



Successful Hand-rearing and Rehabilitation of North American River Otter (*Lontra canadensis*): Hand-rearing and Release Techniques to Maximize Chance of Success.

Section 2 – Otter Housing, Vocalizations, and Health Care.

M. Haire

2011

Published by:

IUCN/SSC Otter Specialist Group, Otters in Zoos, Aquaria, Rehabilitation, and Wildlife
Sanctuaries (OZ) Task Force

<http://www.otterspecialistgroup.org/Library/TaskForces/OCT.html>

Contributions from: Tanya Thibodeaux; Editor: Jan Reed-Smith

Reviewed by: Gwen Myers, DVM; Christine Fiorello, DVM, PhD; Nicole Duplaix

Photographs: Tanya Thibodeaux, Melanie Haire



This document, a compilation of advice from multiple individuals with otter rehabilitation experience, is designed to provide guidelines and techniques of river otter care for licensed wildlife rehabilitators or wildlife care centers that may be unfamiliar with this species. Due to its length it has been divided into 3 Sections.

Thanks to the following contributors for content, personal communications, edits, etc.

Sally Beckwith, Suzanne McBride, Susan Gerros, Brian Helton, Katie Jeffrey, Gwen Myers, and Grace Yoxon.



OTTER HOUSING

This information addresses care of very young otter pups ranging in age from new born to weanlings.

- If an incubator is used for very young pups it should be kept at 85 - 90° F and 50 - 60% humidity. Gradually reduce to room temperature over 3 weeks.
 - If an incubator is not available an aquarium with a heating pad underneath can be used. The heating pad should be set on low and the aquarium should include adequate ventilation and a thermometer.
 - Pups from 0 - 3 weeks of age should be housed in an incubator or aquarium set up as outlined above.
- At 3 - 6 weeks of age, if the infant is healthy, transfer pup to a pet carrier with bedding piled in the back. A heating pad should be placed underneath the back ½ of the kennel which allows for temperature choice. The front ½ may start to serve as a latrine area as the animal develops.
- Healthy pups usually can thermoregulate by week 5.
- All bedding should be ravel-free cotton or fleece type bedding with no holes or strings. Baby blankets, t-shirts, sweatshirts, flannel, and fleece all work well. Avoid terry cloth, towels, and any material with holes or tears as the pups' claws and toes may become entangled.
- A SnuggleSafe™ microwavable heat source or hot water bottles tucked in with blankets can be temporarily used for transport.
- At 6 - 10 weeks of age: Minimum 6 x 6 ft indoor enclosure should be provided as it offers more room to exercise. A heating pad or heat lamp continues to provide gradient heat in sleeping area. Use a small heavy no-tip water bowl and clean daily, or more frequently if required. Once otters pick their latrine area a litter box with shredded paper can sometimes be used to facilitate cleaning. The number of animals housed together also influences the size of pen and how soon they can go without supplemental heat.
- Children's baby pools make good play pens and temporary housing while their cages, kennels, etc. are being cleaned
- Do not use cat litter or rodent bedding in litter boxes as these items tend to stick to wet otters and can clog nostrils, rectums, and get in their eyes.



- Drinking water can be introduced at about 9 weeks of age but care must be taken that otters are not allowed to get too wet because they can chill easily and develop pneumonia. Towel-dry them if they get soaked and replace water bowl with smaller one.
- Continue to provide supplemental heat in a dry sleeping area at least until they are 10 - 12 weeks old depending on ambient temperature (i.e. if above 80° F not required).
- 10 - 12 weeks of age: First outdoor cage should include natural substrate, heated nest box with dry towels, hollow logs, latrine area, and feeding area. A large water bowl or small tub that provides drinking water and introduction to face submerging also should be offered. Start 24/7 access to outdoors when the temperatures are at or above 55 - 60°F. **Do not remove heated nest box or heat lamp until the outside temperatures are consistently above 70°F and the pups are 3 - 4 months old.**
- Author uses a wooden nest box (24" L X 24" W X 30" H) with a ceramic heat lamp built into the roof. A hole drilled into the roof allows the electric cord to pass into the box up and above the otter's reach. The box has a rubber swinging "pet door" so the animals can go in and out and have the door flap close behind them.
- Although the mother may introduce her pups to swimming as early as 8 weeks, the author has a personal preference to wait until they are closer to 10 - 12 weeks of age due to the risk of chilling. In captivity, otter pups tend to first explore the underwater world by submerging their faces up to their ears in their water bowls and looking around with their feet dry and safely on the ground.
- In the wild, the mother may actually have to carry her pups out into the water and let them swim back to the shore many times before the pups begin to feel comfortable enough to try swimming on their own. In captivity, there is less pressure to hurry along the development process so the swimming lessons can be less dramatic and simply done at the comfort level and schedule of the individual pup and care giver. Gradually increasing the pool sizes from a large water bowl to a baby pool will allow the pups to venture in at their own comfort level. Be sure the pups have a ramp or stepping stones going into and out of the pools, especially during this learning period to prevent drowning. It is important that otters are exposed to water and taught how to swim when young. Failure to teach young otters how to swim has resulted in adult otters afraid to go in the water.
- Beginner swimming lessons should be supervised to make sure the animals can get out of the pool quickly and safely in the event that they panic. **Make sure to towel dry the animals after their swims to prevent chilling and always provide dry towels on the cage floor for them to continue to**





rub dry on. Continue to manually dry off pups until they are 12 - 14 weeks old and are beginning to get their adult fur.

- At 12 weeks of age, a large prerelease cage of a minimum size of 20 ft X 20 ft (ideally much larger) filled with lots of natural items (i.e. hollow logs, rocks, live plants, dirt for digging, water bowls, pine cones, pool, dry off area with dirt or sand, etc.) should be provided. This helps them develop natural skills, stimulates their natural curiosity, introduces them to changing environmental elements, and offers opportunities for rubbing to dry their coats as well as marking.



Otter enjoying a dry-off on sand pile

- The larger the pen and the more play items you can rotate in and out, the better. Providing enrichment items such as water toys, balls, float logs, pinecones, frozen fish in ice blocks and even hiding food items around the cage helps to alleviate boredom and helps to prevent self mutilation (e.g. tail sucking) and excessive pacing.

Enrichment items in enclosure should be numerous, varied, and changed frequently to introduce them to novel items and situations.



- Since otters can climb, at least the bottom 4 ft of the cage walls should be constructed or lined with a solid, smooth material so they are unable to get a toe hold (such as sanded plywood, plastic tarp, or a corrugated plastic such as Coroplast®). Make sure the cage “furniture” does not offer a type of climbable structure/ladder that would allow them access to lamps, cords, hardware, etc. suspended from walls or roofs.



- The enclosure should have a top (or overhang) to prevent escapes and to protect pups from predators.
- Otters also dig so the floor should be escape proof. If cement is used, several inches of natural substrate should be placed on top so the pups don't abrade their foot pads.
- Otters also may attempt to chew out. If wood sides or doors are used be sure the material is smooth and solid without gaps (no wood slats) that otters can get teeth, muzzle, or feet through. Doors must be secured within their frames leaving no gaps or latches that can be reached from the inside.
- Again, all pens should include natural substrate and enrichment items to keep them active and allow them to explore and discover.
- Otters can easily climb chain link so these enclosures must have a top and either be lined with a smooth material to prevent foot holds or should be no taller than 4 ft to prevent injury from higher falls.
- Outdoor acclimation usually starts at 6 - 8 weeks of age and finishes by 10 - 12 weeks of age, depending on climate.

VOCALIZATIONS and COMMUNICATION

- River otter pups can make a high pitched chirping sound when they are scared or upset and are calling for mom or other siblings. Initially single pups tend to chirp more often than multiple pups but they generally tend to quiet down after a short adjustment period to their new living quarters.
- When frightened or hurt the pups can make an open mouthed "scream" that usually is best handled by offering the comfort of peace and quiet. Dimming lights, covering kennel, lowering voices, providing secure private hiding area and/or giving the animal space will help quiet him down.
- Otters also make a closed mouth buzzing or humming sound when they are wary of something or someone unfamiliar.
- An open mouthed "hissing/snorting" sound is sometimes made as a warning/threat and may be followed by a bite if not heeded.
- The "warning" vocalization "eh eh eh eh eh" is usually associated with agitation, anger, or fright and often announces a bite will soon follow.
- A loud squeaking sound may be made when a cage mate gets too rough and bites too hard.
- Sometimes the otter pups will mix all these vocalizations together when they are play wrestling with each other.
- Otters have a pair of anal glands that secrete a pungent substance when the animal is afraid or highly stressed. This glandular substance is white in very young pups and darkens as they become older. Secretions from an agitated otter's anal glands should be considered an indication of stress and a precursor to attack due to fright or anger.



OTTER HEALTH CARE

Also see the otter veterinary care document and/or husbandry manuals (available on the OSG OZ Task Force website) for individual species for more detailed information.

BASIC GUIDELINES and COMMON CONDITIONS

Normal body temperature: 99.5° - 102°F.

Normal heart rate: 130 - 189 beats/min

Normal respiratory rate: range = 10 – 61; baseline = 31

*All rates measured under anesthesia

- If the otter comes in sick or injured it should receive immediate veterinary care from a doctor with otter experience. Only vets should make decisions on the medications, drug dosages, diagnostic plan, and sedation plans.
- Otters can be difficult to safely anesthetize and recover so the decision to do so should not be taken lightly. The use of anesthetic reversal drugs is often necessary to bring the otter out of sedation smoothly. If anesthesia is required it should only be attempted when the animal is calm. If the procedure will take longer than 15 - 30 minutes they should be intubated. If the animal needs treatment, treat it; make the procedure as short and quick as possible. Ketamine is associated with hyperthermia, so use only when necessary and monitor body temperature carefully.
- Otters are dangerous and can cause significant injury to people. Be cautious when handling and anesthetizing... experience is crucial.
- Due to their tendency to become overly excited in stressful situations river otters tend to overheat and become hyperthermic during examination or treatment procedures. This also is true if long transports are required.
- Most common medical conditions observed in rescued otters include trauma, hypothermia, and hypoglycemia.
- They also are susceptible to pneumonia, tick borne blood parasites, heartworm, distemper, rabies, clostridial enteritis, and intestinal parasites. May be susceptible to all canine and/or feline viral diseases.
- Dehydration should be treated immediately upon consultation with a veterinarian.
- Bloat can occur due to: imbalances of normal GI tract flora, if fed too much, if wrong formula is used, if the formula is too concentrated, and due to certain diseases. This condition must be addressed early. If you see this contact a rehabilitator or veterinarian with otter experience.
- Trauma – basic wound care procedures should be applied.
- Pain management should be discussed with a veterinarian prior to use; especially if animal is dehydrated, has kidney issues, etc. Drugs that have been used include:
 - Meloxicam – 0.1mg/kg 1x/day oral or injectable subcutaneously.
 - Carprofen – 1mg/lb. orally or injectable subcutaneously 1-2x/day



- In the event an otter dies in rehab it is always good practice to perform a post mortem examination. Much can be learned about the animal from this procedure and often the cause of death may be discovered. In these cases contact jrsotter@iserv.net to submit results to the zoo association data base to assist in the creation of a central database.

BASIC PREVENTATIVE CARE AND TREATMENT OF PARASITES, ETC.

Medications and dosages are offered as a guideline. Treatment should always be carried out by a qualified veterinarian and based on the individual case, location, and condition of the animal.

- Wildlife centers that utilize a preventative medicine program under the direction of a wildlife veterinarian have used the following vaccines with otters:
 - Rabies – killed products only, such as Imrab 3™ (Merial) at 16 weeks.
 - Distemper- PureVax™ Ferret Distemper Vaccine (Merial) 2 - 3 injections given at 3 week intervals.
 - Parvovirus – killed products only at 8, 12, & 16 wks.
 - Fecal exams – every 3 months
 - Heart Worm preventative- can start at 16 weeks. Ivermectin at .012mg/kg orally 1xmonth. Preventative should be given year around after 6 months of age
 - Monthly heartworm prevention should be given **after a negative test.****
 - AZA Otter SSP veterinary advisor recommends canine viral combos and feline viral combos at 8, 12, and 16 weeks instead of individual vaccines listed above.

** Caution if an otter tests positive for filarid nematodes experienced veterinarians should be consulted before any treatment is attempted. Neiffer et al. (Journal of Zoo and Wildlife Medicine; 2002/33(3)) reported deaths of two N. A. river otters when treated with melarsomine dihydrochloride; one had a suspected *Dirofilaria immitis* infection, the other had a confirmed *D. lutrae* infection. Their article abstract follows.

"Two adult North American river otters (Lontra canadensis) and an adult red panda (Ailurus fulgens fulgens) at three separate institutions died within 22 hrs after receiving single 2.5- to 2.7-mg/kg doses of melarsomine dihydrochloride administered in the epaxial musculature as a treatment for filarid nematodes. One otter had a suspected Dirofilaria immitis infection, the other had a confirmed D. lutrae infection, and the red panda had a confirmed Dirofilaria sp. infection, presumably with D. immitis. Postmortem examinations revealed similar gross lesions, although they were less severe in the red panda. The trachea and primary bronchi contained abundant foamy fluid, the lungs were mottled with areas of consolidation, and the pulmonary parenchyma exuded abundant fluid at the cut section. Histologic evaluation revealed acute pulmonary edema, which resulted in respiratory failure and death. There may have been direct pulmonary cellular toxicity of melarsomine dihydrochloride or a severe systemic anaphylactic reaction to antigens released after parasite death. An idiosyncratic drug reaction or a low therapeutic index of melarsomine probably caused the death of the three individuals. Melarsomine dihydrochloride use should be avoided in North American river otters and red pandas."



- Dewormers that have been used on otters (the vast majority of dewormers and antibiotic doses are extrapolated from domestic animals such as dogs and cats) and specific doses are as follows:
 - Pyrantel pamoate
 - Ivermectin – 0.2 mg/kg SC once (for treating mange)
 - Fenbenazole – 50 mg/kg sid PO for 3 days (typically used for protozoal parasites like *Giardia*)
 - Praziquantel

- Ectoparasite treatments:
 - Fipronil (Frontline); keep animal dry for overnight do not use if under 8 weeks
 - Ivermectin
 - Flea powder safe for puppies and kittens (this is pyrethrin-based, if have an alternative it is better to bathe and use flea comb on young animals)
 - Selamectin (Revolution™)

- Antibiotics:
 - Baytril®- 5 mg/kg bid IM, PO or SC. When possible, avoid use on growing animals because of cartilage issues seen in domestic dogs.
 - Amoxicillin/clavulanate – 10 - 20 mg/kg (Clavamox®); used more for deep tissue infections, tooth root abscesses, etc.
 - Amoxicillin – 15 - 20 mg/kg SID or BID, PO (used for simple wounds or infections if not working try antibiotic/dose listed above).
 - Penicillin G – 40,000 - 44,000 *iu*/kg SID IM

- The use of vaccines and prophylactic dewormers are often controversial for many animal species being rehabilitated for release. Several reasons are listed below;
 - The efficacies of vaccines have not been proven in wild carnivore species.
 - There is no rabies vaccine approved for wildlife so any wild animal vaccinated with an “off label” product is still considered non-vaccinated by any human health official in the event of a bite.
 - Some animals may have a negative or allergic reaction to vaccinations and some medications.
 - Some modified live vaccines have been known to produce disease outbreaks in zoo animals.

- That being said, potential zoonotic issues, spread of contagious diseases, and health care of long term captive animals also must be considered.
- Ideally, the preventative care plan for all your animal species should be discussed with your wildlife veterinarian prior to intake.



Anemic 7 month old river otter.



River otter with head/facial wounds.





SEXING OTTER PUPS

Many people have reported sexing young otter pups to be difficult. The male's perineal opening is located about 5 - 6 inches above the rectum as a slight depression. If the area is rubbed you can feel the baculum (bone) as a short ridge under the fur; females lack this. (personal communication N. Duplaix)

Below are photos of 6 week old otter pups to use as a guide.

Young male N. A. river otter at 6 weeks of age.





Young female N. A. river otter at 6 weeks of age.

