

# Southernmost occurrence of *Syngnathus folletti* on a temperate coastal lagoon of Argentina

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*We report the occurrence of a mature male Syngnathus folletti in the inlet channel of Mar Chiquita coastal lagoon (37°44'S 57°25'W, Buenos Aires, Argentina). This record constitutes the southernmost report for the species. Mar Chiquita coastal lagoon is characterized by mudflats surrounded by a large cord-grass area but not by grass beds which are seen to be a suitable habitat for S. folletti. Therefore, oceanic winds that allow warmer northern waters to approach the coast of Argentina could be the cause of the presence of the species.*

**Keywords:** *Syngnathus folletti*, coastal lagoon, Argentina

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## INTRODUCTION

The family Syngnathidae is represented by two subfamilies: Hippocampinae (seahorses) and Syngnathinae (pipefish). The former includes one genus and about 36 species; the latter contains 51 genera and at least 196 species (Nelson, 2006). Only one species of Hippocampinae has been reported on the Argentine continental shelf: the seahorse *Hippocampus patagonicus* (Piacentino & Luzzatto, 2004). Two species of Syngnathinae have been reported in Argentine waters: the deep-bodied pipefish *Leptonotus blainvillleanus* (Eydoux & Gervais, 1837), with a distribution as far south as Tierra del Fuego; and the southern pipefish *Syngnathus folletti* (Herald, 1942), which occurs from northern Brazil (near Fortaleza, Ceará) to Uruguay and north of Argentina (Dawson, 1982). *Syngnathus folletti* is a subtropical species found in depths between 10 and 30 m and sporadically at greater depths (83–200 m) which can support large variations in salinity (Figueiredo & Menezes, 1980), since it has been collected in the Patos Lagoon estuary (Weiss, 1981; Garcia *et al.*, 2001, 2005), the middle zone of the Mambucaba River estuary (Neves *et al.*, 2010), as well as in the Río de la Plata estuary (Ruarte *et al.*, 2009) and the Ajó River from its headwater to its mouth in Samborombón Bay (36°20'–36°28'S 56°54'–56°59'W), in the nearby Río de la Plata estuary (Solari *et al.*, 2009). We report here the occurrence of *S. folletti* in the inlet channel (37°44'S 57°25'W) about 1000 m from the mouth of the Mar Chiquita coastal lagoon (Buenos Aires, Argentina). This record constitutes the southernmost report for the species.

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## MATERIALS AND METHODS

One specimen of *Syngnathus folletti* was collected on 15 December 2008 by a local fisherman with a 1.70 m diameter, 20-mm mesh size landing net equipped with a 5-mm mesh size cod-end, during the high tide at nightfall. The specimen was frozen for four months before being fixed in 10% formalin, identified and measured to the nearest 0.05 mm with a digital caliper. The specimen is registered in the collection of the Instituto Nacional de Investigación y Desarrollo Pesquero as INIDEP No. 825.

## RESULTS

The specimen of *Syngnathus folletti* was a mature male (Figure 1). Morphometric features and body proportions are summarized in Table 1, and agree with those reported by other authors who described this species (e.g. Herald, 1942; Pozzi & Siccardi, 1948).

## DISCUSSION

The occasional presence of tropical and subtropical teleost fish in Mar Chiquita coastal lagoon has been attributed to the incursion of warm neritic waters to the Argentine continental shelf (Díaz de Astarloa *et al.*, 2000; Figueroa *et al.*, 2000; González Castro *et al.*, 2006; Blasina *et al.*, 2009) in combination with winds from the oceanic region that allow marine water to enter several kilometres into the inner channel (Reta *et al.*, 2001). Lucas *et al.* (2005) stated that the Río de la Plata discharge (22,000 m<sup>3</sup> s<sup>-1</sup>) has a weak seasonal signal in discharge volume with a maximum in the



Fig. 1. *Syngnathus folletti*, INIDEP 825, lateral view (scale in mm).

winter and a minimum in the summer. In the summer months, prevailing onshore winds force the low salinity signal south and east along the Argentine coast as far as 37°S (Lucas *et al.*, 2005). The weather forecast for December 2008 developed by the Servicio Meteorológico Nacional (Skansi, 2008) showed a scarce rainfall period with negative anomalies and a sea surface temperature of two degrees above average. The low rainfall could reduce the Rio de la Plata discharge and oceanic winds allowed warmer northern waters to approach the coast of Argentina, explaining the increase in sea surface temperature. This unusual atmospheric phenomenon could explain the southernmost distribution of *Syngnathus folletti*. Garcia & Vieira (1997) and Garcia *et al.* (2005) showed that Widgeon grass beds seem to be a suitable habitat for the species where *S. folletti* can feed and reproduce. Mar Chiquita coastal lagoon is characterized by mudflats surrounded by a large cord-grass (*Spartina densiflora*) area (Fasano *et al.*, 1982; Martinetto *et al.*, 2007) but not by grass beds. Despite the importance of this coastal lagoon as a refuge and feeding ground for juvenile fish during their critical development stages and also as a stopover site for adult fish along their migratory routes (Cousseau *et al.*, 2001; González Castro *et al.*, 2009; Valiñas *et al.*, 2010) it seems not to be a suitable environment for *S. folletti*. This emphasizes that the unusual atmospheric phenomenon could be the cause of the presence of the species.

Table 1. Measurements, morphometrics and body proportions of *Syngnathus folletti* from Mar Chiquita coastal lagoon.

|                          | mm     |
|--------------------------|--------|
| Total length             | 162.49 |
| Standard length (ST)     | 155.02 |
| Snout length             | 7.79   |
| Head length              | 17.62  |
| Trunk length             | 41.33  |
| Tail length              | 96.07  |
| Dorsal fin base length   | 18.51  |
| Pectoral fin length      | 2.38   |
| Pectoral fin base length | 4.38   |
| Dorsal fin               | 38     |
| Anal fin                 | 3      |
| Caudal fin               | 10     |
| Pectoral fin             | 15     |
| Trunk rings              | 18     |
| Caudal rings             | 38     |
| Subdorsal rings          | 2 + 7  |
| Brood pouch rings        | 16 1/2 |
| Head in ST               | 8.79   |
| Dorsal in head           | 1.05   |
| Pectoral base in length  | 1.84   |

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