

**Washington State University Standard of Veterinary Care for
Satellite Animal Housing Location**

Title: Animal Care Plan {Deer, Shipley, Pullman: Wild Ungulate Facility}

I. Procedure:

Daily (365 days a year without exception):

- Observe each animal and check for health concerns (*Guide* pg. 112).
- Clean and organize office/lab space, anterooms, and surrounding premises (*Guide* pg. 72).
- Record daily completion of tasks, environmental monitoring, initial, and date daily animal care sheet (*submit copy of sheet*).
- Report on the OCV Health Database M-F.
 - Any abnormal animals must be reported to the Office of the Campus Veterinarian (Health database), or if an emergency call 5-6246 or 509-335-1871.
- *Pelleted deer ration (custom or commercial), alfalfa hay, fresh or frozen browse (seasonal) fed ad lib daily. Custom from the WSU feed mill, Calf manna or Mauzri.*
- *Water troughs and water devises are checked daily for function and ad lib.*
- *Pest monitoring and/or control devices (snap traps) are documented on daily care sheet.*

Weekly:

- *Floors are sweep in office space and wipe surfaces*
- *Sweep and vacuum feed shed floor*
- *Sweep all iso pens and hay area*
- *Sweep and hose cement area in pens 1-3*
- *Rake debris from around feed troughs in all pens*

Biweekly (not to exceed every 14 days):

- *Clean water troughs in all Pens*
- *Clean feed troughs in all Pens*
- *Clean Iso Pens (if in use)*
- *Hose Cement Area*
 - *In winter season when temperatures are freezing, hosing areas will be delayed until warmer weather.*

Monthly and as needed:

- *Weigh deer*
- *Take Compost*
- *Check for Expired Drugs*
- *Hose out Drains (exemption is when temperatures are below freezing)*
- *Rake/Scoop Poop in Handler*
- *Check/Fix loose nails, boards, stuck gaits*
- *Empty trash inside and outside (as needed)*

Washington State University Standard of Veterinary Care for Satellite Animal Housing Location

Facilities

- *Animals are housed in 0.5-6 acre pastures enclosed with double chain-link fence. Shelters are provided in all enclosures*
- *These animals are housed outdoors with no environmental control*

Housing

- *Enclosures are made of chain link fencing with a double parameter fence approximately 4ft in-between the two fences.*
- *Environmental Enrichment consists of daily human interaction, social housing and provided with browse.*
- *All animals are socially housed except for aggressive males in breeding season, medical condition or on research related trials.*

II. Sanitation Monitoring

- *Sanitation monitoring will follow IACUC SOP #5 B.1.b section on “visual monitoring” for this outdoor housing area.*

III. Waste Disposal

- *Animal carcasses will be transported to WADDL for disposal and +/- necropsy*
- *Soiled bedding in isolation areas are placed in large plastic containers and transported to compost.*
- *Any hazardous waste such as needles, blood, etc., are placed in a biohazard box and transported to EH&S.*

IV. Animal Numbers and Tracking

- *Lisa Shipley is responsible for reporting animal use numbers to the IACUC office at least every 6 months.*

V. Signage, Emergency Information (List of posted signs and locations)

- *All required postings are in the WUF office*
 - Guidelines for Reporting Animal Concerns
 - Emergency contact information for Satellite Housing Location Personnel
 - Emergency contact for Veterinary assistance (OCV or other veterinarian)
 - Any biological, chemical, radiation or other hazard signage as required
 - Notification Protocol for Abnormal Animals

VI. Security

- [REDACTED] 41
[REDACTED] 41
[REDACTED] 41

VII. Disaster Plan

- *See separate plan template below.*

**Washington State University Standard of Veterinary Care for
Satellite Animal Housing Location**

**Washington State University
Disaster Plan
Animal Care**

Lisa Shipley/Wild Ungulate Facility

The primary goal for this document is to give general procedures and information for research animal care and support that are to be followed in the case of an emergency. This is secondary to the employee disaster plan and will only be implemented when conditions provide a safe working environment for employees.

Emergency Plan

WSU telephone service has temporary emergency back-up power and would work in situations of power failure. Employees would be notified of problems and work plan by Lisa Shipley. Lisa Shipley would also be responsible for notifying Facility Operations, EH & S, and OCV of emergency situations in a timely period. Employees would report to work, as they are physically able to. In cases of extended power failure and/or loss of HVAC, animals would be triaged and cared for in priority. Water supply will continue functioning unless physically damaged. There are back up supplies of food and bedding for the animals. Lisa Shipley will supervise care for the animals during a disasters situation with advisory aid from OCV. In the absence of Lisa Shipley lab personnel, Anna Staudenmaier would take charge of such care.

Phone List

Title	Name	Contact number
Principal Investigator	Lisa Shipley	509-335-9182 office, 14 14 cell, 14 home
38	38	38 cell
Research Assistant	Steven Woodley	14 cell
E.H. Steffen Center Facility Manager	John Fluegel	509-335-4371 office, 14 14 cell
Facility Operations		509-335-9000
EH & S		509-335-3041
Office of the Campus Veterinarian		509-330-1871 emergency cell 509-335-6246 office
Campus Security		911
Campus Fire Department		911

Evacuation Plan:

In case of an emergency, such as a fire, everyone is required to leave the building immediately. Staff should gather outside of the WUF/SMRF front gate. This way we can verify that everyone has exited the building safely.

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Standard Operating Procedures (SOP)

Describing Animal Care & Husbandry for deer (*Odocoileus* spp) at the Wild Ungulate Facility at WSU

ANIMAL CARE AND STAFF TRAINING:

Lisa Shipley will be in charge of training staff. She may also designate experienced staff that she has trained to train other staff.

HOUSING & STORAGE:

- Animals will normally be housed outside in social groups in pens ranging from 400 ft² - 6 acres. Animals that are sick or being treated, under an experimental protocol, or males during breeding season, may be housed individually in pens of 6 x 12 ft. Pens will be at least 6 ft. high, and will have at least 2 layers of fencing between the captive deer and wild animals. A 3-sided shelter will be provided, along with an automatic waterer or water tank
- Pelleted food will be stored in large covered bins in the enclosed feed room or just outside, or in bags on a pallet in the feed room. Alfalfa and grass hay will be kept on a pallet in a covered isolation stall covered with a tarp.

FEEDING AND WATERING:

- Deer will be fed a grain-alfalfa completely-balanced pelleted ration, either custom-made at the WSU feed mill (#9017 or similar) or a commercial diet made for deer or wild ungulates (e.g., Purina Antlermax, Mazuri Wild Herbivore). The ration will be provided in a plastic or galvanized steel feed trough or small bucket. Food is normally provided ad libitum unless the animal is overweight.
- Fresh water will be provided daily ad libitum.
- Although the pelleted diets contain the required vitamins and minerals, a salt block or loose salt mixture, preferably containing selenium is normally provided.
- Animals will usually receive a small amount of supplemental hay or browse (e.g., willow) as a supplement to the pelleted diet to provide environmental enrichment and natural foraging behavior. Browsers are often provided as partial trees, which promote natural feeding behavior of these wild animals, we are asking for an exception to the Guide, allowing us to feed forage materials on the ground. Most of the pens have access to natural pastures of grasses and forbs, which provide additional enrichment.

ENVIRONMENTAL ENRICHMENT AND BEHAVIORAL MANAGEMENT

- Animals will normally be housed with compatible herd members. Some animals show dominance, so groups are generally created based on social behavior, sex, age, and species/subspecies. Because males are aggressive towards workers and other males, they are held separately during breeding season, unless we are breeding females. All males are housed next to other animals that they can see through the mesh fencing.
- Deer will normally receive a small amount of fresh hay, grass, or shrubs that will promote natural feeding behavior (see above).

SANITATION SCHEDULE

- Waterers, feeders, mat and concrete floors within isolation pens under the mats will be sanitized every 2 weeks by hand with a Virkon or chlorine solution (soaking for 10 minutes), when animals are moved among isolation pens, or more often as needed. Schedule of cleaning of outside pens in winter will depend on winter conditions of ice, snow, and freezing temperatures.
- When animals are held on concrete or rubber mats, pens will be spot-cleaned every 1 - 3 days to remove feces and dirty bedding.

ANIMAL IDENTIFICATION:

- Animals will be marked with an ear tag with a unique symbol. If an animal has damage to its ears that provide a distinguishing mark, the natural mark rather than an ear tag will be used. Occupants of pens will be noted on a white-board in the WUF office.

BREEDING

- Breeding of deer will occur only occasionally, depending on the need for certain ages, sexes, and species to maintain the herd or use in future research.
- When males begin to shed the velvet on their antlers (usually August - September), they will be anesthetized with xylazine hydrochloride. Antlers will be removed with a bone saw or cable and filed smooth. This is to prevent injuries to other deer and to workers. Deer will be reversed with yohimbine hydrochloride or Tolazoline. One male will be allowed into a pen with the desired number of females sometime between October 1 and March 15, the normal breeding season.
- Gestation length is about 7 months, and twins are normal. Fawns produced may be either dam or hand-raised. If hand-raised, fawns will be removed from their mothers between 24 and 72 hours post-birth.
- Any fawns requiring hand-rearing will be fed formula by bottle designed to mimic the quality, quantity, and feeding schedule of its dam. A commercial powdered formula designed specifically for deer (e.g., Fox Valley) or a mix of 1000 g whole cow's milk mixed with 100 g dry lamb milk replacer can be used. About 16% of body weight will be fed to each animal per day, starting with 7 feedings staggered between 5 a.m. and 11 p.m. The number of feedings will be gradually reduced starting in mid-July and the animals will be weaned at the end of August, beginning of September. Pelleted maintenance ration (see below), browse/forage, fresh tap water and a trace mineral block will be offered at all times during bottle-raising. Raisins will be used as a treat. Up to 3 animals will be held in separate 6X12 ft chainlink dog kennels inside a secondary containment fence (at least 6 ft. high). A temporary mesh roof will be placed on the pens for the first month to deter predation by owls.

VACCINATIONS AND PROPHYLACTIC CARE

These procedures are normally carried out by trained animal care staff

- **Chemical restraint:** When necessary for medical care, deer will be anesthetized with 0.3 - 0.4 mg/kg xylazine hydrochloride and reversed, if necessary, with 0.2 - 0.3 mg/kg yohimbine hydrochloride or 4 mg/kg Tolazoline HCl (Kreeger 1999). Xylazine alone is adequate to induce anesthesia and chemical restraint in tame mule deer and is safe for animals and staff. Animals will range from 20 - 80 kg. These dosages and drugs are safest for use with tame deer. If any of the animals are extremely intractable, the Handbook of Wildlife Chemical Immobilization (Kreeger 1999) provides alternatives.
- **All adults:** Adults will receive prophylactic vaccinations as directed by OCV vet staff. In most cases these vaccinations and other procedures will occur while animals are anesthetized with xylazine hydrochloride annually. These may include one or more of the following:
 - Clostridial 7-way and tetanus (Covexin-8) - 2 mL SQ
 - Fusobacterium necrophorum (Fusogaurd by Novartis) - 2 mL SQ
 - Clostridium perfringens type A bacterin (Novartis) - 2 mL SQ
 - Adults may also receive internal/External parasite control as directed by OCV vets - such as Ivermectin at 2 mL SQ semi-annually
 - Hooves will be trimmed twice annually or as needed.
- **Fawns:** Within 24 hr of birth, all fawns will be given:
 - o 0.5 ml Vit A/D (A: 250,000 IU, D: 37,500 IU),
 - o 1.0 ml Bo-Se (vitamin E: 68 IU, selenium: 1 mg),
 - o 1.0 ml Clostridium C and D (e.g., Coevexin 8, Schering-Plough Animal Health Corporation, Omaha NE) vaccine (only if the dam was not vaccinated while pregnant)
 - o 3.0 ml oral dose of Bovine Rota-Corona Virus vaccine (e.g., Calf Guard, Pfizer Animal Health, Exton PA)
 - o Their umbilicus will be soaked with betadine to prevent possible infections for the first 5 days of life, but if it became swollen we treated them with ceftiofur HCl (e.g., Excenel, Pfizer Animal Health, Exton PA) for 3 days (1.5 mg/kg).
 - o Between 2-3 months all fawns should have a booster of the Clostridium C and D vaccine (8-way).

· **Pregnant females:** may be given the following vaccinations in addition to the above as directed by an OCV veterinarian:

- o E. coli, rota-coronavirus + C perf (e.g., Scourbox) - 2 mL IM in 3rd trimester
- o Pasturella hem. And man. (e.g., Pulmo-Guard PHM-1) - 2 ML SQ mid gestation
- o Bo-se injection - 1 mL IM in 3rd trimester
- o Clostridium C and D (8-way) vaccine in the third trimester

· **Castrated males:** Castrated males usually do not usually shed their velvet, thus their antlers will be left intact year round, or if needed, the antlers will be removed with a bone saw or cable and filed smooth. Because these antlers are more vascular, a rubber tube around the base of the antler will be placed as a tourniquet before cutting off the antlers. The tourniquet will remain in place until the antler stops bleeding. Analgesics will be administered on an as needed basis.

VETERINARY CARE:

Office of Campus Veterinarians will be responsible for providing the veterinary care to these deer. **Animal care staff have been trained to treat minor medical disorders and herd health maintenance under the directive of the OCV, these include:**

Hoof rot

Annual deworming and vaccination

Antler maintenance

All animals undergoing treatment or observation for a medical condition will be reported to OCV in a timely manner. Any medical conditions other than those described here, conditions that do not show improvement or worsen with time and any severe illness and injury must be reported and assessed by the veterinary staff at OCV or another designated veterinarian (CVM VTH). Any and all animal assessments and treatments have to be recorded in the animal's record as well as case resolution (i.e. condition resolved, euthanasia, spontaneous death, etc).

DAILY AND MONTHLY OBSERVATION:

Behavior and physical condition of animals will be observed and recorded daily. Deer will be weighed about once a month in the deer handler scale. Some of the deer are wild and difficult to herd into the weighing facility. Males with antlers are often reluctant to step into the enclosed scale area. Those animals will be monitored for body condition, and if condition deteriorates, extra effort will be made to attempt to weigh them.

DISPOSITION OF ANIMALS:

Animals may be moved to another USDA-approved animal-holding facility, or euthanized with an overdose of a commercially available sodium pentobarbital euthanasia solution IV, normally under xylazine anesthesia by a veterinarian.

Wild Ungulate Facility Monthly Tasks*

Month & Year: _____

Once Monthly

- | | | |
|---------------------------------------------------------------------|-------------|-----------------|
| <input type="checkbox"/> Weigh Deer | Date: _____ | Initials: _____ |
| <input type="checkbox"/> Take Compost | Date: _____ | Initials: _____ |
| <input type="checkbox"/> Check for Expired Drugs | Date: _____ | Initials: _____ |
| <input type="checkbox"/> Hose Out Drains | Date: _____ | Initials: _____ |
| <input type="checkbox"/> Rake/Scoop Poop in Handler | Date: _____ | Initials: _____ |
| <input type="checkbox"/> Check/Fix loose nails, boards, stuck gates | Date: _____ | Initials: _____ |

Twice Monthly

- | | | |
|----------------------------------------------------------|-----------------------------|-----------------|
| <input type="checkbox"/> Clean Water Troughs in all Pens | 1 st Date: _____ | Initials: _____ |
| | 2 nd Date: _____ | Initials: _____ |
| <input type="checkbox"/> Clean feed Troughs in all Pens | 1 st Date: _____ | Initials: _____ |
| | 2 nd Date: _____ | Initials: _____ |
| <input type="checkbox"/> Clean Iso Pens | 1 st Date: _____ | Initials: _____ |
| | 2 nd Date: _____ | Initials: _____ |
| <input type="checkbox"/> Hose Cement Areas | 1 st Date: _____ | Initials: _____ |
| | 2 nd Date: _____ | Initials: _____ |

Month & Year: _____

Once Monthly

- | | | |
|---------------------------------------------------------------------|-------------|-----------------|
| <input type="checkbox"/> Weigh Deer | Date: _____ | Initials: _____ |
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| | 2 nd Date: _____ | Initials: _____ |

*Complete all chores more frequently as needed & record

Wild Ungulate Facility Daily Herd Checklist

Month: _____ Week of: _____

Check feed board for daily feeding directions and white board for general notes

Replenish pellets in each pen		Mon	Tues	Wed	Thurs	Fri	Sat	Sun
Pen #	Iso pens or deer on trial							
	1							
	2							
	3							
	4							
	5							
Hay/Alf: remove stems and replenish every other day. Indicate that you fed with F								
Refill/check water								
Check salt								
Give willow								
Daily headcount for injuries								
Check and rebait mousetraps								

Do the following each week and initial each task. If a job hasn't been done yet, please prioritize that task for your weekly chores.

- | | |
|---------------------------------------------------------------------------|----------------------|
| <input type="checkbox"/> Sweep office floor and wipe surfaces | Date: _____ IN: ____ |
| <input type="checkbox"/> Sweep/vacuum feed shed floor | Date: _____ IN: ____ |
| <input type="checkbox"/> Sweep all iso pens and hay area | Date: _____ IN: ____ |
| <input type="checkbox"/> Sweep/hose cement area in pens 1-3 | Date: _____ IN: ____ |
| <input type="checkbox"/> Rake debris from around feed troughs in all pens | Date: _____ IN: ____ |

As needed:

- ☐ Empty trash inside and outside of office

Daily Notes:

M _____.

T _____.

W _____.

Th _____.

F _____.

Sa _____.

Su _____.