

SHORT NOTE

CITIZEN MONITORING AFTER AN OTTER RESTORATION (*Lontra canadensis*) IN NEW MEXICO, USA

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Photo credit: Michael A. Martinez/Courtesy of Taos Pueblo

Abstract: Citizen reports documenting sightings of river otters (*Lontra canadensis*) and otter sign were collected and analyzed following a restoration program on the Rio Grande watershed in northern New Mexico, USA. From 2008 to 2014, citizens turned in 170 reports of otters, tracks and scats, 51% of which were accompanied by photographs. Citizen science played an important role in documenting the dispersion of river otters from their point of release throughout the watershed.

Citizen science has the potential to provide valuable data about the abundance and distribution of wildlife species. At the same time, those engaged in monitoring wildlife gain a deeper knowledge of and appreciation for the animals they are observing.

We collected sighting reports from citizens for 7 years following a program that restored otters to the State of New Mexico, USA. This note describes the volunteer reporting results from that program and presents a distribution map created from the reports.

Over three years, 2008-2010, 33 North American river otters (*Lontra canadensis*) were released into the northern Rio Grande in New Mexico, a fairly arid state of deserts, grasslands, and mountain ranges in southwestern United States. The Rio Grande is a large river in New Mexico, flowing from north to south through the center of the state, with flows that fluctuate seasonally and from year to year. The high flow season is in late spring/early summer, when snows in the mountains swell streams with meltwaters, but there are sufficient water levels and fish biomass to support a population of otters yearround.

The first release of 10 otters occurred in 2008 (plus 13 released in 2009 and 10 in 2010), near the confluence of the Rio Grande and the much smaller Rio Pueblo de Taos, on Taos Pueblo land. Soon afterwards, report forms were made available at a local environmental organization to interested citizens, river runners, and recreationalists. These forms asked for: 1) observer name, 2) date, 3) location, 3) site description, 4) type of evidence (otter sighting, scat, tracks) with brief description, and 5) general comments/discussion/details. Only reports with a geographic location were entered into a data base. When written reports were submitted that did not use the form, but reported the same data fields, information was translated into the same format. Reports describing known locations, such as named rapids, were assigned a UTM location.

A total of 170 reports were turned in over 7 years, from 2008 to 2014, documenting sightings of otters, tracks and scats. A total of 115 otter sightings were reported, 112 live and 3 dead. About half of the observers reported seeing a single otter (n = 60; 54%), and there were 15 sightings of groups of 2 otters, 15 sightings of 3 otters, 12 sightings of 4 otters, 7 sightings of 5 otters, 2 sightings of 6 otters, and one sighting of 7 otters together. In addition, there were seven reports of young otters, 5 sightings of 3 juveniles and 2 sightings of 2 juveniles together. Otter sign -- tracks and scat -- was also reported. Presence of scat was reported 27 times, and tracks were reported 47 times.

Reports from the main stream of the Rio Grande were 130 (76%), with the remaining 24% of reports from tributaries, mainly the Chama River and the Rio Pueblo de Taos. The map of reported sightings has a geographic bias (Fig. 1), in that the concentration of reports from an area just south of the release site reflects a concentration of recreationalists in a state park along the river. In addition, long stretches of the river north of the release site are in deep and rugged wilderness canyons with little human traffic.

The number of reports varied by year; there were 15 reports submitted in 2008; 56 in 2009; 21 in 2010; 17 in 2011; 17 in 2012; 36 in 2013; and 8 in 2014. However, 34 of the 56 reports made in 2009 were submitted by a restoration team member, and 13 of the 36 reports from 2013 were made by river rafting guides, who were provided with an illustrated guide for identifying otter and otter sign. Taking these factors into account, the number of reports was relatively stable, around 20 per year until 2014, when the number dropped to 8, perhaps because otter sightings had become familiar.

A crucial concern with citizen science reports is reliability. We have reason to have a relatively high level of confidence in the reports. Of the 112 live otters reports, 57 (51%) were supported by photographs. Four photos accompanied the 27 reports of scat, and 11 photos, of the 47 reports of tracks. In addition, notes included in many reports included supporting details. Comments about "snuffling on the bank", "otters on the deck", "eating fish", "observed for several hours" increased confidence that the observers had had a good opportunity to observe the animals. Scat reports included comments on the presence of fish bones and crayfish remains. In one case, a cast was made of tracks. A large number of the reports, 102 of the total of 170 reports (60%),

and 47 of the 115 reports of otter sightings (41%) were made by professional wildlife biologists, veterinarians, or members of state and federal agencies. Five of the 7 the reports of juveniles were made by biologists.

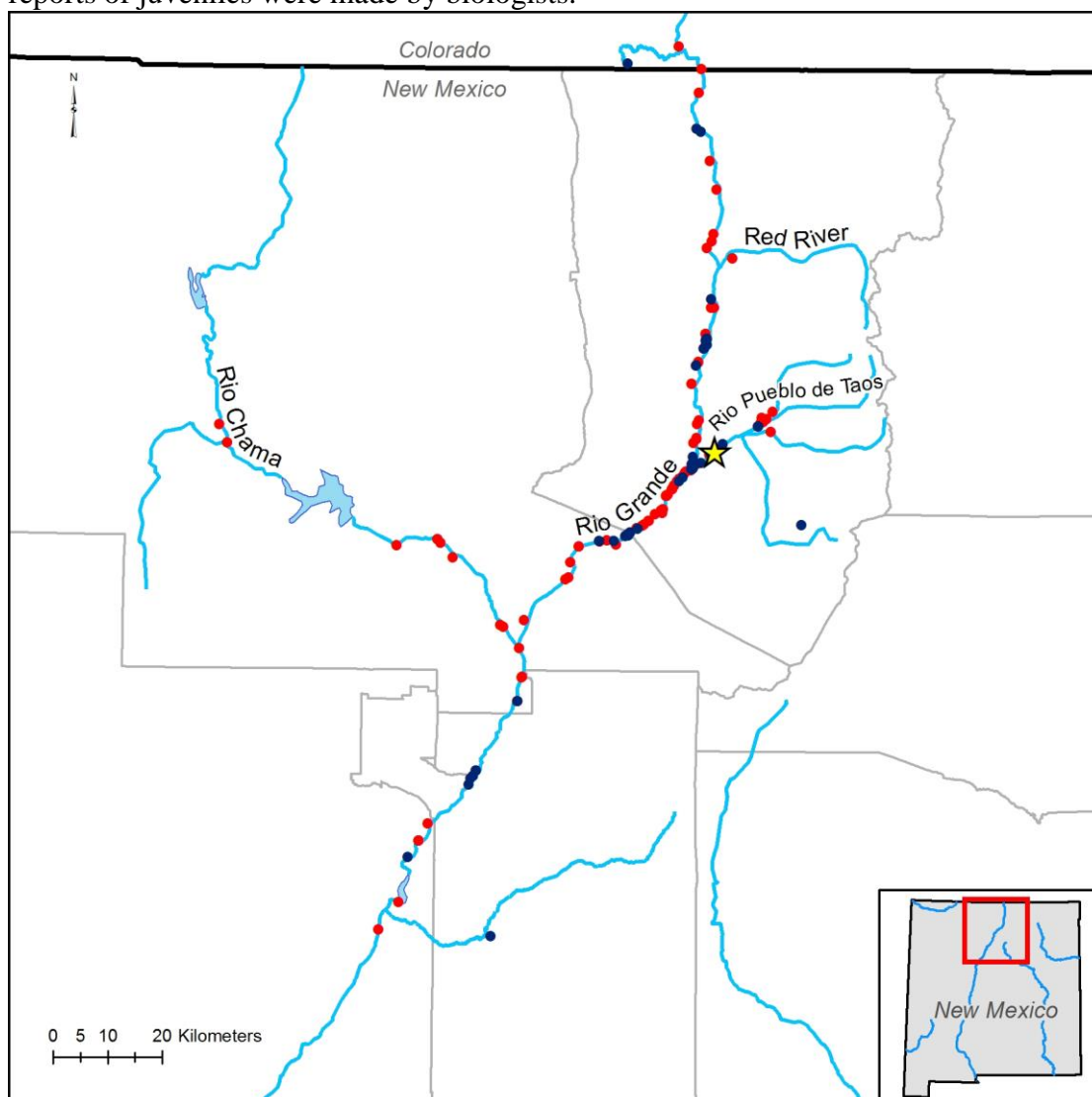


Figure 1. Map sightings of otters, tracks or scat in north-central New Mexico from 2008 to 2014. The map represents a north-central portion of New Mexico. Red dots indicate a sighting of one or more otters; blue dots indicate a report of otter scat or tracks. The yellow star indicates point of otter releases.

A significant contribution was made by observer reports to our understanding of how river otters from a restoration program dispersed throughout the northern Rio Grande watershed. A map of sightings documented where otters travelled to in northern New Mexico, even though they may not have permanently occupied those locations. Just as importantly, interested citizens were engaged enough to submit reports, and no doubt shared their stories with friends. Every river rafting guide sighting meant that a raft full of river runners also shared in the excitement of seeing otters. The reintroduction program in New Mexico generated public enthusiasm and was favorably covered in the media, but the hands-on experience of citizens reporting otter sightings was a positive experience for many.

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RÉSUMÉ

UN SUIVI MENE PAR LES CITOYENS APRES LA REINTRODUCTION DES LOUTRES (*Lontra canadensis*) A NEW MEXICO, ETATS UNIS

Les rapports de citoyens documentant les observations des Loutres (*Lontra canadensis*) ainsi que leurs traces, ont été collectés puis analysés en suivant les consignes du programme de restauration du bassin versant du Rio Grande au Nord de New Mexico, Etats Unis. De 2008 à 2014, les citoyens ont retourné 170 rapports mentionnant des Loutres, leurs empreintes ou leurs excréments, et 51% de ces rapports furent accompagnés de photographies. La science citoyenne joue un rôle majeur en documentant la dispersion des Loutres depuis leur point de libération au travers du bassin versant.

RESUMEN

MONITOREO CIUDADANO LUEGO DE UNA RESTAURACIÓN DE NUTRIAS (*Lontra canadensis*) EN NUEVA MEXICO, USA

Colectamos y analizamos reportes de ciudadanos que documentaban avistajes y signos de nutrias de río (*Lontra canadensis*) luego de un programa de restauración en la cuenca del Río Grande, en el norte de Nueva Mexico, USA. Entre 2008 y 2014, los ciudadanos enviaron 170 reportes de nutrias, huellas y fecas/secreciones, 51 % de los cuales fueron acompañados por fotografías. La ciencia ciudadana jugó un importante papel en la documentación de la dispersión de las nutrias por la cuenca, a partir de su punto de liberación.