MOSS LANDING MARINE LABORATORIES
DIVE SAFETY PROGRAM
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MLML Diving Safety Program
Scientific Dive Plan Proposal

Dive Plan Summary

Dive Plan ID: **100874**

Dive Plan Title: **COPY OF 2017 - MLML DIVE PLAN DEMO - Sally Sebastes**

Dates Proposed: 12/11/2017- 12/30/2018

Dive Site Location: tillwater Cove, Carmel-by-the-Sea, CA

Dive Group: Ich Lab

Dive Plan Submitted by: Shrestha, June #30078

Primary Investigator: Scott Hamilton

Estimated # of dives per diver each day:

Depth Range	< 30 feet	30 - 60 feet	60 - 80 feet	> 80 feet
# Dives per diver each day:	1	2	0	0

Est. Bottom Time/Diver: 40

Dive Mode: Open-Circuit

Breathihng Gas: Nitrox 32% O2

Dive Environment: Coastal

Dive Platform: Home Institution's R/V

Scuba Compressor: Is the compressor used to fill SCUBA cylinders owned by the university? Yes

Scuba Cylinders: Hydrostatically tested within the past 5 yrs and visually inspected within 1 yr.? Yes

Air Tools: No

Joint Diving Operations: Diving conducted jointly with other agencies/institutions? No

Oxygen at Site: Yes ***First Aid at Site:*** Yes ***Dive Flag at Site:*** Yes

Nearest Medical Treatment Facility to Dive Site:

Location: Community Hospital of Monterey: 23625 Pacific Grove-Carmel HWY, Monterey, CA
Telephone: (831) 624-5311 / CALL 911
Transportation Method & Distance: Vehicle: ~30 mins

Nearest Recompression Treatment Facility to Dive Site:

Location: Pacific Grove Recompression Chamber- PG Fire Station #4, 600 Pine Avenue, Pacifi
Telephone: DAN EMERGENCY 1-919-684-9111
Transportation Method & Distance: Vehicle: 15-30 mins. Helicopter: 10 mins

Emergency Contact Numbers:

Local EMS Telephone Number: 911
Local Coast Guard RCC Number: (831) 647-7300
United States Coast Guard: Channel 16 on Marine VHF Radio
Diver's Alert Network (DAN): 1-919-684-9111 - http://www.diversalertnetwork.org/
Diving Safety Officer Cell Phone: (831) 588-5591/Diana Stel

Detailed Dive Plan:

The primary objective of the project is to measure excretion rates of N and P for the dominant fishes inhabiting kelp forests along the California coast, in order to calculate reef-wide total nutrient supply by the fish community. The kelp forest fish community is species rich (~200 spp. of fish), however the bulk of the fish biomass is contributed by ~50 species. We will employ a variety of gear types to target and capture individuals across the available size range (potential size range of 5-100 cm total length) for those 50 species. The goal is to collect excretion data for n = 15-30 individuals per species. Gear used to collect individuals of the target species across their available size range will include: hook and line, baited fish traps, barrier nets, and large hand nets. We will primarily fish from small boats however will occasionally need to use SCUBA, depending on the best application of a particular gear type for a particular target species.

An estimated 2-3 dives per dive day will take place at Stillwater Cove (SWC) to collect fish. There is no fixed site within SWC however I anticipate we will be predominantly at the main mooring or at the mooring past the main circle of rocks. Divers will be encouraged to stay <30', however 1-2 dives per day may need to go deeper (30-45'). Dives will be 30 minutes or less in order to ascend the caught fish and start the experiment. All divers will be working in pairs.

Dive days will take place 1-2 times per month in Monterey (<6 days for the summer). We may need to dive at other sites if we cannot find all of the targeted species in SWC (see list above).The Diving Safety Officer will be alerted of potential dive days at least 5 days prior to sampling.

From August 7-21, diving will occur in Southern CA off of Catalina Island. Diving may be more frequent, as sampling will occur daily (but not necessarily diving).

List of sampling equipment in dive plan and considerations for their use:

To target small fish, sampling equipment will include: handheld nets and underwater fish holding containers. To target larger fish, sampling equipment will include: handlines. Equipment will

To target larger fish, sampling equipment will include: handlines.

Equipment will be provided by Ichthyology Lab.

Hazards and Mitigations

DCS/DCI
Get diver into boat, call DAN, place on emergency O2, lay diver down, and activate EMS procedure.

Lost Diver
After 1 minute, come to the surface. If buddy does not surface within 1 minute, call for help. Search for lost diver using shore help, boat, and other divers. Activate EMS plan and phone chain.

Out of Air Emergency
Share air with buddy and begin slow, controlled ascent to surface. Buddy breathing if necessary due to equipment failure

Lost Vessel
Divers should surface slowly and cautiously, signaling the vessel upon surfacing. If unable to locate vessel divers should make their way to the nearest bank of the slough and wait for assistance.

High current
Swim perpendicular to current. If current too strong, surface slowly and signal vessel while swimming toward nearest bank.

Expected Dive Team Members: (*Lead diver)

Hamilton, Scott #30010 (MLML) Cert Depth: 100
Steller, Diana #30005 (MLML) Cert Depth: 130

General Dive Plan Considerations:

* Any diver has the right to refuse to dive without fear of penalty if she/he feels the conditions are unsafe or unfavorable OR the dive violates the precepts of their training OR the regulations of the MLML Diving Safety Program. MLML Dive Manual can be downloaded from the following site https://diving.mlml.calstate.edu/certification/

* All Dive plans MUST be based on the competency of the least experienced diver.

* An ascent rate of 30ft/min and a precautionary stop at 15-20ft for 3-5min should be made for each dive.

* Depth certification levels may be extended only to the next deepest certification level, with prior approval, only if the diver with the limiting depth certification level is buddied with a diver certified to the deeper depth level.

* For all diving conducted under hazardous conditions a plan should be formulated to deal with such conditions.

* All divers using dive computers to plan dives and indicate or determine decompression status should follow the AAUS recommended dive computer guidelines noted in the Dive Manual.

* Plan dives conservatively and maximize surface intervals.

* A diver should wait at least 18-24 hrs before flying or traveling to altitude (2000+ft) after any dive.

* An Emergency Plan should be reviewed for each project including the following: emergency contact information (including name, relation and telephone number may be available on Webdiver) for each diver, nearest recompression chamber, nearest accessible hospital and anticipated means of transportation.

Diving Accident Emergency Management Plan:

A diving accident victim is any person who has been breathing air underwater regardless of depth. It is essential that emergency procedures are pre-planned and medical treatment is initiated as soon as possible.

It is the responsibility of the "Diver-In-Charge" to develop procedures for such emergencies including evacuation and medical treatment for each dive location.

General Procedures:

Explain the circumstances of the dive incident to the evacuation team, 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. Use DAN medical experts to help you explain this to medical professionals if needed.

1. Rescue victim and/or position so the proper procedures may be initiated.

2. Establish (C)irculation, (A)irway, and (B)reathing as required.

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

4. Activate the local EMS or Coast Guard (at sea) for transport to the nearest appropriate medical facility. (the local EMS will vary from site to site - it must be stated in dive plan)

5. Contact the Diver's Alert Network, Coast Guard or EMS

6. Contact Diving Safety Officer (DSO) and Emergency Contact Person.

7. Complete and submit Incident Report Form (in manual) to DSO (within 24 hrs).

Diver's Alert Network (DAN): 1-919-684-9111

Signature: _____ **Title:** _____ **Date:** _____