



Hazardous Substances

ID 8410	Alert Number	Next Review 27/02/2024
GPS Longitude	GPS Latitude	Location
Category Substance	Reported By Geoff Ockwell	Significant Risks No
Site Plant and Equipment (Critical Risk)	Date 11/06/2021	Status Completed
Description Use of hazardous chemicals as part of fieldwork practice		

Hazard Identified

Hazard Classifications	Hazard Category	Hazard	Risk
Chemical	Hazardous Chemicals	Body contact/exposure	Injury (e.g. burns)
Physical	Transport	Loss of control	Environmental
Chemical	Hazardous Chemicals	Body contact/exposure	Injury (e.g. burns)
Chemical	Hazardous Chemicals	Fire or Explosion	Injury (e.g. burns)
Physical	Housekeeping	Spills on surface	Potential for illness/injury
Physical	Storage	Inappropriate storage	Potential for injury
Physical	Work practices	Inexperienced workers	Potential for injury
Physical	Work processes	Inadequate operating procedures	Potential for injury
Physical	Transport	Loss of control	Potential for injury or fatality
Chemical	Hazardous Chemicals	Body contact/exposure	Potential illness
Emergency	Physical	Potential injury or death	Potential injury or death

Risks Identified

Risk	Risk/Score
Personal Illness	- High

Residual Risk Rating 5.00

Type	Control	Control Name	Status	Description
New	Administrative Controls	Training in handling and storage of hazardous substances	Completed	Staff and students where relevant will receive appropriate training and hold the necessary qualifications when handling and storing hazardous substances
New	Personal Protective Equipment	Use of PPE	Completed	Fieldworkers will be provided and use appropriate PPE when handling hazardous substances
New	Administrative Controls	First Aid Equipment	Completed	Fieldworkers will carry the necessary first aid equipment to assist in responding to a chemical spill on worker(s)
New	Administrative Controls	Emergency Communications Equipment	Completed	Fieldworkers will carry emergency communications equipment to request assistance in the event of a hazardous substance spill
New	Administrative Controls	Safety Data Sheets	Completed	Ensure hard copies of relevant SDS are available when taking hazardous substances into a fieldwork situation.

Reviews

Date	Person	Findings	Actions	Status
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Boating

ID 8411	Alert Number CRITICAL RISK	Next Review 08/02/2024
GPS Longitude	GPS Latitude	Location
Category Activity/Task	Reported By Niall Pearson	Significant Risks Yes
Site	Date 11/06/2021	Status Completed
Description The University of Otago has a fleet of boats/vessels used for research		

Hazard Identified

Hazard Classifications	Hazard Category	Hazard	Risk
Physical	Transport	Grounding	Potential for injury or fatality
Physical	Transport	Loss of control	Potential for injury or fatality
Physical	Transport	Man overboard	Potential for injury or fatality
Physical	Transport	Swamping or submersion	Potential for injury or fatality
Emergency	Physical	Potential injury or death	Potential injury or death
Environment	External	Boat movement	Slip/trips/falls
Environment	External	Fieldwork	Fatigue
Chemical	Hazardous Chemicals	Spill or Release	Environmental Pollution
Chemical	Hazardous Chemicals	Body contact/exposure	Potential illness
Environment	External	Uneven/slippery surfaces	Personal injury
Animal	Live animal	Animal handling/ husbandry	Animal Bite/Scratch
Animal	Live animal	Bite/sting	Potential for illness
Animal	Live animal	Zoonosis	Potential for illness
Physical	Equipment	Plant/equipment not maintained	Damage to equipment/facilities
Physical	Thermal extremes	Burns	Thermal burn
Environment	External	Fieldwork	Delayed medical care/emergency response
Ergonomic	Work processes	Repetitive movements	Sprains/strains
Chemical	Compressed Gases	Unrestrained cylinder	Injury

Risks Identified

Risk	Risk/Score
Personal Injury - (Injury from boating operations)	- Very High
Property Damage - (Damage to vessel)	- High

Residual Risk Rating 6.00

Type	Control	Control Name	Status	Description
New	Administrative Controls	Approval of all boat plans by subject matter expert	Completed	Every Boat trip must have a plan lodged and approved by the Boating officer. This ensures that planned activities are safe and that individuals involved are appropriate qualified to undertake the work proposed. The equipment/vessels are also assessed to determine if it is suitable for the work proposed. Emergency plans are put in place should something go wrong.
New	Administrative Controls	Certificate of competence for small boat <7m operation	Completed	Staff and students have the ability to go through a training program (Small Boat COP, Small boat Training plan Otago University) that will allow them to captain a specific vessel in a specific area
New	Administrative Controls	Six monthly emergency drills for all staff	Completed	Six monthly emergency drills for all staff involved in skippering

Modified	Administrative Controls	Boat maintenance, schedules and tracking	Completed	Vessel compliance and Maintenance is tracked by the Boat Officer. This ensures that all vessels are up to date with their scheduled maintenance and compliance. If there is Significant compliance or maintenance issues, the boat officer declines the cruise plan and the Vessel is tied up until the issues are remedied.
New	Administrative Controls	Certified skippers for all vessels	Completed	There are four professional Skippers that have a wide range of experience in the maritime industry. The majority of work is completed by these skippers with simple repetitive work being picked up by Members of staff or Students that have been trained and awarded with the Small Boat COC (Small boat Training plan Otago University)
New	Administrative Controls	MTOP	Completed	The Maritime Transport Operator Plan outlines the complete operating plan for all vessels including but not limited to, Survey Requirements, Maintenance requirements, Emergency management plans, Crewing requirements, operating limits, Training requirements and general overview of the operation.
New	Administrative Controls	Get home safe tracking system on all vessels	Completed	All boat trips now are required to have a GHS task running while they are on board the vessel. This allows us to pinpoint the location of the vessel at all times ensuring a quick emergency response should something go wrong. The GHS system also works as a check in check out system that alerts the appropriate individuals should unforeseen issues arise. When Vessels are out of cellular range a InReach beacon is used to ensure two way communication can be achieved at all times (INC VHF)
New	Administrative Controls	Weather reports and assessments	Completed	Between the Boat officer, Skippers and Lead scientist several weather forecasting resources including but not limited to MetService, Windy.com, swell map and Channel 16 at sea. The process is collaborative but the skipper always has the final call
New	Engineering Controls	Equipment	Completed	Alternative means of propulsion on board, in working order and readily available.
New	Administrative Controls	Housekeeping	Completed	Maintain good standards of housekeeping on vessel and related accessways.
New	Administrative Controls	Induction	Completed	Any persons on board must have completed a vessel induction from the skipper
New	Administrative Controls	Cruise plan/fieldwork plan	Completed	Every boat trip must have a plan lodged and approved by the Boating officer. This ensures that planned activities are safe and that individuals involved have appropriate qualifications to undertake the work proposed. The vessels and equipment are also assessed to determine if it is suitable for the work proposed. Emergency plans are included in the trip plan
New	Administrative Controls	Medical Checks	Completed	All staff/students/visitors are required to have attended a medical prior to activity. A health declaration is required from participants.
New	Administrative Controls	First aid available on board	Completed	Drugs are available on board to cover most probable scenarios. Skipper is trained in first response medical
Modified	Administrative Controls	Skipper Fatigue management Policy	Underway	This is being considered and the development of a policy is underway Update 08/02/2023 Policy out for consultation

Reviews

Date	Person	Findings	Actions	Status
08/02/2023	Andrea McMillan	Updated control measures		Completed

Hazardous substances

ID 8420	Alert Number CRITICAL RISK	Next Review 08/02/2024
GPS Longitude	GPS Latitude	Location
Category Environmental	Reported By Niall Pearson	Significant Risks Yes
Site	Date 11/06/2021	Status Completed
Description Risk of exposure to hazardous substances/environmental damage on fieldwork		

Hazard Identified

Hazard Classifications	Hazard Category	Hazard	Risk
Chemical	Hazardous Chemicals	Body contact/exposure	Injury (e.g. burns)
Chemical	Hazardous Chemicals	Spill or Release	Damage to facilities/equipment
Chemical	Hazardous Chemicals	Spill or Release	Environmental Pollution

Risks Identified

Risk	Risk/Score
Environment	- Very High

Residual Risk Rating 7.00

Type	Control	Control Name	Status	Description
Modified	Engineering Controls	Safety Data Sheets	Completed	Ensure hard copies of appropriate SDS are available during fieldwork, and users are familiar with the requirements for each substance including storage/segregation and how to control in a spill
Modified	Engineering Controls	Chemicals on boats	Completed	Lab/ chemical use area is built to HSNO specifications/regulations re bunding, surfaces, storage and disposal
Modified	Administrative Controls	Fieldwork plan	Completed	All fieldwork involving the use of chemicals includes chemical management in their fieldwork plan

Lone worker/remote worker

ID 8459	Alert Number Critical Risk	Next Review 13/02/2024
GPS Longitude	GPS Latitude	Location
Category Activity/Task	Reported By Geoff Ockwell	Significant Risks Yes
Site	Date 14/06/2021	Status Completed
Description Staff and/or students working alone in the field		

Hazard Identified

Hazard Classifications	Hazard Category	Hazard	Risk
Physical	Work practices	Lone or afterhour work	Potential for injury

Risks Identified

Risk	Risk/Score
Personal Injury	- High

Residual Risk Rating 6.00

Type	Control	Control Name	Status	Description
New	Administrative Controls	Fieldwork plan	Completed	Ensure lone worker risk is noted/addressed within fieldwork plan
New	Administrative Controls	Emergency Communications Equipment	Completed	Lone worker to have clear monitoring and communications plan with trusted contact(s) and/or university Get Home Safe system
New	Administrative Controls	First Aid Skills	Completed	Lone worker to have appropriate first aid training to self administer first aid as necessary
New	Administrative Controls	First Aid Equipment	Completed	First aid equipment

Reviews

Date	Person	Findings	Actions	Status
13/02/2023	Andrea McMillan	NFA		Completed

Plant and equipment

ID 8465	Alert Number Critical Risk	Next Review 13/02/2024
GPS Longitude	GPS Latitude	Location
Category Plant	Reported By Geoff Ockwell	Significant Risks Yes
Site	Date 14/06/2021	Status Completed
Description Worker(s) injured or ill as a result of plant/equipment used in field activities		

Hazard Identified

Hazard Classifications	Hazard Category	Hazard	Risk
Physical	Equipment	Moving parts	Risk of Injury
Environment	External	Fieldwork	Personal injury
Emergency	Physical	Potential injury or death	Potential injury or death
Physical	Equipment	Plant/equipment not fit for purpose	Risk of Injury
Physical	Equipment	Plant/equipment not maintained	Risk of Injury

Risks Identified

Risk	Risk/Score
Personal Injury	- High

Residual Risk Rating 6.00

Type	Control	Control Name	Status	Description
New	Administrative Controls	Training in Equipment Use and Storage	Completed	Workers to receive the appropriate training to safely use the equipment during field work
New	Personal Protective Equipment	PPE	Completed	Required PPE to operate equipment safely
New	Administrative Controls	First Aid Equipment	Completed	First Aid equipment
New	Administrative Controls	Emergency Communications Equipment	Completed	Emergency comms equipment in emergency
Modified	Administrative Controls	Field work plan & SOP	Completed	Equipment to be noted fieldwork plan SOP's to be followed related to equipment use
Modified	Administrative Controls	Plant and Equipment risk assessment tool	Completed	All plant and equipment risk assessed prior to use. Electrical testing, guarding, training requirements, maintenance and inspection requirements identified

Reviews

Date	Person	Findings	Actions	Status
13/02/2023	Andrea McMillan	Added control		Completed

Drones

ID 8466	Alert Number Critical Risk	Next Review 09/02/2024
GPS Longitude	GPS Latitude	Location
Category Activity/Task	Reported By Geoff Ockwell	Significant Risks Yes

Hazard Identified

Hazard Classifications	Hazard Category	Hazard	Risk
Physical	Work practices	Misuse of equipment	Potential for injury
Physical	Work practices	Lack of training	Potential for injury
Physical	Work processes	Operating procedures not followed	Potential for injury
Physical	Equipment	Plant/equipment not fit for purpose	Risk of Injury

Risks Identified

Risk	Risk/Score
Personal Injury	- High

Residual Risk Rating 6.00

Type	Control	Control Name	Status	Description
Modified	Administrative Controls	Civil Aviation Part 101 and 102	Completed	Field leader/pilot operates in accordance with Civil Aviation's part 101 or 102 as appropriate
New	Administrative Controls	Training and experience	Completed	Ensure field leader/pilot has the necessary training and/or experience
New	Administrative Controls	Field work plan	Completed	Ensure drone flight is addressed in risk assessment within field work plan
New	Administrative Controls	Follow drone manufacturers recommendations	Completed	Pilot aircraft according to the drone manufacturers recommendations and specifications
New	Administrative Controls	Second person as a spotter	Completed	Use a spotter when visibility of the drone becomes challenging due to the environmental conditions and/or distances from pilot to drone
New	Administrative Controls	University of Otago Drone Guidelines	Underway	Develop guidelines for off-campus use of drones

Reviews

Date	Person	Findings	Actions	Status
09/02/2023	Andrea McMillan	Review policy as per controls	Review policy as per controls	Completed

Placements

ID 8469	Alert Number Critical Risk	Next Review 13/02/2024
GPS Longitude	GPS Latitude	Location
Category Environmental	Reported By Geoff Ockwell	Significant Risks Yes
Site	Date 14/06/2021	Status Completed
Description Potential isolation of worker on placement Potential for injury/harm to worker on placement		

Hazard Identified

Hazard Classifications	Hazard Category	Hazard	Risk
Psychosocial Environment	Workplace community/relationships External	Aggressive Behaviour Fieldwork	Personal Injury Personal injury

Risks Identified

Risk	Risk/Score
Personal Injury	- Medium

Residual Risk Rating 5.00

Type	Control	Control Name	Status	Description
New	Administrative Controls	Field work plan	Completed	Field plan to provide detail of risk assessment for specific sites associated with placement Field plan to provide emergency notification plan
New	Administrative Controls	Training	Completed	Before going in to the field workers to receive appropriate training related to assessing placement situations and how to remove themselves if deemed necessary Workers to receive training in activating emergency notification plan
Modified	Administrative Controls	Monitoring and supervision	Completed	Workers to be adequately supervised and monitored in such a way that a response will be activated in the event they are overdue or request assistance.
New	Administrative Controls	Emergency Communications Equipment	Completed	Workers to have appropriate emergency communications device when on placement
New	Administrative Controls	PPE	Completed	Workers to have access and use suitable PPE

Reviews

Date	Person	Findings	Actions	Status
13/02/2023	Andrea McMillan	NFA		Completed

Driving including towing

ID 8482	Alert Number Critical Risk	Next Review 09/02/2024
GPS Longitude	GPS Latitude	Location
Category Activity/Task	Reported By Geoff Ockwell	Significant Risks Yes
Site	Date 15/06/2021	Status Completed
Description	Fieldwork may require participants to tow trailers - sometimes larger with heavy loads - in a variety of locations including off-road conditions.	

Hazard Identified

Hazard Classifications	Hazard Category	Hazard	Risk
Physical	Transport	Towing	Potential for injury or fatality

Risks Identified

Risk	Risk/Score
Financial	- High

Residual Risk Rating 7.00

Type	Control	Control Name	Status	Description
New	Administrative Controls	Trailer towing training	Completed	Training for those involved in towing trailers has been identified as necessary based on the risk assessment of this activity.
Modified	Administrative Controls	Assessing experience of the proposed driver	Completed	Workers expecting to tow a trailer must have a full drivers licence and have completed their driver assessment prior and completed a designated driver form including drivers license
New	Administrative Controls	Assessment of the driver	Completed	In conjunction with trailer training, an assessment of a drivers readiness to tow a trailer in particular environments should be introduced.

Reviews

Date	Person	Findings	Actions	Status
09/02/2023	Andrea McMillan	Updated controls		Completed

International Travel

ID	8504	Alert Number	Critical Risk	Next Review	08/03/2024
GPS Longitude		GPS Latitude		Location	
Category	Activity/Task	Reported By	Andrea McMillan	Significant Risks	No
Site		Date	13/02/2023	Status	Completed
Description	International travel to areas of risk for research teaching and RSL				

Hazard Identified

Hazard Classifications	Hazard Category	Hazard	Risk
Environment	External	Political Unrest	Threat to personal safety
Environment	External	Cultural elements	Threat to personal safety
Environment	External	Fieldwork	Threat to personal safety
Emergency	Physical	Potential injury or death	Potential injury or death

Risks Identified

Risk	Risk/Score
Personal Injury	- Very High

Residual Risk Rating 7.00

Type	Control	Control Name	Status	Description
New	Elimination	Restriction on international travel to high risk areas	Completed	Ensure Helix app used to risk rate countries of interest. Orange levels require PVC sign off, Red levels require VC sign off.
New	Administrative Controls	Insurance	Completed	Insurance must be purchased through University of Otago. Helix and related emergency response teams
New	Administrative Controls	Emergency management	Completed	Emergency response plans in place, fieldwork plan and communications

Injury or death in remote location

ID 8377	Alert Number Critical Risk	Next Review 10/06/2022
GPS Longitude	GPS Latitude	Location
Category Activity/Task	Reported By Geoff Ockwell	Significant Risks No
Site	Date 10/06/2021	Status Completed
Description Injury or emergency in a remote location		

Hazard Identified

Hazard Classifications	Hazard Category	Hazard	Risk
Emergency	Physical	Potential injury or death	Potential injury or death

Risks Identified

Risk	Risk/Score
Personal Injury	- High

Residual Risk Rating 6.00

Type	Control	Control Name	Status	Description
New	Administrative Controls	Emergency response plans	Completed	Staff will follow an emergency notification plan in the event of an injury/emergency in the field
New	Personal Protective Equipment	Personal Protective Equipment	Completed	Ensure appropriate, adequate and worn PPE for staff and students in field. Groups in field to carry required emergency communications devices. Groups to carry appropriate first aid equipment including epipens and group member personal medications
New	Administrative Controls	Training	Completed	First aid and emergency response training
New	Administrative Controls	Approved field work plans	Completed	All field work plans must be approved by the relevant departmental staff member before groups enter the field.

Separation from group/lost

ID 8378	Alert Number Critical Risk	Next Review 10/06/2022
GPS Longitude	GPS Latitude	Location
Category Activity/Task	Reported By Geoff Ockwell	Significant Risks No
Site	Date 10/06/2021	Status Completed
Description Member(s) of group become separated from the group and/or lost		

Risks Identified

Risk	Risk/Score
Personal Injury	- Medium

Residual Risk Rating 5.00

Type	Control	Control Name	Status	Description
Modified	Administrative Controls	Tail gate briefings	Completed	Field leaders ensure they conduct a tailgate briefing about how to remain together and what to do in the event of becoming separated or lost

New	Administrative Controls	Emergency Communications Equipment	Completed	Group to carry emergency communications device(s) to request search assistance if required
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Driving

ID 8381	Alert Number Critical Risk	Next Review 09/02/2024
GPS Longitude	GPS Latitude	Location
Category Activity/Task	Reported By Geoff Ockwell	Significant Risks Yes
Site	Date 11/06/2021	Status Completed
Description Driving self and others to and from fieldwork sites		

Hazard Identified

Hazard Classifications	Hazard Category	Hazard	Risk
Physical	Transport	Moving vehicles	Potential for injury or fatality

Risks Identified

Risk	Risk/Score
Personal Injury - (Possible injury or death of driver and/or occupants)	High

Residual Risk Rating 6.00

Type	Control	Control Name	Status	Description
New	Administrative Controls	Driver has appropriate licence(s)	Completed	Drivers must hold an appropriate, full drivers licence
Modified	Administrative Controls	Driving assessment & training	Completed	Drivers must successfully complete a driving assessment prior to driving a university vehicle. Drivers then sign driver agreement. Driver to receive necessary training in the safe operation of the relevant vehicle.
New	Administrative Controls	Specialist 4WD training course	Completed	Those driving 4WD vehicles to complete a specialist 4wd training course before driving 4wd vehicles
New	Administrative Controls	Vehicle age, safety rating and specifications	Completed	University passenger vehicles will be no more than 6 years old and others no older than 10 years. Passenger vehicles will have ANCAP safety rating of 4 or more. Passenger vehicles to have 2 x front air bags minimum, anti lock brakes and where available, traction control and electronic stability programming. Vehicles will have 12 or fewer seats.
New	Administrative Controls	Required driving practices	Completed	In keeping with university driving policy, workers will wear appropriate footwear, not use mobile devices or hands free sets, drive to the NZTA road code and the conditions at the time.
New	Administrative Controls	First Aid Equipment	Completed	All university vehicles will have appropriate first aid kits, emergency triangle, fire extinguisher and torch
New	Administrative Controls	Regular breaks	Completed	Drivers will take regular breaks or change driver to mitigate risk of fatigue

Reviews

Date	Person	Findings	Actions	Status
09/02/2023	Andrea McMillan	NFA		Completed

Injury from equipment/plant

ID	8392	Alert Number	CRITICAL RISK	Next Review	15/06/2022
GPS Longitude		GPS Latitude		Location	
Category	Activity/Task	Reported By	Geoff Ockwell	Significant Risks	Yes
Site		Date	11/06/2021	Status	Completed
Description	Staff or students injury as a result of using equipment in the field				

Hazard Identified

Hazard Classifications	Hazard Category	Hazard	Risk
Emergency	Physical	Potential injury or death	Potential injury or death

Risks Identified

Risk	Risk/Score
Financial	- High

Residual Risk Rating 5.00

Type	Control	Control Name	Status	Description
New	Personal Protective Equipment	Use of PPE	Completed	Staff and students to be issued with and wear/use PPE necessary for the safe operation of any university plant/equipment in the field.
New	Administrative Controls	Training	Completed	Staff and students to receive the necessary training in the use, maintenance and transportation of equipment used in the field.
New	Administrative Controls	First Aid Equipment	Completed	Staff and students to have appropriate first aid supplies in the field. The field leader or another experienced person in the group will be appropriately trained in providing first aid to any injured member(s) of the group.

Illness or medical event

ID	8393	Alert Number	CRITICAL RISK	Next Review	15/06/2022
GPS Longitude		GPS Latitude		Location	
Category	Activity/Task	Reported By	Geoff Ockwell	Significant Risks	Yes
Site		Date	11/06/2021	Status	Completed
Description	Staff member or student becomes ill or suffers medical event in the field				

Hazard Identified

Hazard Classifications	Hazard Category	Hazard	Risk
Emergency	Physical	Potential injury or death	Potential injury or death

Risks Identified

Risk	Risk/Score
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Residual Risk Rating 6.00

Type	Control	Control Name	Status	Description
Modified	Administrative Controls	Confidential Medical Status	Completed	All group members going in to the field will complete a confidential medical disclosure including medical conditions, allergies, medications taken, current injuries Field leaders will review all group members medical disclosures and discuss with group members (if necessary) BEFORE entering the field. Field leaders will check that group members have any personal medications with them BEFORE entering the field. Field leaders will ensure an unwell group member does not enter the field.
New	Administrative Controls	First Aid Equipment	Completed	All groups in the field will carry appropriate first aid kits.
New	Administrative Controls	Emergency Communications Equipment	Completed	All groups in the field will carry, and be able to use, an emergency communications device to request help from emergency services
New	Administrative Controls	Hygiene	Completed	Field leaders will ensure good hygiene practices (toileting, food preparation) are followed by group members when in the field.

Inadequate Fieldworker Competency

ID 8394	Alert Number CRITICAL RISK	Next Review 15/06/2022
GPS Longitude	GPS Latitude	Location
Category Activity/Task	Reported By Geoff Ockwell	Significant Risks Yes
Site	Date 11/06/2021	Status Completed
Description Fieldworker competency must match or exceed the level of competency required to safely manage field activities		

Hazard Identified

Hazard Classifications	Hazard Category	Hazard	Risk
Emergency	Physical	Potential injury or death	Potential injury or death

Risks Identified

Risk	Risk/Score
Personal Injury	- High

Residual Risk Rating 6.00

Type	Control	Control Name	Status	Description
New	Administrative Controls	Review of incidents	Completed	Complete investigations in to incidents to identify necessary changes to SOP's, additional training needs of workers and any competency gaps in workers.
New	Administrative Controls	DHSO's liaise with H & S Advisor - Fieldwork	Completed	DHSO's will consult as necessary with the university H & S Advisor - Fieldwork about issues of worker competency and training needs.

Diving

ID 8398

Alert Number CRITICAL RISK

Next Review 09/02/2024

GPS Longitude

GPS Latitude

Location

Category Activity/Task

Reported By Niall Pearson

Significant Risks Yes

Site

Date 11/06/2021

Status Completed

Description Divers working in various locations/conditions.

Illness directly caused or associated with diving activities including but not limited to, decompression illness (DCS) (which covers decompression sickness and arterial gas embolism), nitrogen narcosis, ear barotrauma, oxygen toxicity, and pulmonary barotrauma (burst lung).

Hazard Identified

Hazard Classifications	Hazard Category	Hazard	Risk
Physical	Work practices	Lack of training	Potential for injury
Emergency	Physical	Potential injury or death	Potential injury or death
Environment	External	Scuba diving	Decompression sickness
Environment	External	Scuba diving	Delayed medical care/emergency response
Environment	External	Scuba diving	Drowning
Environment	External	Scuba diving	Fatigue
Animal	Live animal	Bite/sting	Potential for illness
Animal	Live animal	Bite/sting	Potential for injury

Risks Identified

Risk	Risk/Score
Personal Injury - (Baratrouma)	- High
Personal Illness - (DCI -Arterial Gas Embolism-Gas entering the arterial blood through ruptured pulmonary vessels can distribute bubbles into the body tissues, including the heart and brain, where they can disrupt circulation or damage vessel walls -Decompression sickness-Breathing air under pressure causes excess inert gas (usually nitrogen) to dissolve in and saturate body tissues. The amount of gas dissolved is proportional to—and increases with—the total depth and time a diver is below the surface. As the diver ascends, the excess dissolved gas must be cleared through respiration. Depending on the amount of gas dissolved and the rate of ascent, some can supersaturate tissues, where it separates from solution to form bubbles, interfering with blood flow and tissue oxygenation)	- Medium
Personal Injury - (Pulmonary Issues. A scuba diver reduces the risk of lung overpressure problems by breathing normally and ascending slowly when breathing compressed gas. Over-expansion of the lungs can result if a scuba diver ascends toward the surface without proper exhalation, which may happen, for example, when a novice diver panics. During ascent, compressed gas trapped in the lung increases in volume until the expansion exceeds the elastic limit of lung tissue, causing damage and allowing gas bubbles to escape into 3 possible locations:)	- Medium
Personal Injury - (Nitrogen narcosis)	- Medium
Personal Injury - (Oxygen toxicity)	- Low

Residual Risk Rating 6.00

Type	Control	Control Name	Status	Description
New	Administrative Controls	Dive Medicals for Staff and Students	Completed	MBIE Dive medicals are completed and approved annually by Hyperbaric Medicine NZ for all divers approved to dive with the University, This reduces the chance of a medical condition contributing to DCI or an existing medical condition effecting a diver's safety.

New	Administrative Controls	Check out dives/Authorisation to dive.	Completed	Divers are assessed on both their practical and theoretical skills before being approved to dive. This ensures individuals' skills are up to a sufficient standard required for scientific dive work. Divers' authorisation can also be revoked should they not follow the University Diving COP or are deemed unsafe by the dive supervisor.
New	Administrative Controls	Training and Competency assessments.	Completed	All divers are required to have a base level of training in order to dive with the University. This includes a Current First Aid and O2 certificate, Rescue diver certification and at least 12 dives experience. If divers want to supervise trips and earn reward for their diving they must hold a COC in scientific diving. Competency assessments are conducted every second year to ensure diver's skills stay up to date. There are also training days run throughout the year to ensure divers' skills stay sharp.
New	Administrative Controls	Audits and Site Visits,	Completed	The Dive officer often will audit dive activities to ensure correct procedures are being followed including adapting procedures where improvements can be made regarding diving safety.
New	Administrative Controls	Dive Plan approvals and monitoring, and emergency plans.	Completed	Every dive trip must have a dive plan lodged and approved by the dive officer. This ensures that planned dive activities are safe and that individuals are appropriate qualified to undertake the work proposed. Emergency plans are put in place should something go wrong.
New	Engineering Controls	Equipment Tracking, Maintenance and certification.	Completed	All Dive equipment is maintained and tracked to ensure critical gear is always in good condition and ready to be used.

Reviews

Date	Person	Findings	Actions	Status
09/02/2023	Andrea McMillan	NFA		Completed

Fieldwork Locations and Activities

ID	8405	Alert Number	CRITICAL RISK	Next Review	09/02/2024
GPS Longitude		GPS Latitude		Location	
Category	Activity/Task	Reported By	Niall Pearson	Significant Risks	Yes
Site		Date	11/06/2021	Status	Completed
Description	Getting to and from fieldwork sites, this may be by any means of transportation. Some areas are remote and may also involve international travel				

Hazard Identified

Hazard Classifications	Hazard Category	Hazard	Risk
Physical	Transport	Towing	Potential for injury or fatality
Physical	Transport	Moving vehicles	Damage to vehicle
Physical	Transport	Loss of control	Potential for injury or fatality
Environment	External	Fieldwork	Delayed medical care/emergency response
Environment	External	Topographical/water features	Threat to personal safety
Emergency	Physical	Potential injury or death	Potential injury or death
Physical	Thermal extremes	Medical	Death
Environment	External	Solo/lone work	Delayed medical care/emergency response
Physical	Manual handling	Uneven surfaces	Potential for injuries
Animal	Live animal	Bite/sting	Potential for illness

Risks Identified

Risk	Risk/Score
Personal Injury - (Injury due to issues with transportation before and after diving. Often towing boats, Driving to altitude (DCI))	- High

Residual Risk Rating 6.00

Type	Control	Control Name	Status	Description
Modified	Administrative Controls	Audits and Site Visits	Completed	Audits to ensure correct procedures are being followed including adapting procedures where improvements can be made regarding safety
Modified	Administrative Controls	Fieldwork approvals and monitoring, and emergency plans/equipment	Completed	All fieldwork must have a plan approved and lodged with the person responsible, this may vary between departments. This ensures that planned activities are safe and that individuals are appropriate qualified to undertake the work proposed. Emergency plans are put in place should something go wrong.
New	Administrative Controls	Designated Driver/Driving Policy	Completed	Ensure all drivers have completed a University of Otago Designated Driver form including a copy of current drivers licence. A drivers assessment may be required.
Modified	Administrative Controls	Vehicles comply with driving policy	Completed	All vehicles are fit for purpose and meet policy requirements as per University policy and guidelines
New	Administrative Controls	Communications	Completed	We advise any person or groups going on a fieldtrip to take 2 forms of communication with them. In Reach locator beacons are available from the H & S team which are used alongside the Get Home Safe app
New	Administrative Controls	Competence	Completed	Worker (staff or student) competence to be assessed to ensure workers are sufficiently fit/experienced/qualified to manage themselves and/or others in remote areas
New	Administrative Controls	Weather and Environmental conditions	Completed	Fieldtrip leaders will have the ability to receive daily (minimum) updates of weather forecasts and relevant environmental conditions. The planned field activities will be considered against these updates. The decision to cease or postpone activities will always be considered.
New	Personal Protective Equipment	First Aid and emergency training	Completed	Have first aid equipment and the knowledge to use it

Reviews

Date	Person	Findings	Actions	Status
09/02/2023	Andrea McMillan	Added controls		Completed
14/03/2023	Karen Bonney	Updated controls		Completed

Environmental Hazards

ID 8407	Alert Number Critical Risk	Next Review 13/02/2024
GPS Longitude	GPS Latitude	Location
Category Activity/Task	Reported By Geoff Ockwell	Significant Risks Yes
Site Fieldwork	Date 11/06/2021	Status Completed
Locations/Activities (Critical Risk)		
Description	A range of risks associated with height (cliffs, rocks falling), water (flat and moving), temperature (air & water), tree/branch falls	

Hazard Identified

Hazard Classifications	Hazard Category	Hazard	Risk
Environment	External	Fieldwork	Threat to personal safety

Risks Identified

Risk	Risk/Score
Personal Injury	- Very High

Residual Risk Rating 6.00

Type	Control	Control Name	Status	Description
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New	Administrative Controls	Approved safety plans	Completed	Ensure field leaders complete a thorough field plan including risk assessment and management. Plan will be approved before group enters the field.
Modified	Administrative Controls	Ongoing review of environmental conditions	Completed	Field leader(s) will get daily weather forecast and review environmental conditions on an ongoing basis. Leader(s) to adjust field activities to suit conditions. 'Not going in to the field' as planned or 'leaving the field early' will always be options in response to environmental conditions
New	Personal Protective Equipment	Appropriate PPE	Completed	Leaders will ensure group members have essential personal gear items (rain jacket, suitable footwear, shelter) and PPE to assist in managing environmental conditions.
New	Administrative Controls	Group management skills	Completed	Field Leaders will have the necessary experience and skills to manage the group's interactions with environmental hazards

Reviews

Date	Person	Findings	Actions	Status
13/02/2023	Andrea McMillan	NFA		Completed