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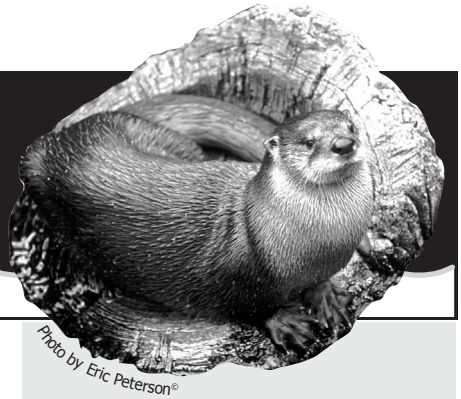

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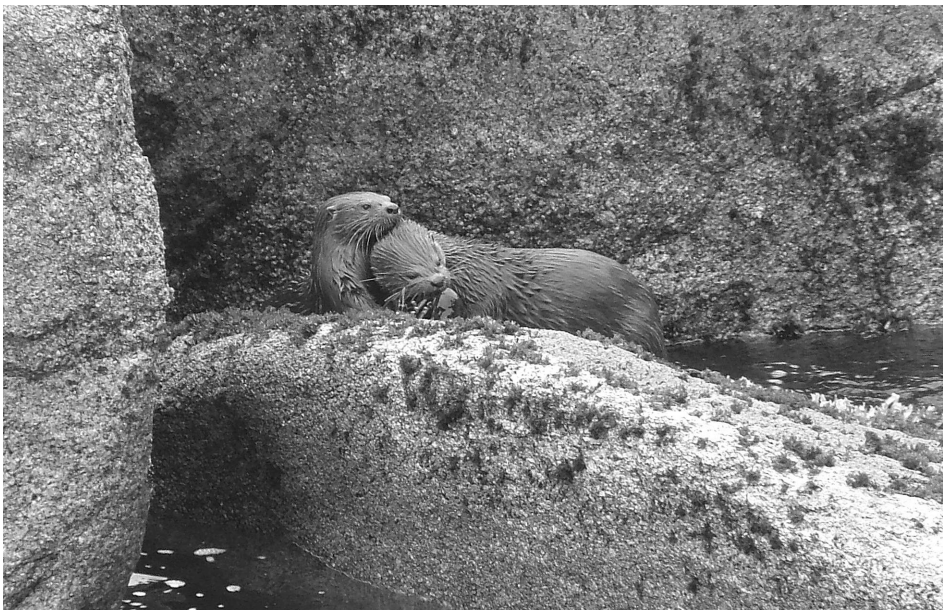

Female Sea Cat and Pup
Photo courtesy of Claudio Delgado-Rodriguez

SEA CAT PROJECT FINAL REPORT Feeding Ecology of the Sea Cat (*Lontra felina*) in Southern Chile

By Claudio Delgado-Rodríguez, Marine Biologist

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Introduction

This report gives the most important final results of the scientific study, "Feeding Ecology of the Sea Cat (*Lontra felina*)," supported principally by the International Otter Survival Fund, IOSF.

This research was made from June 1999 and June 2000, in four study sites located approximately 42 km from Valdivia City in Southern Chile.

With the aim to increase the knowledge about the feeding ecology of *L. felina* this study was realized establishing the follow hypothesis (Ho); *the marine otter is not an opportunistic predator and thus the diet should not be strongly related with the environmental availability and consequently the prey selection should be more related with the calorific value of the prey than the environmental availability.*

This work represents an important input in the knowledge of the sea cat diet, because it is the first that gives annual data and recorded seasonal variations in the diet. Several studies about diet

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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 2005!

River Otter Alliance Mission

The River Otter Alliance promotes the survival of the North American River Otter (*Lontra 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 parties on a national and international basis, in order to ensure the healthy future of the North American River Otter.

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Sea Cat Habitat
Photo courtesy of Claudio Delgado-Rodriguez

of the marine otter have been made in Chile (Castilla & Bahamondes 1979, Cabello 1983, Ostfeld et al. 1989, Sielfeld 1990, Medina 1995), however none of them carried out an annual work.

Partial results of this work were presented at the VIII International Otter Colloquium and in the Scientific Meeting organized by Universidad Austral de Chile in January and June 2001, respectively.

General characters and basic information of marine otter

Some vernacular names of marine otter are: sea cat, Chilean sea otter, South American sea otter (English); chinchimén, chungungo (native name, Chile), huallaque (Perú), gato marino, gato de mar, nutria de mar (Spanish); loutra feline, loutre marine (French).

The Marine Otter, *Lontra felina* (Molina 1872), belongs to the Mustelidae family and lives exclusively in marine habitats, specially exposed rocky shorelines (Ostfeld et al. 1989).

L. felina is distributed along the pacific coast between latitudes 6° (near Chimbote, Perú) and 56° S in Cabo de Hornos and Isla de los Estados (Orlog and Lucero 1981).

For a long time this species has been the object of hunting, thus producing an important diminution in the population density. For this reason, *L. felina* is classified as endangered in I.U.C.N's Red List of Endangered Species (Hilton and Taylor 2000), as vulnerable in the Red Book of Chilean Terrestrial Vertebrates (Glade 1993), and figures in Appendix I of C.I.T.E.S. (Shouten 1987).

The diet of *L. felina* is relatively well known. It is mostly composed of invertebrates, crustaceans being the most important. The consumption of mollusks, such us gastropods, octopus and bivalves has also been described (Castilla and Bahamondes 1979; Ostfeld et al. 1989; Sielfeld 1990; Medina 1995). Another source of food, but less important, are amphipods and isopods (Sielfeld 1990). When considering vertebrates, fish (predominantly from the families, Blennidae, Cheilodactylidae, Gobiesocidae, and Pomacentridae) are the most important food item (Castilla and Bahamondes 1979, Ostfeld et al. 1989; Sielfeld 1990). Opportunistic and occasionally, *L. felina* may consume birds from the *Phalacrocorax genus* (Sielfeld 1990).

However these studies are only surveys or short time works, thus nothing is known about the diet seasonality or the relation between the diet composition, prey availability and energetic value of the main prey species.

Study area and methodology

These results are based on the study carried out from June 1999 to June 2000. Four study sites were selected based upon: otter presence, access and observation possibility. Accordingly, the selected sites were: Caleta Bonifacio, Bahía Curahuiche, Pilolcura Norte and Pilolcura Sur located between 39° 30' S, 73° 00' W and 38° 25' S, 73° 00' W (Figure 1).

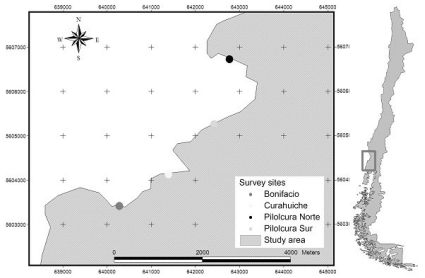

Figure 1. Study area. Located 35 km northwest of Valdivia city.

Study sites were visited for one day a month. Observations were made during daytime for 8 hours, totaling 480 hours. The total number of individuals observed in all the sites was 22.

Diet was assessed principally by feces analysis and direct observation following the Estes classification (Estes 1982). Applying Estes, the size of prey species was determined by comparing it with the size of the otter's head. Thus, when the prey was larger than the head of the otter, it was considered large prey. Prey sized between one half and the total length of the otter's head was considered medium prey. Prey was considered small when it was one half the otter's head size. Taxonomic group, time and place where the prey was taken were identified with the help of 10 x 50 binoculars.

Feces were collected monthly in each study site. Identification of prey species was done using fish bones and pieces of crustaceans that were consumed.

The evaluation of the environmental availability was done monthly using fish and crab

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Otter Champion Corner

By Jan Reed-Smith

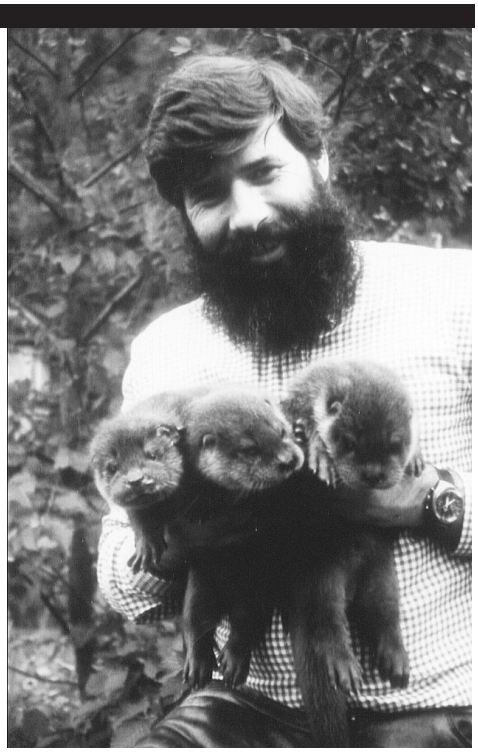
Thirteen species of otters found around the world; small, secretive, generally hard to see.

Typically there are over 100 people studying otter species every year. Some of these are graduate students who will go on to other topics, others are people who do this work out of curiosity, a commitment to wildlife and conservation, and a passion for otters. Many of these people may be unfamiliar to ROA members, so we would like to introduce them to you.

Claus Reuther was a larger than life figure in the otter world. During his lifetime he founded two otter centers in Germany, championed the endangered Eurasian otters plight and eventual return, tirelessly provided incentive and resources to every serious otter researcher who crossed his path, and chaired the IUCN/SSC Otter Specialist Group for the last six years.

All who knew Claus were shocked, but not necessarily surprised, by his sudden and untimely death in December 2004; shocked because his loss is a significant blow to the world of otter conservation, unsurprised because Claus was larger than life and lived his life at a fast and active pace.

Claus will be missed by all of us, especially his very lovely wife, Biggi, who shared him with the otter world for over 20 years.



Claus Reuther and Friends
Photo courtesy of Jan Reed-Smith

President's Message

Dear Readers,

Welcome to the Spring 2005 edition of The River Otter Journal.

In this issue, we have Marine Biologist Claudio Delgado-Rodríguez's report on the Feeding Ecology of the Sea Cat in Southern Chile. Diana Sarmiento has provided a summary of Otter Day, a recent march and festival sponsored by her zoo in Colombia to create awareness and promote the conservation of the threatened Neotropical Otter, found locally in the areas around the zoo. We also have an excerpt from Chapter One of Judy Berg's new book, The Otter Spirit. Jan Reed-Smith has provided an update on otters in Kenya, as well as a tribute to Claus Reuther who recently passed away at age 54 from a heart attack.

Claus dedicated his life to the protection of otters and their habitats and his death is a great loss to the scientific community. Claus began his work in otter research and conservation in 1974 and studied otters around the world, including North and South America, Europe, Africa, Asia, and the Middle-East. In addition to writing many books and articles on otters and nature conservation, Claus was honored with numerous national and international conservation awards. Some of his many positions and accomplishments include Chairman of the IUCN SSC Otter Specialist Group, Founder and Chairman of the Executive Board of the German Association for Otter Conservation (Aktion Fischotterschutz--a 15,000 member group), and founder of the Otter-Zentrum, a breeding center in Hankensbüttel, Germany which has been visited by over 1.5 million people. He also founded the International Otter Colloquium in 1979. Donations in Claus Reuther's memory may be made to Aktion Fischotterschutz e. V., Sudendorfallee 1, D-29386 Hankensbüttel, Germany.

Our sincere condolences to his family, friends and colleagues.

— Tracy Johnston, ROA President and Newsletter Editor

OTTER DAY: Walking for Conservation

By Diana Sarmiento

Editor's Note: Diana Sarmiento is a biologist and the Conservation and Education Department Head for the Piscilago-Colsubsidio Zoo (Parque Recreativo y Zoológico Piscilago-Colsubsidio), located in Giradot, Colombia, South America. The goal of the Otter Festival held on April 30, 2005, was to create awareness and promote conservation of the local species of river otter or Nutria, the Spanish name for the Neotropical species of otter. Neotropical Otters (Lutra longicaudis) are indigenous to the region where the zoo is located and are presently threatened by hunting and habitat destruction.

Otter Day Celebration
Photos courtesy of Diana Sarmiento

On Saturday, April 30, 2005 we held the Otter Festival to promote River Otter conservation within the Girardot Region. This festival was proposed as a part of the Otter Conservation Program lead by the Conservation and Education Department of the Parque Recreativo y Zoológico Piscilago-Colsubsidio.

We started to organize this event four months ago. Finally many institutions from Girardot and Melgar shared with us this process and walked together for conserving the otters. We will never forget the results. We went through the principal Girardot Street, walking together with the Army band and other citizens and institutions. During the event, we handed out posters and printed materials to stores and the public. People came outside and supported us by clapping as we passed through.

The route finished at Girardot Central Park. There, we did some presentations organized by schools and other institutions. We saw Colombian dances, puppet presentations, children sang an otter song, and students from the Nuestra Señora del Pilar School performed a theater play about otters.

At the end of the Otter Day, we finished with the better sensations. We had the satisfaction of seeing the community answer with people wanting to be involved in a program for saving native species. In the same way, we felt happy for recognizing that Colombia offers more than war and narcotics traffic. We are a rich country with dedicated people who want to be involved in its species conservation and are worried about the status of its natural resources.

Future plans

This event was included within the schedule proposed by the project "Increasing the Sensibilitation and Awarness for the River Otter Conservation within the Influence Area of Piscilago Park." This project is part of the Conservation Plan for the River Otter within the Sumapaz and Magdalena Valleys, led by Piscilago. This program has two essential components: captive management of the species and in situ conservation. At the moment, we are developing a program of activities to determine the population status of otters in the regional rivers and to get community involvement to promote species conservation within the region.

Otters in Kenya – An Update

By Jan Reed-Smith

For one week this spring (2005) Tom Serfass, Mordecai Ogada, and I conducted a brief survey of two protected areas, Lake Nakuru and Saiwa Swamp, and three unprotected areas, Kingwal swamp, Burgaret River, and Rumuruti swamp, in Kenya. This survey netted some interesting results, results both encouraging and discouraging.

African Clawless Otter
Photo by Mordecai Ogada

Tom with Local Villagers – Kingwal Swamp
Photo by Jan Reed-Smith

Encouraging results:

Definite signs of otter presence (scat and food remains) were found at Kingwal swamp, Saiwa swamp, and Lake Nakuru. Prior to this survey, otters had not been reported at Lake Nakuru and their presence was only suspected in the Kingwal and Saiwa swamps. Perhaps even more encouraging than the Lake Nakuru discovery was the positive reception we received from villagers living around the Kingwal swamp, an area completely unprotected and surrounded by small farms.

As a means of encouraging visitors to come and see the sitatunga (a rare African antelope), the varied bird life, and the otters, some of the local Kingwal farmers have built a small platform at the edge of the swamp. While this platform is crude and has not been successful to date, Mordecai Ogada hopes to work with KWS and the local population to aid this fledgling conservation effort.

Another interesting development was the reporting of both the spotted-necked and African clawless otter at the Kingwal swamp. These two otters are known to live sympatrically in some areas of their range; is this the case here? We don't know, but Mordecai Ogada and the Kenyan team also will be looking into this.

Discouraging results:

As reported in the Spring 2004 River Otter Journal (Volume XIII, Number I), Mordecai Ogada has been conducting research on the African clawless otter in the Laikipia region of Kenya for the past three years. While his original research showed what appeared to be a healthy population of otters in both the Ewaso Ng'iro and Burgaret Rivers, the situation seems to have changed dramatically in the past year.

Farms Encroaching on Rumuruti Swamp

Erosion Caused by Overgrazing and Agriculture

The Louisiana red crayfish, which invaded the Ewaso Ng'iro River several years ago, appears to have suffered a population crash. Why is unclear, but it is believed they are more vulnerable to predation than the native crab which previously inhabited this ecosystem. Compounding this recent decline in food resources are additional stressors that have long plagued this system. These are, a high human population, overgrazing by local pastoralists, and farmers driven by extreme poverty pushing them to use increasingly marginal land on which they try to eek out a living.

While the otters had been hanging-on despite these long-standing pressures,

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Otter Updates

By Tracy Johnston

- **The first physical evidence of river otters in New Mexico in over 50 years was recently confirmed by DNA tests completed by the University of New Mexico.** The scat was discovered at Navajo Lake State Park on November 3, 2004 by a team of researchers, including Dr. Paul Polechla and New Mexico State Park Rangers Auboy Burns and Scott Rist. The team found three scats, two new and one old, containing remnants of crayfish exoskeleton, fish bones and scales and submitted them to the university's biology department for DNA analysis. The last physical evidence of river otters in New Mexico was in 1953, when a state wildlife officer captured a river otter on the Gila River.

- **"Research Advances and Otter Conservation in Europe," a European Otter Workshop, will be held in Teggiano, Italy October 20-23, 2005.** The workshop will focus on "new advances in otter research in Europe that will contribute to renewed conservation strategies and Action Plans." Scheduled topics include: distribution, habitat suitability and restoration, GIS modeling, genetics and conservation, and a meeting of the European IUCN/SSC Otter Specialist Group. English will be the official language of the workshop. See http://www.pncvd.it/eow1/index.htm for additional information.

- **Four North American river otter pups were born at The Pittsburgh Zoo & PPG Aquarium on February 20, 2005.** The two male and two female pups are the first offspring from their mother, Koda, and father, Country, both 4 years old. Although Koda and her pups have been living in their exhibit since birth, they had essentially remained hidden from view by staying inside their nest located in a hollow log at the back of the exhibit. In April, a few lucky zoo visitors got their first glimpse of the pups when Koda carried them one-at-a-time by the scruffs of their necks to the front of the exhibit for brief periods of time.

  River otters are difficult to breed in captivity which makes the birth significant for the Otter Species Survival Plan, a national cooperative breeding effort among American Zoo and Aquarium Association (AZAA) accredited zoos. North American river otters are a protected species in the state of Pennsylvania.

Photo by Eric Peterson©

- **The Ohio Division of Wildlife has announced it will allow river otter trapping for the first time in recent history in state public hunting areas with a special beaver/otter trapping permit.** The season will run December 26, 2005 through February 28, 2006. Ohio reintroduced 123 river otters to the state between 1986 and 1992. The present otter population in Ohio is estimated to be 4,300.

Otters in Kenya – An Update *continued from page 5*

Mordecai believes they are in the process of abandoning the Ewaso Ng'iro River. The apparent decrease in otter sign could be due to a number of causes: the drastic decline in food resources, increased deterioration of the river system due to the gradual river bank erosion and increased siltation, or, some other reason(s) we have not identified. At this time we do not know the cause, but their disappearance is of great concern.

The Burgaret River, last year's home to several otters in the study area, runs through portions of the Mt. Kenya National Park; while this should guarantee protection, it unfortunately does not. The primary threat to this water system is illegal logging, causing severe erosion and heavy siltation of the river. This is bad for the otters and the local population but, unfortunately this logging is currently funded by a local hotel owner and is ignored by the authorities.

The team was dismayed by the scarcity of otters in water systems they previously inhabited and encouraged by the discovery of previously unknown populations. These are mixed results that we hope to further explore over the next year during a major study being launched by Dr. Tom Serfass of Frostburg State University. If you are interested in obtaining more information on the status of otters in Africa or this planned study, please contact me at jrsotter@iserv.net.

I would like to thank the Core Foundation and Jo Thompson for their support; without it we would not be able to continue monitoring and addressing the status of otters in Kenya.

SEA CAT PROJECT FINAL REPORT

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traps that were placed approximately 40 meters from the shoreline at 15 meters deep for 24 hours. All the captures were standardized by capture per unit of trap. Accordingly, the environmental availability was estimated by the number of individuals trapped per hour of trapping.

The energetic evaluation of the most important species of crustaceans consumed was made in a calorimetric bomb and was standardized in Kcal/gr of dry weight.

Results

Diet and environmental availability

The main prey species that composed the diet of *L. felina* were identified and seasonal variations of the diet and prey availability were recorded. In addition, the relation between the calorific value of the main prey and their preference were evaluated.

Based on the data from the study, the diet of *L. felina* was composed of 25 species: 13 species were crustaceans, 10 were fishes, and 2 corresponded to mollusks. No seasonal difference in the number of prey species or diversity was recorded (Figure 2).

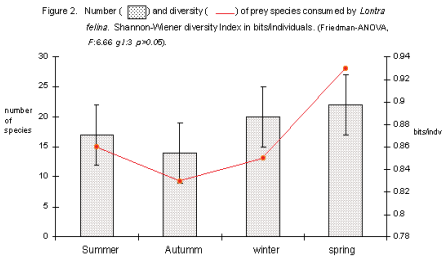

Figure 2. Number and diversity of prey species consumed by Lontra felina. Shannon-Wiener diversity Index in bits/individuals. (Friedman-ANOVA, F:6.66 g.l:3 p>0.05).

Furthermore, 78.41% were crustaceans, 20.17% were fishes and 1.42% were mollusks. Comparatively, the frequency of capture showed the environmental availability was composed of 93.25% crustaceans and 6.75% fishes, (Figures 3 and 4).

Both diet and environmental availability showed highly correlated seasonal differences. Thus, the seasonal change in the species availability was clearly reflected in prey consumption. For example, species like the crab *Taliepus dentatus* was principally eaten year round and was the species most frequently captured in the traps. Nevertheless, during spring, changes in the capture rates were recorded, with the crab *Cancer edwardsi* becoming the most abundant species in the environment. This seasonal change was also observed in otter diet, since the spring prey species most consumed was *C. edwardsi* (Figures 5 and 6).

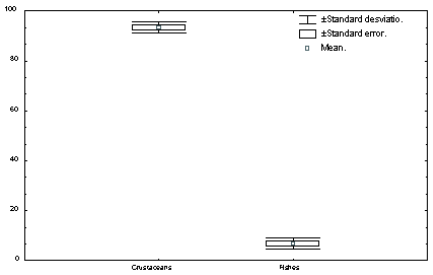

Figure 3. Annual composition of taxonomic groups recorded in the diet of marine otter. (n=475, Friedman-ANOVA; F:8 g.l: 2 p<0.001).

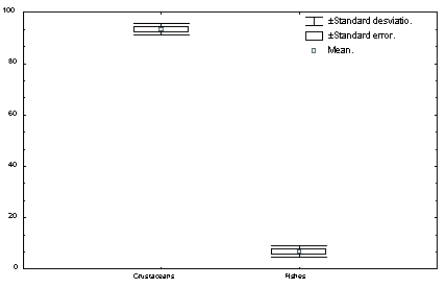

Figure 4. Annual composition of the taxonomic groups captured by trapping (n=566).

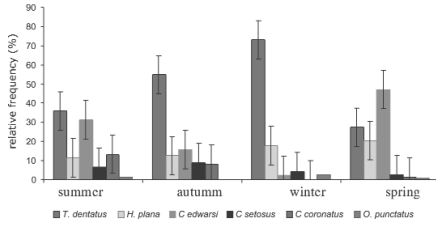

Figure 5. Seasonal variations in otter diet. (n=475 feces)

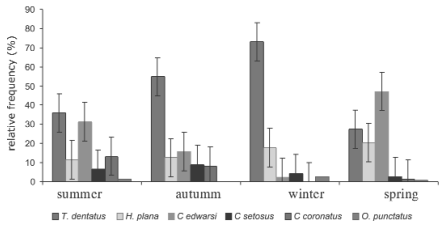

Figure 6. Seasonal variations of the environmental availability, estimated by frequency of capture (%). (n= 566)

Prey Size

According to the data recorded during the year, *L. felina* showed a high consumption of medium (3.8 cm to 7.6 cm) and large (> 7.6 cm) prey species in relation to their head size (Figure 9).

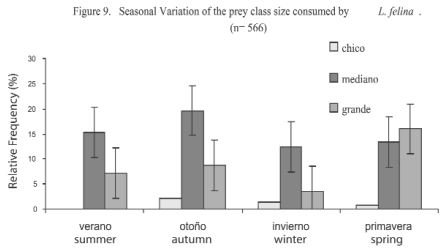

Figure 9. Seasonal variation of the prey class consumed by *L. felina*. (n=566)

Crustaceans consumed and energetic value.

The frequency of the *L. felina* consuming crustaceans was compared with the energetic values (Kcal / dry weigh). No direct relation between frequency of consumption and energetic value were observed.

Of this manner, species such us *T. dentatus*, was predominantly consumed all the year but their calorific contribution was very low (2.56 Kcal/ gr. dry weigh), compared with other species such as *O. punctatus* (4.91 Kcal/ dry weigh) and C. setosus (3.17 Kcal/ gr. dry weigh), (Figure 10).

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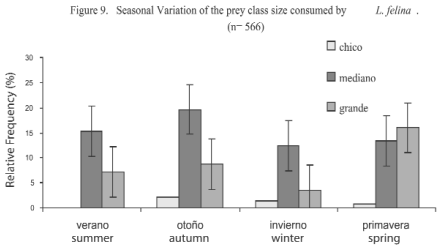

Figure 10. Relation between caloric value (Kcal/gr. dry weigh) and relative frequency (%) of the main prey species of crustaceans consumed by *L. felina*.

Discussion

The study results suggest that the research hypothesis should be rejected, thus for the studied environment the marine otter (*Lontra felina*) has a behavior appearing like opportunistic predation, since throughout the year, the main prey species consumed by the otter were highly coincident with the abundance estimations of the prey's environmental availability.

Moreover, the otters showed no positive relation between calorific value and the frequency of consumption of the main prey species consumed.

For these reasons, as expected, it is possible to confirm that in Southern Chile *L. felina* is principally a crustacean feeder (> 78%). Thus the study results are similar to those registered in Chiloé Island, for coastal regions from central Chile and the observations communicated previously for sites near to this studies' sites (Cabello 1983, Ostfeld et al. 1989, Medina 1995).

Compared with other species of otters the feeding ecology of *L. felina* is closest to *Aonyx capensis, Lutra maculicollis* and *Lutra perspicillata* (Choudhury 1998, Perrin and Corugati 2000) and different from Enhydra lutris and *Lutra lutra* in marine environments (Estes et al. 1982, Estes 1989, Kruuk and Hewson 1978, Kruuk and Moorhouse 1990, Kruuk 1995).

Finally, these results suggest that the best profitable prey species for *L. felina* are represented by species with the highest environmental availability and those more easily caught, but not necessarily the preys that offer a high calorific value. In this perspective, it seems to be that the energetic compensation is more a quantitative than qualitative process, and it is possible that this helps to explain why the *L. felina* spent the major part of their time budget on feeding. (Castilla y Bahamondes 1979; Medina 1995, Bartheld 2001).

Conclusions

I. In the studied site and according with the results, the Marine Otter (Lontra felina) was an opportunistic predator.

II. The diet of *L. felina* was highly related with the prey available in the environment.

III. The diet was principally composed of crustaceans.

IV. Seasonal variations in the otter diet were coincident with seasonal variations in the prey availability.

V. Lontra felina showed more consumption for the more available prey species than the high calorific value preys.

Needs and research priorities

The results of this research provides significant information about the feeding ecology of *L. felina*. However, many problems and questions are still waiting for answers. Thus, we have a lot of work for the future. This work will focus first on determining the population density along the seashore of Chile, to asses the home range and role of the marine otter in the structure of the intertidial community.

Another important question will be the human dimension of the marine otter conservation problem. For this we will need to map the distribution of the marine otter and threats against it using geographic information systems to determine the density distribution data.

In this manner, finally, we can obtain the best approximation to encourage and identify the best places along the country, to develop conservation programs in the different levels proposed by the Otter Specialist Group and discussed in the last Otter Colloquium held in Chile.

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The Otter Spirit

By Judy Berg

Emergence
Illustration by Michael Reed ©

Preface

This is a natural history story of the life of a river otter and the autobiographical complement of the otter's researcher. Their unique journey through life transcends two worlds: the real and the spiritual. Travel with them through seasons and years as they discover many remarkable mysteries of the natural world, evoking wonder at its beauty and diversity.

The story of *The Otter Spirit* is based on true accounts of observations the researcher recorded firsthand, and imagined events that very credibly could be observed, based on reports documented in the referenced literature. The dialogue and expression of feelings among the otters and other animals in this book are admitted anthropomorphic interpretations of events told in the story. However, facts articulated in the book are real and substantiated by direct measurement by the researcher or authenticated in the references.

Hope prevails that, through the tale of the Otter Spirit, a genuine appreciation of these marvelous animals and the environment they call home will be conferred to the reader. For some, a greater passion will drive them to research the literature and, perhaps, go beyond, to find their own Otter Spirit – on a river, in a forest, on a mountain yet to be explored – and personally realize the sacred gifts that Nature offers those who take the time to hear the Ancient Voices.

CHAPTER ONE – The Beginning

From Nature's womb you'll come to me to teach of water, land, and tree; there you'll enter into my soul – to become One will be our goal . . .

Mother Nature continues to spread her coat of white across the land. Her delicate crystal tears fall like soft petals gently kissing the Earth.

Spring emerges late in the high mountains, but it won't be long before the warmth of Nature's smile will melt her winter garment, baring the flesh and bones of her firmament. Purified and nourished for emerging flora and fauna, timed to perfection from millennia of natural selection, from her womb will sprout a bounty of new life during this most precious time of year.

You see, according to Old One, the Earth was made from Woman.

High on the western slope of the Continental Divide in the Rocky Mountains of Colorado, near the headwaters of those Great Medicine Waters known as the Colorado River, preparations are being made for the birth of one of Nature's children to whom her life-sustaining force of water is most important.

It is the North American River Otter.

The prospective mother otter prepares the inside of her den with soft vegetation to cradle the new life she will soon bring into it. Because river otters do not construct or excavate their own dens, she may use a lodge or bank den constructed by beavers; or a den excavated by a larger animal, such as a coyote, or by a smaller animal, such as a muskrat, that she could then enlarge; or a natural area like a log jam, hollow tree, or a rock formation; or even a man-made structure, such as a boat house or under a boat dock.

The otter isn't lazy, just very resourceful. After all, except for the first few weeks of her newborn's life, she'll probably not use the same den for a prolonged period of time.

* * *

. . . Even though wildlife professionals tell me that the likelihood of frequent otter sightings is small, and my literature review endorses that fact, I fully expect to defeat the odds and

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The Otter Spirit *continued from page 9*

perform an in-depth documentation of their natural behavior.

Professional goal aside, what I don't anticipate is the unique journey that lies ahead. Perhaps what occurs at the onset of my venture should give me a clue:

During the beginning of my project, I meet a Native American medicine woman of the Blackfoot Tribe. Although we spend only a short time in each other's physical presence, she bestows me with some incredible gifts.

She reaches deep into my soul with her child-like passion for discovery. Her excitement reigns supreme, whether we encounter an animal sign or the animal itself. . .

While at the river's edge, my Native American friend performs a special ceremony for me. When she returns home, she sends me a gift: a small medicine bag.

She encourages me to keep it with me all through my project to guide me to otters and protect me on my journey.

Maybe my need to collect data clouds the meaning of those special gifts during the first year of my project. Whatever the case, research reality sets in as I trek the river and its tributaries to find only otter tracks and scat, slides and tail-drags. At least, I know the otters were there.

Then, one day, my luck changes. I discover an otter den!

This particular den is located about 500 feet inland from a section of the Colorado River headwaters, where a small inlet empties into a large pond. This pristine environment is aesthetically pleasing to the human eye. But more importantly, it contains all the necessary elements for comfort and security of a mother and infant otters. . .

The den is located in an area of good land cover. Natural camouflage includes vegetation, hollowed logs, and twisted roots—all providing protection for a mother otter during her daily foraging expeditions between the waters and the den.

My discovery occurs at the end of March, the time for otter births in this section of the country. Snow still carpets the land and a recent heavy storm adds yet more challenge to the forward progress of my small stature. Walking through stretches of willows with snowshoes strapped to my feet, I still sink—almost down to bare ground—through the softer snow surrounding these shrubs. Snowshoe leg lifts become physical energy vampires.

"Oh, to be an otter," I mutter.

The river segment flowing through my study site is at the headwaters and not very wide. Typically, many headwater locations still contain a covering of ice at the beginning of spring. This section of the river, however, has fragments of open waters, and with some ambient daytime temperatures above freezing, I hear snow and ice crashing into its flow.

Slides, tracks, and scat near the river led to my discovery. More heavy snow predicted for later today will cover the otter's signs. Nevertheless, for some peculiar reason on this particular day, I feel compelled to walk that segment of my study site's forty-mile stretch of watershed.

Is a special newborn otter calling out to me?

I take measurements of the signs and their distance from each other and from the waterway. I then collect the scat, a clue to the otter's diet, for analysis. Once completing this work, I sit down and try to sense the adult otter that leaves me this valuable information.

Moving my hands over the signs, strange feelings enter my being.

What is their message?

* * *

At the end of March, our denning female delivers two small furry pups. Although possible for her to birth six young, normally only two or three are born in the wild. Her blind, toothless, and helpless babies weigh 3 to 6 ounces, and from the tip of their noses to the end of their tails measures all of 8 to 11 inches. Soft, silky, dark-gray to black fur covers their bodies. This coat, along with their cozy home and the warmth of Mother Otter's body, helps to keep them warm.

Following their birth, the young otters remain in their natal den for seven to eight weeks. In this secure environment, Mother Otter nourishes them with her rich milk and bathes them with her wet tongue. Their eyes will begin to open at four to five weeks of age; at that time, they can explore their den and play with each other.

Many adventures await them when emerging from Earth Mother's womb. Both instinctive and learned behavior governs what lies ahead for them. But for now, sleeping, nursing, playing, and growing are their only requirements.

* * *

As the light of day concedes to the dark of night, I return to my own den and retreat into my cradle of down. I imagine the baby otters curled within Earth Mother's womb as they also seek to rest from their day's activities.

Soon, one of these two furry little animals will distinguish itself in a very different way. This special otter and I are about to enter two worlds: the real, with its accompanying life and death struggles; and the spiritual, with its accompanying comfort and solace.

But what will guide us together?

The Penobscot Otter

Adapted from "A Book of New England Legends and Folklore," Samuel Drake, 1884.

Photo by Eric Peterson©

Some years ago, near the Penobscot River of Maine, two men set off in search of an otter that they believed had been stealing their fish. The land was deep in snow and the two men dressed appropriately in warm clothes and snowshoes. Some neighbors claimed to have caught sight of the otter, one saying, "It was like a shadow sliding across the snow."

Samuel, one of the searchers, mentioned to his companion, Rutland, that the creature they pursued was a supernatural otter that neither man nor creature could capture. Suddenly, both saw an otter staring at them from an ice bridge in a stream near the river. It almost seamed to be daring them to attempt a chase. Samuel ran forward, but the otter only gave a snort and scampered off along the river bank. The men struggled after it, could see it from time to time, but then the otter would stand and snort and again disappear.

After some distance, they came to what appeared to be the otter's den. "Aha," they thought, "We have him trapped." But amazingly, on the far side of the clearing some distance from the den, the otter again appeared. One snort and the pursuit resumed.

Samuel and Rutland moved on as best they could on their snowshoes. Nothing concerned them except the hunt. On and on they ran beneath a moon that never set, through a night that would never meet day. In the winter dark there was only their movement, running and stumbling, while the otter slid and scampered on forever ahead. Samuel and Rutland were never seen again.

But from time to time, a lone snowshoer or skier will spot two shadowy figures stumbling through the pines. They never respond to a call, but hurry on and are soon lost to sight. They seem to be pursuing a dark animal with a long tail that always keeps just ahead. This is the otter of Penobscot River, forever enjoying the chase!

-- Contributed by John Mulvihill

The River Otter Alliance

ENROLL NOW FOR 2005!

As a member you will be supporting research and education to help ensure the survival of *Lontra canadensis*, the North American River Otter. You will receive a semi-annual newsletter, **THE RIVER OTTER JOURNAL**, with updates on otter-related:

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Photo by Eric Peterson©

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

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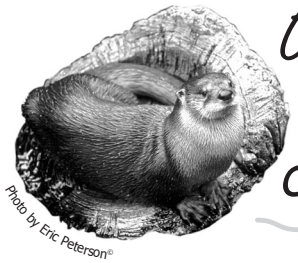
The River Otter Alliance is a non-profit, tax-exempt group organized to promote the survival of the North American River Otter (*Lontra canadensis*) though education, research, reintroduction, and habitat protection.

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 Alliance

6733 South Locust Court
Centennial, Colorado 80112

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