

THE RIVER OTTER JOURNAL

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Otters in Asia, An International Workshop

By Jan Reed-Smith

December 9th-13th there was an international meeting held in TaiChung, Taiwan, on the conservation and public awareness of otters in Asia. Organized by the IUCN/SSC OSG (International Union for the Conservation of Nature/Species Survival Commission Otter Specialist Group) Asian section, the Otter Research Group of Japan, National Taiwan University, Tung-Hai University, and the Taiwan Society for Wildlife and Nature, this meeting was attended by 55 participants from 12 countries.

In Asia there are five species of otter, the sea otter (*Enhydra lutris*), Eurasian otter (*Lutra lutra*), smooth-coated otter (*Lutra perspicillata*), small-clawed otter (*Amblonyx cinereus*), and the hairy-nosed otter (*Lutra sumatrana*). Throughout much of Asia otter numbers are unknown. In those countries where some survey work has been done, only the small-clawed otter is believed to be present in fairly large numbers. The other three species are vulnerable regionally over parts of their Asian range (Eurasian otter), considered vulnerable (smooth-coated otter, hairy-nosed otter), or, in the case of the hairy-nosed otter, their continued existence was in doubt until recently.

“Otter conservation in Asia, however, is plagued. Wildlife laws and administrative capability ensuring their enforcement are insufficient. The lack of reliable data from the field is also a problem. Above all, the low motivation of the people in Asia for otter conservation make otter conservation difficult, as legislative measures are unlikely to be successful in the absence of public support.” (Workshop on Conservation and Public Awareness of Otters, announcement ceremony, 1999)

For this reason, it was decided at a 1996 meeting of the IUCN/SSC OSG Asian Section that the group’s next meeting should focus on methods of promoting public awareness of otters, otter conservation, threats to otters, and the importance of otters to wet-



*Photo showing the nose difference in **Lutra sumatrana**, the hairy-nosed otter.*

Photo courtesy of Jan Reed-Smith

land ecosystems. Additional objectives for the meeting included a review of methods of defining target groups for education campaigns, a review of education materials available, and how these materials can be adapted to the Asian public.

Opening remarks were delivered by Dr. Y.S. Chou, Director of the National Museum of Natural Sciences, Dr. Kang-Pei Wang, President of Tung-Hai University and Claus Reuther, Chairman of the OSG. All three speakers stressed the need to raise public awareness of the need to conserve otters, and their habitats, and the importance of enlisting local support to the success of all conservation efforts.

All of the presentations were thought provoking, but in the interest of space I will share just a sampling of what was covered.

The otters’ status in Asian countries was a subject reported on by several participants. For the most part, unfortunately, there was a universal theme; not enough is known about what is happening to otters in Asia. However, it is known that all water related habitats (i.e. wetlands, lake shores, estuaries, peat swamps, etc.) are disappearing at an alarming rate. There are some reports of

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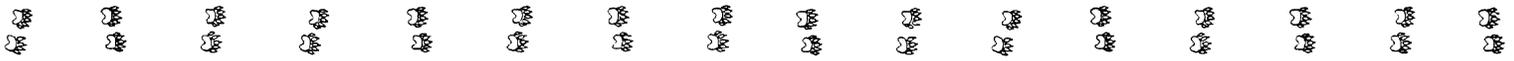
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River Otter Alliance Mission

The River Otter Alliance promotes the survival of the North American River Otter (*Lutra Canadensis*) through education, research and habitat protection. We support current research and reintroduction programs, monitor abundance and distribution in the United States, and educate the general public through our newsletter, THE RIVER OTTER JOURNAL, on the need to restore and sustain River Otter populations.

Our goal is to be a center of communications among wildlife biologists, environmental organizations, fishermen, and all interested otter lovers on a national and international basis, in order to ensure the healthy future of the North American River Otter.



Otters in Asia

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large numbers of pelts being exported out of China that are of concern to the OSG Asian section. The concern was only compounded by the fact that the most recent data dates from the 1980's, too old to be considered reliable as an indicator of the current situation. It was decided that the group needs to make a concerted effort to establish contacts in China and try to find out more about this trade in otter pelts and parts, which are used for traditional medicine.

On a positive note, Kanchanasaka Budsabong of the Wildlife Research Division of Thailand's Royal Forest Department was contacted by a forest ranger that found three 1-month-old hairy-nosed otter pups this year. This was the first confirmed sighting of this species in many years; exciting to have proof that there are hairy-nosed otters still to be found, exciting to have a better idea where to look for this species (peat-swamp forest), but, unfortunately, the pups did not survive. A further disappointment was that due to a misunderstanding only the skeleton was saved. It is uncertain at this time if enough material is left to extract DNA samples for genetic testing of the true status of this species (species, or subspecies that is the question). So, although at this point we have only pictures of a very appealing pup and a skeleton, it is more than we had one year ago and cause for great optimism.

Youngdae Noh and Han Sung-Yong presented information on the status of otters in South Korea. According to their estimates there are about 700-800 Eurasian otters living in South Korea today, approximately one quarter the number believed to have been occupying that region in 1980. This decline is due to "habitat loss, a lack of conservation sense, persistent poaching, and deaths due to fishing nets and traps." (Noh, Youngdae, Taiwan 1999) However, there has been a recent change in this situation due in large part to a "rapid rise" in public awareness of otters generally, and otter conservation issues in particular. This heightened visibility is due to 1) effective broadcasting of the threats posed to otter habitats by arbitrary changes in the environment, 2) otters are beginning to be perceived as interesting "and mysterious animals living in a hidden place," 3) researchers at Kyungnam University have been studying and working to protect otters for a long time



*One of three hairy-nosed otter pups, *Lutra sumatrana*, found in Thailand in 1999.*

Photo courtesy of Jan Reed-Smith

and their efforts are beginning to pay off, and 4) the extirpation of otters in Japan has acted as a loud wake up call.

Before taking a job with the Frankfurt Zoological Society managing their many in-situ conservation programs, Christof Schenk and his wife spent several years studying the giant otter in Peru. As a result of their research and many subsequent years of work, the long-term outlook for this unusual mammal looks a little brighter.

*"The Giant Otter (*Pteronura brasiliensis*) is a highly endangered predator inhabiting the Amazon wetlands. Due to extensive hunting from 1940 to 1970 for the international fur trade, continuing habitat destruction, human disturbances and contamination, the otter has survived only in remote or protected areas. Despite these unfavourable circumstances, the giant otter is an ideal candidate for a modern species-centered conservation strategy."*

"In 1990 the Frankfurt Zoological Society established a long-term research and conservation project in South-eastern Peru designed to improve the understanding of otter distribution, spatial behaviour, social structure, habitat selection, endangerment factors, and conservation possibilities. On the basis of the findings, a conservation strategy was developed that defined conservation goals, methods for achieving these goals, evaluation processes and control mechanisms." (Christof Schenk presentation synopsis, 1999.)

This project has seen tremendous success with some of their education efforts, in particular with a children's coloring book and tourist guide tee shirt.

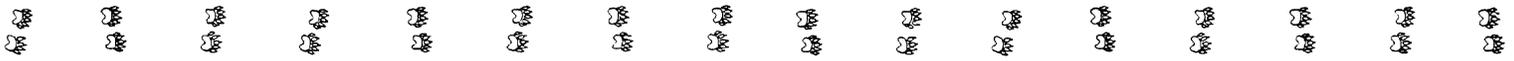
The coloring book was developed using drawings of otters and their habitat created by a local artist. A simple story line was translated, then checked by local teachers to ensure it was idiomatically correct for the

targeted area. Next, the books and accompanying pencils were distributed to 900 children in the villages around, and in, Manu National Park, Peru. In order to encourage the children to use the coloring books, and the adults to participate, they held a coloring contest. Each child was invited to turn in a colored page; the winner received \$50.00 worth of goods – a true bonanza for a Peruvian villager. The most exciting thing about the whole project was that they received 836 entries! 836 potential otter conservationists born through a coloring book!

The tee shirt was developed for eco-tourist guides. Eco-tourism is growing in Peru and providing a much needed influx of money to a relatively poor area. However, this same tourism is threatening the continued existence of giant otters by introducing a highly disruptive influence – humans. It turns out that giant otter females require a great deal of privacy to successfully raise their young, and any disturbance, such as a canoe full of tourists, can cause the female to abandon her young. The solution has been the channeling of tourists to high platform observation towers and the introduction of basic viewing rules. It is these rules that are written on the back of the guides' tee shirts. This solution has proven to be popular and taken some of the stress off of the guides.

My presentation was "Partnership and Communication: The use of captive otters as educational conservation ambassadors in North American zoos and aquariums." A long title for a fun subject, otter education programs in zoos and aquariums.

In North America many people view otters as charismatic mammals. The phrase "I love otters" is frequently heard from zoo visitors. At the same time, the two species of otter found in North America, sea otters and



river otters, are frequently confused and both are misunderstood by a segment of the North American public. For these reasons and their appealing nature, otters are well suited as educational ambassadors for a wide range of water-associated habitats and conservation messages.

The objective of Partnership and Communication was to share some of the programs that have been developed by AZA institutions that could be adapted to Asian zoos or conservation efforts. My research was aided by the education liaison to the AZA Small Carnivore Taxonomic Advisory Group, Jennifer Taylor from the Santa Barbara Zoo.

A number of facilities submitted their materials. The Tennessee Aquarium provided slides of their auditorium program using Otessa otter that teaches young children about otter habitat and what they can do to preserve wetlands and promote conservation. Several institutions utilize otter games, puzzles, and coloring sheets to make otter learning informative and fun. Still other AZA member zoos and aquariums use otters in educational curricula designed for older children and adults to teach about wetland and riverine habitat conservation.

Additional news from Asia included:

- Eurasian otters are only confirmed to be found in the Kinmen National Park of Taiwan these days. There have been reports of a family of small-clawed otters on one of the outer islands belonging to Taiwan, but these are as yet unconfirmed.
- Wetlands International's Indonesian scientists are working to improve public awareness of the importance of conserving wetlands. It is estimated that approximately 13% of Indonesia is still covered by natural wetlands and that 69% of the population derives their livelihood directly from wetland areas. Most of these people are involved in agriculture or fishery activities, and without adequate conservation efforts, these wetlands and the populaces' means of survival will disappear.
- Four species of otter are found in Vietnam: small-clawed, Eurasian, smooth-coated, and the hairy-nosed otter. The first three species are known to still be present in Vietnam; the hairy-nosed otter has not been reported since the 1940's.
- Finally, there were some interesting reports from India and the lasting impact it is

believed colonialism has had on the conservation ethic in India. There is an argument made that because the people were disenfranchised from the land, their historical connection to it has been broken. Because of this, there is no attachment felt to the land and thus no personal concern for conserving natural resources for future generations. It is believed that with the return of the land to the local people there is a concomitant rise in conservation interest.

Probably one of the most impressive features of this Otter Awareness Workshop was

the people. These are people working under extreme conditions with, for the most part, limited budgets, accomplishing their conservation objectives one step at a time through sheer force of will. It is humbling and awe-inspiring to me to have had the opportunity to spend five days with the likes of Charles Santiapillai, Padma de Silva, Burhanuddin Mohd. Nor, Ruchi Badola, and all of the others. I returned home with a renewed ambition to do my part in the struggle to preserve wild places for wild creatures and work to ensure the continued survival of river otters wherever they are found.

The Hairy-Nosed Otter in Thailand

By Paul Yoxen

Thirteen species of otter inhabit the planet, occurring in all continents except the Antarctic and Australia. The otter is one of the sad casualties of the 20th century, with many of the populations declining or vulnerable. An amazing animal, the otter is not just a creature with a cheeky face and playful lifestyle, but an ambassador of first-class rank to a healthy environment. Being a super predator and living on both land and in the water, it is totally dependent on a healthy environment and is thus one of the best bio-indicators on the planet. Protect the otter, and all the other species—including our own—will have a safe future.

The International Otter Survival Fund (IOSF) has been working on otter conservation programmes in many countries and has always had a soft spot for the hairy-nosed otter (*Lutra sumatrana*), so-called because of the hairs on its nose! In 1998, this species was thought to be extinct, but last year three cubs were found in the Phru Toa Dang Swamp Forest in the Narathiwat Province of Thailand. Immediately, IOSF set up the Sumatrana Fund to raise money to help conserve the only known locality where hairy-nosed otters are still found in the world.

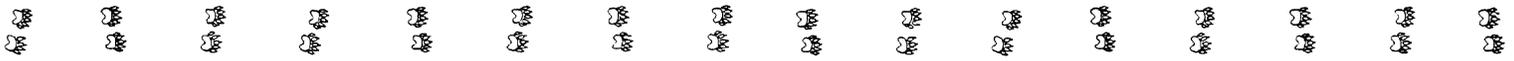
Thailand has four species of otter: the Asian small-clawed otter (*Amblonyx cinereus*), the smooth-coated otter (*Lutra perspicillata*), the Eurasian otter (*Lutra lutra*), and the hairy-nosed otter (*Lutra sumatrana*). All of these otters are severely threatened due to the loss of habitat, pollution and disturbance, but it is the hairy-nosed otter that is verging on extinction. All four species of otter have full protection from the Thai government under the Wild Animals Reservation and Protection Act, and it is illegal to kill or trade in otter skins and parts.

The hairy-nosed otter once occurred from southern Indochina and Thailand through to Malaysia and Indonesia. Other than having strong claws on the feet, dark brown colouring and being just over one meter in length, nothing further is known about its feeding habits, behaviour, breeding or ecology.

IOSF has begun funding a project with a grant from the Rainforest Foundation and are working alongside Dr. Budsabong Kanchanaska of the Royal Forest Department of Thailand. She is working in the Swamp Forest to look into the diet, behaviour and ecology of the hairy-nosed otter and will provide the first-ever information on its habitat and ultimately what is vital to conserve this rare species. A conservation plan can then be formulated to establish priorities for future research with the Thai government and discover other countries where the hairy-nosed otter may still exist.

The future of this species is still hairy, but you can help. If you can publicize this and would like a colour poster to display, please e-mail back:

Sumatrana Fund, International Otter Survival Fund
Broadford, Isle of Skye, Scotland IV49 9AQ UK
Tel: +44 (1471) 822 487, Fax: +44 (1471) 822 975
E-Mail: iosf@otter.org, Web Page: www.otter.org



Congo Clawless Otter

Photo by Dr. Jo Thompson

Africa's Most Elusive Otter

By Dr. Jo Thompson

In 1990 the IUCN Species Survival Commission reported the Congo Clawless Otter (*Aonyx congica*) to be present within "the Congo River basin extending eastward to the forests and wetland areas of Rwanda, Burundi, and Uganda," (Otters: An Action Plan for their Conservation) but were no where common. At the most recent IUCN Otter Specialist Group meeting the members concluded that the Congo Clawless Otter had gone extinct based on the absence of reporting. Admittedly, our knowledge of *Aonyx congica* is abysmally poor.

The little descriptive reference we have of the Congo Clawless Otter is based on a paucity of data drawn from a limited number of captive individuals and inferences from studies of the Cape Clawless Otter (*Aonyx capensis*). No empirical studies have been conducted on the Congo Clawless Otter in its natural habitat.

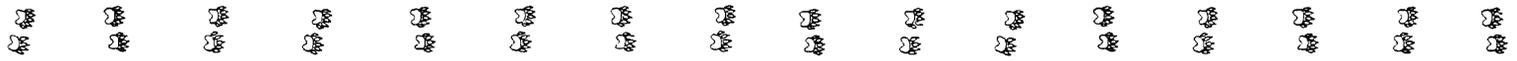
As a field scientist working in central Democratic Republic of Congo (formerly Zaire) since 1992 and the only individual in the region whose focus is wildlife, any incident concerning animals is brought to my attention. Thus, in 1995 I had the

opportunity to foster-mother a female Congo Clawless Otter cub. She was brought to me on August 4, 1995. She passed meconium shortly after I acquired her, and I estimated her to be approximately one day old at acquisition. The men (hunters) who brought her to me reported that they had found her in a den along a northern tributary of the Sankuru River (latitude 04 degrees 00 minutes South, longitude 021 degrees 23 minutes East) crying loudly, and that her mother had abandoned her there. There were no other pups in the den. On several occasions through the years I have seen evidence of otter presence in my research area, including skins, and had periodic reports of otter sightings by local hunters.

The local people report that the Congo Clawless Otter (called "Njondo" in Lingala, the Congolese trade language) is common in the Lukuru Wildlife Research Project area. Within our Project area, the women of the IKolombe ethnic group have a tradition against consuming the meat of the otter. However, the other ethnic groups (the NDengese, IYalima, and ISolu peoples) within our Project area have no such taboo. Although the otter is not specifically targeted, local people will eat its meat whenever the opportunity arises to harvest an individual. The people do not use the skins but dry/smoke them and keep them. In May 1998 the Project acquired 8,401 acres which is locally recognized as a wildlife sanctuary, named Park

Bososandja. Along the shoreline of one perennial pool within the Bososandja, we have constructed an observation blind where we have observed a number of Congo Clawless Otters during studies of other wildlife. I have photographed track marks in wet sand and mud within the shallow feeder streams. I have personally observed the otters on three separate occasions in the Bososandja sanctuary pool (03 degrees 43 minutes South, 021 degrees 22 minutes East) which is surrounded by dry climax forest. All sightings occurred between 9:00-10:30 a.m. The first occasion was on December 24, 1997, when a single adult otter was seen (there may have been others) climbing around a fallen log that jutted out into the pool. On January 30, 1998, a solitary adult otter swam directly in front of the blind (a distance of 2 meters in front of me). On February 6, 1998, two otters were glimpsed briefly in the shallow end of the pool. Although my infant otter was very vocal, during all three sightings of wild adults the observed otters made no vocalizations. On February 18, 1998, I followed the tracks of 2-3 otters on the muddy sandbars of a small stream that flows into the pool. Again, on February 19 and March 7, 1998, we followed tracks in another stream that feeds the pool. However, for six weeks from March through April 1998 I was traveling within the Project area conducting conservation education meetings and surveying for other wildlife. I left the Lukuru in June 1998 as the military and political situation was escalating.

I will be returning as soon as the security situation improves, and I intend to collect data on our otters. When considering these antidotal observations from the Lukuru, please remember that at the Lukuru we have relatively marked climatic seasonality. I analyzed daily weather data, which I collected from June 1994 through September 1995 and intermittently from 1995 through 1998 with long-term records (1941-1963) from comparable meteorological stations at proximate locations. At 4 degrees latitude south of the equator, the Lukuru experiences two sea-



sons: the rainy season from September through April (highest rainfall between October through December) and the dry season from May through August (including periods of 15 or more consecutive days with precipitation less than 0.1 millimeters in June/July = drought). Our observations of Congo Clawless Otters occurred between December 1997 - February 1998, succeeding the period of peak rainfall. It is not known what affect seasonality does or does not have on their activity patterns and whether there is birth seasonality associated with the end of the dry season.

In April 1999, I had the unique opportunity to visit and view a captive North American River Otter female and her pups in an artificial den. It was interesting to compare the more aquatic North American River Otter pups with my Congo Clawless Otter pup. The Congo Clawless Otter is reportedly the most terrestrially adapted otter. My pup was approximately twice the size of these River Otters at a comparable age. Some orphological attributes that seemed most obvious to me and confirm the different habitat adaptations were the absence of whiskers, absence of webbing (particularly on the front feet), absence of front claws/nails, smaller nose, and more prominent ears on *Aonyx congica*. My otter was pure white at birth (see photograph) and the North American River Otters were a dark gray. Also, the vocalizations were distinctly different.

My otter pup died from a prolapsed anus, as determined by Frank Wheeler of the London Zoo, who viewed numerous photographs. I buried her carcass in a specific location where I knew I could retrieve whatever had not decomposed at some later date for genetic analysis. Unfortunately, the current situation in DR Congo does not permit secure work in the interior. However, the local workers continue in my absence. If you are interested in knowing more about the Lukuru Wildlife Research Project, you can check out our website at: <http://members.aol.com/jat434/index.htm>.

President's Message

Spring is the season of renewal. Mother Nature has shed her coat of white exposing her dress of color. She is preparing her natural bounties for the young who will be born in this special season, including the river otters.

The River Otter Alliance is also renewing its life through the emergence of new ideas and new contributors to our Journal. As we reach out to people of the otter community, they, in turn, reach out to us. These people share their ideas and they share their otter experiences and otter expertise through articles in our Journal. Enjoy the articles and share them with others.



Judy Berg

I have said in the past, and continue to say in the present, that education is a key component to preserving the river otter. Our group is continuously pursuing new ways to answer this educational need. One new idea that we recently proposed is the preparation of an educational resource to be used by teachers to help guide their students into understanding this elusive species and its importance in the complex web of life. We are assembling an Education Box, which will be loaned to a teacher at a specific school or environmental education center. We will cover the cost of shipping to and from (if necessary) the institution. It is planned that the box will contain: replicas of an otter skull, feet and scat; track molds (plus compound to make tracks); an activity book for ages 7-12; a Mammal Tracking Guide; an education packet for teachers and students; and the video "The Otters of Yellowstone." If we get enough interest, we may add a second box. The box will be in place by the fall semester to be loaned for a limited period of time, possibly one week, to any institution in our country.

What do we need from you who read this Journal? We need for you to go to your child's, grandchild's or local school or environmental center to inquire as to their interest in such a resource. Then please write to us with your results to our journal address, or my home address: 4421 South Parkview Drive; Salt Lake City, UT 84124-3903. Thanks!

We have other ideas relating to education which we hope will evolve into reality for the near future. We also ask for your ideas. Your input is valued! I will be writing a proposal for funding to cover the box(es) and other potential otter-related activities. PLEASE respond as soon as possible with your input.

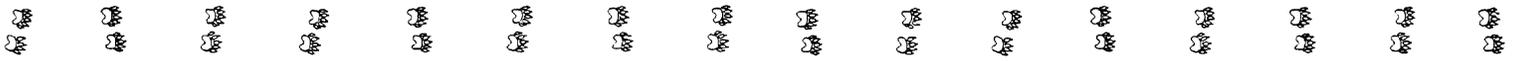
Our Journal, however, continues to be our major educational avenue to reach our membership and others. We continue to ask you for your input into our publication. Remember, such input can be from a few words to many, from professional research to anecdotal experience, as evidenced in our issues. Also, If you haven't already done so, please renew your memberships for 2000 or become a new member. Let's all continue to lend our support to the river otters!

On 4 March 2000, Rocky Mountain National Park held its bi-annual year River Otter Survey. David and I were unable to attend, but Board Members Tracy Johnston (and husband Chris), John Mulvilhill, and Carol Peterson participated, along with several people from Colorado's Ocean Journey (in Denver), RMNP Park Staff and other enthusiastic volunteers. I understand it was quite successful. (Please see Otter Updates.)

Spring is the blossoming of the bud into the bloom of life. Let's make sure our river otters will continue to blossom into new life. HAPPY SPRING!

— *Judy Berg, President*

Visit the River Otter Alliance Web Page at www.otternet.com/ROA



Otter Updates

By Tracy Johnston

• The biannual river otter population survey for Rocky Mountain National Park, Colorado, was held on Saturday, March 4, 2000. Initial reports indicate the population has increased from the 1998 survey, however census numbers are not yet available. This is further evidence that a stable population has been reestablished by the reintroduction program that began in 1978.



River Otter Slides in Rocky Mountain National Park, March 2000

Photos by Tracy Johnston

• Two toxic mine waste spills have devastated portions of the Vaser, Viso, Tisza, Szamos and Danube rivers in Romania and Hungary during the last two months. The first occurred on January 30, 2000, when cyanide-contaminated water leaked from a dyke located near a gold mine. Since that time, practically all flora and fauna have disappeared from Hungary's Szamos and Tisza rivers. This includes a population of approximately 300-400 river otters, most of whom are thought to have died in their nests. A second spill of lead, zinc, copper and cyanide occurred on March 11, 2000, when melting snow and torrential rains broke a dam northwest of Bucharest, Romania. This sent toxic mine waste into a tributary connecting with a previously unspoiled section of the Tisza River.

Mr. Pal Gera, president of the Foundation for Otters, has developed the Otter Ambulance and Otter Park in Somogy County, Hungary. Although a small number of river otters have been rescued so far, the Hungarian government does not have the financial resources to support the effort. For information on how you can help, contact:

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Broadford, Isle of Skye, Scotland IV49 9AQ UK
Tel: + 44 (1471) 822 487
Fax: + 44 (1471) 822 975
E-Mail: iosf@otter.org
Web Page: www.otter.org

• Melanie Haire, Zoo Atlanta's Asian small-clawed otter keeper (see "Rehabilitating Hooch" in Spring 1998 newsletter), successfully rehabilitated and released two male orphan North American river otters on Georgia's Yellow River this past summer. A third orphan otter, a female, had to be euthanized after her health deteriorated due to hydrocephalus. Melanie reports "the boys" are doing well and show themselves occasionally.

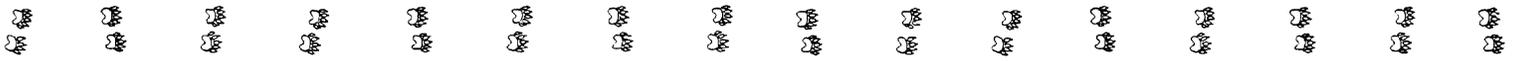


Melanie Haire and Orphan River Otter Pups

Photos by Melanie Haire

• A controlled study of river otter responses to oil contamination at the Alaska SeaLife Center in Seward, Alaska, will conclude this May. Previous data collected on Prince William Sound's free-ranging coastal river otters following the Exxon Valdez oil spill indicated a strong relation between oil contamination and physiological stress. However, scientists felt this evidence required verification through controlled experiments. Therefore, between April 1998 and March 1999, fifteen wild-caught male river otters were exposed to "two low

levels of oil contamination under controlled conditions in captivity" to simulate chronic exposure to crude oil. Samples of blood, skin tissue and feces were then collected for chemical analysis. Observations on diving and foraging behavior were also conducted. After receiving a certificate of good health, the otters were then re-released at the site of original capture. Radio tracking of the otters to determine post-release survival continues until May 2000.



Means to an End

By Kurt Butkiewicz

As an amateur photographer, I am often fascinated by the photo series that professionals are able to take of objects in motion; especially those of animals. I was thrilled when I received my own photos in the mail showing what appeared to be just the same: a series of three shots of a cute little otter diving backwards.

As excited as I was about the photos, I was equally upset that I was able to accomplish such a feat. Upset because these photos are not a series of pictures taken of the same motion. These are actually three separate photos taken of three separate yet almost identical dives. These pictures are of a repetitive behavior commonly seen in this otter. An otter who is not stimulated by its environment and has therefore resigned to doing the only thing it finds to be amusing in any sense.

Although I encountered this particular little fellow at a small zoo in Massachusetts, this same unfortunate dilemma is common at many animal facilities around the world, and not just with otters. This is why enrichment programs have been developed, are becoming more common, and are so extremely necessary when housing any sort of animal, including otters.

Repetitive behavior is just one type of problem behavior that should be viewed as a *red flag* warning that an enrichment program is needed. Needed to provide an animal with adequate stimulation and promote a mentally healthy specimen; in other words, a happy otter.

Other behaviors that are strong warnings that an animal is lacking in mental care include: lack of normal activity or depressive behavior, extreme submissive behavior, constant overly-necessary aggressive acts, displaced aggression toward inanimate objects, extreme attempts to escape confinement, or even self-mutilation to any degree. There are other signs that may be species- or subject-specific, and any of these behavioral misadventures may be caused by something other than lack of enrichment. Still, as a



What appears as a photo series of one motion are actually separate photos displaying repetitive behavior in this otter.

Photos by Kurt Butkiewicz

caregiver, it is best to stay out from 'behind the eight ball,' provide a strong enrichment program, and keep an open eye for any such red flags that an animal may need more from you.

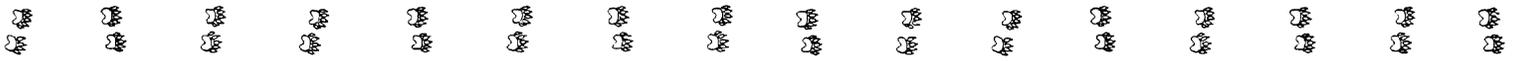
Animals are dynamic by nature. Just because something used to be enriching doesn't mean that it still is. Just because

something is enriching now doesn't mean that it will be next time it is presented. Any animal will grow accustomed to any specific enrichment. Therefore the enrichment program must be more dynamic than the animal itself.

So what comprises an enrichment program? There are two main components: environmental enrichment and animal enrichment. Environmental enrichment involves any change to the animal's surroundings focused upon stimulating new activities from the animal (i.e. giving toys, changing decor). Animal enrichment involves including the animal in an activity that promotes stimulation (i.e. training, playtime, changing social groupings). The main difference between these formulas is that while an animal may ignore offerings made through environmental enrichment, an agenda focused on animal enrichment requires the animal's participation.

To provide the most effective enrichment program it is best to mix these components regularly and randomly. It has often been stated that "change is good." This quote states the basis to an enrichment program. Any change that stimulates any of the animal's senses is enlightening. Don't focus merely upon physical activity. Instead, focus on all of the senses. Unique sounds, smells, sights, or tactile conditions will intrigue any animal to explore, react, or interact. A unique food or a natural juice offered on rare occasions can bring on a long lasting 'high.' A random, unfamiliar sound may keep an animal alert until the source is discovered. Human interaction stimulates the animal and builds a relationship. Any change of social groupings, even if just moving between with one other animal or alone, creates a chance to approach its surroundings differently. This list could go on and on. It's as limitless as the human imagination. Be creative. Ask friends and visitors for unique ideas. The caregiver needs only to ensure the enrichment is safe for all participants.

A creative approach to applying a well-mixed enrichment program will provide any animal under human care with the changes necessary to stay mentally alert, challenged, and overall stimulated. End result: a happy otter.



Mexican Otters

By Joseph A. Davis

Mexican otters are carried on the books these days as *Lontra longicaudis*, a name that rattles around like a loose nut in the hubcap of my 40-year journey through lutrophilia. This isn't the place to explain my beef with *Lontra* – suffice it to say that the otters of the New World are still *Lutra* in my book. Literally.

The otters of Mexico were first described in 1897 under the name *Lutra annectens*. In the century since then we've learned almost nothing about them, except to add some information about where they occur. We know that they differ from their cousins north of the U.S. border in having somewhat smaller bare nose pads. We know too that in South America nose pad size and shape vary all over the place. Without question the otters of Mexico, Central America, and most, if not all, of the South American continent, are a single species, to which the name *longicaudis* has been applied in recent years.

Are these really members of a species distinct from *Lutra canadensis* to the north? 19th-century taxonomy accepted as separate species nearly any two populations that were geographically separated, on the grounds that they didn't interbreed. Whether or not they *could* actually interbreed doesn't seem to have been a practical issue. Under this philosophy, populations of *canadensis* on coastal islands were described as separate full species (though they were later demoted to subspecies status as our understanding grew).

Lutra annectens is separated from *canadensis* by an expanse of desert, although each penetrates the desert along some rivers (Figure 1). Obviously even the small remaining distance means that the two couldn't interbreed, or at least would never be able to meet. Not today, at any rate, but the world isn't a static thing. When glaciers were at their maximum, both the Sonoran and Chihuahuan deserts of northern Mexico (which pretty much meet today) dwindled to small, arid islands in a sea of grassland and forest across which otters could migrate (Figure 2).

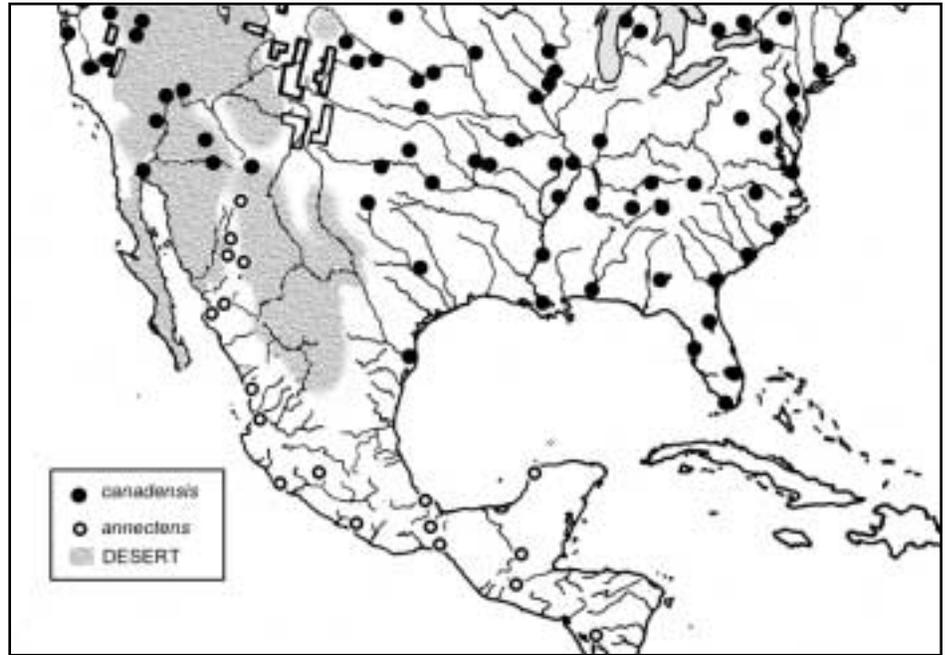


Figure 1 — Otter sightings throughout the U.S., Mexico and Central America.

Deserts waxed and waned several times through the Pleistocene epoch, and they were at their minimum as recently as 18,000 years ago, about the time the earliest human immigrants from Siberia arrived in North America.

Figure 1 shows some localities from which otters have been reported. U.S. and Mexican otters are separated by less than 200 miles, quite a bit less than the distance between New York and Washington. The separation was probably greater during interglacial maxima, when deserts

were more extensive than today's, and it has likely been less—nonexistent, I suspect—when the last glacier was at its zenith. At such times individuals from the two populations would meet. What then?

There is no behavioral reason why they would not mate. A male *canadensis* and a female (*enudris*) from northern South America understood each other's vocal and postural signals and scents, and went through all the right motions of courtship in the Bronx Zoo some years ago.

Could they have produced offspring? *That's the question!* First, the pair had to overcome an initial obstacle to mating. The male had a seasonal rut, while the female, born in the tropics, came into heat every five weeks around the year. At such times she displayed a shrewish temper, which the sexually inactive male bore with restraint and good will. I put them together in late June, and the male took a lot of guff until the last eight days of October, when breeding was seen almost constantly. Unlike the languorous lovemaking of the African spot-necked otter, this sounded like rape, although it was clearly as consensual as it was vigorous. By 16 December the female looked pot-bellied, and four days later I could see that her nipples had enlarged. By this time she had been brought in out of the cold, into the basement of the Lion House.

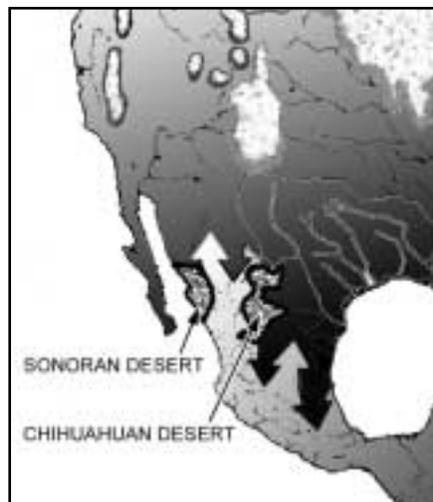
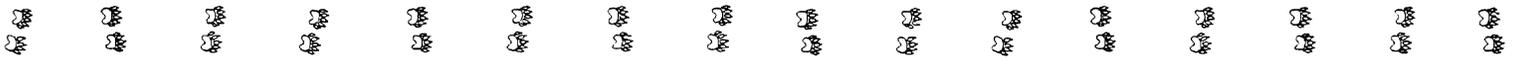


Figure 2 — Deserts prohibiting otter migrations were much smaller in past geologic periods.



Shortly after New Year's day, blood was found in her enclosure. By this time I was out of the Mammal Department loop, and I didn't know until too late that workmen had been scheduled to tear out a great quantity of old air ducting, a traumatically noisy process at best in the cavernous basement. The otter should have been removed, but she wasn't, and the blood was most likely the result of a late-term miscarriage, or the act of a new mother stressed to the point of distraction.

The second question about a cross mating involves the matter of gestation length. In tropical South America, female otters almost certainly have the straightforward, approximately 60-day gestation common to all freshwater otters except those north of the Rio Grande. What would happen when the genes of one of the mating pair bring about delayed implantation and those of the other does not? The event of January suggests—but only suggests—that the female was in the very late stage of pregnancy—that she had not experienced the delay.

Did the loss of the litter happen because of the traumatic disturbance of workmen, or could it have been the result of a physiological incompatibility unrelated to the noise? And, had cubs been born, would they be true hybrids, like tiglon, or would they have been fertile? The answers to these questions would go a long way to settling the relationships of the various populations of *Lutra* in the New World. My observations over more than half a lifetime cause me to believe that a single species, *Lutra canadensis*, ranges from Alaska to Argentina and Chile. The differences, physical and behavioral, within and between populations are trivial, and suggest a species forced into isolated populations for a long-enough time to develop physical differences, and then reunited, to interbreed freely.

Delayed implantation looks very much like a phenomenon that was useful some time in the past, but is irrelevant to otters today. It may be a souvenir of Beringia, the Ice Age land bridge between Alaska and Siberia. There seems to be no differ-

ence in the breeding success of Eurasian *Lutra lutra*, which have the simple, uninterrupted two-month-ish gestation and *canadensis* on this continent, which interrupt gestation for several months, to give it a span that seems to last the better part of a year. Despite what we used to be taught, not everything we see in nature has a good reason to be. If delayed implantation today was a disadvantage it would be eliminated by natural selection. But sometimes it's neither detrimental nor beneficial any more; it isn't "worth the trouble" to eliminate an unneeded trait, and the trait persists.

Knowing whether *canadensis* and *annectens* are of a single species would tell us something significant about the evolution of New World otters, and could supply data that would help us to conserve them. Test breeding would be time-consuming (because of the possible delayed implantation), but would otherwise be fairly easy if you know what you're doing, and would be relatively inexpensive, to boot. At one time I had hoped to set up a program of breeding to settle the issue, but financing fell through. I hope that one day someone will pick up the torch and shed the light we need.

Indiana River Otter Reintroduction Program – 1999

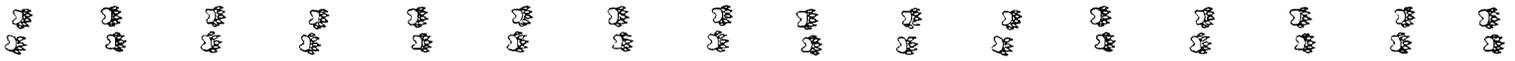
By Scott A. Johnson, Kim A. Berkley, and Charlie Jones
Indiana Division of Fish and Wildlife, Work Plan #98410

Synopsis of their report:

The North American river otter was believed to have been extirpated from the state of Indiana by 1942. The otter had been protected since 1921. After conducting a feasibility study in the early 1990's, a reintroduction program was initiated. The Indiana Division of Fish and Wildlife, Indiana Department of Natural Resources, obtained and released 303 river otters during the years 1995 through 1999 into the targeted watersheds. This included 12 different release sites in 12 different counties throughout the state. The numbers released were: 25 in 1995 (pilot release); 75 in 1996; 74 in 1997; 77 in 1998; and 52 in 1999. The cumulative distribution of otters from 1995 through 1999 showed that they occupied portions of 31 counties. This information was based on telemetry studies, field surveys and observation. In addition, marked and unmarked individuals were recovered in portions of 10 additional counties. Since 1996, reproduction was confirmed or suspected at 10 of the 12 release sites plus three additional sites. This evidence was determined from observations of family groups or age analysis of recovered individuals. The numbers were: 2 in 1996; 4 in 1997; 8 in 1998; and 8 in 1999. Mortality data of 35 otters (28 males and 7 females) as of 1999 were: incidental trapping-40%; road kills-34%; unknown-11%; stress-6%; drowning-3%; shooting-3%; and research related-3%.

The combination of a low mortality rate (11.5%), reproductive success, and dispersion to adjacent watersheds from their release sites, points to a very successful reintroduction program. Congratulations to Indiana! Keep up your good work.

— Contributed by Judy Berg.



AAZK and Otters

By Jan Reed-Smith

What, you may wonder, do the American Association of Zoo Keepers (AAZK) and otters have in common? Well, that depends on whom you ask. If it were me you were asking, then I would answer "a great deal." Of course, some people might say I think everything has a great deal to do with otters; if it doesn't at first, just give me time and I will make a connection.

First, what is the American Association of Zoo Keepers? AAZK is an organization for wild animal keepers. Members of AAZK include zoo keepers, aquarists, zoo or aquarium docents, students, zoo or aquarium curators, and some zoo and aquarium organizations.

AAZK's mission statement reads: "To provide a resource and a forum of continuing education for the animal care professional and to support zoo and aquarium personnel in their roles as animal care givers, scientific researchers, public educators and conservationists. To promote zoos and aquariums as cultural establishments dedicated to the enrichment of human and natural resources; to foster the exchange of research materials, enrichment options, and husbandry information through publications and conferences which will lead to a greater understanding of the needs and requirements of all animals."

So, we're clear now on the goals of AAZK, but still a bit uncertain what this has to do with otters. Well, I'm going to tell you, but first, a bit more about AAZK.

Every year AAZK has a National Conference—for 1999 it was held in Portland, Oregon from September 12th to the 16th. The 300+ conference attendees came from all over North America and included a few foreign representatives. This year, every animal or plant-related zoo job was represented, from zoo director to junior zoo keeper, vet tech to animal behavior specialist, horticulturist to curator. Presentation topics ranged from "Drop Chute Restraint as an Alternative to Chemical Immobilizations for Hoofed

Stock" to "Evolution of Keeper Interpretive Programs" to "Mixed Species by Animal Choice" to "Otter Special Interest Group Workshop" We're there! Here comes the otter stuff!

Kevin Shelton, a fellow AAZK board member, and I decided to formalize an informal otter group that gathered during the 1998 AAZK conference in Indianapolis. Ten or twelve of us joined together to talk about shared otter problems over lunch one day. This impromptu discussion had proved to be a beneficial and popular way to share information, so in 1999 we ORGANIZED.

There are five species of otter kept in North American facilities: the sea otter (much loved but specialized, so not a topic during our otter meeting), the giant otter, the African clawless otter, the Asian small-clawed otter, and the North American river otter. Keepers who work with the last three species were present at our first Otter Special Interest Group (OSIG) meeting, which led to some good comparisons of the differences, and similarities, in behavior, threats to wild populations, and captive husbandry requirements.

Discussions of animal behavior are always interesting and frequently thought provoking. One of the behavior topics discussed was: What is the activity cycle of otters? How can we as keepers accommodate and encourage the animal's natural behavior patterns and thus keep them active, healthy, and interesting for the zoo visitor to observe?

Otters pose interesting problems in this area because they are behaviorally "on" or "off." They are intensely active animals for a few hours and then they sleep; behavior that continues 24 hours a day. This means that keepers must consider activity options for their animals both on and off exhibit. The challenge then is to try and keep them active, or at least visible when on exhibit, and provide them with "things to do" when off exhibit. For keepers, this means behavioral enrichment and exhibit decoration.

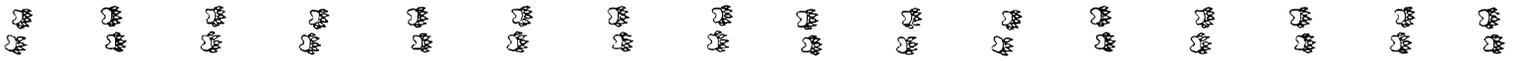
Some of the less ordinary enrichment items used by facilities represented at the otter workshop included: ghost shrimp,

blueberries, a grape leaf ball with cooled crickets inside (as the crickets warm up they crawl out and the otters nab them), crushed fennel, red zinger tea, and curry, which was used to keep animals away from plants. Items used in off-exhibit holding areas included: hammocks, buckets, children's pools, blankets, towels, and a variety of things to rub on or burrow in like wood, wool and hay.

Exhibit decoration is a bit more difficult and generally requires the assistance of a number of people. First, there are mechanical problems that must be considered like pool filtration systems, visibility for the public, the logistics of getting an item into an exhibit, and toxicity of any plants that are being considered for placement in an enclosure. Second, the species-specific and individual otter's behavior must be taken into account. The African Cape clawless otter is known as being very destructive—they dig up everything! N.A. river otters and Asian small-clawed otters may do some digging. Some individual N.A. river otters have proven to be very adept climbers! Asian small-clawed otters have very dexterous fingers and individuals have been known to become very good at dismantling structures.

The discussion revolving around these exhibit decorating issues was lively and, at times, extremely funny. Stories told by participating keepers included the otter that kept climbing out of his exhibit every night only to return each morning, the male who undermined the entire exhibit with tunnels, and the female who partially dismantled her nest box and rejected it in favor of a burlap bag as a nursery for her pups.

Another topic discussed at this otter workshop was husbandry training. An increasing number of institutions are utilizing operant conditioning techniques used by canine and marine mammal trainers to train their otters to cooperate in simple husbandry procedures. These activities may include stationing (standing still in one spot so the keeper can get an animal's weight or give the animal a close visual check for injuries, observe coat, foot, or teeth condition) or crating up (teaching an animal to go in a crate which is then used to transport the animal to



another location or put on a scale for weighing). Every animal trained is different, and an opportunity to discuss technique or problems with fellow keepers is invaluable.

Another interesting area of discussion during our keeper workshop was that of captive breeding. This is an issue for all three species (N.A. river otter, ASC otter and Cape clawless) but for different reasons. The interest to keepers is that the more we understand about their reproductive behavior and pup-rearing needs, the better we can be at providing a suitable environment.

The ASC otter is an American Association of Zoos and Aquariums SSP species. Because this otter is a social one, meaning they live in family groups, it was selected as the model for some of the more endangered social otters like the giant otter. AAZA institutions have accomplished a great deal with the ASC otter, but we are just beginning to reliably breed this species. Some of the more interesting conversations regarding the breeding of this species revolved around how long pups from the previous litter should be left with the family group, the role these sub-adults

play in caring for the next litter, and the role of the male in caring for pups.

The Cape clawless otter is represented by just a few individuals in U.S. zoos, so at this time breeding is a consideration for only one institution. For them the issue is one faced by facilities over and over again: Will the animals get along? Will they breed? If not, why?

The N.A. river otter is the species most commonly found in U.S. zoos with roughly 260 individuals maintained by 97 institutions belonging to ISIS (International Species Information System). Breeding this species in captivity presents its own special set of problems; to a large extent because of the female's reproductive physiology. Female N.A. river otters are seasonal breeders and experience delayed implantation; the fertilized egg develops to the blastocyst stage, and then stops. After essentially floating around the uterus for 8 to 10 months, the egg implants and completes a 60-day actual gestation.

Because of this long delay and the single breeding season, there is generally a two-year inter-birth interval. Combine this with a failure for most pairs to breed at all, and the end result is the birth of rel-

atively few pups each year.

John Ball Zoo is one of a handful of facilities that is consistently breeding this species. "Why" is the question, and what can we do to change this? A question that precedes this is do we want to change this? There are orphaned pups brought to zoos and rehabilitation centers every year. How many pairs should we be trying to breed every year to provide animals for all of the facilities interested in exhibiting this charismatic animal?

These are all questions currently being considered by the American Association of Zoos and Aquarium's Small Carnivore Taxonomic Advisory Group, the committee designated to address issues concerning small carnivores held in U.S. zoological institutions. Keepers can contribute a great deal to this discussion by pooling our first-hand observations on the behavior and successful captive management techniques used at our various institutions.

It was for these reasons and many others that the Otter Special Interest Group met in Portland, but perhaps the most important one was that we all just love to talk about our animals!

The Feast for the Otter

From *The Fables of India* by Joseph Gaer (1955)

A great hound once hunted an otter, but he could never succeed in catching him. At last, after many a long run, the hound decided that the otter was too quick to be caught in an open chase. So he schemed to trap him with cunning.

He went to the otter's den near the river, and dug a very deep hole at the entrance. He covered the pit neatly with straw and twigs. Then he laid out a tempting meal of a large sucker, which he certainly did not want for himself. Then the hound ran off and hid himself near enough to hear what happened.

The otter returned to his home and saw the feast awaiting him at the door. He sat down and perked up his ears for any sounds. Then he looked at the big fish with cunning eyes, and thought: "It was certainly not there when I left his place. Now, who could have put it there? If a friend wanted to give me this fish, he would have brought the gift to me when I was at home. Therefore an enemy must have brought this to me for an evil

purpose. It is not safe for me to eat it. It is not even safe for me to remain here much longer."

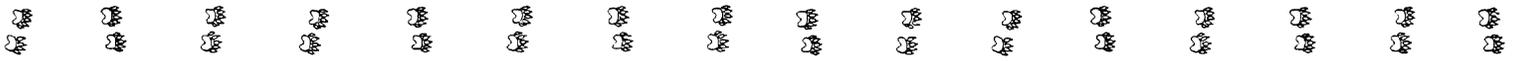
Though he was very hungry and strongly tempted to taste the fish, the otter jumped into the river to find safe lodging for the night.

After the otter had left, a hungry bear came along who smelled the food before he could even see where it was. He dashed blindly toward it, eager for his meal. But as soon as he stepped upon the twigs and branches, the trap collapsed, and he landed at the bottom of the pit.

The hound heard the commotion and congratulated himself on his success in finally trapping the otter. He leaped out of his hiding place and jumped into the pit; happy his scheme had worked so well.

But when he landed at the bottom of the trap he found before him, not his intended victim the otter, but his mortal enemy, the fierce bear. And the hound met the fate that he had intended for the otter.

— *Contributed by John Mulvihill*



Deep Alaskan Otter Ecology

By Paul J. Polechla Jr.

Here in Albuquerque, New Mexico, as summer gives way to fall, the weather has been mixed: frequent rains interspersed with sunny days with plenty of clear blue sky. The only exception is a fog bank at the base of the Sandia Mountains jutting out from the high shrubby desert steppe grasslands.

Strange as it may seem, this reminded me of Southwestern Alaska. I spent nearly five years in Bethel, Alaska, with rainy/sunny late summers. I was stationed at the Kuskokwim campus of the University of Alaska-Fairbanks. Off in the distance of the wide expanse of tundra (with low shrubs), if you squinted you could see the Kilbuck Mountains. It was here that I was assigned to host (compliments of a grant from the National Science Foundation) Western Alaska's Natural Science Summer Camp. Our clientele was 15 bright-eyed, happy and eager teenagers from "Bush" Alaska, mostly Yupik Eskimo and Denina Athabaskan kids. Our purpose was to provide the students with a "hands-on" experience in ecology.

On 5 July, I boarded a two-seated Cessna plane (standard for the bush) and the pilot

took me over the endless tundra. Wetlands abound in this area with the beautiful ink spot-shaped ponds glimmering in the sunlight. We approached the winding ribbon of the Kuskokwim River and turned upstream. Then, we flew towards the Kilbuck Mountains when we came to the Tuluksak River. Wildlife was ever apparent from the air. Every couple of miles, white dots would appear, each representing a white pair of graceful tundra swans. Now we soar over the foothills and country where the river was lined with willow and alder. Looking down at the river below there is a stair-step chain of beaver dams and a huge pile of cut branches...a monster beaver lodge. The pilot comes to taiga, spruce-birch forest and a series of canyons. He swerves to the left and then the right. Finally, after an hour and a half flight, we see a group of buildings, gravel ponds and a gravel runway. The flight panel begins to squawk as the plane touches down on the runway like a clumsy gymnast lands on the mat after a sawhorse vault. Clump-clump! After "coming to," I stand bewildered on the runway staring in all directions at this gold mining camp (mercury-free), in the middle of this northern mountainous paradise.

Finally I hear the humming of a couple of ATV's. My buddies Joe Kwaraceius (an Anglo who speaks Eskimo) and Daniel Ayargarak (an Eskimo who speaks English) load my gear into an ATV trailer and I ride double. On our drive to camp on a four-mile stretch of

dead-end trail along Slate Creek, several puddle ducks—green wing teals with little ducklings—stir off their favorite pools. Bright yellow warblers, cherry robins, and hovering arctic terns fishing over a pool could be seen. The terns are making use of the land of the midnight sun to put on high-yield fat for their long flight to Antarctica in several weeks. The tall lavender fireweed, harbinger of days to come, tells me autumn is coming quick near the Arctic Circle. The next couple of days are spent readying camp for the students (building latrines and other "domestic chores").

In those days we saw so much wildlife without even trying...we saw more than twenty species of birds around camp next to a myriad of wetlands. Mammals observed included snow shoe hares, red fox and black bear sign. The night before the students arrived, a juvenile black bear got friendly at the porch after dinner; so friendly in fact we had to squirt the curious "teenager" with a little pepper spray. It snorted, wheeled, and ran into the alder thicket. We had another interesting encounter with undoubtedly the same bear. This time the teenager took an interest in our crispy bacon and syrup-laden French toast!

The next morning the students arrived. We oriented them and settled them into their cabins. The ninth of July was a full Nature

continued on page 16

River Otter Trapping

By Tracy Johnston

Did you know the fur-trapping industry is a primary reason why river otters have been extirpated from many U.S. states? Records from Hudson Bay and other fur-trading companies indicate river otter harvesting peaked around the year 1800, when 65,000 river otters were "taken" in North America. Trapping of river otters declined to about 4,500 annually in 1904, which is approximately the time when the animals disappeared from many states.

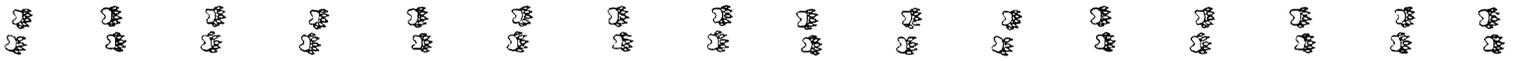
Today approximately one-half of the lower 48 states, Alaska, and all the Canadian provinces have otter trapping seasons. According to Nebraska state officials, more than 50,000 river otters are "taken" in North America annually. Alaskan state officials report between 1,200 and 1,400 river otters have been "harvested" annually in their state for the last ten years. The otter harvest in Louisiana sometimes

Colorado River Otter Reintroduction Program

Photo by Jerry Claassen,
District Wildlife Manager,
Colorado Division of Wildlife



exceeds 10,000 animals per year. At the same time, states like Colorado, Illinois, Indiana, Nebraska, New York and Pennsylvania have reintroduced or are currently in the process of reintroducing the river otter back into their states.



Otter and Display Area, Union Federal Savings & Loan

Photos courtesy of Dave Modder, D.V.M.

Otters That Live In, Not On, A Bank

By David R. Modder, D.V.M.

Imagine you've just moved to Kewanee, a town of 13,000 people in west central Illinois. In hopes of securing a car loan, you visit Union Federal Savings and Loan. You're drawn to an atrium-like area in the center of the building surrounded by a three-foot tall railing. You lean over the railing and find yourself looking down over a large two-story tank that holds 5,000 gallons of water at a depth of 5 feet. The walls of the tank replicate a natural environment. There is running water, even a waterfall cascading down over a series of rocks. There is a separate "land" area covered by indoor/outdoor carpeting. And there in the water, playfully swimming are Andy and Oscar, a pair of North American river otters who have been residents here since 1991.

Andy and Oscar were brought to Kewanee chiefly due to the efforts of Robert Hansen, who served as president and chairman of the board at Union Federal. His main purpose was to educate the public about river otters, an endangered species in Illinois at that time. The pair was purchased from a Louisiana otter farm. They were estimated to be 18 months old when they made the journey north to their current home. USDA approval, a primary care giver, and names were just a few necessities for Andy and Oscar. The USDA granted an exhibitor's license to the financial institution. They continue to monitor the care of the animals by regular inspections. The primary care giver since their arrival has been

Nancy Mitchell, a long-time employee of Union Federal, who over the years has cultivated a close bond to the otters. In fact, they allow contact with her that they do not extend to any other people. Andy and Oscar received their names through a contest involving Kewanee school children.

I have provided health care for Andy and Oscar for the last several years. This includes quarterly visits where they are observed not only in their tank, but also close-up in their cages behind the scenes in the basement. For the last two years, we have performed annual physical exams, under anesthesia. We draw blood for white blood cell counts, serum chemistry analysis, and heartworm testing. We also perform dental cleaning at this time, as well as radiographing their chest and abdomen. We also vaccinate them while they are sleeping. Vaccinating under anesthesia is

much more pleasant for everybody involved, Andy and Oscar included, as compared to vaccinating them in their cages as we had previously done.

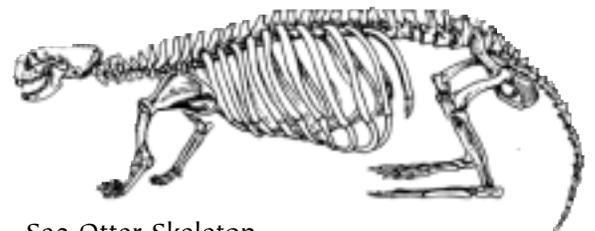
The otters spend much of their time out in their tank, where Nancy can watch them from her desk through a window that is set at the water line, so they can be seen whether they are in or out of the water. While in the tank, they enjoy playing with toys, chasing after frozen smelt, and watching the many visitors that stop by to say hello. New visitors are always welcome, so if you're ever in the area, and want to see a pair of otters in truly a unique setting, stop by during business hours, and don't forget to bring some hard-boiled eggs, or smelt, their favorite snack foods.

— David R. Modder, D.V.M.
Kewanee Veterinary Clinic
Kewanee, Illinois

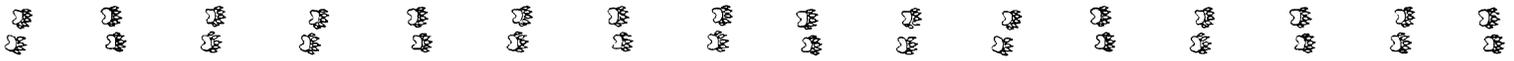
Otter Facts

Although today's river otters and sea otters are thought to have been the same species approximately one million years ago, their skeletons now indicate significant differences.

River Otter Skeleton



Sea Otter Skeleton



An Otter Called Sara

By Christy Vanfraechem

If you should ask people what they know about otters, most will tell you that otters make slides in the snow. Indeed, otters are known to be very playful animals. I have no experience with the Canadian river otter but I guess they're not much different from the European otter when it comes to playing games. From 1994 to 1998, I worked on a research project to determine whether it is possible to predict when a female European otter (*Lutra lutra*) is in oestrous, just by looking at the behaviour. For this reason, I spent nearly 3 years observing the behaviour of 5 female otters in captivity in 'Dierenpark Planckendael' in Belgium and in 'Aqualutra' in the Netherlands. I enjoyed watching all 5 of them, but one became my all time favourite: Sara. So when Mrs. Berg (whom I was very honoured to meet at the Otter Colloquium in Trebon, Tsjechic Republic, in 1998) asked me to write something for the Otter Alliance, I thought I might write something about this specific otter.

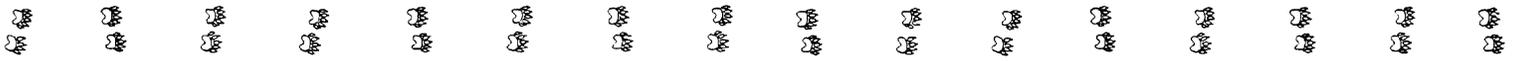
In March 1997, I came to The Netherlands to do observations on the female otters of the otter park 'Aqualutra' in Leeuwarden. There I met Sara. She was a very tiny and extremely shy otter with a cute face (to me she looked more like a teddy bear than an otter) and a gigantic curiosity, which very often collided with her shyness. It took over a month before Sara started to accept my presence as a harmless piece of the scenery, as a part of everyday life. Still, I constantly had to watch out not to do anything that could startle Sara: a slight cough or the smell of a freshly washed T-shirt (soon I smelled like an entire fish store, which wasn't improving my social life) or even the sound of a pencil dropping on the floor, was enough to bring Sara into such a state of fright that she would refuse to come near my observation place for hours, even days. So I spent many hours a night, just sitting there, barely moving (even when every part of my body was aching because of the cold in wintertime or during summer under another attack of the big 'vampire' mosquitoes which were determined to draw every last drop of blood from my veins), observing Sara. But my patience was greatly rewarded as I came to know Sara as the playful otter she is.

All the otters in captivity I observed during the 4 years I was working on my project displayed more or less the same behaviour. Most of the time they just sleep, and in a few hours of activity, they eat, drink, swim, groom, run around, and sometimes dig a hole or climb the occasional tree. But not Sara. Since Sara was kept alone in a holding pen, she had to find things to do to amuse herself.

Many nights I observed Sara digging. She had a very peculiar way of making holes in the ground: first she would make a little dent by pressing her nose firmly in the ground, then she would start digging in the way an otter normally digs (the way dogs do) until the hole was about 20 centimeters deep. After that, she would continue digging while lying on her back. It's a very funny sight to see an otter lying on its back, halfway in a hole with its hind legs pointing to the sky and dirt flying around everywhere. One evening after some heavy rainfall, Sara found herself a mud pool and started digging. Soon the hole was deep enough to collect muddy water and the only thing I could see of Sara was her hind legs and tail sticking out. That's when Sara started blowing bubbles. From time to time she would come up, her face dripping with mud to gasp some air before diving into her mud pool again. At first it seemed as if Sara was making random holes all over her holding pen, but one night it became clear that it wasn't so. Sara was just happily running around when she suddenly stopped. There she stood: head slightly cocked to one side, left front leg lifted, tail in a straight line behind the body (just like a hunting dog). Then, for no apparent reason, she started digging until she had a little hole. She stopped again, listened (hunting dog posture) and started to dig a new hole, about 1.5 meters from the first one. Suddenly Sara went back to the first hole, just when a mouse popped up. The mouse didn't stand a chance. I guess Sara listened very carefully for any sound that gave away the presence of a mouse under ground. When she located a mouse, she would start digging. The trick is to scare the mouse so it starts running inside its burrow, away from the digging sounds. As soon as the mouse moves, Sara would dig on the other side in order to make the mouse turn back. This way, all she had to do was wait until the mouse tried to escape through the first hole. After this, I saw Sara use this strategy to hunt mice several times and she was always successful.

Another night, Sara suddenly developed an interest in the lamps (500 W) which were installed inside her pen in order to do observations during night-time. Since I had been doing observations for several months, and neither Sara nor the other otters showed any signs of disturbances by the lamps, I thought it to be very peculiar. Then, I saw what was going on: those lamps were ideal to attract moths. Many moths were drawn to the light, knocked themselves out as they smashed into the lamps, and dropped onto the ground. As soon as they started coming around, they would scamper about, still too dazed to fly. This was what Sara was waiting for. The first moth she caught she tried to eat, but I guess it didn't taste all that good because she spat it out again almost immediately. And then Sara did something amazing: she caught another moth, held it very carefully without harming it, rolled on her back, and put the moth on her belly. The dazzled moth started to walk around on her belly and once in a while when it was about to fall off, Sara would pick it up gently and put it back on her tummy. Sara enjoyed herself this way for hours. She even did this a few times with mice she caught and didn't kill right away, but the mice were too quick and always tried to get away as soon as possible.

Since the mice wouldn't cooperate in the 'tummy running,' Sara came up with another game she could play with mice. Very often I saw Sara throwing food (one-day-old dead chicks or frogs) around, only to run after it and throw it again, as soon as she found it. It reminded me of humans throwing sticks for dogs to fetch, only Sara was playing both thrower and dog. She even had a different style of throwing for each item. Frogs were held by a hind leg and thrown forward. Chicks were also held by a leg but they were thrown backwards over the head; this was extra fun since Sara couldn't see where they landed so she had to search for them. But best of all for this game were mice. Sara would pick them up by their tail, get a good swing and let them fly. This way you could never predict which way the mouse would go. No question this was even more fun with live mice, since Sara had to chase them after she threw them away. When Sara got bored with this game, she often would go into the water. She would push the dead fish (that she would get for food) through the water with her nose. Sara tried this also a couple of times with chicks, but since they have the



tendency to sink, she soon discovered that it was more fun to drop them into the deepest part of the pond, dive after them, and try to catch them before they reached the bottom of the pool. As she got more practice, she challenged herself by playing this game in more shallow waters. Moths were not so useful for this game, since they just floated away.

When Sara had no moths, mice, frogs, fishes or chicks to play with, she would just chase her own tail. She had 4 distinct ways to do so. The first two were in the water: Sara would either swim after her tail in little circles in a horizontal line or she would dive after it and make circles in a vertical line. On land she tried to catch her tail by running in circles (as dogs do) but the most unusual—and probably difficult—way was taking her tail by surprise. Sara would start the game by running as fast as she could (so her tail was dangling behind her) and then, she suddenly stopped and jumped back. To my surprise she occasionally even succeeded in catching her tail just by ‘jumping’ it. Once she caught her tail, the game wasn’t over.

Now it was a matter of trying to get out of or into the water (depending on where she caught her tail) without letting it go. The game became even more fun if there were a lot of obstacles (like trees and stuff) she had to avoid. Of course, if Sara let go of her tail, she had to start all over again. It certainly was much fun to see Sara play.

However, there is still one game I haven’t mentioned because it was such an extraordinary behaviour that I still find it hard to believe, even after I saw Sara do it several times. This game, which I consider the ‘ultimate’ game, I called the ‘sling-shot’. Sara discovered this game by accident while she was collecting nesting material. After she had gathered lots of grass, she decided to add some twigs. So Sara grabbed hold of a branch of a young willow and started to pull. Of course, willow is very flexible and instead of breaking, the branch started to bend. The further Sara walked away, the further the branch, and eventually the entire tree, started to bend over up to the point where it couldn’t bend any further. For maybe 10 seconds or so, Sara and the tree were in a tie

but then the tree won and it swung back to its original position, with Sara still holding on firmly. Apparently Sara liked this ‘flying’ because I observed her playing this game many times. After a while she discovered that she could bend the tree that was standing near the pool by extending its branches over the water. Now she just reached for the highest branch she could get hold of, got a good grip, and started swimming away until the tree would swing her out of the water. And believe me, a dripping wet otter, flying through the air while hanging on a branch by its teeth, is truly a magnificent and unforgettable sight.

All the things I described in this story are actually done by Sara. It was a lot of fun to see her come up with new games and I feel privileged to have had the chance to observe and get to know this remarkable creature. I can only hope that, by writing this story, I made it possible for you, who read this, to share a little in the wonder and delight otters can bring. And I sincerely hope that we all may enjoy the sight of a playing otter in the wild one day.

The River Otter Alliance

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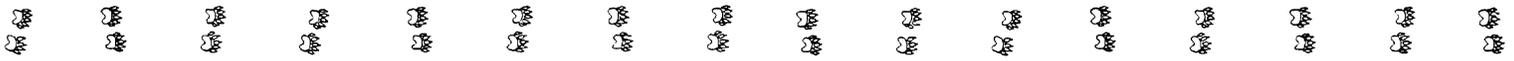
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Deep Alaskan Otter Ecology

continued from page 12

Day to remember. We hiked to an old gold dredge downstream. En route various critters popped out of the thicket. In the felt-leaf willows a sparrow-sized bird with a streaked breast and eye-strip ran on the shaded road—a northern water thrush—and white bog star and yellow shrubby cinquefoil flowers were in bloom. We noticed disturbances along the trail. Alder branches had been recently cut by the buckteeth of a moose! A black bear had ripped open a rotten log...looking for insects I reckon. We reached the banks of the Tuluksak River with our sack lunches and noted bear and moose tracks. Relaxing a little with casts into a deep pool produced a glimmering trout-like fish

with a “sail fin”...handsome Arctic graylings. At this point I asked myself “How could life be any better?” Tucking the old rod ‘n reel underneath my arm, there in front of me were the webbed five-toed, clawed track signifying that here walked the playboy of the northern rivers, the Nearctic river otter! Apparently it too had been fishing. However, fresh bear scat on the return trip to camp ‘sobered’ us up from our discovery.

What seemed to hit home as we propped our feet up inside our cozy cabin was this: Any living creature can only be properly considered in context of where and with whom it lives. Only if we conserve complex wetland habitats and its host of plants and animals, will we have the river otters, not to mention clean water to drink and unpolluted fish to eat.

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The River Otter Alliance is a non-profit, tax-exempt group which is organized to promote the survival of the North American River Otter (*Lutra Canadensis*) through education, research, reintroduction, and habitat protection.

All work and efforts for this organization and newsletter are on a volunteer basis by those who share a common concern for the welfare of the river otter and its habitat. We invite all interested persons to contribute their time at any level of the organization.

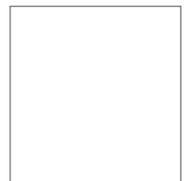
THE RIVER OTTER JOURNAL is a semi-annual publication of the River Otter Alliance. Look for the next edition of THE RIVER OTTER JOURNAL in Fall 2000!

Visit the River Otter Alliance Web Page at www.otternet.com/ROA



The River Otter Alliance

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INSIDE:

*The Spring 2000 update on
river otter sightings, research news,
and interesting stories!*