

REPORT

HAND REARING 1.1 ASIAN SMALL CLAWED OTTER (*Amblonyx cinereus*) 21 FEBRUARY 2007 THROUGH 2 JULY 2007

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Abstract: Three litters of Asian small otters (*Amblonyx cinereus*) were cannibalized by the adult pair. Therefore it was decided that hand-rearing was the method of choice for this specific pair. All details of the hand-rearing procedure are described in detail.

Keywords: small clawed otter, hand rearing, veterinary care

INTRODUCTION

Captive conditions and husbandry at times are challenging for species that require extreme privacy for successful reproduction. Infanticide and/or cannibalism have been observed in captive and wild animals, including carnivores.

Hand-rearing is not recommended as an elective process for various reasons. In almost all cases, the philosophy of the Association of Zoos and Aquariums (AZA) managers is for the offspring of captive born species to be parent-reared. At times this goal cannot be reached. When an animal requires hand-rearing it is very important to have a clear and well planned course of action for all staff. The dietary, medical, and social needs of the species must be included in the hand-rearing protocols.

In 2005 the Asian Small Clawed (ASC) Otter Species Survival Plan recommended that a pair of ASC Otter breed at Miami MetroZoo, in Miami, Florida, United States. Both the sire and the dam were parent-reared. The sire was two and the dam was five years old at this time. The pair had not had an opportunity to breed before this recommendation.

In November 2005 they produced their first litter and the pups were missing and presumed cannibalized on day two after delivery. They produced another litter in May 2006 and again on day two the pups were missing. Management and protocols were discussed following this litter. It was decided that strict visitation and husbandry restrictions should be put into place approximately two weeks prior to the expected

delivery date. Added privacy such as visual barriers and a limited cleaning schedule was implemented to reduce noise and traffic in the area. It is believed that the dam was predominately involved in the cannibalism, but it is difficult to be 100% sure.

In August 2006 a third litter was born and cannibalized on day two. At this time management made the decision that any further litters with this pair would be pulled for hand-rearing as soon as the birth occurred. On 21 February 2007, this pair had two pups and they were pulled for hand-rearing as soon as they were discovered.

INITIAL DISCOVERIES

The pups were clean and dry at the time of discovery. Both pups had bite wounds to the head, muzzles, abdomen and the female had blood in her urine. They were both given a complete physical evaluation and determined to be in good health. The umbilicus area was cleaned with betadine solution, they were given antibiotic injections, confirmed sex, and placed in an incubator at a temperature of 26.6 °C – 32.2 °C (80 – 90 °F). The pups had a hard time adjusting to the flow of milk from the nipple and aspirated formula for approximately eight days before they suckled well. A syringe may be helpful in reduce aspiration risk and could be used for the first few days or until the pups can pull down the plunger and then switch to a bottle with a nipple. This has been done with *Lutra lutra* to aid in the prevention of aspiration pneumonia associated with nursing difficulties with newborns.

MEDICAL TREATMENT

Drug	Purpose
Ceftiofur PO	Preventive
Baytril SQ	Antibiotic
Fluids SQ	Hydration
Pedialyte PO	Electrolytes for infants
Feline distemper vaccine at Day 53	Preventive
Feline rhinotracheitis vaccine Day 64 and 70	Preventive
Calicivirus vaccine Day 64 and 70	Preventive
Panleukopenia vaccine Day 64 and 70	Preventive
Canine distemper Day 70 and Day 97	Preventive
Rabies vaccine Day 70 and Day 180	Preventive
Routine Urine Sample Specific Gravity Day 19	Male = 1.0009 Female = 1.0007

DIET

Day 1-5

Esbilac brand, ready to use canned formula for dog pups at ratio of 50:50 to water. Feed every two hours. 3.0 ml of formula offered at each feeding. 2.0 ml of fat free yogurt once a day to help curb diarrhea and aid in formula digestion. A small latex marsupial nipple will be used until further notice.

Day 6-8

Esbilac changed to full strength. Feed every 2 hours. 4.0 ml per feeding.

Day 8- 21

Feed every 3 hours. 8.0 ml per feeding.

Day 22 – 26

9.0 ml per feeding.

Day 27 – 28

10.0 ml per feeding.

Day 29 - 31

12.0 ml per feeding.

Day 32 – 36

14.0 ml per feeding.

Day 37 – 38

15.0 ml per feeding.

Day 39

16.0 ml per feeding. The nipple was changed to human premature infant type, and pups accepted well.

Day 40 - 43

20.0 ml per feeding.

Day 41

Number of feedings reduced from 7 to 6 per day.

Day 44 – 46

22.0 ml per feeding.

Day 47 – 50

24.0 ml per feeding.

Day 51 – 84

30.0 ml per feeding.

Day 57

Both exposed to live fish for first time in a pool. The male caught and ate 2 small fish and the female caught and chewed one fish, but did not consume.

Day 60

Offered IAMS cat food soaked in formula. The male ate a few pieces and the female chewed and not did consume.

Day 62

The nipple was changed to high flow nipple, and pups accepted well.

Day 85

Number of feedings reduced from 5 to 4 per day.

Day 96

Number feedings reduced from 4 to 3 per day.

Day 110

Number of feedings reduced from 3 to 2 per day.

Day 114

Beginning to lose interest in bottle and showing more interest in solids.

Day 124

Number of feedings reduced from 2 to 1 per day.

Day 130

Last bottle given today, weaned. The pups remained healthy and thrived throughout the hand rearing process. Their development was considered normal based on benchmarks found in the literature. No parasites were found in fecal exams done from the parents and the pups.

Growth Progress

Male

Birth weight = 55.5 grams.

Weaning weight = 2374 grams.

Total gain from birth to weaning = 2318.5 grams.

Average monthly gain from birth to 6 months = 508.1 grams.

Crown-rump length at birth = 9.0 cm.

Crown-rump length at 1 month = 16.0 cm.

Female

Birth weight = 52.6 grams.

Weaning weight = 2336 grams

Total gain from birth to weaning = 2283.4 grams.

Average monthly gain from birth to 6 months = 491.2 grams,

Crown-rump length at birth = 8.5 cm.

Crown-rump length at 1 month = 17.5 cm.

DEVELOPMENT NOTES

Male

Day 17 R eye open.

Day 20 teeth erupting.

Day 33 L eye beginning to open

Day 35 both eyes completely open.

Day 38 no longer require supplemental heat source, thermo-regulating well.

Day 55 first exposure to water, 2 inches deep in small pool, and had no aversion to water and played in water for 30 minutes.

Day 57 first live fish caught and ate.

Day 59 no longer need to stimulate, urination and defecation are normal.

Day 91 canine teeth are erupting.

Day 92 eating smelt, live fish, and cat food well.

Day 103 given access to deep water pool (~2.4 m) and did well.

Day 130 weaned.

Female

Day 20 teeth erupting.

Day 34 both eyes beginning to open.

Day 35 both eyes completely open.

Day 38 no longer require supplemental heat source, thermo-regulating well.

Day 55 first exposure to water, 2 inches deep in small pool, and had no aversion to water and played in water for 30 minutes.

Day 57 caught first live fish but did not consume.

Day 59 no longer need to stimulate, urination and defecation are normal

Day 70 ate first live fish.

Day 91 canine teeth are erupting.

Day 92 eating smelt, live fish, and cat food well.

Day 103 given access to deep water pool (~2.4 m) and did well.

Day 130 weaned.

Their development varied between individuals in some aspects and was considered to be normal for the species.

SOCIALIZATION

Fortunately for these two pups they have each other for companionship during and the post hand-rearing period. We believe this was beneficial to their well being and contributed to their physical and mental development. They were definitely bonded to the keeper staff, but they played with each other and competed for space in their enclosure when they were not being handled. They are not planned to be introduced to any adults at this time. The SSP will be consulted on their development and behavior and for future placement at other facilities. They will not be automatically excluded from breeding recommendations because they were hand reared.

CONCLUSIONS

Hand-rearing is difficult, challenging, and labor intensive, especially during the early stages of the process. The most challenging aspect of this hand-rearing process was getting the animals to swallow and not aspirate milk. The animals were very anxious and drank too fast and milk was passed back through the nasal passages for the first eight days. After this problem passed, the pups grew fast, and did well with their natural behaviors of swimming, diving, and catching live prey.

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RÉSUMÉ : ELEVAGE A LA MAIN DE LA LOUTRE ASIATIQUE

Suite au comportement de cannibalisme de loutres asiatiques (*Amblonyx cinereus*) sur trois de leurs portées, il a été décidé que l'élevage à la main serait appliqué pour les futures portées de ce couple. Les détails de la procédure d'élevage à la main sont ici décrits.

RESUMEN : CRÍA A MANO 1.1 NUTRIA CENICIENTA (*Amblonyx cinereus*) - DESDE EL 21 DE FEBRERO DE 2007 HASTA EL 2 DE JULIO DE 2007.

Como resultado de que tres camadas de nutria cenicienta (*Amblonyx cinereus*) fueran depredadas por la pareja adulta (canibalismo), se decidió que la cría a mano sería el método a utilizar para esta pareja específica. Todos los detalles del procedimiento de cría a mano se describen en detalle.