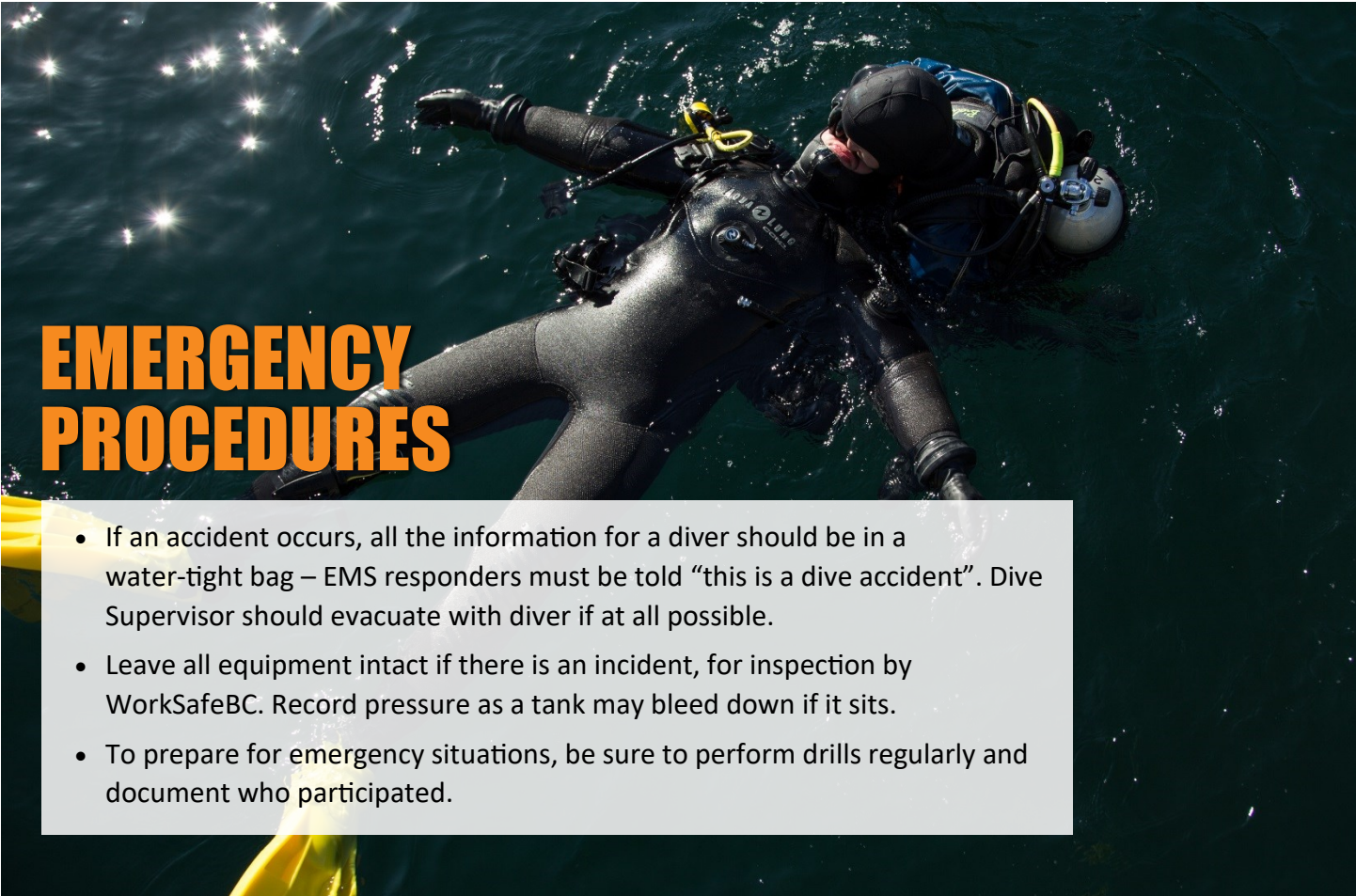
- Divers: Build a knife into the rake to create redundancy – it can be welded to the rake.
- Divers: Create a bailout procedure for detaching from the buoy.



Surface-supply specific:

- Tenders: Ensure divers are away from the down line when lowering a bag especially if a cannon ball is attached.
- (New) divers should be instructed on what to do if hoses become entangled around the anchor before getting in the water.
- Tenders: Assist diver on the ladder enter and exit the water to ensure hoses are clear.





EMERGENCY PROCEDURES

- If an accident occurs, all the information for a diver should be in a water-tight bag – EMS responders must be told “this is a dive accident”. Dive Supervisor should evacuate with diver if at all possible.
- Leave all equipment intact if there is an incident, for inspection by WorkSafeBC. Record pressure as a tank may bleed down if it sits.
- To prepare for emergency situations, be sure to perform drills regularly and document who participated.



DOCUMENTATION

- Check for proper diver certifications and ensure they are current.
- Pre-dive checklists should be created and initialled every day. Caution should be used if laminated record-keeping is being considered. In the event of an investigation the required documentation would be lacking.
- Be sure to use a new crew orientation checklist. Have crews initial, and keep a copy on the vessel.
- Maintain an Equipment Maintenance Checklist.
- Have a posted list of crew responsibilities and diver fitness expectations, including drug and alcohol use policies.
- It is important that everything is documented in case there is an investigation.

CONTACT NUMBERS

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SERVICE PROVIDERS

Archipelago Marine Research 250-383-4535 (Geoduck)
D&D Pacific Fisheries Ltd. 604-886-4819 (RSU and Cukes)

VICTORIA NAVAL FLEET DIVING UNIT

Chamber (24/7) 250-363-2379
Backup Number 250-363-4979
Base Switchboard 250-363-2000

UNDERWATER HARVESTERS ASSOCIATION

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WORKSAFEBC

1-888-621-7233 or 1-866-922-4357

EMERGENCY

JOINT RESCUE COORDINATION CENTRE

250-413-8933 or 1-800-567-5111
or #727 on cell phone

CANADIAN COAST GUARD

VHF Channel 16 or *16 on cell phone

DIVERS ALERT NETWORK

919-684-9111 or 1-800-461-2671

VANCOUVER GENERAL HOSPITAL

(Ask for the emergency hyperbaric physician on call) 604-875-4111

VANCOUVER GENERAL HOSPITAL - HYPERBARIC UNIT

Emergency (24/7) 604-875-5000
Chamber 604-875-4007

BC AMBULANCE SERVICE

911 or 1-800-461-9911

AIR AMBULANCE SERVICE

1-888-309-9037