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**FIRST PHYSICAL EVIDENCE OF THE NEARCTIC RIVER OTTER  
(*LONTRA CANADENSIS*) COLLECTED IN NEW MEXICO, USA, SINCE  
1953**

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**Abstract:** On November 3rd, 2004, we collected what seems to be 3 North American River Otter (*Lontra canadensis*) spraints on the San Juan river, Navajo Reservoir, Navajo State Park, San Juan County, New Mexico, USA. Given that the samples were collected on a hard substrate, not good for tracks, we then had them analyzed in the laboratory. DNA was extracted from the samples and the cytochrome *b* gene was amplified and sequences for 2 of the samples. The sequences were identified as being *L. canadensis*, after comparison with the NCBI Genebank. These spraints constitute the second data and the first concrete indicator of presence in this state for more than 50 years. Otter releases have been carried out in the past in the basin, without taking account of subspecies, and the presence of indigenous otters prior to these introductions from other areas means that the identification of subspecies is premature and additional analyses are necessary. More field surveys would indicate the distribution of the otter in the state and help to evaluate the quality of the wetlands.

## INTRODUCTION

On 3 November 2004 between the mouths of Grassy and Albino Canyons of Navajo Reservoir and on the east bank of the Los Pinos arm, 16.2 Km N. and 1.3 Km E. of the village of Navajo Dam, San Juan County, New Mexico, three presumptive river otter (*Lontra canadensis*) scats (or spraints in British English) were found; two new and one old scat. Scats ranged from 12 to 20 mm in diameter and varied in hue from white to tan. Scats were compared to drawings and photos of MURIE (1974) and HALFPENNY (1986). No river otter tracks (or seals in British English) were observed at this location.

The scats were found on a small spit of dried and cold mud, a substrate not conducive to receiving fresh tracks. The spit was positioned across the arm from a small point. Sandstone rim rock formed the sides of the box canyon about 305.8 m wide and approximately 182.9 m deep. Water depth and width was about 3.7 m and 9.1 m, respectively. Early successional vegetation in the area consisted of plants such as: red willow (*Salix exigua*), salt cedar (*Tamarisk pentandra*), cocklebur (*Xanthium* sp.), low grass (*Poaceae*), and a lone cottonwood (*Populus deltoides*).

The scats contained remnants of crayfish exoskeleton and fish bones and scales. Skeletons of old flathead catfish (*Pylodictis olivaris*) were observed at the scat site and those of fresh kokanee salmon (*Oncorhynchus nerka*) (discarded by fisherman after cleaning their fish) were found and at a nearby marina at Pine Site, Navajo Lake State Park. Live common carp (*Cyprinus carpio*) and gambusia (*Gambusia affinis*) were observed as well.

Tracks of other commensal animals such as beaver (*Castor canadensis*), ringtail (*Bassariscus astutus*), mountain lion (*Puma concolor*), black bear (*Ursus americanus*), gray fox (*Urocyon cinereoargenteus*),

and mule deer (*Odocoileus hemionus*) were observed on the east bank in the vicinity (< 40 m) of the presumptive otter scat. Tracks of cattle (*Bos taurus*) were found on the opposite bank. Birds observed on site and on the outgoing and return trips included: the American coot (*Fulica americana*), great blue heron (*Ardea herodias*), common merganser (*Mergus merganser*), Canada goose (*Branta canadensis*), mallard (*Anas platyrhynchos*), white pelican (*Pelecanus erythrorhynchos*), and gulls (*Larus* spp.). All these species are considered piscivorous and/or aquatic bird species indicating good quality otter habitat (POLECHLA, 2002b).

Without corroborating sign or evidence, separation of river otter scat from raccoon (*Procyon lotor*) is difficult if raccoons abstain from plant material (e.g., fruits) and switch to/or subsist on crayfish and fish. The later two food items are the preferred and almost exclusive prey of river otters (MELQUIST et al., 2003). Because tracks were not found associated with the presumptive otter scat due to frozen/hard substrate, a DNA analysis was performed to confirm or refute field identification.

Extraction of DNA from the three scats and one negative control (no DNA source) was performed following manufacturers protocol for the QIAamp DNA Stool Mini Kit (Qiagen, Inc., Valencia, California), with modifications described by HARRISON et al. (2002). Polymerase Chain Reaction (PCR) was used to amplify the cytochrome *b* region of mitochondrial DNA using primers L14724 or L15513 and H15915 (IRWIN et al., 1991). Reaction conditions and cleanup procedures followed those of HARRISON et al. (2002). Cleaned PCR products were sequenced using BigDye™ Terminator Cycle Sequencing Ready Reaction mix (Applied Biosystems, Inc., Foster City, CA) and either of the forward primers (L14724 or L15513), and the reverse primer (H15915). Sequences were determined by running samples on an ABI 3100 Automated DNA Sequencer, and then submitted to an NCBI Nucleotide-nucleotide BLAST search (<http://www.ncbi.nlm.nih.gov/BLAST/>) for sequence identification.

Two of the three scats provided enough quantity and quality DNA for cytochrome *b* amplification and sequencing and were identified based on 412 and 236 nucleotides. BLAST search results showed both samples to be most similar (99%) to *L. canadensis* sequence provided by KOEPFLI and WAYNE (1998). Additionally, the first scat sample was 89% similar to the Neotropical otter (*L. longicaudis*) and the marine otter or chungungo (*L. felina*) and 87% similar to the sea otter (*Enhydra lutris*). The second sample was 90% similar to *L. longicaudis* and *L. felina* and 85% similar to the Eurasian otter (*Lutra lutra*).

The river otter is a native member of the New Mexican fauna (POLECHLA et al. 2000). However, the first and heretofore only voucher specimen (*Lontra c. sonora*) from the state was collected in 1953 by T. J. Lyon (McCLELLAN, 1954). In addition to this single museum skin specimen, housed at the Museum of Southwestern Biology (MSB), numerous sightings and reports of otters in New Mexico have been recorded (BAILEY, 1931, POLECHLA et al., 2000). More recently, Mr. Lyon reported seeing signs of otter years after collection of the 1953 specimen (Lyon fide J. Hubbard pers. comm.). A Dr. A. Daggett (personal communication) reported observing an otter in the summer (late August-early September) of 2001 in Canyon Bancos, 7.4 straight-line Km S. (= 10.2 Km by waterway) of the Colorado/New Mexico State Line, Rio Arriba County, New Mexico. The description of the animal's appearance and swimming behavior were typically river otter in nature. It was described as "long, sleek, slender and very manoeuvrable," with a head and body length as about "2 feet" with a "tail about 1/3 of the head and body length". The animal "[circled the] boat twice before it swam off down the shoreline," while its tail circumscribed a "snakelike or sigmoid pattern" in the water. These characteristics rule out other of the state's mammalian species including the semi-aquatic beaver, coypu (*Myocastor coypu*), muskrat (*Ondatra zibethicus*), and mink (*Mustela vison*).

Additionally, two otter specimens have been collected and prepared from the San Juan drainage system just on the other side of the border in Colorado (POLECHLA 2002b, 2003). These specimens were provided by S. Wait of the Colorado Division of Wildlife (CDOW) for deposition at MSB. These specimens consisted of a male, collected on 17 March 2003 on the Los Pinos River about 2.1 Km E. and 3.2 Km S. Columbus, La Plata County, Colorado at an elevation of 2,195 m, and a female, collected on 16 September 1996 on Vallecito Creek, 0.8 Km N. of Vallecito Reservoir, La Plata County, Colorado at an elevation of 2,347 m.

A study was completed in the San Juan drainage of Colorado, in which river otters were documented in a place where native otters had been previously reported and where they had been translocated from Wisconsin, an unidentified state in the U.S., and Nova Scotia (H. Browning personal communication 2002, POLECHLA, 2002b). BICH (1988) reported otters in the San Juan and Colorado drainages of Utah prior to translocations. Since one of four subspecies of river otters (HALL, 1981, POLECHLA, 2002b) may be suspected (*L. c. canadensis*, *L. c. lataxina*, *L. c. pacifica*, *L. c. sonora*), the subspecific designation of our specimens will require further analysis.

FINDLEY et al. (1975) stated that otters "may well be extinct in the state." In 1985, the NMGFD declared the river otter apparently extirpated in New Mexico (JONES and SCHMITT, 1997) although no field surveys were conducted for otters. This opinion has been repeated in the literature (FREY, 2004; BISON-M, 2004; SAVAGE, 2004, FRIENDS OF THE RIVER OTTER, 2005). Our record of a river otter scat in New Mexico constitutes the first time that physical evidence of otters has been documented in over 50 years. In addition, this constitutes the second collection of physical evidence of otter in the state to date.

Other species of otters and carnivores were once thought to extirpated or extinct. By 1911, scientists regarded the southern sea otter (*Enhydra lutris nereis*) as extinct (FISHER et al., 1969) until 300 sea otters were "discovered" along Big Sur coast, California (MATTISON, 1971; KENYON, 1969). However, undocumented observations of southern sea otters were reported during this intervening 27 years (KENYON, 1969). In similar fashion, the hairy nosed otter (*Lutra sumatrana*) was summarily regarded as extinct (ECOLOGICAL RESEARCH DEPARTMENT, 1991; KANCHANASAKA, 2002; Otter Net 6 February 2005 <http://www.otter.org/news/news29.html>,) until they were "rediscovered" in Thailand from 1998 to 2000 (KANCHANASAKA, 2002). In 1904, the jaguar (*Panthera onca*), a large diurnal charismatic mega-mammal, was thought to be extirpated from New Mexico, until GLENN (1996) using hounds bayed one in the Peloncillo Mountains on the Arizona/New Mexico border. These species were thought to be extirpated or extinct until actual field surveys were conducted in earnest.

With less than 5% of the river miles properly surveyed in New Mexico and very little surveyed in the Rio Grande, Colorado, and Arkansas River drainages in neighboring Texas, Mexico, Arizona, Utah, Wyoming, California, Nevada, and Colorado (POLECHLA, 2002a,b; 2004, DEPUE and SCHNURR, 2004), plans for translocating otters may be premature. Until the majority of the river miles (and shoreline) of habitat is surveyed, by biologists experienced with tracking otters and other New Mexican fauna, for river otters during the seasonal peak of otter sign abundance, then a river drainage should be regarded as potentially possessing otters. Simultaneous to these river otter surveys, the majority of potential habitat should be surveyed as well (POLECHLA et al., 2000). RALLS (1990) recommends that an effective otter restoration program in a particular watershed involve an assessment of current suitability of habitat and the removal of the factor(s), which contributed to the decline of the population.

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## REFERENCES

- Bailey, V. 1931.** Mammals of New Mexico. North American Fauna 53, 1-412.
- Bich, J.P. 1988.** The feasibility of river otter reintroduction in northern Utah. Utah State University, Logan, UT, 54 pp.
- BISON-M 2005** (23 February). Written by **Klingel, J.**, maintained by **L. Pierce**, Biota Information System of New Mexico, New Mexico Game and Fish Department, Santa Fe, NM. [http://fwie.fw.vt.edu/states/nmex\\_main/species/050555.htm](http://fwie.fw.vt.edu/states/nmex_main/species/050555.htm)
- DePue, J.E., P. Schnurr 2004. Status of Colorado's river otter reintroduction: looking good! Abstract, Ninth International Otter Colloquium, Frostburg, MD
- Ecological Research Department. 1991.** Endangered species and habitats of Thailand. Ecological Research Department, Thailand Institute of Scientific and Technological Research, Kurusapha Ladprao

Press, 243 pp.

**Findley, J.S., A.H. Harris, D.E. Wilson, C. Jones 1975.** Mammals of New Mexico. University of New Mexico Press, Albuquerque, NM, 360 pp.

**Fisher, J., N. Simon, J. Vincent. 1969.** Wildlife in danger. Viking Press, New York, NY, 368 pp.

**Frey, J.K. 2004.** Taxonomy and distribution of the mammals of New Mexico: an annotated checklist. *Occasional Papers, Museum of Texas Tech University*, **240**, 1-32.

**Friends of the River Otter 2005.** (January), personal communication and flyer, public meeting, New Mexico Game and Fish Department, Albuquerque, NM

**Glenn, W. 1996.** Eyes of fire: encounter with a borderlands jaguar. Printing Corner Press, El Paso, TX, 28 pp.

**Hall, E.R. 1981.** The mammals of North America. John Wiley and Sons. New York, NY 2:601-1181 - 90.

**Halfpenny, J. 1986.** A field guide to mammal tracking in western America. Johnson Books, Boulder, CO, 161 pp.

**Harrison, R.L., D.J. Barr, J.W. Drago. 2002.** A comparison of population survey techniques for swift foxes (*Vulpes velox*) in New Mexico. *American Midland Naturalist* **148**, 320-337.

**Irwin, D.M., T.D. Kocher, A.C. Wilson. 1991.** Evolution of the cytochrome *b* gene of mammals. *Journal of Molecular Evolution* **32**, 128-144.

**Jones, C., C.G. Schmitt. 1997.** Mammal species of concern in New Mexico. Special publication: Life among the muses; papers in honor of James S. Findley. *Museum of Southwestern Biology*. **3**, 179-205.

**Kanchanasaka, B. 2002.** Tracks and other signs of the hairy-nosed otter (*Lutra sumatrana*). IUCN OSG Bull. 19A, 160-166.

**Kenyon, K.W. 1969.** The sea otter in the eastern Pacific Ocean. Dover Publications Incorporated, New York, NY 352 pp.

**Koepfli, K.-P., R.K. Wayne 1998.** Phylogenetic relationships of otters (Carnivora: Mustelidae) based on mitochondrial cytochrome *b* sequences. *Journal of the Zoological Society of London* **246**, 401-416.

**Mattison, J.A. Jr. 1971.** Back from extinction: a documentary motion picture prepared for educational purposes on the southern sea otter, *Enhydra lutris nereis*. Phoenix Films, Salinas, CA 32 pp.

**McClellan, J. 1954.** An otter catch on the Gila river in southwestern New Mexico. *Journal of Mammalogy* **35**, 443-444.

**Melquist, W.E., P.J. Polechla, D. Towell. 2003.** River otter *Lontra canadensis*. Pp. 708-734. In Wild mammals of North America: biology, management, and conservation. Second edition. **G.A.**

**Feldhamer, B.C. Thompson, and J.A. Chapman.** Johns Hopkins University Press, Baltimore, MD, 1216 pp.

**Murie, O.J. 1974.** A field guide to animal tracks. Houghton Mifflin Company, Boston, MS, 375 pp.

**Otter Net**, 6 February 2005, <http://www.otter.org/news/news29.html>

**Polechla, P.J., Jr., T.R. Meinecke, A.G. Burns, W.S. Knapp, K.D. Leuthner, D.T. Lockner 2000.** Ecology of the river otter and other wetland furbearers in the upper Rio Grande. Final Report to Bureau of Land Management, University of New Mexico, Albuquerque, NM 226 pp.

**Polechla, P.J. Jr., 2002a.** A review of the natural history of the river otter (*Lontra canadensis*) in the southwestern United States with special reference to New Mexico. Report to North American Wilderness Recovery Incorporated, Albuquerque, NM 48 pp.

**Polechla, P.J. Jr., 2002b.** River otter (*Lontra canadensis*) and riparian survey of the Los Pinos, Piedra, and San Juan rivers in Archuleta, Hinsdale, and La Plata Counties, Colorado. Final Report to Colorado Division of Wildlife, Denver, CO 96 pp. + frontispiece + endpiece.

**Polechla, P.J., Jr. 2003.** Spring diet of the river otter (*Lontra canadensis*) in the Piedra and San Juan rivers, southwestern Colorado. Report to the Colorado Division of Wildlife, Denver, CO 25 pp. + 8 tables + 2 appendices.

**Polechla, P.J. Jr., 2004.** The plight of the endangered southwestern river otter (*Lontra canadensis*) in New Mexico and the southwestern United States. Abstract, Ninth International Otter Colloquium, Frostburg, MD

**Ralls, K. 1990.** Reintroductions. In Otters: an action plan for their conservation. **P. Foster-Turley, S. Macdonald, and C. Mason** (eds.), Kelyvn Press Incorporated, Broadview, IL 126 pp.

**Savage, M. 2004.** Possible otter restoration in New Mexico. *River Otter Journal*. **13** (1).

**Résumé: Premiers indices de présence de la loutre du Canada (*Lontra canadensis*) collectés au Nouveau Mexique, USA, depuis 1953**

Le 3 Novembre 2004, nous avons collectés ce qui semble être 3 épreintes de loutre du Canada (*Lontra canadensis*) sur la rivière de San Juan, Navajo Reservoir, Navajo State Park, San Juan County, New Mexico, USA. Etant donné que les échantillons ont été collectés sur un substrat dur, dépourvu de traces, nous les avons fait analyser en laboratoire. L'ADN a été extrait des échantillons et le gène cytochrome b a été amplifié et séquencé pour 2 des échantillons. Les séquences ont été identifiées comme étant de *L. canadensis*, après comparaison avec la NCBI Genbank. Ces épreintes constituent la deuxième donnée et le premier indice de présence concret pour cet état, depuis plus de 50 ans. Des lâchés d'individus ayant été effectués par le passé dans le bassin, sans tenir compte des sous-espèces, et la présence de loutres autochtones, antérieure à l'introduction d'individus issus d'autres régions, ayant été signalée, l'identification de sous-espèces est prématurée et des analyses supplémentaires sont nécessaires. Davantage de prospections sur le terrain permettraient de connaître la distribution de la loutre dans l'état et d'évaluer la qualité des zones humides.

**Resumen:**

El día 3 de noviembre del año 2004 se colectaron tres heces que parecían ser de nutria de río (*Lontra canadensis*) en el río San Juan en la Reserva Navajo, Parque Estatal Navajo, condado de San Juan en el estado de Nueva Mexico, Estados Unidos. Las muestras fueron analizadas para extraer ADN. El gen citocromo b fue amplificado y secuenciado a partir de 2 de las muestras. Las secuencias fueron comparadas con el banco genético NCBI y fueron asignadas a *L. canadensis*. Estas heces son el segundo registro para el estado y es la primera vez en 50 años que se colectan evidencias físicas. La identificación de subespecies es necesaria debido a previas translocaciones de individuos sin considerar subespecie y a reportes de la presencia de individuos nativos previa a la translocación. Reconocimientos de campo son necesarios para determinar otras áreas donde la especie pudiera existir y determinar la condición de los humedales.