Short Note

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Historical toponymy reveals the active presence of the Iberian wolf close to the Guadalquivir River in the 18th century

La toponimia histórica revela la presencia activa del lobo ibérico en torno al río Guadalquivir (SO España) en el siglo XVIII

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Toponymy, or more appropriately toponomastics, is the science that studies the names of geographical places and their origin, development, evolution and cultural connections. So, toponyms are terms born with the vocation of identifying, locating and labelling places in space, originally inspired by representative features of physical, biological or sociological nature, singular in their contemporaneous surrounding area (Cacciafoco & Cavallaro 2023). Beyond their linguistic, historical and anthropological primary values, toponymic records contain cryptic information of potential interest to natural sciences (Signorini *et al.* 2016). Although often underestimated, this information results particularly useful as auxiliar tool to reconstruct past distribution of species and habitats, as well to detect ecosystems trends and infer putative causes which have could drive to present scenarios (Cox *et al.* 2002, Moore 2002, Pagán-Jiménez & Lazcano-Lara 2013, Fagúndez & Izco 2016, Tattoni 2019, Spampinato *et al.* 2022). Specifically, extinct microtoponyms, which are defined as disappeared names of places at local scale, may function as powerful environmental descriptors of the ecological dynamics of a territory, mainly in terms of nature degradation by man-made land uses (Sousa *et al.* 2010). Unfortunately, such historical placenames are sparsely contained into documental resources of very diverse origin, epoch, conservation state and aims, whose hard extraction effort determines an underrepresented use in environmental studies (Pujol 2012, González 2015, Muñoz-Reinoso 2022).

In this note, I report the extinct microtoponym 'Isla de los Lobos', literally 'Wolves Island', suggesting about the potential location of a historical, natural crossing-site for wolves (*Canis lupus signatus* Cabrera, 1907) on the Guadalquivir River (SW Spain; Fig. 1). This zootoponym was a recurrent placename in the accounting documentation from the public archive of the counts of Cantillana and lords of Brenes and Villaverde, its owners, from 1750 to 1780 (Ministerio de Cultura 2024a), being previously known as 'Hornillo de Brenes' during 16th and 17th centuries. It was also cited in a lawsuit towards 1800, where the described facts pointed to its ecological affinity with other neighbouring river islands, and again in 1818, within an auxiliary note focused on the tithe payment (Vila-Villar & Morejón-Pazos 2011). The last known mention of this zootoponym is dated 1845, within a deed of possession and mortgage (Registro de la Propiedad del partido judicial de Algaba 1872). According to these sources, the toponym identified a place immediately adjacent to the Guadalquivir River at the municipality of Brenes (Seville), within the area currently known as 'Banda de Brenes' (lat.: 37º 32' N, long.: 5º 53' W), where occupied an indetermined surface of at least 68 hectares managed as herbaceous crop field (Fig. 1). Moreover, other four allied microtoponyms have been applied to lands located on the edge of the Guadalquivir River at the study area: 'La Lobera' ('The Wolf Den') and 'Boca Lobo' ('Wolf Mouth'), both still recognized in topographic charts, and the disappeared 'Vado de la Lobera' ('Wolf's Den Ford') and 'Cachones del Lobo' ('Wolf Waterfall'), both cited by García-Otero (1847).

Uncritical assignation of placenames to the category of oikonyms (*i.e.* phyto- and zootoponyms) can lead to environmental misinterpretations (Beconyté *et al.* 2022; *cf.* Medina-Gavilán 2022, for the study area). However, after the consultation of assorted documents with local onomastic value

belonging to the historical archives of the counts of Cantillana, there are no reasons to consider these microtoponyms as derived from an original anthroponym. Alternatively, the assumption of an alleged hydrotoponymic identity of pre-Roman origin is not parsimonious (Ballester 2009), even more so when 'wolf' or related terms are absent from the oldest writing sources referring to these properties (Vila-Villar & Morejón-Pazos 2011). Therefore, there are no linguistic reasons to doubt the legitimacy of such placenames as true zootoponyms.

A different issue is to deduce the specific causes that led to the establishment and decay of these zootoponyms: from strictly ecological explanations (*e.g.* intense use of space by wolves during certain periods), to simply ethnobiological reasons (*e.g.* fear impact of observing one wolf specimen). Interestingly, spatial concentration of zootoponyms relative to the wolf has been demonstrated as a proxy for the density of this species in accordance with extinction and recolonisation patterns (Tattoni 2019). On this matter, although scarce, there is historical evidence about the presence of the Iberian wolf in this region over the course of the 18th century, being likely that population connectivity between western Sierra Morena and Subbetica Mountains occurred largely across the Guadalquivir alluvial plain (Gutiérrez-Alba 2006). Thus, the recognition of the study area as a toponymic hot-spot in relation to the wolf is consistent with its functional role as a potential crossing point on the Guadalquivir River.

The allusion to the insular nature of 'Isla de los Lobos' is coherent with the historical configuration of the Guadalquivir River in the region before 1920, which was predominantly unconfined with a single-thread meandering channel morphology and abundant sedimentary bars along the meanders (Baena-Escudero *et al.* 2019). As an instance,

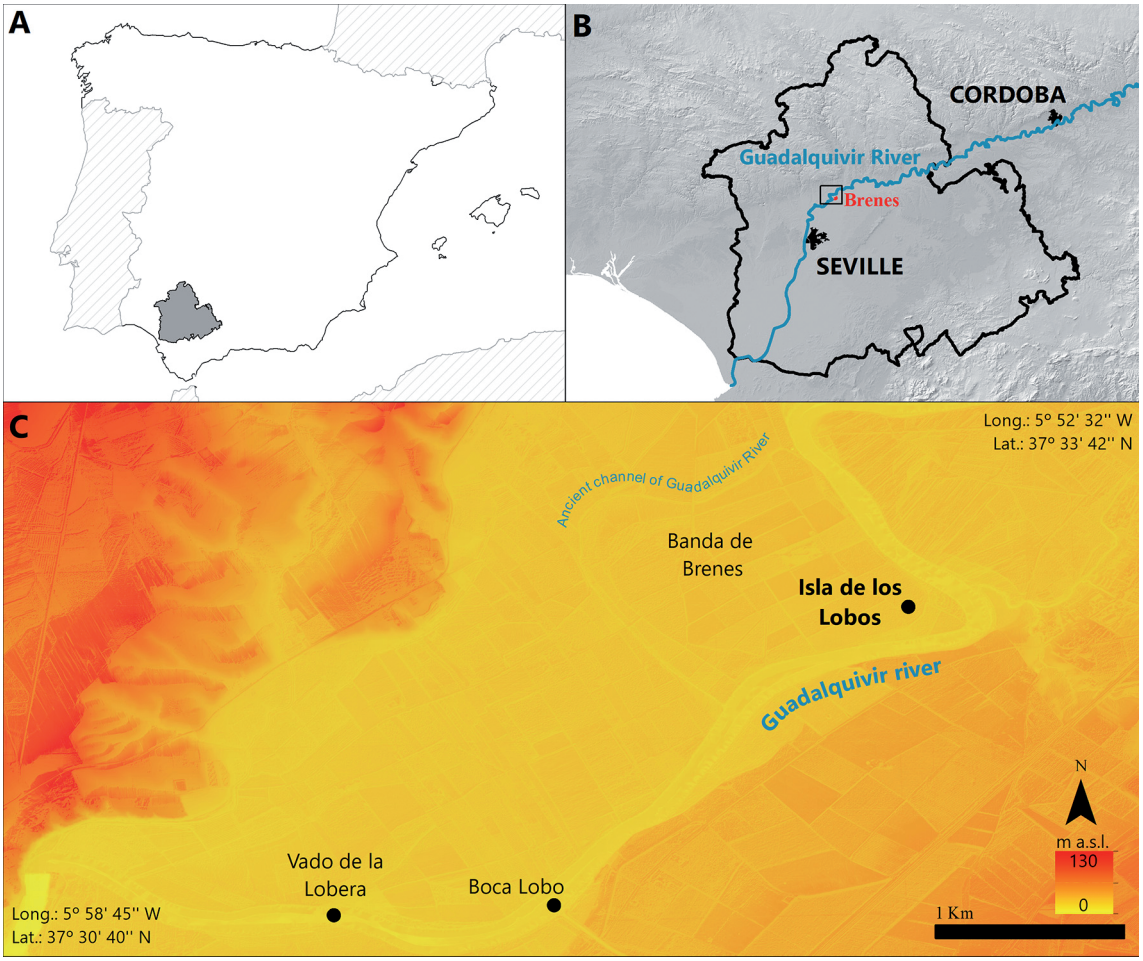

Figure 1. Study area. **A**) **B)** Iberian Peninsula and province of Seville. **C**) Detail location of the disappeared 'Isla de los Lobos' ('Wolves Island') in the Guadalquivir River (digital elevation model 2x2 m from *Plan Nacional de Ortofotografía Aérea*).

García-Otero (1847) described the river course at the study site as meandering and mainly shallow, with depth among 1,45 and 5,63 m (2,27 ± 1,44 m), surface velocity of 0,39 m^3/s and the existence of at least four islands and five fords along only 5 km of river channel, whereas Baena-Escudero *et al.* (2019) establish a channel width near to 250 m towards 1850. In general, there is abundant documentation on the old existence of these fluvial islands, providing testimonies on their fast genesis (Ministerio de Cultura 2024c) and social conflicts (Ministerio de Cultura 2024a). From a land-use viewpoint, these islands were arable and used mainly to cultivate barley, wheat or hemp; occasionally, they were also reserved for other purposes, such as corralling cattle, wool washing or simply kept uncultivated (reedbeds) as a hunting ground for birds (Fernández-Flores *et al.* 2011, Vila-Villar & Morejón-Pazos 2011). Besides, the Guadalquivir River suffered a historical meander cut-off in this specific area, modifying the orientation of its channel and the local drainage network into a new permanent course. This transformation or avulsion phenomenon possibly occurred after the medieval delimitation of the administrative territory belonging to Brenes and prior to 1530, but it was still markedly perceptible at the end of the 19th century (Marín & Álvarez-Benavides 1825) and even continues to be partially recognizable nowadays (Fig. 1).

I postulate that the spatial concentration of these zootoponyms points to the ancient location of a corridor for the Iberian wolf across the Guadalquivir River, a perennial Mediterranean river suffering a low-flow period during the dry season, as the best possible explanation. Large perennial rivers and associated floodplains have been invoked as potential restrictions to the natural dispersal capacity of very different species and functional types of terrestrial fauna, being primarily driven through limitations on the free-ranging behaviour of animals (White *et al.* 2000, Frantz *et al.* 2010, Cozzi *et al.* 2013, Marrotte *et al.* 2014, Gilbertson *et al.* 2022, Naka *et al.* 2022). In the most extreme cases, the long-term effects of riverine barriers may become cause of ecological differentiation across populations occurring on opposite banks (*e.g.*: strong limitation in gene flow, sex and age-biased dispersal, competitive imbalances, alteration of metapopulation dynamics) and subsequently may condition the biogeographic singularity of the territory (*e.g.*: origin or maintenance of allopatric speciation processes) (Santorelli-Junior *et al.* 2022). In relation to the wolf, a highly adaptable and mobile predator, a few studies have specifically evaluated the role of large rivers as landscape obstacles influencing movements of individual and contacts among populations, with dissimilar results (Luchini *et al.* 2004, Blanco *et al.* 2007) or non-unequivocal conclusions (Djan *et al.* 2014, Trbojevic & Cirovic 2016). Nevertheless, such studies conclude that rivers act only as semi-permeable barriers to wolf dispersal (Carmichael *et al.* 2001, Jedrzejewski *et al.* 2004, Blanco *et al.* 2007, Ražen *et al.* 2015).

In conclusion, toponymy allows to identify this type of hydrogeomorphological scenario as especially suitable for favouring lateral movement across channels by the Iberian wolf in historical times, even in Mediterranean rivers where they are not expected to behave as important barriers.

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