Aquarium Animal Care

Risk Assessment

CONTACT DETAILS

IN AN EMERGENCY CALL:

Lead:	**Primary Contact:**
Participants:	

SERVICE/ACTIVITY DETAILS

Purpose:	**Date:**

Benefit: Educates visitors about ocean conservation and the importance of marine life. | Ensures marine species receive proper care in a controlled environment. | Facilitates breeding programs to prevent the decline of endangered marine species. | Promotes responsible aquarium management and habitat sustainability. | Reduces environmental impact by rescuing and rehabilitating injured marine animals. | Supports scientific research on aquatic species and their habitats.

HAZARDS

HAZARD	RISK	RISK BENEFIT	MEASURE	RISK TO	RISK LEVEL
Diving hazards for staff	Drowning, decompression sickness, entrapment	Staff diving enables direct aquarium maintenance and interaction with species, enhancing care quality.	Require dive certifications, enforce buddy systems, and conduct safety briefings before all underwater tasks. Maintain emergency retrieval plans and safety gear. **(ALL)**	Staff	Before Measure: **High** After Measure: **Med**
Hazardous marine life handling	Bites, stings, envenomation, injury	Handling hazardous species allows public education and professional training in safe marine conservation.	Train staff on proper handling techniques and provide PPE such as gloves and shields. Use secure transfer methods for venomous or aggressive species. **(ALL)**	Staff	Before Measure: **High** After Measure: **Med**

HAZARD	RISK	RISK BENEFIT	MEASURE	RISK TO	RISK LEVEL
Inadequate staff training	Improper handling, increased accidents, ineffective emergency response	Well-trained staff provide high-quality care, support conservation efforts, and contribute to marine science research.	Implement a structured training program covering animal care, emergency response, and safety procedures. Conduct regular refresher courses and competency assessments for all staff. **(ALL)**	Staff, Animals, Visitors	Before Measure: **High** After Measure: **Med**
Allergic reactions	Skin irritation, respiratory distress, anaphylaxis	Handling live marine animals exposes staff to new species, enabling them to contribute to research and species preservation.	Identify common allergens in food, chemicals, and animal proteins. Provide PPE such as gloves and masks, and establish emergency protocols for treating allergic reactions. **(ALL)**	Staff, Visitors	Before Measure: **Med** After Measure: **Low**
Animal escapes	Injury, property damage, loss of animals	Keeping live aquatic animals in captivity allows people to study their behavior up close, educate the public, and support conservation breeding programs.	Conduct daily inspections of enclosures to ensure structural integrity. Install escape-proof barriers and follow strict animal handling procedures to minimize risks. Train staff on emergency response. **(ALL)**	Staff, Visitors, Animals	Before Measure: **Med** After Measure: **Low**
Animal welfare concerns	Stress, poor health, reduced lifespan	Ensuring high standards of animal welfare promotes ethical practices and enhances the reputation of the institution.	Develop and implement a comprehensive animal welfare assessment program, including regular behavioral observations, environmental enrichment, and health evaluations. Train staff to recognize signs of stress or discomfort in animals. **(ALL)**	Animals	Before Measure: **Med** After Measure: **Low**
Biofouling in filtration systems	Reduced water quality, clogged systems, increased disease risk	Managing natural biofouling enables realistic habitat simulation, ensuring healthy ecosystems.	Implement routine filter cleaning and conduct regular water flow assessments. Use natural algae control methods where appropriate. **(ALL)**	Animals, Staff	Before Measure: **Med** After Measure: **Low**

HAZARD	RISK	RISK BENEFIT	MEASURE	RISK TO	RISK LEVEL
Chemical exposure	Skin irritation, respiratory issues, poisoning	Chemical treatments disinfect water, prevent disease outbreaks, and maintain clean enclosures, which are crucial for animal health and longevity.	Store chemicals in a locked, ventilated area with clear labeling. Train staff on safe handling, use appropriate PPE, and provide emergency spill response kits, including eye wash stations. **(ALL)**	Staff, Animals	Before Measure: **High** After Measure: **Low**
Chemical hazards to visitors	Skin irritation, respiratory distress, accidental ingestion	Protecting visitors from chemical exposure ensures public safety and maintains the institution's reputation.	Ensure that all chemicals are stored securely and are inaccessible to visitors. Clearly label areas where chemicals are used and provide appropriate signage to inform and direct the public. **(ALL)**	Visitors	Before Measure: **Med** After Measure: **Low**
Contamination of food supplies	Food poisoning, disease transmission, malnutrition	Ensuring the integrity of food supplies prevents health issues in animals and supports overall well-being.	Source food from reputable suppliers and implement strict storage protocols to prevent spoilage or contamination. Conduct regular inspections and maintain records of food quality and inventory. **(ALL)**	Animals	Before Measure: **High** After Measure: **Low**
Electrical hazards	Electrocution, fire, injury, death	Using electricity enables the maintenance of life-support systems, ensuring the survival of aquatic species in captivity and allowing controlled study of marine ecosystems.	Inspect electrical systems weekly for damage or corrosion. Ensure all wiring is properly grounded and waterproofed. Install GFCIs in all aquatic areas and maintain emergency backup power for life-support systems. **(ALL)**	Staff, Visitors, Animals	Before Measure: **High** After Measure: **Low**
Exposure to harmful UV radiation	Skin damage, eye damage, immune suppression	Protecting animals and staff from harmful UV radiation prevents health issues and ensures a safe environment.	Install UV-filtering materials where necessary and monitor UV levels in enclosures. Provide shaded areas and educate staff on the risks of UV exposure to both animals and humans. **(ALL)**	Staff, Animals	Before Measure: **Med** After Measure: **Low**

HAZARD	RISK	RISK BENEFIT	MEASURE	RISK TO	RISK LEVEL
Extreme weather impacts	Structural damage, loss of life, power failures	Public aquariums provide stable shelter and care for marine life that might be endangered in the wild.	Maintain emergency power systems, reinforce enclosures, and establish disaster response plans. Conduct annual drills for weather-related emergencies. **(ALL)**	Staff, Animals	Before Measure: **High** After Measure: **Low**
Fire hazards	Burns, smoke inhalation, structural damage, loss of life	The use of electrical and climate-control systems allows for stable environments for aquatic species that could not otherwise survive in local climates.	Install smoke detectors, fire extinguishers, and suppression systems. Conduct quarterly fire drills and ensure staff are trained on evacuation procedures for both people and animals. **(ALL)**	Staff, Visitors, Animals	Before Measure: **High** After Measure: **Low**
Inadequate climate control	Temperature stress, dehydration, respiratory issues	Maintaining optimal climate conditions supports animal health and comfort, promoting natural behaviors and successful breeding.	Regularly maintain and calibrate HVAC systems to ensure stable temperature and humidity levels appropriate for each species. Install backup systems and monitor environmental parameters continuously. **(ALL)**	Animals	Before Measure: **High** After Measure: **Low**
Inadequate emergency preparedness	Delayed response, increased injuries, loss of animals	Running an aquarium enables unique conservation breeding programs that support species survival.	Develop written emergency response plans for power failures, natural disasters, and medical crises. Conduct regular staff training and emergency drills for all situations. **(ALL)**	Staff, Animals, Visitors	Before Measure: **High** After Measure: **Low**
Inadequate enclosure maintenance	Structural failure, injury, animal escape	Keeping animals in enclosures ensures their safety while allowing visitors to observe and learn about them.	Implement scheduled inspections of enclosures, filtration systems, and habitat conditions. Document and address maintenance issues immediately to ensure structural integrity. **(ALL)**	Staff, Visitors, Animals	Before Measure: **High** After Measure: **Low**

HAZARD	RISK	RISK BENEFIT	MEASURE	RISK TO	RISK LEVEL
Inadequate lighting	Stress in animals, disrupted behaviors, impaired vision	Artificial lighting enables aquariums to replicate day-night cycles for species that require precise environmental conditions.	Install species-appropriate lighting systems and conduct regular assessments to ensure proper intensity and spectrum. Replace bulbs and fixtures as needed. **(ALL)**	Staff, Animals	Before Measure: **Med** After Measure: **Low**
Inadequate pest control	Food contamination, disease spread, damage to enclosures	Maintaining an aquarium with live food sources attracts natural predators, supporting authentic feeding behaviors in marine life.	Implement an integrated pest management program, using non-toxic control methods. Regularly inspect facilities and properly store all food and waste materials. **(ALL)**	Staff, Animals	Before Measure: **Med** After Measure: **Low**
Inadequate record-keeping	Missed treatments, lack of health monitoring, regulatory non-compliance	Maintaining detailed records supports informed decision-making, enhances animal care, and facilitates research and conservation efforts.	Implement a comprehensive record-keeping system for animal health, behavior, and husbandry practices. Train staff on data entry protocols and regularly review records for accuracy and completeness. **(ALL)**	Staff, Animals	Before Measure: **Med** After Measure: **Low**
Inadequate waste management	Environmental contamination, disease outbreaks, foul odors	Managing waste from live animal enclosures allows aquariums to maintain real ecosystems rather than artificial displays.	Establish separate protocols for biological, chemical, and general waste disposal. Train staff on handling procedures and ensure compliance with environmental regulations. **(ALL)**	Staff, Animals, Visitors	Before Measure: **Med** After Measure: **Low**
Invasive species introduction	Ecosystem disruption, species displacement, disease introduction	Preventing the introduction of invasive species protects local ecosystems and maintains ecological balance within the aquarium.	Implement strict protocols for quarantine and health assessments of new animals before introducing them to existing populations. Regularly monitor exhibits for signs of non-native species and educate staff on identification and reporting procedures. **(ALL)**	Animals, Environment	Before Measure: **High** After Measure: **Low**

HAZARD	RISK	RISK BENEFIT	MEASURE	RISK TO	RISK LEVEL
Limited veterinary resources	Delayed treatment, increased mortality, poor animal welfare	Veterinary programs support rare species conservation, helping to prevent extinctions and improve animal welfare.	Develop veterinary partnerships and maintain an in-house care plan. Establish emergency medical protocols and ensure regular health checks for all species. **(ALL)**	Animals	Before Measure: **Med** After Measure: **Low**
Live feeding risks	Injury, aggression, disease transmission	Live feeding allows natural behaviors, helping species retain instincts crucial for reintroduction to the wild.	Use controlled feeding stations and supervise feeding to minimize competition. Train staff on species-specific feeding behaviors and aggression prevention. **(ALL)**	Animals, Staff	Before Measure: **High** After Measure: **Low**
Noise pollution	Stress in animals, hearing damage, visitor discomfort	Operating an aquarium in public spaces exposes people to marine life, fostering appreciation and conservation efforts.	Monitor facility noise levels and install soundproofing where necessary. Establish quiet hours in sensitive areas and train staff to minimize unnecessary noise. **(ALL)**	Staff, Visitors, Animals	Before Measure: **Med** After Measure: **Low**
Nutritional deficiencies in animals	Weakness, disease, decreased reproductive success	Providing balanced nutrition supports animal health, longevity, and natural behaviors, contributing to successful breeding and conservation programs.	Develop species-specific dietary plans in consultation with veterinary nutritionists. Regularly assess the nutritional content of food items, monitor animal health indicators, and adjust diets as necessary. **(ALL)**	Animals	Before Measure: **Med** After Measure: **Low**
Overcrowding of tanks	Increased aggression, disease outbreaks, stress	Keeping animals in controlled spaces allows observation of behaviors rarely seen in the wild.	Follow stocking density guidelines and monitor species interactions. Adjust populations as needed to prevent stress and aggression. **(ALL)**	Animals	Before Measure: **Med** After Measure: **Low**
Oxygen depletion in tanks	Suffocation, increased mortality, behavioral stress	Simulating aquatic environments enables long-term study of marine ecosystems and species adaptation.	Continuously monitor oxygen levels with alarms for sudden drops. Install redundant aeration systems and conduct regular water circulation checks. **(ALL)**	Animals	Before Measure: **High** After Measure: **Low**

HAZARD	RISK	RISK BENEFIT	MEASURE	RISK TO	RISK LEVEL
Poor ergonomics	Musculoskeletal injuries, repetitive strain injuries, chronic pain	The physical demands of animal care enable staff to engage directly in conservation efforts and scientific study, developing valuable expertise.	Provide ergonomic workstations, lifting aids, and staff training on body mechanics. Rotate tasks to prevent repetitive strain injuries and conduct regular ergonomic assessments. **(ALL)**	Staff	Before Measure: **Med** After Measure: **Low**
Public safety during interactive sessions	Bites, scratches, allergic reactions	Facilitating safe public interactions fosters educational experiences and encourages public support for conservation efforts.	Establish clear guidelines and supervision protocols for public interactions with animals. Provide safety briefings to visitors, limit the duration and type of interactions, and ensure the presence of trained staff during these sessions. **(ALL)**	Visitors, Staff	Before Measure: **Med** After Measure: **Low**
Slips, trips, and falls	Bruises, fractures, head injuries	Operating in a wet environment allows for the replication of natural aquatic habitats, ensuring species thrive and behave naturally.	Install non-slip flooring in wet areas, ensure immediate cleanup of spills, and provide proper footwear for staff. Conduct routine inspections to identify and eliminate hazards. **(ALL)**	Staff, Visitors	Before Measure: **Med** After Measure: **Low**
Stress due to habitat changes	Behavioral changes, aggression, reduced immune response	Minimizing stress during habitat changes maintains animal health and promotes the display of natural behaviors, enhancing educational value.	Plan habitat modifications carefully, considering the behavioral and physiological needs of the species. Gradually introduce changes and monitor animal responses, providing refuges or enrichment to mitigate stress. **(ALL)**	Animals	Before Measure: **High** After Measure: **Low**
Transporting animals	Stress, injury, death	Moving animals supports conservation breeding programs, genetic diversity, and population sustainability.	Use temperature-controlled transport containers and minimize travel time. Follow strict handling protocols and conduct veterinary assessments before and after transport. **(ALL)**	Animals, Staff	Before Measure: **High** After Measure: **Low**

HAZARD	RISK	RISK BENEFIT	MEASURE	RISK TO	RISK LEVEL
Water quality deterioration	Illness, reduced oxygen levels, death	Housing diverse aquatic species in controlled environments enables public education, conservation programs, and research opportunities.	Conduct daily water quality tests for pH, ammonia, nitrite, nitrate, and temperature using calibrated meters. Install automated monitoring systems with alerts and maintain a scheduled cleaning routine for filtration systems. **(ALL)**	Staff, Animals	Before Measure: **High** After Measure: **Low**
Zoonotic disease transmission	Infection, illness, allergic reactions	Close human-animal interaction fosters educational experiences, encourages conservation awareness, and supports critical veterinary research.	Require regular handwashing, PPE use, and staff vaccinations where necessary. Conduct health screenings for animals and implement strict quarantine protocols for new arrivals. **(ALL)**	Staff, Visitors	Before Measure: **High** After Measure: **Low**
Unpredicted risks	Illness, injury, death		Continuous risk monitoring conducted by all staff. Any unforeseen hazards must be reported promptly to supervisors or management, with immediate corrective action taken as necessary. **(ALL)**	All	**N/A**

NOTES

Extra notes & activity evaluation:

Completed by	Reviewed/Approved by	Risk Assessment Date	Review Required Date