

organised by the Grupo para la Conservación de Flamencos Altoandinos (GCFA)¹³, we found *P. andinus* nesting at Laguna Purulla, in the Lagunas Altoandinas y Puneñas de Catamarca Ramsar site, Catamarca, north-west Argentina (26°40'26"S 67°51'15"W; 3,500 m). This site is a shallow hyper-saline lake of 119.7 ha. Six microhabitats are present at Laguna Purulla: salt flats, mud shores, mud with a film of water, shallow water (<1 m depth), deep water (>1 m depth) and *vegas*⁸.

We recorded three nesting groups, two of them—A ($n=57$ nests) and B ($n=40$)—in the centre of Laguna Purulla, and group C ($n=3$) in the southern part. Observations were made from the shore using telescopes for one hour. Group A was c.70 m from the shore, and 30% of the nests had adults incubating and c.20% adults standing by the nest. We counted 26 nests with one egg each. Group B was further away, c.200 m from the shore, and many birds were walking, standing and flying in the vicinity; 90% of nests had adults incubating, although no eggs were seen. At C, the three nests had adults incubating constantly. We took a number of images (Fig. 1) and video.

Laguna Purulla was censused by the GCFA in January / February of 1998, 2000, 2001, 2005 and in 2007–10^{10,14,20,21}. During each census, we recorded three species of flamingos: *P. andinus*, James' Flamingo *P. jamesi* and Chilean Flamingo *Phoenicopterus chilensis*. Andean Flamingo was

always the most abundant of the three, although this is the first record of nesting at the lake. The total number of *P. andinus* recorded during the 2010 census was 461 individuals, or more than 1% of the global population^{10,14}. We recorded 126 James' Flamingos and 20 Chilean Flamingos at the same time on the lake.

Andean Flamingo nests in shallow to deep hyper-saline lakes⁸ at 2,305 m (Salar de Atacama, Chile) to 4,325 m (Salar de Surire, Chile). The most successful nesting sites for the species prior to 2006 were in Chile³. Since then smaller numbers of chicks have been reported at several sites in Chile^{1,2,4,7}. In contrast, Andean Flamingo has been reported in increasing numbers and breeding at Reserva Eduardo Avaroa, in Bolivia, since 2006^{3,6}.

In Argentina there are only two previous nesting records of Andean Flamingo: in December 1986 at Laguna Mar Chiquita, Córdoba¹¹ within a colony of *P. chilensis* (of c.700 nests an estimated 100 were *P. andinus*), and at Laguna Brava, La Rioja, in 1998⁹. The latter record we consider doubtful due to the lack of documentation and because it does not match other records from the same place and period^{10,18}. Also, two adult Andean Flamingos were recorded in a huge colony of more than 27,000 Chilean Flamingos at Laguna Llananelo, Mendoza, in February 2010¹⁹, although it is unclear if they were actually nesting or just resting within the colony.

Of the 13 breeding sites in Chile just five were occupied in 2010 and only one was successful (Salar de Tara, 80 chicks fledged). In Bolivia, of 1,812 chicks unidentified to species during the summer census, >500 were confirmed as Andean Flamingos during the 2010 ringing effort¹⁶. We consider Laguna Purulla to be important to the species' survival given its currently low reproductive output^{10,15,17}. Furthermore, in the regional context of pressures on high-Andean wetlands, Laguna Purulla becomes even more significant. Mining activity has increased at Andean Flamingo

First confirmed nesting record of Andean Flamingo *Phoenicoparrus andinus* in Catamarca, Argentina, and remarks on its breeding ecology

Andean Flamingo *Phoenicoparrus andinus*, currently classified as Vulnerable based on IUCN criteria, is the rarest flamingo in the world. With a population currently estimated at 38,600¹⁴, it uses limited breeding areas and the species' reproductive output has been very low in the past decade.

On 24 January 2010, during the fourth simultaneous flamingo census in South America,



Figure 1. Colony of Andean Flamingos *Phoenicoparrus andinus*, Laguna Purulla, Catamarca, Argentina, January 2010 (Amelia Clark)

nesting areas in Chile during recent years, and new mining projects and a huge geothermal development are imminent at the Bolivian sites¹². Although mining exploration is intense in Argentina, particularly in Catamarca, Laguna Purulla has been unaffected to date. The lake forms part of the Parinas wetland complex in Catamarca, one of 22 priority sites in the High Andean Flamingos Wetland Network¹³. The GCFA will continue monitoring the wetland to determine whether the site supports regular nesting events.

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