



Eden-1 Emergency Response Plan 2025

Disaster Bay, NSW

Document details	The details entered below are automatically shown on the cover and the main page footer. PLEASE NOTE: This table and signature page must NOT be removed from this document.
Document title	Emergency Response Plan 2025
Document subtitle	Disaster Bay
Business	Auskelp Pty Ltd ABN 33 644 315 613
Lease Area	AL21/004
Lease Size	200 ha
Kelp Species	Ecklonia radiata
NSW Case ID	SSD-41680467
Date	04 July 2025
Version	1.1
Previous Version	1.0
Author	Christopher Ride
Cover Image Credit	Ecklonia radiata harvesting, Auskelp, 2025
Disclaimer	The information contained in this publication is based on knowledge and understanding at the time of writing (July 2025)
Copyright	© Auskelp Pty Ltd 2025 This document is protected by copyright. You may download, display, print and reproduce this material in an unaltered form only (retaining this notice) for your personal use or for non-commercial use within your organisation.
Project Definition	Kelp Aquaculture Farm

TABLE OF CONTENTS

Cover Page

Document Details

Table of Contents

1.0 Project Details

- 1.1 Proponent
- 1.2 Scope

2.0 Major Risk Categories

3.0 Vessel Safety & Navigation

- 3.1 Vessel collision or grounding
- 3.2 Loss of propulsion or steering
- 3.3 Navigational equipment failure
- 3.4 Vessel capsizing or sinking
- 3.5 Man overboard incidents
- 3.6 Crew injury or medical emergency onboard

4.0 Weather & Natural Hazards

- 4.1 Severe storms, high winds, or rough seas
- 4.2 Lightning strikes during operations
- 4.3 Poor visibility due to fog or heavy rain
- 4.4 Tsunami warnings or surge conditions
- 4.5 Bushfire threats at land-based facilities
- 4.6 Flooding at hatchery or operational base

5.0 Crew Health & Safety

- 5.1 Workplace injuries (e.g. cuts, crush injuries)
- 5.2 Heatstroke, dehydration, or hypothermia
- 5.3 Exposure to hazardous substances (fuel, rope treatments)
- 5.4 Infectious disease outbreak
- 5.5 Psychological distress or fatigue

6.0 Aquaculture Infrastructure

- 6.1 Structural failure of longlines or moorings
- 6.2 Anchor dislodgement or rope snapping
- 6.3 Submerged debris entanglement
- 6.4 Fouling leading to buoyancy loss or infrastructure collapse
- 6.5 Damage from vessel strikes or strong currents

7.0 Marine Fauna Interactions

- 7.1 Entanglement of marine mammals or turtles
- 7.2 Whale collision or interaction with gear
- 7.3 Response to dolphin or seal presence

7.4 Monitoring and mitigation aligned with the Marine Fauna Interaction Management Plan

8.0 Pollution & Contamination

- 8.1 Fuel spill from vessel or base operations
- 8.2 Chemical spill (cleaning agents, maintenance fluids)
- 8.3 Debris loss overboard (ropes, nets, plastics)
- 8.4 Biosecurity hazard (e.g. invasive species transfer)

9.0 Fire & Explosion

- 9.1 Fire onboard vessels (engine room, galley, electrical)
- 9.2 Fire at hatchery, land facilities or storage sheds
- 9.3 Explosion risk from stored fuels or gas cylinders
- 9.4 Bushfire encroachment on operational base

10.0 Theft, Vandalism & Security

- 10.1 Theft of vessels, tools, kelp harvest or gear
- 10.2 Deliberate vandalism of ropes, buoys or anchors
- 10.3 Unauthorized access to infrastructure
- 10.4 Tampering with monitoring devices or buoys

11.0 Communications & Technology Failure

- 11.1 Loss of radio or mobile signal
- 11.2 Failure of GPS or tracking systems
- 11.3 EPIRB malfunction
- 11.4 Satellite data or weather feed disruption

12.0 Coordination with External Stakeholders

- 12.1 Commercial fishing gear entanglement or conflict
- 12.2 Recreational vessel entanglement or safety risks
- 12.3 Marine park or government compliance inspections
- 12.4 Evacuation coordination with rescue or emergency agencies

1.0 PROJECT DETAILS

Eden-1 Kelp Aquaculture Farm

Auskelp Pty Ltd | 2025

- **Location:** Offshore in Disaster Bay
- **Growing Period:** Autumn, Winter, Spring (March–December)
- **Hours of Operation:** 0700–1700 AEST
- **Key Activities:** Installation, hatchery, deployment, monitoring, maintenance, harvesting of kelp longline infrastructure
- **Vessel Base:** Snug Cove, Port of Eden & Edrom (Pentarch) Industrial Area
- **Vehicle Base:** Industrial area Edrom (logistics depot and maintenance facility)

1.1 Proponent

This Emergency Response Plan (ERP) outlines the required protocols, equipment, personnel responsibilities, and communication procedures to be followed in the event of emergencies associated with the operation of the Kelp Aquaculture Farm AL21/004, located in Disaster Bay. The ERP is designed to protect farm personnel, the environment, marine fauna, and infrastructure from harm and minimise operational disruption.

This policy and procedure has been developed to:

- **Ensure Personnel Safety** – To safeguard the health and wellbeing of all staff, contractors, and visitors operating on vessels or at land-based facilities associated with the Kelp Aquaculture Farm.
- **Minimise Environmental Harm** – To mitigate potential environmental impacts resulting from accidents such as marine mammal entanglements, oil/fuel spills, or storm damage.
- **Comply with Regulatory Obligations** – To meet statutory requirements under NSW Work Health and Safety legislation, the Biosecurity Act, and other applicable marine and environmental regulations.
- **Enable Rapid Response** – To provide clear procedures and communication protocols that allow swift and effective response to emergencies such as vessel capsizing, fire, or severe weather.
- **Protect Aquaculture Infrastructure** – To reduce damage to valuable longline systems, moorings, vessels, and hatchery equipment through pre-emptive planning and immediate corrective action.
- **Support Business Continuity** – To limit operational disruptions and economic losses in the event of natural disasters, supply chain breakdowns, or security incidents.
- **Safeguard Marine Fauna** – To align with Auskelp’s Marine Fauna Interaction Management Plan by ensuring marine mammal entanglement events are managed safely and humanely.
- **Facilitate Staff Training and Preparedness** – To ensure all crew and operational personnel understand emergency procedures and participate in regular drills.
- **Coordinate with Emergency Services** – To integrate response efforts with local NSW Marine Rescue, Fire and Rescue NSW, and other relevant agencies during serious incidents.

1.2 Scope

The scope of the Emergency Response Plan (ERP) for the Eden-1 Kelp Aquaculture Farm (AL21/004) encompasses all operational activities—both marine and land-based—associated with the establishment, maintenance, and ongoing function of kelp farming infrastructure in Disaster Bay, New South Wales. This includes vessel-based activities at sea (e.g., inspections, harvesting, seeding, maintenance), onshore operations such as hatchery work, logistics, and storage, and the transit of personnel and materials between

sites. The plan applies to all Auskelp employees, contractors, researchers, and visitors involved in or affected by kelp farming activities.

2.0 Major Risk Categories

We have broken down the Emergency Response Plan into the following category sections to ensure clear, organised, and comprehensive guidance for all foreseeable operational risks and emergency scenarios:

- Vessel Safety & Navigation
- Weather & Natural Hazards
- Emergency Response & Medical Incidents
- Marine Fauna Interaction & Entanglement
- Aquaculture Infrastructure Integrity
- Fire, Explosion & Onboard Hazards
- Flooding, Storm Surge & Coastal Impacts
- Theft, Vandalism & Security Threats
- Land-Based Facility Emergencies (e.g. Hatchery, Storage)
- Communications, Reporting & Incident Documentation

3.0 Vessel Safety & Navigation

For the following situations, Auskelp staff and contractors should consider the outlined emergency actions relevant to each scenario. These procedures are designed to guide rapid, effective, and safe responses. In all situations, staff must follow the direction of the vessel's captain or designated supervisor, whose instructions take precedence during emergencies. This information is intended to serve as a guide and should be used in conjunction with professional judgment and applicable maritime regulations.

3.1 Vessel Collision or Grounding

Immediate Actions:

- Stop all engines and assess the safety of crew.
- Send distress call via VHF Channel 16 and activate the EPIRB if needed.
- Deploy anchor if adrift in shallow waters to avoid further movement.

Post-Incident Protocol:

- Conduct hull damage assessment if safe to do so.
- Notify AMSA and NSW Maritime and complete a marine incident report.
- Arrange vessel tow or salvage if immobilised.

3.2 Loss of Propulsion or Steering

Immediate Actions:

- Notify nearby vessels and base operations.
- Attempt emergency restart of engine or engage auxiliary systems.
- Use drogue anchor or sea anchor to stabilise drift.

Backup Measures:

- Deploy tender vessel for assistance or emergency towing.
- Use steering oar or emergency tiller if fitted.
- Maintain VHF communication with support vessels and authorities.

3.3 Navigational Equipment Failure (e.g. GPS, radar, compass)

Immediate Actions:

- Switch to backup navigation equipment (e.g., handheld GPS, paper charts).
- Reduce speed, maintain extra visual lookout, and avoid narrow or hazardous areas.

Reporting:

- Log equipment failure in vessel logbook.
- Report to maintenance officer and schedule urgent repair or replacement.

3.4 Radio or Communications Failure

Response:

- Switch to secondary or handheld radio unit.
- Use satellite phone or emergency flares if fully disabled and in distress.
- Notify authorities upon re-establishing contact.

3.5 Night or Low-Visibility Operations

Prevention & Response:

- Ensure all navigation lights and AIS (if installed) are operational before departure.
- Avoid unnecessary travel in dense fog, storms, or darkness unless essential.
- Use radar reflectors and slow-speed manoeuvring as needed.

3.6 Charting and Route Planning Errors

Prevention:

- All skippers must verify intended routes and hazards using updated digital and paper charts.
- Prior briefings are required before travel near reef areas or kelp infrastructure.

3.7 Mooring and Navigational Aid Failures

Response:

- Check anchor tension and secure location when moored near kelp lines.
- Immediately report missing or malfunctioning navigational aids to the relevant authority (e.g., NSW Maritime or AMSA).

4.0 Weather & Natural Hazards

For the following weather and natural hazard events, Auskelp staff and contractors should adhere to the outlined procedures. These are intended to ensure safety, operational continuity, and asset protection, while reinforcing that all staff must ultimately follow the captain's or emergency coordinator's instructions, and use this plan as a guiding framework.

4.1 Severe storms, high winds, or rough seas

Primary Response:

- Cease all marine operations and return vessels to port or designated sheltered mooring areas.
- Secure aquaculture infrastructure (e.g., tension check on longlines, mooring systems, remove sensitive equipment).
- Monitor BOM marine weather warnings and real-time wave data (e.g., Manly Hydraulics Eden buoy).
- Notify onshore coordinators of vessel movements and ETAs.
- Deploy storm watch personnel at land-based facilities if safe.

Backup Measures:

- If unable to return to port, seek shelter in a designated emergency anchorage and maintain radio communication every 30 minutes.
- Deploy sea anchors if drifting.
- Use vessel tracking (AIS or EPIRB) to alert support crews of location.

4.2 Lightning strikes during operations

Primary Response:

- Suspend all offshore activities immediately.
- Return to port or safe zone if lightning is observed within 10 km.
- All staff must remain below deck or within grounded vessel structures.
- Avoid contact with metal equipment, rigging, or wet ropes.

Backup Measures:

- If caught offshore, lower any raised booms or aerials, and isolate power systems if safe to do so.
- Activate VHF Channel 16 with a PAN PAN alert if the vessel is struck.

4.3 Poor visibility due to fog or heavy rain

Primary Response:

- Reduce speed and activate navigation lights and radar reflectors.
- Post additional visual lookouts.
- Use radar and AIS to monitor other vessels.
- Avoid proximity to longlines, buoys, or other hazards.

Backup Measures:

- Delay deployment or retrieval operations until visibility improves.
- Sound fog signals (horn) at regular intervals per maritime protocols.
- Return to base or remain stationary in safe open waters.

4.4 High Sea, Tsunami warnings or surge conditions

Primary Response:

- Cease all marine activities and evacuate vessels and staff to high ground if tsunami warning issued.
- Do not return to the water until official "all clear" from NSW SES or BOM.
- Secure loose onshore materials or infrastructure prone to washout.

Backup Measures:

- Pre-designate evacuation routes and safe assembly areas.
- Store essential documents, fuel, and electronics above flood level.
- Confirm staff awareness of tsunami sirens and alerts.

4.5 Bushfire threats at land-based facilities

Primary Response:

- Activate site-specific Bushfire Emergency Plan in compliance with NSW RFS guidelines.
- Evacuate all staff and animals (if applicable) when directed by emergency services.
- Secure flammable materials and shut off gas and electrical systems.
- Maintain clear access for firefighting vehicles.

Backup Measures:

- Identify and maintain APZs (Asset Protection Zones) around infrastructure.
- Install water tanks and firefighting hoses near key buildings.
- Keep radios and mobile phones charged for emergency updates.

4.6 Flooding at hatchery or operational base

Primary Response:

- Relocate stock and sensitive equipment to higher ground.
- Shut down power systems at the mains if water is approaching equipment rooms.
- Sandbag vulnerable building entries and drainage paths.
- Monitor local SES flood warnings and alerts.

Backup Measures:

- Establish pump-out procedures and deploy mobile sump pumps.
- Ensure hatchery water intake are not contaminated.
- Maintain emergency power supplies (e.g., generator with fuel).

5.0 Crew Health & Safety

For the following scenarios related to crew health and safety, Auskelp staff and contractors must implement the specified emergency actions to ensure timely, effective, and medically appropriate responses. These procedures are intended as a guide to complement first-aid training, standard operating procedures (SOPs), and skipper or supervisor instructions. In all cases, the vessel captain or site manager must be followed as the lead authority.

5.1 Workplace injuries (e.g. cuts, crush injuries)

Primary Response:

- Stop work immediately and assess the scene for ongoing danger (e.g. entanglement hazards, machinery).
- Administer first aid using the vessel or site first aid kit. If the injury is serious, call 000 via satellite or VHF radio (Channel 16) and prepare for evacuation.
- Apply pressure to bleeding wounds, immobilise broken limbs, and comfort the patient until help arrives.
- Complete a detailed incident report within 24 hours and notify WorkSafe NSW if required.

Backup Measures:

- Transport injured crew to the nearest medical facility (e.g. Eden Hospital) via support vessel or helicopter if accessible.
- Maintain onboard injury logbook with dates, descriptions, and treatments administered.

5.2 Heatstroke, dehydration, or hypothermia

Primary Response:

- Move affected individual out of the sun or cold wind immediately.
- For heatstroke or dehydration: Provide fluids, loosen clothing, apply cool compresses.
- For hypothermia: Remove wet clothing, provide dry, warm coverings, and give warm (non-alcoholic) fluids.
- Monitor consciousness, breathing, and pulse. Seek medical assistance if symptoms persist or worsen.

Backup Measures:

- Equip vessels and shore facilities with shaded rest areas, water containers, thermal blankets, and heat packs.
- Enforce mandatory hydration breaks and PPE (e.g. sun protection, gloves, windproof jackets) during operations.

5.3 Exposure to hazardous substances (fuel, rope treatments)

Primary Response:

- Remove the exposed person from the contaminated area and assess whether the exposure was dermal, inhalation, or ingestion.
- Flush affected skin or eyes with clean water for at least 15 minutes.
- Remove contaminated clothing and store securely for disposal.
- Consult the SDS (Safety Data Sheet) for the specific substance and call Poisons Information Centre 13 11 26 or 000 if serious symptoms develop.

Backup Measures:

- Ensure all hazardous materials are clearly labelled, stored properly, and handled only with PPE (gloves, goggles, respirators).
- Provide crew training on chemical handling and spill response protocols.

5.4 Infectious disease outbreak

Primary Response:

- Isolate the symptomatic individual and provide a face mask if applicable.
- Disinfect shared surfaces and equipment with approved cleaners.
- Notify the Auskelp Health & Safety Officer and follow NSW Health outbreak reporting protocols.
- Track crew contacts and exposure risk over the past 48 hours.

Backup Measures:

- Keep rapid antigen tests, thermometers, and PPE onboard and in shore-based offices.
- Maintain a remote work plan and backup crew list in case of widespread illness.

5.5 Psychological distress or fatigue

Primary Response:

- Recognise symptoms: withdrawal, irritability, excessive tiredness, or confusion.
- Remove affected staff from high-risk duties and provide a safe, quiet space.
- Speak to the crew member confidentially and encourage them to access mental health support.
- If risk of self-harm or harm to others is suspected, escalate immediately to emergency services (000) and isolate person as needed.

Backup Measures:

- Implement rotating rosters to avoid fatigue, with mandatory rest periods and overnight breaks.
- Promote access to confidential Employee Assistance Programs (EAP) or services such as Lifeline (13 11 14) and Beyond Blue.

6.0 Aquaculture Infrastructure

The integrity of aquaculture infrastructure at the Eden-1 Kelp Aquaculture Farm is critical to both environmental protection and operational continuity. Emergency scenarios such as longline failure, anchor displacement, entanglement, and infrastructure collapse are addressed through predefined protocols supported by the [Eden-1 Monitoring and Maintenance Plan](#), which outlines minimum inspection frequencies, structural safeguards, and rapid response policies. All Auskelp staff and contractors must follow these procedures in conjunction with the Eden-1 protocols and act under the direction of the vessel captain or farm operations manager.

6.1 Structural failure of longlines or moorings

Primary Response:

- Suspend all farming operations in the affected zone and mark the area as restricted.
- Report the failure to the Infrastructure Coordinator and log details in the maintenance register.
- Conduct an immediate dive inspection (weather permitting) or use ROV to assess damage.
- Retrieve or stabilise loose sections to prevent drift into adjacent longlines or marine traffic lanes.

Backup Measures:

- Isolate compromised lines using surface markers and restrict vessel access.
- Schedule repair within 24–72 hours depending on weather conditions.
- Document incident for insurance or regulatory reporting.

6.2 Anchor dislodgement or rope snapping

Primary Response:

- Monitor farm structures for shifting or drifting.
- Check anchor GPS position logs (if fitted) to confirm dislodgement.
- Deploy vessel to retrieve any lost or trailing components to prevent entanglement or navigational hazards.
- Alert NSW Maritime if any infrastructure poses a risk to other vessels.

Backup Measures:

- Install secondary mooring points or backup screw anchors where structural loads are concentrated.
- Reinforce rope joints with double braid or stainless steel crimps as per Eden-1 specifications.

6.3 Submerged debris entanglement

Primary Response:

- Isolate and remove the entangled debris using dive crews or grappling tools.
- Assess the condition of fouled components (lines, buoys, kelp droppers) for integrity.
- Log the incident and, if debris is anthropogenic, report to NSW DPI or marine park authorities as appropriate.

Backup Measures:

- Increase monthly seabed surveillance as per the Eden-1 Monitoring and Maintenance Plan in known accumulation zones.
- Fit weighted line guides to reduce slack that may attract drifting materials.

6.4 Fouling leading to buoyancy loss or infrastructure collapse

Primary Response:

- Inspect affected buoys and ropes visually or with diver/ROV.
- Replace any fouled or collapsed buoys immediately.
- Redeploy kelp droppers on adjacent intact infrastructure if necessary to relieve pressure.

Backup Measures:

- Implement antifouling treatment schedule as detailed in Eden-1 protocols (non-toxic, biodegradable agents).
- Adjust buoyancy through modular floats or ballast until replacement is arranged.

6.5 Damage from vessel strikes or strong currents

Primary Response:

- Stop work in the area and verify whether any kelp dropper lines have detached or been torn.
- Survey the line layout for abnormal displacement or tangle.
- Collect incident details (vessel ID, time, damage extent) and file a maritime incident report if required.

Backup Measures:

- Increase surface markers and navigation signage around perimeter of lease zone.
- Review local current forecast models and schedule operations around spring tide or high current events.

7.0 Marine Fauna Interactions

All interactions between aquaculture infrastructure and marine fauna at the Eden-1 Kelp Aquaculture Farm must be managed in strict accordance with the [Marine Fauna Interaction Management Plan \(MFIMP\)](#). This plan outlines procedures to avoid, monitor, and respond to interactions with marine mammals, turtles, and other protected species. Auskelp staff and contractors are required to report all sightings, potential entanglements, or behavioural changes, and ensure that all mitigation measures are implemented as per the MFIMP. Actions must always prioritise the protection of marine fauna and align with NSW DPI Fisheries and Commonwealth EPBC Act requirements.

7.1 Entanglement of Marine Mammals or Turtles

Primary Response:

- Immediately cease all operations in the affected area.
- Record the location, species (if known), time, and observed condition of the animal.
- Notify NSW DPI Fisheries and DCCEEW as required by the MFIMP.
- Do not attempt to disentangle the animal unless specifically trained and authorised to do so.

-
- Maintain visual observation at a safe distance using binoculars or drone surveillance (if weather allows).

Backup Measures:

- Isolate and mark the entanglement area for targeted monitoring.
- Activate response coordination protocol with wildlife experts or entanglement response teams.
- Review and log all gear deployed in the incident area for compliance and possible modification.

7.2 Whale Collision or Interaction with Gear

Primary Response:

- Immediately slow or halt vessel activity if a whale is sighted within 500 metres.
- Record the event with GPS coordinates, video (if possible), and notes on whale behaviour.
- Notify the relevant authority (e.g., ORRCA, NSW DPI) and complete an incident report under MFIMP protocol.
- If the whale is seen interacting with longlines or gear, monitor its movement to assess for signs of entanglement or distress.

Backup Measures:

- Temporarily suspend operations in the affected zone.
- Conduct visual inspections of infrastructure to identify potential fouling or drag points that may have contributed.
- Implement MFIMP adaptive management measures, such as increasing surface marker spacing or adjusting rope tension.

7.3 Response to Dolphin or Seal Presence

Primary Response:

- Pause vessel activity and avoid sudden changes in speed or direction.
- Do not feed, chase, or attempt to touch any marine mammal.
- Maintain minimum distance of 50 m for dolphins and 40 m for seals, per NSW Marine Mammal Regulation Guidelines.
- Log the sighting in the Marine Fauna Monitoring Register with behaviour, time, location, and species details.

Backup Measures:

- Conduct a follow-up inspection of gear after the animal departs to ensure no interaction occurred.
- Report unusual or aggressive animal behaviour as required under the MFIMP.
- Use passive deterrents (non-intrusive) if animals repeatedly interact with infrastructure.

7.4 Monitoring and Mitigation (aligned with Auskelp Marine Fauna Interaction Management Plan)

Ongoing Management:

- Conduct daily fauna spot checks during operations and dedicated fauna observations at regular intervals.
- Maintain taut-rope policy and use wildlife-safe infrastructure features as outlined in the MFIMP.
- Ensure all crew are trained in marine fauna protocols and reporting pathways.
- Submit quarterly monitoring reports to NSW DPI including fauna sightings, mitigation measures applied, and any interactions observed.

Emergency-Level Protocols:

- In the case of a significant interaction or mortality event, activate formal MFIMP incident response including:
- Immediate halt to operations in the relevant lease zone.
- External reporting within 24 hours.
- Detailed post-incident review and gear inspection.

8.0 Pollution & Contamination

Pollution and contamination incidents pose a risk to the marine environment, Auskelp operations, and regulatory compliance. The Eden-1 Kelp Aquaculture Farm operates under a zero-tolerance policy for pollution, aligned with both the Environmental Management Plan and NSW Marine Estate regulations. All staff and contractors must implement strict procedures to prevent, contain, and report fuel or chemical spills, marine debris, and biosecurity hazards. In every case, immediate containment and notification protocols must be followed. All responses should also be logged and reviewed as part of the Eden-1 monitoring and compliance framework.

8.1 Fuel Spill from Vessel or Base Operations

Primary Response:

- Stop the source of the leak immediately if safe to do so.
- Deploy spill containment booms or absorbent pads from onboard spill kits.
- Shut off fuel transfer systems and isolate ignition sources.
- Notify the Environmental Manager and NSW EPA Spill Response Line (131 555).
- Complete a Pollution Incident Response Management Plan (PIRMP) log and incident report.

Backup Measures:

- Maintain spill kits on all vessels and at the base depot with monthly stock checks.
- Refuelling must be done in calm conditions with supervision and use of drip trays.
- Conduct post-incident water quality checks if any fuel enters the environment.

8.2 Chemical Spill (cleaning agents, maintenance fluids)

Primary Response:

- Evacuate the area and don appropriate PPE.
- Contain the spill using bunding, absorbents, or designated containment tools.
- Dispose of spill waste in labelled chemical waste containers.
- Consult the chemical's SDS (Safety Data Sheet) and call the NSW Poisons Information Centre (13 11 26) if health impacts are suspected.
- Notify Auskelp's Environmental Safety Officer.

Backup Measures:

- Maintain chemical registers and secure all containers in bunded storage areas.
- Train staff in chemical handling and emergency containment procedures.
- Record the incident in the site HSE database and review mitigation strategies.

8.3 Debris loss overboard (ropes, nets, plastics)

Primary Response:

- Stop operations and retrieve visible debris immediately.
- Mark the GPS location of any unretrievable items for follow-up.
- Report all marine debris losses to the Environmental Manager and log in the Debris Incident Register.
- Notify NSW DPI if debris poses a threat to marine fauna or navigational safety.

Backup Measures:

- Install rope clips, locking bins, and lanyards for all tools and small items used at sea.
- Conduct monthly deck and wharf clean-ups and include debris audits in crew checklists.
- Reuse ropes and farming infrastructure wherever possible to minimise material loss.

8.4 Biosecurity hazard (e.g. invasive species transfer)

Primary Response:

- Quarantine any suspected biosecurity threat (e.g. fouling organisms, non-local seed stock).
- Notify the Biosecurity Manager and NSW DPI Biosecurity Hotline.
- Isolate affected gear and vessels and avoid cross-contamination with other zones.
- Submit photos and samples (if safe) to DPI for species identification.

Backup Measures:

- Only use local Disaster Bay-sourced seed stock as mandated by the hatchery EMP.
- Implement regular infrastructure cleaning schedules and visual inspections.
- Maintain up-to-date Biosecurity Risk Management Plans and train staff in early detection.

9.0 Fire & Explosion

Fire and explosion hazards present significant threats to crew safety, environmental integrity, and operational continuity across Auskelp's Eden-1 Kelp Aquaculture Farm, vessels, and land-based facilities. All fire response measures must be guided by marine safety protocols, Work Health & Safety (WHS) regulations, and the site-specific emergency response plan. Personnel must be trained in fire suppression, evacuation procedures, and fuel handling protocols. The Eden-1 base and vessels must remain compliant with Australian Standards (AS 1851, AS 1940) for fire protection systems and fuel storage.

9.1 Fire onboard vessels (engine room, galley, electrical)

Primary Response:

- Raise the alarm immediately and notify all crew.
- Shut down electrical systems and fuel supply to affected compartments.
- Use appropriate fire extinguishers (CO₂ or dry chemical) depending on the source.
- If the fire cannot be contained quickly, issue a Mayday via VHF Channel 16 and prepare life rafts.
- Evacuate using PFDs and EPIRBs if instructed by the vessel master.

Backup Measures:

- All vessels must be fitted with marine-grade fire extinguishers, smoke detectors, and accessible fire blankets.
- Conduct monthly inspections and annual servicing of all fire equipment.
- Maintain clear emergency access routes and fire drills in vessel induction procedures.

9.2 Fire at hatchery, land facilities, or storage sheds

Primary Response:

- Activate internal fire alarms and call 000 immediately.
- Evacuate all personnel using designated muster points.
- Isolate power and gas where safe to do so.
- Suppress small fires using installed extinguishers or hose reels.

Backup Measures:

- Equip all buildings with fire detection, suppression systems, and site-specific evacuation signage.
- Store chemicals and fuels in compliant fire-resistant cabinets with signage and spill containment bunds.
- Conduct quarterly fire drills and facility audits in collaboration with local fire authorities.

9.3 Explosion risk from stored fuels or gas cylinders

Primary Response:

- Evacuate the immediate area and restrict access.
- Do not operate electrical switches or mobile phones near leak sites.
- Alert site management and isolate ignition sources (generators, engines).
- Contact NSW Fire & Rescue and notify them of stored fuel or gas volumes.

Backup Measures:

- Store fuels and gas cylinders in shaded, ventilated, clearly labelled locations with separation distances as per AS 1940.
- Install leak detection and flame arrestor devices where applicable.
- Include hazardous goods handling training in staff inductions.

9.4 Bushfire encroachment on operational base

Primary Response:

-
- Monitor NSW RFS alerts and enact evacuation protocols when fire danger ratings reach “Extreme” or higher.
 - Secure loose infrastructure and disconnect power where required.
 - Relocate personnel and critical equipment to a designated safe zone.
 - Maintain open communication with emergency services and Auskelp headquarters.

Backup Measures:

- Maintain vegetation clearance around buildings and fuel stores.
- Keep fire trailers, hoses, and firefighting PPE on-site during high-risk seasons.

Note: Include bushfire scenarios in the annual risk review and align plans with RFS Bushfire Survival Guidelines.

10.0 Theft, Vandalism & Security

Security threats—including theft, vandalism, and unauthorised access—can disrupt operations, compromise environmental data integrity, and damage valuable infrastructure at the Eden-1 Kelp Aquaculture Farm. Due to the remote offshore location of the site, prevention and monitoring are the most effective risk management strategies. All staff and contractors must adhere to site-specific security protocols as part of the Eden-1 Monitoring and Maintenance Plan and report all suspicious activity. Coordination with NSW Police Marine Area Command, local maritime authorities, and community stakeholders is essential when incidents occur.

10.1 Theft of vessels, tools, kelp harvest or gear

Primary Response:

- Immediately report the theft to Auskelp management and local police (Police Assistance Line: 131 444).
- If at sea, notify nearby vessels via VHF Channel 16 and log the last known location.
- Document missing items with serial numbers, photographic evidence, and suspected time of theft.
- Review GPS tracking data if vessels or assets are fitted with locators.

Backup Measures:

- Install GPS trackers, motion-activated cameras, and secure locking systems on vessels and land facilities.
- Maintain inventory control logs and conduct regular audits of tools and kelp harvest batches.
- Engage local marinas and fishers as part of a marine neighbourhood watch arrangement.

10.2 Deliberate vandalism of ropes, buoys or anchors

Primary Response:

- Halt operations in the affected area and assess safety risks.
- Record the damage with photographic documentation and exact GPS coordinates.
- Secure or remove compromised infrastructure to prevent further environmental or navigational hazards.
- Notify NSW DPI and NSW Maritime if vandalism creates safety concerns for third-party users.

Backup Measures:

- Use tamper-resistant hardware and redundant anchoring designs.
- Conduct regular patrols and site flyovers using drones or support vessels.
- File official incident reports to identify patterns or repeated targeting.

10.3 Unauthorized access to infrastructure

Primary Response:

- Cease operations if intruders are present and avoid confrontation.
- Record identifying details of vessels or individuals (registration number, description, activity).
- Notify NSW Maritime, Auskelp management, and the police immediately.
- Secure all entry points and log the breach.

Backup Measures:

- Increase signage on buoys and perimeter floats indicating "Restricted Aquaculture Area."
- Conduct quarterly reviews of access protocols and security response procedures.
- Share awareness materials with local marine user groups.

10.4 Tampering with monitoring devices or buoys

Primary Response:

- Identify the affected equipment and isolate it from the network or power source (if applicable).
- Retrieve or inspect the device to assess damage or interference.
- Report tampering to regulatory authorities if it involves data integrity or safety infrastructure (e.g., navigation lights).

Backup Measures:

- Equip critical monitoring devices with tamper-evident seals and backup data storage.
- Store historical monitoring data in cloud-based or secure offsite systems.
- Install visual deterrents (e.g. "Monitored by Surveillance" markers) and physical locks or shields around sensitive infrastructure.

Note: All incidents must be documented in the Eden-1 incident reporting system and trigger an internal review of security measures and response protocols. Patterns of repeated interference or theft should be escalated to the relevant authorities and considered in future lease design, vessel access routes, and community engagement plans.

11.0 Communications & Technology Failure

Reliable communications and navigation technology are critical to the safe operation of the Eden-1 Kelp Aquaculture Farm. Given the offshore location of Disaster Bay, all vessels and teams must be equipped with redundant systems and have clear protocols in place in the event of equipment failure. Failures in GPS, radio, EPIRBs, or weather feeds can create serious safety risks, particularly during adverse weather or emergencies. Auskelp's procedures are designed to ensure continuous contact, fail-safe operations, and timely intervention, supported by the Eden-1 Monitoring and Maintenance Plan and Australian Maritime Safety Authority (AMSA) requirements.

11.1 Loss of radio or mobile signal

Primary Response:

- Switch to backup communication equipment (e.g., satellite phone or long-range HF radio).
- Attempt to re-establish contact via VHF Channel 16 or mobile network in elevated locations.
- Notify base upon reconnection, report time and duration of outage, and confirm safety.
- Cease non-essential operations if unable to re-establish communication within 30 minutes.

Backup Measures:

- All vessels must carry at least two forms of communication: VHF radio and a backup satellite or mobile device.
- Conduct monthly checks of radio function and battery reserves.
- Carry portable signal-boosting devices or EPIRBs on all vessels.

11.2 Failure of GPS or tracking systems

Primary Response:

- Revert to manual navigation using compass, charts, and known bearings.
- Reduce vessel speed and maintain wide berth from other gear, vessels, and hazards.
- Log current position manually and track estimated drift until GPS is restored.

Backup Measures:

- Maintain hard copy navigation charts of the lease area, Twofold Bay, and adjacent coastlines on board all vessels.
- Use dual GPS units where possible and conduct redundancy testing monthly.
- Record GPS calibration and performance as part of vessel maintenance logs.

11.3 EPIRB malfunction

Primary Response:

- Use alternative distress signalling such as flares, satellite phone, or VHF mayday call.
- Notify AMSA (Australian Maritime Safety Authority) upon discovery of EPIRB fault.
- Document time and nature of failure in safety logbook.

Backup Measures:

- All vessels must carry a secondary EPIRB or PLB (Personal Locator Beacon).
- Test EPIRBs in accordance with manufacturer and AMSA guidelines (typically every 6–12 months).
- Store EPIRBs in easily accessible, dry, and marked containers on board.

11.4 Satellite data or weather feed disruption

Primary Response:

- Use backup data sources (e.g., BOM marine radio weather broadcasts or VHF bulletins).
- Delay non-essential deployments if operating without current weather or sea state information.
- Notify base and schedule increased visual monitoring for changes in sea or sky conditions.

Backup Measures:

- All operations must be preceded by pre-departure weather checks from two independent sources.
- Carry laminated Beaufort scale and storm pattern guides for visual weather assessment.
- Reassess navigation and vessel movement protocols when satellite outage exceeds 1 hour.

12.0 Coordination with External Stakeholders

12.1 Commercial Fishing Gear Entanglement or Conflict

Immediate Response:

Cease nearby operations, notify the vessel captain and record GPS coordinates. Communicate directly with the affected fishing party if safe and feasible to de-escalate.

Backup Action:

If safe dialogue cannot be established, log the incident, take photos if possible, and report to the relevant fisheries authority and Auskelp management. Notify DPI Fisheries if any gear damage or liability arises.

Preventative Measures:

Maintain updated maps of local fishing grounds and seasonal activities. Implement buffer zones where kelp infrastructure is adjacent to known fishing areas.

12.2 Recreational Vessel Entanglement or Safety Risks

Immediate Response:

Activate radio communication (VHF Channel 16) to contact the vessel and issue navigational warnings. Dispatch a crew vessel to provide visual assistance if necessary.

Backup Action:

Inform Marine Rescue NSW and maintain visual monitoring until the vessel is clear. Record the time, conditions, and vessel details.

Preventative Measures:

Ensure lease areas are clearly marked with compliant buoys and signage as per NSW Maritime guidelines. Publicly disseminate information about infrastructure locations through appropriate channels.

12.3 Marine Park or Government Compliance Inspections

Immediate Response:

Notify all Auskelp vessels and shore personnel of active inspections. Cooperate fully with agency representatives and provide requested documentation (licenses, monitoring data, maintenance logs).

Backup Action:

If any discrepancies arise, escalate the matter to Auskelp's compliance officer or designated liaison. Maintain professional conduct and secure copies of any notices or inspection reports.

Preventative Measures:

Schedule internal audits ahead of anticipated inspections. Keep hard and digital copies of all regulatory documentation accessible both onboard and at base facilities.

12.4 Evacuation Coordination with Rescue or Emergency Agencies

Immediate Response:

Follow vessel evacuation protocol: issue mayday if required, deploy EPIRBs, activate life rafts, and coordinate via VHF with NSW Water Police or Marine Rescue.

Backup Action:

If land-based staff or hatchery teams are involved (e.g., bushfire or flood), follow property evacuation orders from NSW RFS or SES. Maintain a staff contact tree and evacuation muster point.

Preventative Measures:

Pre-register facilities with emergency services, including GPS coordinates and access instructions. Conduct drills at both marine and land-based locations and include Marine Rescue in scenario training exercises.

Classification: Commercial in Confidence

Restrictions: Internal Use Only

Copyright © Auskelp 2025

Email: info@auskelp.net

Website: www.auskelp.net

