NOTES

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Natural History

First records for *Hydrochoerus isthmius* Goldman, 1912 (Rodentia: Hydrochaeridae) in coastal wetlands from northern Sierra Nevada de Santa Marta, Magdalena, Colombia

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Resumen

Presentamos los primeros reportes de *Hydrochoerus isthmius* para la zona costera de la vertiente norte de la Sierra Nevada de Santa Marta, departamento de Magdalena, Caribe colombiano. Evidencias directas (cámaras trampa, restos óseos, fotografías *in situ*) e indirectas (huellas y excretas), comprueban la ocurrencia de esta especie para los humedales costeros ubicados entre dos áreas protegidas del sistema de Parques Nacionales; PNN Tayrona y Sierra Nevada de Santa Marta.

Palabras clave: Área de distribución, *Hydrochoerus isthmius*, humedales, Caribe colombiano

Abstract

In this note, we present the first reports for the *Hydrochoerus isthmius* in the northeastern coastal border of the Magdalena department (Colombia). Records were based on direct evidence (Camera traps, skeletal remains, in situ photographs) and indirect evidence (scats and tracks). We evidenced that the species inhabits coastal wetlands located between two national parks, Tayrona and Sierra Nevada de Santa Marta.

Keywords: Lesser capybara Distribution area, wetlands Colombian Caribbean.

Hydrochoerus isthmius is a large and semiaquatic rodent that is locally known in the Colombian Caribbean region as “ponche”, and valued as an important source of protein for local consumption, although its meat is also sold as bushmeat in illegal markets (Aldana-Domínguez et al., 2002; Quinceno et al., 2015). Some authors consider *H. isthmius* populations as a *different* species, sister to *H. hydrochaeris* (Aldana-Domínguez et al., 2007), while others consider it a geographical subspecies (Ruiz-García et al. 2016). The Capybara (*H. hydrochaeris*) is distributed east to the Andes, extending throughout the llanos orientales, reaching southern Colombia in Caqueta, Putumayo, and Amazonas

departments (Aldana-Domínguez et al., 2007). The lesser capybara (*H. isthmius*), is distributed in Colombia west to the Andes, including the Atlantic versant, Magdalena Valley, Cauca, and Sinú rivers, extending through Chocó, in western Colombia (Wilson & Reader 2005, Aldana-Dominguez et al. 2007, Aldana-Dominguez et al. 2013). Solari et al. (2013) lists *H. isthmius* as a valid species for Colombia, with records in Magdalena, Sucre, Antioquia, Chocó, Cordoba, and Valle del Cauca departments.

It is known that some of the areas within the species range, have not been surveyed due to the internal armed conflict (Aldana-Dominguez et al. 2007). Consequently, the distribution of *H. isthmius* in Magdalena department has been poorly documented. The scarce published reports for Magdalena, include sightings in two national protected areas located west of the Sierra Nevada de Santa Marta, Parque Isla Salamanca, and Santuario de Fauna y Flora Ciénaga Grande de Santa Marta (Moreno-Bejarano & Álvarez-León, 2003). Furthermore, the species has been recorded within areas covered by African palm crops, at the municipality of El Piñon, Magdalena (Madriñan & Rojas-Salazar, 2018).

The study site is located between two protected areas, limiting southwest with Tayrona National Natural Park, at Piedras river (11º17'46,40'' N, 73º53'32,88'' W), and limiting North East with Sierra Nevada de Santa Marta National Natural Park, at Don Diego river (11º15'28,72'' N, 73º42'8,36'' W), ranging in elevations between 8-13 m (Figure 1). Five main rivers drain down the Northern versant of the Sierra Nevada de Santa Marta to the Caribbean Sea in the Magdalena Department (Piedras river, Mendihuaca River, Guachaca River, Buritaca River, and Don Diego River). These river deltas, form species-rich coastal wetlands and mangrove forests. Natural habitats within the study site are locally threatened by the expansion of the agriculture, cattle ranching, development of urbanizations, and touristic infrastructure (Allan et al., 2019; Rangel Buitrago, 2008). These wetlands generate habitat for multiple threatened species including river otters *Lontra longicaudis* (Trujillo et al., 2017).

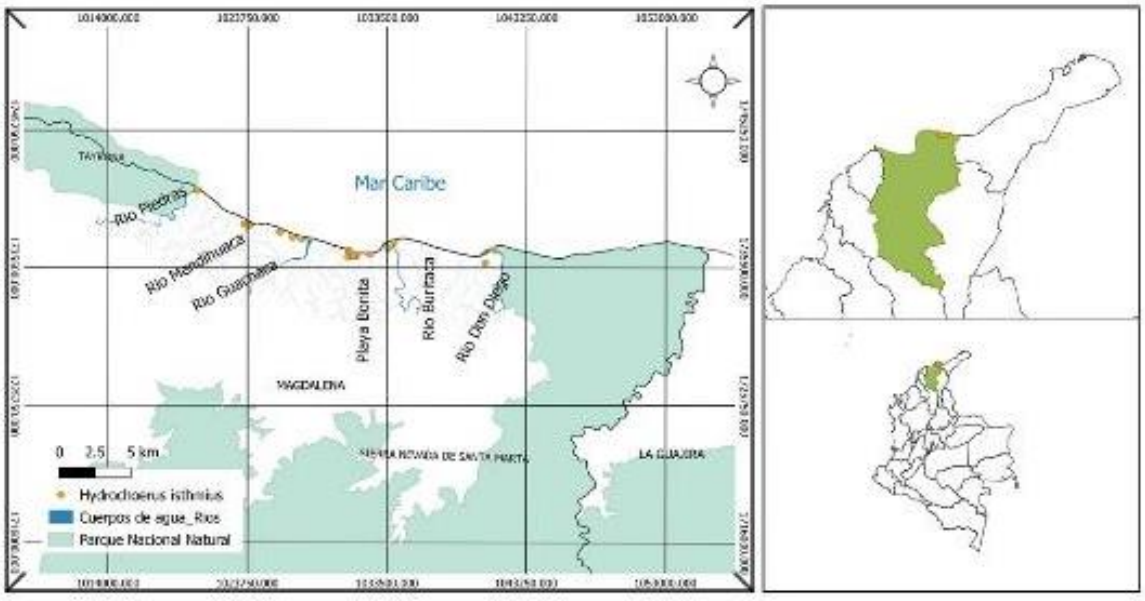

FIGURE 1. Records of the Lesser capybara reported between June 2019 and November 2020 for six localities in the department of Magdalena, Colombia.

FIGURE 2. Habitat of *H. isthmius* in the north eastern Coastal border of the Sierra Nevada de Santa Marta, A) Coastal wetlands, Playa Bonita-Quebrada del Tigre B) Banana monoculture near the seashore in Buritaca.

Records on the presence of the species were made during fieldwork between 2019 and 2020. Diurnal and nocturnal searches, were carried out along two kilometer long transects, inspected both by foot and on board of a small boat for each of the six surveyed areas. In these transects we registered evidence on the presence of *H. isthmius* with the use of a GPS and a digital camera. The use of camera traps during the study was specifically to monitor predator and non-predator species that visited nesting and basking areas used by American crocodiles (*Crocodylus acutus*), for this purpose we installed a total of six cameras each year from 12 April to 20 September, for a total of 93 nights of sampling in 2019 and 124 nights of sampling in 2020.

We registered a total of 25 observations on *H. isthmius*, for six localities (Piedras River, Guachaca River, Buritaca River, Mendihuaca River, Don Diego River and Playa Bonita-Quebrada Valencia) eight based on photographs and videos from camera traps, six direct observations in the field, nine based on scats and tracks, and two remains from dead individuals (Table 1).

The species was registered along the water edge of coastal lagoons, utilizing Mangrove forests, as well as banana plantations (*Musa paradisiaca*), and cacao crops (*Theobroma cacao*) as habitat (Figure 2), moving along nesting and basking areas used by the American crocodile. Scats and tracks were found in congregation sites used by lesser capybaras for mud bathing and grazing (Figure 4A). The species shows predominantly nocturnal activity patterns, that may extend to morning hours (19:10-05:18), being less frequently observed during daytime. Most photographs taken by camera traps show solitary individuals (seven from eight recordings). A single group, formed by two adults, three subadults and four juveniles was filmed during August 2020, in a mangrove forest from the locality of Playa Bonita (Figure 3A).

In this note we evidenced the presence of *H. isthmius* in wetlands comprised between two protected areas: Tayrona National Natural Park (Piedras River) and Sierra Nevada de Santa Marta National Natural Park (Don Diego River), representing the first confirmed records for the studied localities.

Table 1. Lesser capybara (*H. isthmius*) records for the study area. Column #ind, specifies number of individuals recorded, (G) evidence of tracks from more than one individual or group.

Locality	Record	Date	Hour	Latitude	Longitud	# ind.	Habitat type
Playa Bonita-Quebrada del Tigre	Camera trap	23-Jun-19	22:26	11.257393	-73.795232	1	Crocodile nesting area
Playa Bonita-Quebrada del Tigre	Skeletal remains	15-Jul-19		11.256042	-73.794748	1	Mangrove forest
Playa Bonita-Quebrada del Tigre	Camera trap	17-Aug-19	2:24	11.253413	-73.79558	1	Cacao plantation
Playa Bonita-Quebrada del Tigre	Scats and tracks	18-Aug-19		11.253683	-73.79558	G	Mangrove forest
Playa Bonita-Quebrada del Tigre	Direct observation	14-Jan-20	22:08	11.254999	-73.79176	1	Mangrove forest
Playa Bonita-Quebrada del Tigre	Camera trap	23-Mar-20	5:18	11.257121	-73.794889	1	Crocodile nesting area
Playa Bonita-Quebrada del Tigre	Camera trap	15-May-20	5:11	11.25636	-73.794168	1	Crocodile nesting area
Playa Bonita-Quebrada del Tigre	Scats and tracks	26-Jul-20		11.253808	-73.796084	G	Mangrove forest
Playa Bonita-Quebrada del Tigre	Camera trap	6-Aug-20	3:06	11.253841	-73.791962	9	Mangrove forest border
Playa Bonita-Quebrada del Tigre	Tracks	11-Nov-20		11.253808	-73.796084	G	Mangrove forest
Playa Bonita-Quebrada del Tigre	Scats and tracks	11-Oct-19		11.254932	-73.781437	G	Mangrove forest
Buritaca	Scats and tracks	12-Dec-19		11.254101	-73.790625	G	Mangrove forest
Buritaca	Camera trap	24-Feb-20	21:39	11.254101	-73.790625	1	Mangrove forest
Buritaca	Direct observation	12-Mar-20	21:41	11.262646	-73.766696	1	Banana plantation
Buritaca	Direct observation	12-Mar-20	19:15	11.262693	-73.766211	2	Banana plantation
Buritaca	Tracks	3-Mar-20		11.258767	-73.769945	G	Mangrove forest
Don Diego	Scats and tracks (Mud bathing site)	29-Jan-20		11.25798	-73.702324	G	Grassland, mangrove forest border
Don Diego	Direct observation	20-Sep-20	20:00	11.249303	-73.707817	1	Banana plantation
Guachaca	Scats and tracks	8-Aug-19		11.265006	-73.825647	G	Mangrove forest
Guachaca	Individual killed in noose trap	20-Feb-20		11.266263	-73.831293	1	Mangrove forest
Mendihuaca	Scats and tracks	23-Nov-19		11.27544	-73.8609	G	Mangrove forest
Mendihuaca	Tracks	16-Sep-19		11.27369	-73.858819	G	Mangrove forest
Mendihuaca	Tracks	29-Feb-20		11.269458	-73.8394	G	Mangrove forest
Rio Piedras	Camera trap	4-Feb-20	19:10	11.296223	-73.892469	1	Crocodile basking area
Rio Piedras	Camera trap	19-Jun-20	20:47	11.296783	-73.892469	1	Crocodile basking area

The species was not prioritized in the Conservation and Management Plan for the Aquatic mammals from Magdalena Department (Trujillo et al., 2017), thus knowledge on the range

at the Magdalena department remains scarce and no data exists regarding population trends and conservation status. We highlight that the species has not been included in the management plans from neither of the two mentioned national parks. During fieldwork we encountered the remains from two dead individuals, one of the corpses had its right ankle partially mutilated by the action of a noose trap (Figure 4C, D), proving that the species is hunted in the study area.

The accelerated growth of extensive agriculture, urban spaces, roads, and touristic infrastructure are main threats for wetlands through landfills and deforestation. Banana monocultures have extended throughout the study site, replacing natural habitats, and reducing original forest covers to small patches (Figure 2B). However, inside these plantations there is restricted access to personnel, and it is strictly prohibited to hunt wildlife, conditions that make them a favorable habitat for the presence of the species that uses artificial water channels to find shelter, fresh water, and grazing areas. The number of observations recorded with camera traps during the study period was limited by the number of American crocodile nesting and basking sites detected and by the loss, vandalized and stolen equipment at the study areas of Don Diego River, Playa Bonita-Quebrada Valencia and Buritaca River. The presence of sites with numerous tracks and scats, also prove that the population is not only configured by solitary individuals (Figure 4A).

Lesser capybaras inhabits vulnerable wetland habitats, which require assertive territorial planning for their conservation as they are located outside protected areas, they face numerous threats that accelerate habitat loss for terrestrial and aquatic fauna. This species faces pressures that compromise its survival imposed by hunting for bushmeat. A specific sampling design for the species will allow further studies over aspects such as abundance, age structure, and habitat use, future research on the population trend for the study area could be an initial effort towards its management and conservation.

FIGURE 3. Photographic evidence on the presence of *H. isthmius* for the study area: A) Juveniles from a family group, Playa Bonita (id 9); B) Río Buritaca, Banana plantation direct observation (Id 14); C) Individual transiting through American crocodile basking area, captured by camera trap, Río Piedras (Id 24); D-E) Individual transiting through American crocodile nesting area, captured by camera trap, Playa Bonita (Id 1; 6).

FIGURE 4. Evidence on the presence of the species. A) Río Don Diego- mud bathing site (Id 17); B) Tracks, Playa Bonita, (id 10); C) Skeletal remains, Playa Bonita, (Id 2); D) Dead individual caught in noose trap, Rio Guachaca (Id 20).

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