

## **File No. 16632 Appendix F: Health Screening and Quarantine Protocols for Translocations**

### ***HEALTH SCREENING AND QUARANTINE PROTOCOLS FOR HAWAIIAN MONK SEAL TRANSLOCATION BETWEEN SUBPOPULATIONS***

These protocols support NMFS' translocation actions. These protocols are intended for any seal translocations between subpopulations (e.g., two-stage translocations or experimental juvenile translocations), as opposed to rapid and short distance translocations (within atolls or within the main Hawaiian Islands, MHI). Separate protocols are included for translocating different age classes of seals and are applicable to any locations in the Hawaiian Archipelago.

These protocols are subject to refinement and change based on experience that will accrue during the next decade, veterinary consultation, emergence of new testing procedures, disease risks, etc. Protocols will be reviewed annually and updated as required to refine protocols and improve implementation.

#### **Weaned Pup Translocations**

Steps involved in weaned pup translocations include:

- 1) Selection and capture of seals, health screening, and attachment of tracking instruments.
- 2) Recapture and transport to vessel/aircraft.
- 3) Transport to destination site.
- 4) Release of seals at new location.
- 5) Post-release monitoring.

#### ***Transport Vessels***

A variety of transportation modes will be used including large vessels (NOAA ships, other chartered vessels), airplanes, helicopters, automobiles, and other as appropriate depending on location and available resources.

#### ***Specific Protocols***

- 1) *Selection and capture of seals, health screening and attachment of tracking instruments.*

Any weaned pup at the designated source site will be considered a candidate for selection, as long as it exhibits no apparent signs of disease, injury or any other factors that may compromise survival. Relatively recently (i.e., less than a month previous) weaned pups may be favored for selection as they are more likely to remain at the release location longer than those that have weaned earlier (Baker et al. in review). Seals will undergo health screening and a subset will be instrumented with a tracking device approximately 1-4 days prior to transport. Seals will be captured using standard practices (by hand or using a hoop net). Blood may be collected without sedation or seals will be sedated.

Seals will be evaluated using the current standard health screen. This may be modified as deemed necessary due to specific disease concerns in source and recipient subpopulations, up to date testing procedures and veterinary consultation. Current practice includes:

### Blood Analysis

#### 1) Field analysis:

- a. WBC count – Unopette system
- b. RBC count – Unopette system
- c. WBC differentials, platelets – Microscope and archive extra unstained smear
- d. Hematocrit/ PCV – Microhematocrit centrifuge
- e. Hemoglobin
- f. Serum chemistry (Na, K, Cl, BUN, Creat, Ca) – I-Stat kit
- g. Glucose – Glucometer and test strips
- h. BUN - Azostix

#### 2) Lab analysis (frozen 0.5-1.0 mL aliquots of serum, stored in liquid nitrogen dewar in the field)

- a. Serum chemistry – send to IDEXX
- b. Tier 1 testing, which currently includes: morbillivirus, seal herpes 1, Toxoplasma, and fecal culture.

#### 3) Banked blood samples stored in liquid nitrogen dewar in the field

- a. Remaining serum (or at least 4 aliquots)
- b. Whole blood (Na heparin and EDTA)
- c. EDTA plasma, buffy coat, and RBC
- d. Na heparin plasma, buffy coat, and RBC
- e. PAX gene blood RNA tube (for biotoxins)

### Swab processing

#### 1) In the field place all swabs in the liquid nitrogen dewar after collection

#### 2) Lab analysis

- a. 1 nasal and 1 rectal swab in Avian Influenza transport media (frozen) – send to National Wildlife Health Center in Madison
- b. 2 dry swabs from the eyes, nares, mouth, genital orifice, rectum and any external wounds
- c. 1 swab of any abnormal tissue in viral transport media (if deemed appropriate)

### Blubber Biopsies

Put in liquid nitrogen dewar in the field

- 1) 1 for toxicology (Teflon container)
- 2) 1 for fatty acid analysis (cyrovial)

### Other Sampling

- 1) Any other sampling deemed necessary by the PI or attending veterinarian.

### External Exam

- 1) Physical Exam
  - a) Assessment for external wounds
  - b) Auscultation of lungs, heart
  - c) Examine eyes, nose, ears etc. (damage, disease, moisture)
- 2) Morphometrics
  - a. Girth
  - b. Length
  - c. Weight

Samples not analyzed in the field will be stored, shipped, and analyzed as described in the current monk seal permit.

If, based on veterinarian's physical exam and immediately available test results, seals do not show any signs of injury or illness, some may be instrumented with appropriate telemetry equipment to monitor them after release. This device will assist post-release monitoring until the opportunity to visually survey the seals arises.

If seals do show physical signs of injury or illness, the attending veterinarian will determine whether to sedate for full biomedical sampling or to treat the injury or illness. These animals will be covered under the health assessment portion of the PIFSC research and enhancement permit, or under the MMHSRP permit depending on the treatments required.

After this handling, seals will either be released and allowed to freely range until capture for transport, or will be held in a shore pen (approximately 1-4 days). Allowing seals to freely move will minimize any stress seals may experience being held in a captive shore pen. Holding in shore pens allows for better assessment of animals health and reduces effort of relocating seals within the atoll. The decision to use pens or allow seals to free-range prior to transport will depend on conditions at the field site, results of physical examination and transport logistics. If seals are allowed to range freely, prior to the second capture the seals will be visually assessed for any outward signs of injury or illness. If the attending veterinarian determines the animal to be unhealthy, either after physical examination and/or evaluation of blood sample, then the animal will not be translocated.

### *2) Recapture and transport to vessel/aircraft.*

Weaned pups will be captured using standard techniques for the transport of weaners. If transport involves a small boat shuttle to a larger ship, animals will be restrained in a stretcher net by two trained seal biologists and placed on the deck inside the small boat. Seals will then be transported directly to the vessel. Water will be available onboard to cool the seal when needed. The number of seals that may be transported at one time in the small boat will be dependent the specific boat's capacity.

There should be adequate area that no seals are piled on top of each other and that there is a reasonable amount of space for researchers to operate to cool and move seals as necessary.

Seals will be taken onto the vessel by lifting the entire small boat by crane up to the mid-ship low railing access on the port side of the vessel (or the safest method depending on the vessel being used). One biologist will remain with the seal during lifting. Seals will be hand lifted from the small boat onto the vessel and brought to their cages.

The distances between cages will be wide enough to allow biologists to move between, prevent spread of urine and feces between cages, and allow the free flow of air. The cages will be strapped to the deck to prevent sliding if rough seas develop. Seals will be placed on a blue tarp, removed from the stretcher net and lifted manually into the cages. Seals will be held separately. A saltwater hose is located near the cage and ice is available for cooling off seals in the heat of the day. Cage openings will be accessible to allow access to animals if medical care or treatment is needed in transit.

If transport is via automobile to aircraft, similar but more logistically simple procedures will apply. Seals will be captured in the same way. Unless it is not feasible, the seals will be transported in cages (again while being observed and with water for cooling available) in automobiles and likewise aboard aircraft.

### *3) Transportation to destination site*

The transportation of seals between subpopulations could be done via boat, plane, car, or other reasonable mode of transportation. Multiple modes of transport can be used at any time. During all transports, the animals will be escorted by a veterinarian and sufficient staff to be able to respond to an emergency.

#### Transport via ship

During transport the deck(s) holding the seals will be off limits to anyone except seal biologist monitoring the animals, the veterinarian and ships safety officers. No physical contact with seals will be made unless a problem arises in which a seal needs to be restrained for examination or treatment (see contingency plan below). If physical contact is made, protocols for handling seals in the wild will be followed as described in the permit application and as written in the Hawaiian monk seal Field Research Manual for safe handling of seals and minimizing risk of disease transmission (e.g., clean coveralls that have been soaked in bleach solution, wash hands, etc). Observers will look for a variety of threats, indications of stress or disease, and ways to mitigate both while observing the animal:

- a) Entrapment/entanglement in cage
- b) Abnormal discharge from body orifices
- c) Abnormal respiration
- d) Abnormal behavior
- e) Modifying ambient temperatures to prevent overheating
- f) Enforce security-preventing disturbance by people on ship

g) Monitor for ship equipment/supplies posing risk to seals.

Seals will be monitored 24 hrs a day while on the ship. Observers will watch for changes in external behavioral/health parameters. Initially upon be loaded onto the boat the seals will be closely observed for signs of acute stress (e.g. continued high respiration and heart rate, agitated behavior, shaking). Descriptive and medical observations will be collected for each individual seal. The following types of data will be recorded:

- a) Observation form to be annotated at the end of each shift with significant findings; summary form to be completed by veterinarian daily.
- b) Summary form to be completed at the end of each 2-hour shift
- c) Eye exam form - only if eye issue is observed

Veterinary exam sheet will also be filled out by the attending vet prior to release.

#### *4) Release of seals.*

The protocols for releasing seals will be dependent on conditions at the selected release site(s).

#### General Considerations:

- Most releases will be on shore at a beach selected based on suite of criteria including, but not limited to:
  - site where pups have weaned and survived in past
  - ideally where conspecifics of similar age are present or frequent
  - if in MHI, then isolated from human contact
- Immediately after release seals will be monitored on shore for as long as logistically practicable.

*If the site is a remote island or beach and landing by small boat is treacherous then this strategy will be considered (this will only be done in rare circumstances):*

The vessel will approach the release site and attempt to get as close as possible to minimize distance traveled by small boats. Seals will be removed from their cages and placed on a blue tarp. They will be captured using a stretcher net and brought to the small boat, which will be held by the crane at the portside mid-ship low railing access (or other technique deemed safest and depending on vessel). Seals will be transported on the floor of the small boat and the boat will be lowered into the water for a near-shore release of seals.

The small boat will attempt to get within at least 100 m of shore but closer if conditions allow. This will mean the boat will be in shallow water with emergent land clearly visible for seals to navigate by. Two biologists will lift the seal over the rail of the safe boat, lowered to the surface of the water and one side of the stretcher net dropped allowing the seal to swim away. Safety lines will be tied to the boat side bar of the stretcher net and connected to the SAFE boat. This will keep the stretcher net from sinking and will cause the net to open releasing the seals if it should be dropped. An

additional crewmember will be prepared with snorkel gear to help in the water if something needs to be done in the water.

*If the site can be accessed by truck or other vehicle the following should be considered:*

- Time of transport should be minimized so animals should be moved be transported during peak traffic times
- Animals will be escorted in the back of the truck by monk seal specialists to monitor the animals' health and welfare during transport
- Water will be available to cool the seal during transport
- A veterinarian and emergency gear will be available should an animal need assistance
- A back up/escort vehicle will be accompany the transport in case a vehicle should breakdown, so the animal(s) can continue to be moved

#### 5) *Post Release Monitoring*

##### a. Remote Monitoring

Movement and diving behavior of seals instrumented with tracking devices data will be compared to data concurrently collected from native seals or to pre-existing data on seals of similar age to determine whether translocated seal behavior is within the normal observed range.

##### b. Resighting

Attempts to resight translocated seals will be made during regular population monitoring effort or intensified observation at the release subpopulation. The level of observation effort will vary largely depending upon the accessibility, logistics and cost of mounting surveys. Subsequently, haulout behavior and survival of translocated versus native seals of the same age will be compared.

### **Translocation of Older Seals**

The following protocols pertain to the translocation of juvenile or sub-adult Hawaiian monk seals (e.g., involved in the second stage of two-stage translocation). Similar protocols will be applied to translocation of aggressive adult male monk seals. Any seal older than 1 yr, which has been identified for translocation for any of the purposes proposed under the PEIS, may be subject to these protocols. Once identified for translocation, subjects will be considered further if they exhibit no apparent signs of disease, injury or any other factors that may compromise survival<sup>1</sup>.

Steps involved in translocation of older seals may include some, but not necessarily all, of the following:

- 1) Selection and capture of seals for health screening and attachment of tracking instruments.

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<sup>1</sup> Aggressive adult male selected for translocation to mitigate harm to other seals may nevertheless be selected even if compromised in some way.

- 2) Quarantine
- 3) Transport
- 4) Release of seals at new location.
- 5) Post-release monitoring

***Transport Vessels*** (Same as for weaned pups)

***Specific Protocols for Older Seals***

*1) Selection and capture of seals for instrumentation and health and disease screening.*

Procedures will be as described above for weaned pups with the following exceptions. Older seals will typically be captured with a stretcher or hoop net and transported in cages appropriate to their body size. Because older seals are far more mobile than weaned pups, they will usually be held in shore pens after initial capture until transport to the destination. As with weaned pups, seals which do not pass their health screen will not be translocated. If appropriate, they may be brought in for treatment under the MMHSRP or released on site if deemed appropriate by the attending veterinarian. Further, aggressive adult males deemed inappropriate for translocation may be brought into permanent captivity or euthanized according to the currently existing research and enhancement permit.

*2) Quarantine Period*

When transporting seals from the MHI to the NWHI, a period of quarantine may be necessary to reduce the likelihood of transferring a disease between the two regions. Quarantine holding will be done at a facility, on board a ship or in shore pens depending on the situation and facilities availability. The quarantine period should be long enough for the analysis of biomedical samples or longer than the prepatent period for the demonstration of clinical signs for the diseases of greatest concern. Two weeks is the generally accepted period and this period could include the transport period. Specific quarantine protocols are described in greater detail in a subsequent section.

*3) Transportation to release site*

Transportation of seals will follow the protocols established for weaned pups.

*4) Release of seals at new location.*

Release of seals will follow the protocols established for weaned pups.

*5) Post Release Monitoring*

Monitoring will be conducted as described for weaned pups.

***Injury/Illness during transport***

If during transport any seal becomes sick or injured, it will be cared for in transit by veterinary and husbandry staff equipped with emergency drugs, antibiotics, intubation equipment, fluids for hydration, and IQF herring if tube feeding is necessary. The compromised seal(s) will be monitored 24 hours/day until it can be delivered to a captive care facility. Captive care will be conducted using established protocols refined and developed with recent captive care activities for Hawaiian monk seals and other pinnipeds under the authority of the MMHSRP permit.

Eventual release of the seal will be determined according to standards of the MMHSRP.

## **Detailed Hawaiian Monk Seal Quarantine Protocol**

The following are quarantine protocols that will be followed during the captive holding of Hawaiian monk seals, for example during translocation quarantine periods. Quarantine will typically occur in a captive facility, but these protocols can be adapted for use in a shore pen situation if needed. In such cases, reference to “pools” or “tanks” would apply to separate shore pens.

To date, no infectious disease that can be spread horizontally between seals has been found to cause clinical disease in Hawaiian monk seals. The following protocol takes this into consideration and is designed to reduce the risk of transmission of disease from outside sources to seals under human care. These sources include domestic animals and terrestrial wildlife (both directly and indirectly via fomites). Because humans act as fomites and because habituation of temporarily held monk seals is of paramount concern, every effort should be made to minimize human contact with releasable seals.

### **I. QUARANTINE**

#### **A. QUARANTINE DEFINITION AND OBJECTIVES**

1. Quarantine refers to “any isolation or restriction on travel or passage imposed to keep contagious diseases, insect pests, etc. from spreading.”
2. Hawaiian monk seals held in captive care must be maintained under strict quarantine at all times. Quarantine measures between individual seals are at veterinary discretion based on health assessment findings.
3. All personnel involved in the feeding, handling, and care of these seals must be properly trained in quarantine procedures by an experienced staff. Quarantine procedures should always be clearly posted.

#### **B. APPROVED DISINFECTING AGENTS**

1. Dilute (10%) bleach, accelerated hydrogen peroxide or Nolvasan solution may be used. Practices differ slightly for each type of disinfecting agent and adherence to these practices is crucial to adequate quarantine.
2. The preferred agent is accelerated hydrogen peroxide (brand name: Accel) because it is less toxic than bleach and has a shorter contact time than bleach and Nolvasan.
3. CONTACT TIME is the most important aspect of disinfection. Each agent should be allowed to contact the surface that is being disinfected for the following minimum amounts of time:
  - a. Bleach: 10 minutes
  - b. Nolvasan: 10 minutes
  - c. Accel: 5 minutes
4. When using bleach, either in footbaths or otherwise, it is imperative that organic matter (feces, dirt, etc.) be removed from the surface FIRST. Bleach will not adequately disinfect in the presence of such debris.

## C. NMFS QUARANTINE POLICY

### Quarantine from Outside Sources

1. All equipment used in the quarantine facility, including feeding, handling, clothing and medical supplies **MUST** be:
  - a. Used exclusively for monk seals
  - b. Properly sanitized after each use
2. **NO VISITORS** are allowed in monk seal quarantine area unless previous approval is granted by the permit holder (Charles Littnan) and the on-site supervisor. This approval is granted on a case-by-case basis.
3. Any person working with wild or domestic animals or visiting another animal care facility on the same day must shower and change clothes before and/or after entering the seal enclosures.
4. Gloves should be worn anytime a seal (or biological samples) will be handled. Thoroughly wash hands with soap after handling seals or biological samples.
5. **FOOTWEAR:**
  - a. No street shoes are to be worn inside enclosures.
  - b. Closed-toe footwear designated for “monk seal quarantine” should be kept at the lower entrance to each enclosure. This footwear should be used in the enclosures at all times and nowhere else. Breathable footwear (such as crocs) is permitted unless the wearer will be in standing water contaminated with biological matter (*i.e.*, feces). Rubber boots should be worn to completely protect the feet from biological matter in these instances, such as during tank cleaning.
  - c. Footwear described above should be dipped in a footbath and scrubbed upon entry into and exit from the pool area. A footbath and long handled scrub brush should be kept at the bottom of the steps, inside the gate of each enclosure.
6. **PROTECTIVE CLOTHING:**
  - a. Any person that will potentially come in direct contact with seals must wear clothing that is designated for monk seal quarantine use only. This clothing can include coveralls, tee shirts and shorts/pants.
  - b. All quarantine clothing should be kept clean and remain at Ford Island in a designated area away from potential sources of contamination. It should never be worn when handling other species or animals outside of Ford Island.
  - c. Clothing should also be changed before and after handling any sick individual seals.
  - d. Protective clothing worn during procedures should be washed and disinfected at the end of each day.
7. Any new equipment or tools brought into the quarantine area must first be disinfected.

### Seal Isolation

These measures should be followed if sick and healthy seals are housed at the same facility concurrently:

1. Use separate cleaning and feeding supplies, footwear and clothing exclusively for the sick seal unless instructed otherwise by the attending veterinarian.
2. Veterinary approval is required for any movements of seals between enclosures or when combining more than one seal in a tank.
3. If a seal requires isolation, follow the Potential Disease Outbreak Protocol.

## II. OBSERVATIONS AND CONDUCT AROUND SEALS

### A. OBSERVATIONS

1. In the morning and prior to each feed, conduct a thorough inspection of the seals and pens before proceeding with further activity. Following each feed or handling event, monitor the seals' behavior closely. Perform a final inspection before leaving for the day.
2. Throughout the day, use the cameras to observe each seal at least every 60 minutes. Observe and record the condition and activity level of the seal. Record the presence, color, consistency and amount of feces, urine, and spew (and the ID of the seal that produced it, if known). Look for any harmful debris in or around pens.
3. Note anything unusual in a seal's appearance (eye discharge or cloudiness, nasal discharge, bite wounds, etc.) and behavior (lethargic, unresponsive, stereotypic behaviors, etc.). Notify attending veterinarian and animal care manager immediately of any abnormal changes in a seal's health.
4. Succinctly record any observations on the Daily Observation Sheet, including the time and observer's initials. Frequently used acronyms: BAR = bright, alert, and responsive; QAR = quiet, alert, and responsive.

### B. CONDUCT AROUND THE SEALS AT ALL TIMES

Every possible effort should be made to minimize the habituation of the seals by reducing human-seal interactions.

1. Do not enter enclosures unless absolutely necessary.
2. When in enclosures, **DO NOT MAKE PHYSICAL CONTACT WITH SEALS** unless necessary for procedures requiring handling. Minimize going into the enclosure and the amount of time you spend in the enclosure as much as possible.
3. Minimize talking and noise when working with or near the seals and the enclosure. Move slowly and avoid startling gestures.
4. Whenever possible, observers should remain as inconspicuous and unobtrusive as possible to observe seals' normal behaviors in captivity and minimize their stress in captivity.
5. Each person entering an enclosure with the seal should be carrying a herding board, which should be within arms-reach at all times.
6. Outside of feeding sessions seals may display undesirable behaviors. Record these observations and follow these instructions:
  - a. Approaching too closely or too rapidly  
→ Use a herding board to keep the seal away
  - b. Mouthing hoses, brooms, or boots  
→ Discourage this by preventing opportunities for seals to bite at these objects
  - c. Stereotypic behaviors (repetitive splashing, slapping at the walls of the enclosure, pattern swimming)  
→ These are a sign of boredom and may be reduced by providing seals with approved environmental enrichment devices (EEDs). Objects such as marine debris that the seals may encounter once returned to their natural habitat should not be used as EEDs so that they do not associate these objects with food or play. A good example of an EED is sinking a milk crate that has fish stuck in the holes or providing some of their daily caloric needs through "fishsicles."

### **III. CLEANING THE QUARANTINE AREA**

#### **A. DISHES**

1. Wash all dishes used for feeding and handling with dish soap and water. Scrub the inside of all feeding tubes using a tube brush. Rinse thoroughly.
2. Place all dishes in a dish sanitizer. If a dish sanitizer is not available, the following steps should be followed after step 1, above:
  - a. Soak or spray all equipment (bolus syringes, knives, tongs, cutting boards, etc.) with disinfectant according to section I.B. (“Approved Disinfecting Agents”) above.
  - b. Rinse all dishes thoroughly to remove the disinfectant.
  - c. Allow all dishes to air-dry.
  - d. Stomach tubes should be washed with soap and water, rinsed thoroughly, and then boiled for 10 minutes.
3. Bolus Syringe Care: after the syringes have been washed and dried as described above, lubricate the O-ring with mineral oil and put the syringes back together for safe storage. Be careful when handling the syringes as they are fragile and can crack easily.

#### **B. DAILY CLEANING AND MAINTENANCE**

##### **Seal Enclosure Cleaning**

1. Do not allow seals to mouth or bite brooms or hoses.
2. Never allow equipment to remain unattended in an occupied seal enclosure. Return all equipment to its storage area after use.
3. Always keep enclosure gates bolted.
4. When cleaning, take the opportunity to look for vomit, diarrhea and observe the feces for consistency and parasites. Always record observations form in the seal’s chart and make special note of any unusual findings.
5. Every morning, inspect the entire pen enclosure for any scat, urine, fish parts, and wind-blown debris. If necessary, use a broom and fresh water hose to clean the seal enclosure. Thoroughly rinse all fish scales, blood, and debris from the decks, walls, and ledge of the enclosure and walkway with the fresh water hose after each feed. Special care should be taken to clean scales from doors, door handles, and bolts.
6. Before leaving in the evening, the deck and pool walls and floor should be hosed down and any spattered blood, scales, scat, or other debris should be scrubbed away.

##### **Footbaths and Walkways**

1. Rinse off the walkway and stairs leading to the seal enclosure at least once a day. Scrub the walkway with broom, disinfectant and water as needed.
2. Refill footbaths as needed depending on choice of disinfectant (usually once per 1-2 days for Accel). When using bleach, footbaths should be refilled anytime organic material is present.
3. If using bleach, add 1 cup bleach to 1 gallon of water and be sure to have a final water rinse before the pen entrance.

### **Fish House Cleaning**

1. Freezers and refrigerators must remain clean and neat at all times. All feeders are responsible for maintaining freezer cleanliness on a daily basis. Keep freezers free of ice buildup as much as possible.
2. Wipe down all counter and table surfaces after each feeding. Be especially mindful of cleaning any fish scales and spattered blood from the all surfaces after each feeding.
3. Mop the food prep room floor after the morning feeding.
4. Empty the garbage daily.

### **C. WEEKLY CLEANING**

Seals should be crated/kenneled and weighed once weekly using the forklift. Weekly cleaning can be done during this time. Use a net to scoop the seals out of the water and herding boards to direct them into the holding area. Be sure to keep the seals wet, shaded and monitor their behavior regularly.

#### **Seal Enclosure**

The monk seal pools should be drained and the pools, walls, ledges, doors, and stairways cleaned once a week using accelerated hydrogen peroxide disinfectant (preferred) and a large, soft-bristled brush.

1. Drain pool, empty all footbaths.
2. Spray and use disinfectant to scrub all surfaces (pools, walls, ledges, doors, stairways).
  - a. If using bleach solution instead of hydrogen peroxide, all organic matter must be rinsed away first and be careful to direct the rinse water toward the drain holes at the corners of the enclosure, away from seals because (bleach is a skin and eye irritant).
3. Allow appropriate amount of contact time for the disinfectant used (see above).
4. Hose off all surfaces, then close drain and turn on the water inflow.
5. Refill footbaths and when pool is full, return seals to enclosure.
6. Thoroughly rinse and put away all cleaning equipment.
7. Record the seals' behavior, the duration spent in the holding area, and any other relevant information from the cleaning event (scat, spew, urine, etc.) on the observations form in each seal's chart.

### **D. QUARTERLY CLEANING**

Every 3 months, and particularly before the rainy season or forecasted heavy rainfall, the shade structure should be rinsed (if removable, it should be removed and scrubbed) to remove dust and debris. Rinse water should not go into an enclosure if it is occupied by a seal – remove the seal as with weekly cleaning procedures. Clean enclosure per weekly cleaning instructions after cleaning the shade structure.

### **IV. WATER SAMPLING SEAL TANK**

Sampling should occur on the same day and time each week at least a couple of days after the weekly enclosure cleaning. Collect one sample from each occupied pool and one from the inflow in addition to a temperature control sample collected from the pool. These samples are submitted to Hawaii Food & Water Testing Lab (HF&WTL) for total coliform testing.

1. Be as sterile as possible: wear gloves, do not open lid to bottle until immediately before collection, do not contaminate inside of lid or bottle, don't set the lid down, etc.
2. Collect the inflow sample by removing the lid and holding the bottle under the water inflow to fill it. Decant any excess water being careful not to touch the lip of the bottle or the lid.
3. Sample the pool (pool and temp control sample) 180° from the water inlet. With the lid still in place, submerge the bottle about 1 foot deep. Unscrew the lid underwater with the bottle positioned counter-current to fill the bottle. Replace the lid underwater. Remove the bottle from the water and decant the excess water being careful not to contaminate the bottle or lid.
4. Immediately place the samples in the small red cooler with blue ice (provided by HF&WTL) for transport to the lab. If transport is not immediate, place the samples in the refrigerator (sampling fridge, not fish storage fridge). Store sample bottles in the cooler and ice pack in freezer until next sampling.
5. Complete all the necessary paperwork and be sure to label each bottle (pool, inflow, temp control).
6. Results submitted on Tuesday are usually faxed to us, c/o Angie Kaufman, on Thursday or Friday. These counts should not exceed 1000 MF/100ml. If fecal coliform counts exceed 1000 MF/100ml, results are reported to Robert Dollar by phone; sampling must be repeated within 24 hours. Promptly notify the veterinary staff if counts are above 1000 MF/100ml.
7. Enter the date, time, coliform count, and any pertinent comments in the HMS Water Testing spreadsheet.

#### **DIRECTIONS TO HF&WTL**

2688 B Kilihau St.  
Honolulu, HI 96819  
Ph: 836-5558  
Fax: 836-5509  
contact: Wendy

Open Mon.-Friday, 8am-5pm

Located in Mapunapuna near the airport. Go east (towards the airport) on Nimitz Hwy & turn left on Kakoi St then right on Kilihau St (2688B Kilihau St.). It's the 3<sup>rd</sup> grey building on the left.

#### **V. SEAL ILLNESS/EMERGENCY CARE**

1. In case of an emergency or suspected illness, refer to the phone list and call the attending veterinarian or veterinary technician immediately to relate symptoms or circumstances of emergency or illness. Follow the emergency chain-of-command protocol.
2. A veterinarian or trained veterinary staff will perform any needed blood sampling.
3. A crash kit and emergency drugs will be kept at all facilities when seals are present. All other medical supplies for blood sampling, fluid and antibiotic administration, monk seal medications, and additional medical supplies are kept at the Vet Lab Ford Island.

**EXAMPLE Physical Examination Form**  
*Circle as appropriate*

**Body outline:** Swelling, Wound, Change from previous day

If yes, describe: \_\_\_\_\_

**Flippers:** Normal use of all 4 flippers with full-range of motion, Favoring one flipper (describe \_\_\_\_\_), Lacerations, Swelling, Ulcers/sores, Signs of pain or discomfort

**Discharges:** Ears, Nares, Eyes, Umbilicus, Rectum, Vagina, Other

If yes, describe amount: \_\_\_\_\_ mL, Color: \_\_\_\_\_, Consistency: \_\_\_\_\_

**Feces:** Describe amount: \_\_\_\_\_ mL, Color: \_\_\_\_\_,

Consistency: \_\_\_\_\_

**Urine:** Color: \_\_\_\_\_

**Eyes:**

**Right:** Discharge: Clear tears, Crustiness around eyes, Purulent discharge  
Redness or congestion of conjunctiva, Swelling of conjunctiva, Prominence of third eyelid, Corneal opacity/ cloudiness, Corneal ulcer, Lacerations, Swelling of eyelids, Squinting or photosensitivity, Any obvious loss of vision

**Left:** Discharge: Clear tears, Crustiness around eyes, Purulent discharge  
Redness or congestion of conjunctiva, Swelling of conjunctiva, Prominence of third eyelid, Corneal opacity/ cloudiness, Corneal ulcer, Lacerations, Swelling of eyelids, Squinting or photosensitivity, Any obvious loss of vision

**Mouth:** Color of mucous membranes: Pink, Red, Pale pink/White

Teeth: Broken, Erupting. List site: \_\_\_\_\_

**Behavior:** Alert, Bright, Lethargic, Depressed, Active, Inactive, Stereotypic behavior, Disorientation, Vocalizations, Other abnormal behavior for each individual seal, Any marked change from previous days

Describe: \_\_\_\_\_

**Other comments (environmental conditions, respiration rate, heart rate, etc.):**

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**Animal ID:** \_\_\_\_\_ **Date:** \_\_\_\_\_ **Name of Observer:** \_\_\_\_\_

**Time:** \_\_\_\_\_