OFFICE OF THE GOVERNOR
STATE OF HAWAI'I

PROCLAMATION
RELATING TO INVASIVE MANJANO ANEMONE IN KĀNE'OHE BAY

By the authority vested in me by the Constitution and laws of the State of Hawai'i, in order to provide relief from irreparable harm to the environment, I, JOSH GREEN, M.D., Governor of the State of Hawai'i, hereby determine, designate, and proclaim as follows:

WHEREAS, pursuant to chapter 127A, Hawaii Revised Statutes (HRS), emergency powers are conferred on the Governor of the State of Hawai'i to respond to disasters or emergencies, to protect public health, safety, and welfare, and to protect the environment of the State; and

WHEREAS, coral reef ecosystems are a component of the environment of the State and provide critical ecological, cultural, and economic benefits to the people of Hawai'i, including supporting fisheries, shoreline protection, biodiversity, cultural practices, and recreation; and

WHEREAS, the Manjano anemone (*Anemonia manjano*) is a rapidly spreading, non-native marine invertebrate that has become established on an isolated patch of reef, identified as Reef 8 (Attachment 1), in Kāne'ohe Bay and in Wai Momi of Pu'uloa (Pearl Harbor); and

WHEREAS, *Anemonia manjano* is known to aggressively overgrow and smother coral colonies and other benthic organisms, resulting in degradation of reef ecosystems and loss of native biodiversity; and

WHEREAS, the spread of *Anemonia manjano* threatens additional reef habitats, native species, and marine ecosystems of the State; and

WHEREAS, the waters of Wai Momi of Pu'uloa (Pearl Harbor) are under the control and jurisdiction of the United States Department of the Navy as a defensive sea area, pursuant to Executive Order 8143 signed by President Franklin D. Roosevelt on May 26, 1939, and are therefore outside the jurisdiction of the State government, and are therefore not covered by this Proclamation; and

WHEREAS, Reef 8 in Kāne'ohe Bay is within the jurisdiction of the State and the Department of Land and Natural Resources, Division of Aquatic Resources, has identified a method to rapidly remove *Anemonia manjano*; and

WHEREAS, as *Anemonia manjano* is currently confined to a single patch of reef in Kāne'ohe Bay, the Department of Land and Natural Resources, Division of Aquatic Resources, has determined that its eradication is feasible if rapid response actions are implemented before it spreads to additional reefs within Kāne'ohe Bay or elsewhere in the State; and

WHEREAS, the Legislature has acknowledged, in Act 104, 2025 Session Laws of Hawaii, which was signed into law on June 27, 2025, the devastation that *Anemonia manjano* can cause to coral reefs and marine ecosystems in Kāne'ohe Bay and appropriated funds to the Department of Land and Natural Resources to support removing this anemone from Kāne'ohe Bay; and

WHEREAS, the Department of Land and Natural Resources, Division of Aquatic Resources, has monitored *Anemonia manjano* at Reef 8 in Kāne'ohe Bay since October 2024 and documented a rapid expansion of the affected area to more than 11,970 square feet as of January 2026; and

WHEREAS, the Department of Land and Natural Resources, Division of Aquatic Resources, has taken efforts to control *Anemonia manjano* in Kāne'ohe Bay, including smothering with epoxy since July 2020, but such efforts have not been effective; and

WHEREAS, failure to take immediate action may allow *Anemonia manjano* to spread to additional reef habitats, resulting in significant ecological damage, loss of coral reef function, and substantially greater long-term management costs; and

WHEREAS, rapid response and eradication are feasible when an invasive marine organism is contained to a limited area, but delays materially increase the risk of spread and long-term environmental damage; and

WHEREAS, in the case of *Anemonia manjano*, it spreads due to rapid asexual reproduction and fragmentation, which can result in exponential expansion of its infestation, and delay will risk the opportunity for effective eradication; and

WHEREAS, the Department of Land and Natural Resources, Division of Aquatic Resources, seeks to immediately remove all *Anemonia manjano* from Reef 8 in Kāne'ohe Bay, as delineated in Attachment 1 ("Treatment Area"); and

WHEREAS, the Department of Land and Natural Resources, Division of Aquatic Resources, proposes to eradicate *Anemonia manjano* at the Treatment Area using two methods: (1) primarily using temporary containment barriers, combined with the controlled and temporary application of chlorine, followed by a secondary application of chemical compounds to neutralize the chlorine prior to removal of the containment barriers ("Primary Method"), and (2) secondarily using targeted chlorinated paste to treat small, discrete colonies, where the containment barriers are not practicable or necessary due to reef complexity or limited colony size ("Satellite Colony Treatment Method") (cumulatively, the "Emergency Response"); and

WHEREAS, the Emergency Response will occur only at the Treatment Area within physically contained areas beneath sealed tarps, with continuous monitoring and neutralization of residual oxidants prior to tarp removal to prevent release of chlorine or reaction byproducts into surrounding waters; and

WHEREAS, chemical treatment conducted beneath containment barriers has been successfully used in prior marine invasive species eradication efforts, including treatments targeting invasive algae and invertebrates, and represents the most effective available method to eradicate localized infestations of *Anemonia manjano*; and

WHEREAS, for the treatment of satellite colonies, the chlorinated paste will be applied directly to targeted *Anemonia manjano* colonies by trained divers and a clay cap would be placed over the paste, which acts as a seal to prevent dispersal and ensure the treatment remains localized to the targeted organism; and

WHEREAS, the Satellite Colony Treatment Method is consistent with methods successfully used in other invasive aquatic invertebrates, including work at Palmyra Atoll; and

WHEREAS, Chapter 342D, HRS, provides a legal framework for prosecuting discharges of water pollutants to State waters; and

WHEREAS, Chapter 342D, HRS, does not provide the type of rapid response required to prevent further spread of *Anemonia manjano*; and

WHEREAS, the United States Army Corps of Engineers has permitted the in-water Emergency Response and associated activities under Department of the Army Permit File No. POH-2025-00078; and

WHEREAS, the Department of Land and Natural Resources, Office of Conservation and Coastal Lands has issued a Site Plan Approval, SPA OA 26-04, and determined that the Emergency Response may be exempt from a conservation district use permit, subject to specific conditions; and

WHEREAS, the Department of Land and Natural Resources shall document and maintain records of monitoring activities, treatment efficacy, and any observed impacts to native species, and may provide a summary of outcomes to the Board of Land and Natural Resources; and

WHEREAS, to prevent the further spread of *Anemonia manjano* and the subsequent environmental harm it will cause, it is necessary to provide time-limited emergency authority and narrowly tailored regulatory relief, with strict operational controls, monitoring, chemical neutralization, and reporting requirements; and

WHEREAS, the current threat to the health, safety, and welfare of the State's environment and Kāne'ohe Bay caused by the rapid spread of *Anemonia manjano* constitutes an emergency under sections 127A-1 and 127A-14, HRS, and warrants preemptive and protective actions;

NOW, THEREFORE, I, JOSH GREEN, M.D., Governor of the State of Hawai'i, hereby determine that an emergency contemplated by section 127A-14, HRS, exists at Kāne'ōhe Bay, on the Island of O'ahu, State of Hawai'i, and do hereby authorize and invoke the following emergency provisions:

I. **Invocation of Laws**

Pursuant to subsection 127A-12(b), HRS, I hereby direct all state agencies and officers to cooperate with and extend services, materials, and facilities as may be required to assist in all efforts to address the objectives of this Proclamation.

II. **Emergency Response Authorized**

The suspension of laws and emergency response authorized is strictly limited to the Department of Land and Natural Resources, Division of Aquatic Resources'

Emergency Response relating to *Anemonia manjano* at Reef 8, Kāne'ōhe Bay, O'ahu, as described herein.

A. Area and Duration of Emergency Response. This Proclamation applies only to the delineated Treatment Area. This Proclamation shall be effective for sixty (60) days from the date of signature, unless terminated, superseded, or extended by separate Proclamation.

B. Authorized Emergency Response. The Department of Land and Natural Resources, Division of Aquatic Resources, is authorized to plan and implement rapid response eradication actions at the Treatment Area, including the Primary Method and the Satellite Colony Treatment Method. The Primary Method involves the temporary installation of containment tarps, controlled application of chlorine-based treatment compounds within contained treatment areas, the neutralization of chlorine-based treatment compounds with sodium thiosulfate prior to tarp removal, and post-treatment monitoring. If deemed necessary while responding to the emergency, the Satellite Colony Treatment Method involves the application of chlorinated paste in a targeted manner to target small, discrete satellite colonies of *Anemonia manjano* when the containment tarp method is not practical or necessary due to reef complexity or limited colony size. The chlorinated paste consists of a biodegradable base mixture (glycerol, carboxymethylcellulose, calcium carbonate, sodium hydroxide, and water) and chlorine is added immediately prior to application.

C. Department of Health Coordination. The Department of Land and Natural Resources, Division of Aquatic Resources, shall coordinate with the Department of Health, Clean Water Branch, on operational safeguards, monitoring, discharge prevention, neutralization verification, and reporting.

D. Interagency Notification. The Department of Land and Natural Resources, Division of Aquatic Resources, shall notify and coordinate as appropriate with relevant federal partners and resource agencies (including the United States Army Corps of Engineers and the National Oceanic and Atmospheric

Administration) about its in-water work, best management practices, and protected resources considerations.

E. Conditions and Limitations to Ensure Public Health and Environmental Protection. The Department of Land and Natural Resources, Division of Aquatic Resources, shall adhere to the following conditions and limitations to ensure public health and environmental protection during the Emergency Response:

i. Containment. Treatment chemicals shall only be introduced within a sealed containment system designed to prevent off-site migration. If the Satellite Colony Treatment Method is used, the chlorinated paste will be contained beneath a clay cap to minimize disturbance to the surrounding coral substrate and prevent off-site migration.

ii. Monitoring. A monitoring plan (Attachment 2) that includes: perimeter checks of containment integrity; real-time or frequent oxidant/residual monitoring at containment boundaries; field logs; and incident reporting protocols.

iii. Neutralization. The containment tarps shall not be removed until monitoring verifies that residual oxidant levels within the containment zone have been neutralized in accordance with the monitoring plan (Attachment 2) and any applicable criteria imposed by the Department of Health. The clay caps and paste will be removed after 24-48 hours of treatment.

iv. Contingencies. There shall be immediate response measures (Attachment 3) for any suspected containment loss, including suspension of chemical application, on-site neutralization, and notification to the Department of Health, Clean Water Branch.

III. **Suspension of Laws**

I suspend the following provisions of law under section 127A-13(a)(3) to the extent that the law impedes or tends to impede or be detrimental to the expeditious and efficient execution of, or to conflict with, emergency functions, including laws which by this chapter specifically are made applicable to emergency personnel:

Chapter 103D, HRS, **Hawaii public procurement code**, to the extent necessary to respond to the emergency;

Section 127A-30, HRS, **rental or sale of essential commodities during a state of emergency; prohibition against prince increases**, as it related to this Proclamation and emergency. The invocations and suspensions of section 127A-30, HRS, contained in any other emergency proclamations are not affected by this Proclamation;

Chapter 128D, HRS, **environmental response law**, and its implementing administrative rules in Hawaii Administrative Rules (HAR) chapter 11-451, to the extent necessary to respond to the emergency;

Chapter 171, HRS, **public lands, management and disposition of**, and its implementing administrative rules in HAR chapter 13-221, to the extent necessary to respond to the emergency;

Chapter 183C, HRS, **conservation district**, and its implementing administrative rules in HAR chapter 13-5, to the extent necessary to respond to the emergency;

Chapter 187A, HRS, **aquatic resources**, and its implementing administrative rules in HAR chapters 13-83 through 13-95, to the extent necessary to respond to the emergency;

Chapter 194, HRS, **invasive species council**, and its implementing administrative rules in HAR chapter 13-326, to the extent necessary to respond to the emergency;

Chapter 195D, HRS, **conservation of aquatic life, wildlife, and land plants**, and its implementing administrative rules in HAR chapter 13-124, to the extent necessary to respond to the emergency;

Chapter 200, HRS, **ocean recreation and coastal areas programs**, and its implementing administrative rules in HAR chapters 13-230 through 13-257, to the extent necessary to respond to the emergency;

Chapter 200D, HRS, **Kaneohe Bay regional council**, to the extent necessary to respond to the emergency;

Chapter 205A, HRS, **coastal zone management**, and its implementing administrative rules in HAR chapter 13-5, to the extent necessary to respond to the emergency;

Chapter 342D, HRS, **water pollution**, and its implementing administrative rules in HAR chapters 11-53, 11-54, and 11-55, to the extent necessary to respond to this emergency;

Chapter 343, HRS, **environmental impact statements**, and its implementing administrative rules in HAR chapter 11-200.1, to the extent that compliance with this chapter requires additional time detrimental to the expeditious and efficient execution of emergency actions;

IV. **Severability**

If any provision of this Proclamation is rendered or declared illegal for any reason, or is invalid or unenforceable, such provision shall be modified or deleted, and the remainder of this Proclamation and the application of such provision to other circumstances shall not be affected thereby but shall be enforced to the greatest extent permitted by applicable law.

V. **Enforcement**

No provision of this Proclamation, or any rule or regulation hereunder, shall be construed as authorizing any private right of action to enforce any requirement of this Proclamation, or of any rule or regulation. Unless the Governor or his designee issues an express order to a non-judicial public officer, no provision of this Proclamation shall be construed as imposing any ministerial duty upon any non-judicial public officer and shall not bind the officer to any specific course of action or planning in response to the emergency or interfere with the officer's authority to utilize his or her discretion.

I FURTHER DECLARE that this Proclamation is not intended to create, and does not create, any rights or benefits, whether substantive or procedural, or enforceable at law or in equity, against the State of Hawai'i, the counties of the State, or any State or county agencies, departments, entities, officers, employees, or any other person.

I FURTHER DECLARE that the disaster emergency relief period shall commence immediately and continue through May 23, 2026, unless terminated or superseded by separate proclamation, whichever shall occur first. Following the

termination of this disaster emergency relief period, any contracts, agreements, procurements, programs, or employment of personnel entered into, started, amended, or continued by reason of the provisions of the Proclamation relating to this emergency shall continue in full force and effect to the extent allowed by law.

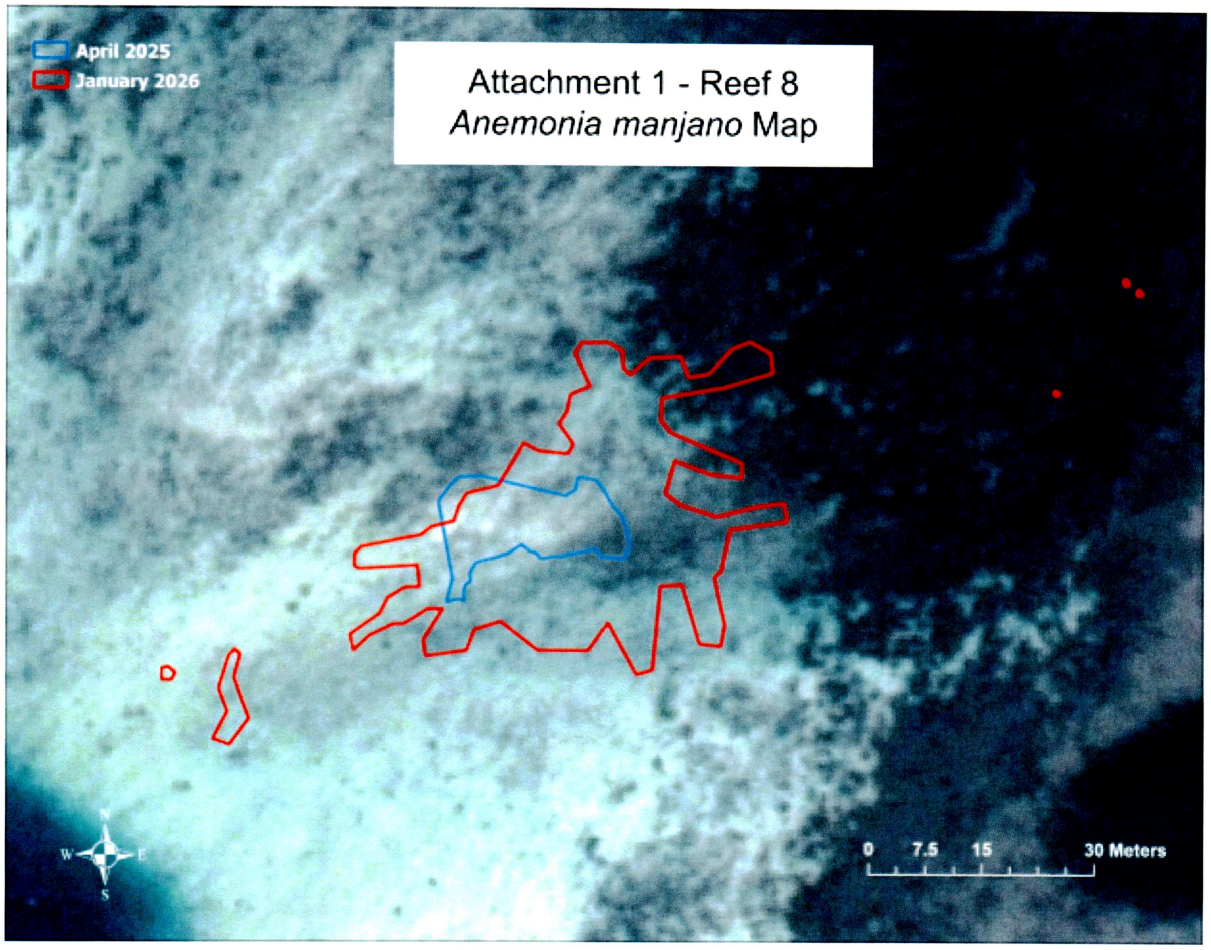
DONE at the Capitol in Honolulu, State of Hawai'i, this 24th day of March, 2026.

JOSH GREEN, M.D.,
Governor of Hawai'i

APPROVED:

Anne E. Lopez

ANNE E. LOPEZ,
Attorney General
State of Hawai'i


April 2025
January 2026
Attachment 1 - Reef 8
Anemonia manjano Map
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15
30 Meters

Attachment 2- Monitoring Plan for *Anemonia manjano* Emergency Response

1. Purpose

This plan establishes monitoring and response procedures to ensure the chlorine treatment area remains sealed under the tarp and does not adversely impact the surrounding reef systems. The treatment plan incorporates multiple operational safeguards to minimize risk and ensure a rapid response in the unlikely event of a leak, a personnel emergency, or an environmental concern. The treatment is designed as a fully contained system with no intended discharge of chlorine or reaction byproducts into surrounding waters. This monitoring framework is designed to provide multiple, redundant layers of detection and response to ensure that any potential containment failure is identified and addressed immediately."

2. Monitoring Objectives

Monitoring will be conducted continuously through visual observation, with water quality measurements collected at regular intervals (every 4 hours or more frequently if conditions warrant). The intended outcomes for monitoring activities conducted during treatment operations.

- Confirm the integrity of the sealed tarp system.
- Any detectable oxidant concentration above baseline conditions at the containment boundary will trigger immediate response actions, including inspection of containment integrity and, if necessary, application of sodium thiosulfate to neutralize residual oxidants.
- Rapidly respond to exceedances or containment failures.
- Maintain complete field records and incident reporting.

3. Monitoring Methods

This section outlines the methods to be used and their frequency. Monitoring will be conducted through a combination of visual inspections and water-quality measurements. Due to safety and operational constraints, in-field monitoring during treatment will be limited; water quality measurements will be taken using kayaks and chlorine monitors. All monitoring efforts are designed to minimize disturbance to the tarped containment system while ensuring adequate surveillance of the tarp perimeter. All treatment activities occur within a sealed containment system designed to prevent exchange with surrounding waters.

3.1 Pre-Treatment Verification

Before initiating chlorine treatment, field staff will verify that all containment and monitoring systems are properly in place. This includes confirming that:

- The tarp is partially deployed and sealed, with edges secured using sandbags or equivalent weighting.
- No visible gaps, openings, or potential leak pathways are present.
- Monitoring equipment is operational and calibrated.
- Baseline water quality conditions have been established at containment boundaries and down-current monitoring locations.

Treatment will not begin until containment integrity and monitoring readiness are confirmed.

3.2 Visual Inspections

The tarp containment system, with a focus on the perimeter, will be continuously monitored for 24 hours throughout the treatment. Monitoring activities for the tarp containment system include:

- Kayaking over the entire tarped area once every 4 hours to ensure the sandbags are in place, the tarp is secure, and that there are no tears or holes in the tarp.
    - Increased attention will be given to the down-current borders, where leakage is more likely to occur.
- 24-hour monitoring of the treatment area from a barge anchored outside of the project area in case the tarp is freed from the substrate. Night operations will use high-beam LED lights to illuminate the entire treatment area. Surface visual cues necessitating a response include:
    - Escaping bubbles, plumes, or turbidity.
    - Water discoloration or sheen outside of the treatment area.
    - Movement, lifting, or displacement of the tarp edges or sandbags.
    - Changes in surface water conditions that may indicate leakage.
- Observations will be documented and timestamped with water quality measurements.

3.3 Water Quality Monitoring

Water quality will be continuously monitored for 24 hours during the treatment. Sampling will provide oxidant monitoring at containment boundaries. Water quality monitoring methods include:

- Water samples will be collected at least once every 4 hours at containment boundaries and at a minimum of 20 meters down-current, with increased frequency if any anomalies are detected.
- Collecting and testing water samples once every 4 hours from areas directly next to the sealed tarps, as well as 20m down-current to the tarp containment system.

Down-current sampling locations will be determined based on prevailing current direction at the time of treatment.

3.4 Protected Species Monitoring

Monitoring for protected species will occur continuously for 24 hours during the treatment. Monitoring for protected species will include:

- Staff will continuously monitor for protected species from the support vessel, utilizing binoculars, when necessary, for 24 hours throughout the treatment.
- Protected species sightings that occur within 50m of the treatment area will be logged. If protected species exhibit signs of distress, treatment operations will be paused, and containment integrity and water quality will be immediately assessed. Signs of distress will be recorded and reported to the Division of Aquatic Resources Protected Species Program (DAR PSP) and the National Oceanic and Atmospheric Administration National Marine Fisheries Service (NOAA NMFS).

4. Response Actions

The following conditions will initiate an immediate response:

- Detection of residual oxidants above baseline levels at the containment perimeter.
- Detection of measurable oxidant levels at the containment perimeter or down-current monitoring locations.
- Visible evidence of leakage, including plumes, discoloration, turbidity, or escaping bubbles.
- Loss of tarp seal integrity, including gaps, lifting, or displacement of sandbags.
- Structural damage to the tarp, including tears, punctures, or holes.
- Significant change in environmental conditions, including severe weather, increased wind and current shifts, or wave action that might compromise containment.
- Failure or malfunction of response equipment that may interfere with or limit the ability to detect leakages.

4.1 Exceeding Water Quality Parameters

The following procedures will be in place for rapid response if water quality parameters are exceeded:

1. Expand water quality monitoring to areas outside the detected leakage to delineate the extent of the affected area.
2. Inspect tarp area and perimeter for potential gaps, holes, displacements, plumes, bubbles, or discoloration.
   If appropriate, deploy neutralizing sodium thiosulfate to reduce concentrations.
3. Continue water quality monitoring until levels return to baseline conditions.
4. Document all observations and actions taken.
5. Report the incident to the proper authorities.

4.2 Compromised Tarp Containment

The following procedures will be in place for a rapid response if the tarp containment system is compromised:

1. Conduct a kayak-based assessment over the tarped area and determine the location, nature, and severity of the compromise.
2. Repair the compromised tarp by either patching a hole with marine-grade patch kits and/or reinforcing with sandbags as needed.
3. If immediate repair is not feasible and leakage persists:
    a. Consider neutralizing the area under and around the tarp with sodium thiosulfate to minimize environmental impact.
4. Increase monitoring frequency, especially in down-current monitoring areas, until containment is restored and water quality returns to baseline.
5. Document all observations and actions taken to report the incident.

4.3 Adverse Environmental Conditions

The following procedures will be in place for a rapid response should adverse conditions occur:

1. Conduct a kayak-based assessment over the tarped area and ensure the perimeter is secured.
2. Increase monitoring frequency, especially in down-current monitoring areas.
3. Monitor weather online and on the NOAA VHF Radio Channel.
4. If weather conditions become too severe to monitor the treatment area, staff will analyze the adverse conditions and either:
    a. Briefly return to shore to wait out thunder/ lightning and return to monitoring as soon as conditions are deemed safe again.
    b. Consider neutralizing chlorine within the containment barrier before returning to shore for an extended period.

4.4 Monitoring Equipment Malfunction

The following procedures will be in place in case any monitoring equipment malfunctions:

1. Notify DAR staff to bring additional monitoring equipment and replacements.
2. Troubleshoot monitoring equipment and attempt to fix the malfunction.
3. Increase visual monitoring frequency.
4. Return to regular monitoring as soon as the malfunction has been resolved.

5. Documentation

All observations, tarp conditions, and water quality data will be documented using field logs. Each type of monitoring will have a separate field log that will include the following information:

- Date and time of day.
- Weather conditions.
- Type of Monitoring.
- Staff members on duty.
- Perimeter areas checked.
- Presence/absence of plumes, bubbles, discolored water, gaps, holes, or any other visual abnormality (if applicable).

- Protected species in the area, distance from the treatment area, and time spent in the treatment area (if applicable).
- Water quality levels (if applicable).
- Monitoring equipment malfunctions (if applicable).

6. Operational Safety and Emergency Response

In the event of an emergency, DAR staff will be prepared with the appropriate emergency equipment and contact information to manage the incident.

6.1 Safety Procedures

The following procedures will be in place to aid in case of emergency:

- Have a dedicated support vessel on standby for immediate mobilization.
- Ensure First-Aid equipment and CPR/First Aid-trained staff are always on-site during in-water operations.
- Ensure field staff have adequate experience with marine operations and aquatic invasive species response.
- File a standardized DAR field plan for all in-water operations to ensure location tracking and operational accountability.

6.2 Medical Emergencies

The following procedures will be in place if a staff member has a medical emergency during treatment operations:

1. Call 911 immediately.
2. Perform CPR/ First Aid.
3. Coordinate transportation with EMS.
    a. The nearest medical facility is Adventist Health Castle.
    b. The support vessel can transport injured staff from the field to the nearest dock (He'eia SBH or Lilipuna Pier)
4. Report the emergency to DAR supervisors and other appropriate authorities.
    a. In the event of a pesticide or chemical exposure incident, the following resources are available:
        i. Hawai'i Poison Control Center: 1-800-222-1222

7. Incident Reporting

Should an incident occur, it will be documented and reported to the proper authorities immediately. Incidents involving protected species will be reported to DAR PSP and NOAA NMFS. Any pesticide or chemical exposure incident will be reported to HDOH, HERR, and NRC. Incident reporting will include the following information:

- Type of incident (i.e., compromised tarp, exceeding water quality parameters, adverse weather conditions, protected species in distress).
- Date and time of incident.
- Personnel involved.
- Mitigations taken to resolve or reduce adverse effects.
- Time of incident resolution (i.e., compromised tarp is secured, water quality parameters return to baseline, weather conditions return to normal, protected species no longer in distress).
- Preparations and adjustments were made to reduce the chance of a recurring incident.

7.1 Reporting Chemical Release Incidents

Chlorine handling and spill response procedures follow the United States Environmental Protection Agency's guidance for pesticide incident response.

- In the event of a pesticide or chemical exposure incident, the following resources should be used to assist with treatment and reporting:
    a. Hawai'i Poison Control Center: 1-800-222-1222
    b. Hawai'i Department of Health Hazard Evaluation and Emergency Response (HEER) Office: 808-586-4249
    c. National Response Center (chemical release reporting): 1-800-424-8802

Attachment 3- Safety and Incident Response Plan for *Anemonia manjano* Emergency Response

This plan applies to all chemical treatment operations conducted within the defined Treatment Area at Reef 8, Kāne'ohe Bay. The treatment plan incorporates multiple operational safeguards to minimize risk and ensure a rapid response in the unlikely event of a leak, a personnel emergency, or an environmental concern. All treatment activities are conducted within a sealed containment system with no intended discharge of chlorine or reaction byproducts into surrounding waters.

Scope of Application

This plan applies to all chemical treatment operations conducted by the Division of Aquatic Resources within the defined Treatment Area at Reef 8 in Kāne'ohe Bay, as described in the Emergency Proclamation and associated attachments.

Pre-Operational Safety Check

Before initiating treatment, staff will verify that all safety equipment, monitoring tools, communication systems, and response materials (including neutralizing agents and repair materials) are present, functional, and readily accessible.

Leak detection and response

- **Perimeter monitoring:** Residual chlorine will be measured in receiving water around the tarps (containment barriers) throughout treatment to detect any oxidant above baseline conditions that may indicate leakage.
- **Immediate resealing:** If a leak or edge lift is detected, staff will immediately assess and reseal the containment barrier using surface-based adjustments (e.g., repositioning the skirt, reinforcing edges with sandbags).
- **Additional weighting:** Extra sandbags will be kept on hand to rapidly reinforce edges or seal small flow paths caused by reef rugosity or shifting currents.
- **Chemical neutralization:** If monitoring indicates chlorine escaping beyond containment, sodium thiosulfate will be applied immediately to neutralize oxidants and minimize any potential environmental impact.
- Any confirmed or suspected detection of oxidants above baseline conditions outside the containment area will trigger immediate response actions, including inspection, resealing, and neutralization as appropriate.

Environmental oversight

- Project staff will remain continuously present on-site during operations.
- Personnel will actively monitor for recreational users, vessels, and protected marine species, pausing operations if necessary to avoid disturbance.
- Monitoring ensures treatment remains confined to the defined footprint with monitoring and safeguards in place to minimize the potential for off-target effects.
- Operations will be paused if conditions arise that could compromise containment integrity, including excessive current, wave action, or vessel interference.

- Field leads have the authority to immediately pause or suspend operations if conditions arise that could compromise containment integrity, personnel safety, or environmental protection, including but not limited to adverse weather, equipment malfunction, or unexpected site conditions.

Operational safety and emergency readiness

- A **dedicated support vessel** will remain on standby and ready to mobilize immediately if needed.
- **First aid supplies and trained personnel** will be present on-site during in-water operations.
- Field staff conducting the work are **experienced in marine operations and aquatic invasive species response**.
- All in-water operations are conducted under a **field standard DAR float plan** to ensure location tracking and operational accountability.

Medical and emergency response

- The nearest medical facility to the treatment area is Adventist Health Castle.
- In the event of a medical emergency, 911 will be contacted immediately, and transport coordinated via the support vessel if needed.
- Chlorine handling and spill response procedures follow guidance from the United States Environmental Protection Agency for pesticide incident response.
- In the event of a pesticide or chemical exposure incident, the following resources are available:
    - **Hawai'i Poison Control Center:** 1-800-222-1222
    - **Hawai'i Department of Health Hazard Evaluation and Emergency Response (HEER) Office:** 808-586-4249
    - **National Response Center (chemical release reporting):** 1-800-424-8802

Overall risk management approach

- Continuous monitoring, rapid resealing capability, and on-site neutralization capacity ensure that any unexpected release can be addressed immediately.
- These procedures align with standard pesticide emergency response recommendations and provide multiple layers of operational and environmental protection during treatment activities.
- All incidents will be documented and reported in accordance with the Monitoring Plan (Attachment 2).

These measures provide multiple, redundant layers of containment, monitoring, and response to ensure rapid detection and mitigation of any unexpected release.