Title: Husbandry Care of Seahorses

I. Purpose:

The purpose of this policy is to outline the UC Davis minimum standards of care for seahorses.

II. Policy:

All units providing animal care for seahorses must meet or exceed these minimum requirements based on the ILAR Guide for the Care and Use of Laboratory Animals (Guide). Deviations or exceptions must be approved by the Attending Veterinarian and the IACUC.

III. Procedure:

Daily (365 days a year without exception):

- Observe each animal and check for health concerns (Guide pg. 112).
- Ensure adequate feed is available, though depending on the species and life stage this may be done less frequently (Guide pg. 65-68).
- Record sick and dead animals, and report them to Campus Veterinary Services (CVS) or designated clinical veterinarian per standard operating procedure.
- Record minimum and maximum water temperatures.
  - Temperature range varies by species, but general recommendations are 22.2-27.8°C (72-82°F) for tropical seahorses, 20-23.9°C (68-75°F) for subtropical seahorses, and 17.8-22.2°C (64-72°F) for temperate seahorses.
  - It is recommended to record each individual tank water temperature daily, but for large subsets of tanks, including recirculating or flow-through systems, minimally 10% of the tanks must be recorded.
- Clean any excessively soiled tanks (Guide pg. 85).
- Clean and organize room, anterooms, and surrounding premises (Guide pg. 86).
- Record daily completion of each task, initial each task, and date the log.

Weekly (not to exceed every 7 days):

- For static tanks, Record water quality at least weekly. Suggested parameters include dissolved oxygen, ammonia/nitrite/nitrates, pH, and conductivity (Guide pg. 78).
Ranges vary by species, but seahorse recommendations are: 6-7ppm dissolved oxygen, < 0.020 mg/L Ammonia (NH₃), < 0.1mg/L Nitrite (NO₂), and <15 ppm Nitrate (NO₃). pH (8.0-8.4), conductivity (1.020-1.026).

- Replace 10-25% of the tank water volume using conditioned water.

**For recirculating systems**, record water quality weekly. Suggested parameters include dissolved oxygen, ammonia/nitrite/nitrates, pH, and conductivity (Guide pg. 78).

Ranges vary by species, but seahorse recommendations are: 6-7ppm dissolved oxygen, < 0.1 mg/L Ammonia (NH₃), < 0.1mg/L Nitrite (NO₂), and < 20ppm Nitrate (NO₃). pH (8.0-8.4), conductivity (1.020-1.026)

**For flow-through tanks**, it is recommended that dissolved oxygen levels are measured and evaluated.

**Biweekly (not to exceed every 14 days):**
For recirculating systems, replace 10-25% of the tank water with volume using conditioned water.

**Monthly (not to exceed every 30 days):**
- Disinfect nets, shelves, racks, tank cleaning utensils, scrub brushes, and enrichment devices.
  - The use of certain disinfectants may be contraindicated for some aquatic species, as residues may be highly deleterious (Guide pg. 71).
- **For flow-through and recirculating systems**: Vacuum uppermost layer of substrate (top ½ inch) in sump/filtration tanks and replace with new substrate.

**Semi-Annually (every 6 months):**
- Flow-through tanks are recommended to have tanks and/or source water quality evaluated.
  - Since water quality is constantly changing in flow-through systems more frequent evaluation may not be necessary. If high mortality or other clinical concerns are recognized, water quality intervals may be increased.

**As needed:**
- Disinfect the animal room including walls, floors, and ceilings (if possible) (Guide pg. 86).
- Remove and replace worn or damaged equipment from primary enclosures and surrounding facility (Guide pg. 86).
- Pelleted feed must be discarded after 6 months of the milling date unless manufacturer guidelines recommend a shorter or longer expiration (Guide pg. 66). Manufacturer guidelines will be followed for frozen feed.
- Clean and sanitize feed storage containers (Guide pg. 67).
- For filtration system and pumps, clean all filters per manufacturer’s instruction.
- Each facility will develop their own best practices with sanitization typically occurring every 6 months or whenever there is a change in species but may vary with facility.
Environmental Enrichment:
- Refer to the Environmental Enrichment policy (SOC-30-102).

Facilities:
- Temperature alarms must be installed in all rooms housing seahorses (Guide pg. 136).
- All electrical outlets in close proximity to water sources must be GFCI (Guide pg. 150).
- Adequate ventilation must be provided for the health and comfort of the animal at all times, governed by thermal and moisture loads (Guide pg. 80).
- Floors shall be moisture-resistant, non-absorbent, impact-resistant, and relatively smooth (Guide pg. 137). Refer to Physical Plant SOC 50-102.

Housing:
- Whenever possible and depending on the species, seahorses should be socially housed in compatible groups (Guide pg. 82).