

Early Hunter-Gatherers and Miners (ca. 12,000 CALYBP) in the Arid Coast of Northern Chile

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► **Keywords:** Hunter-gatherers, mining, Chile

The early hunter-gatherers and fishers of the Pacific coast of South America have been regarded as rather simple societies, dependent on subsistence and technological imperatives (De France et al. 2001; Jackson and Méndez 2005; Lavallée et al. 1999; Llagostera 1979; Sandweiss et al. 1998; Stothert 1988). However, the recent discovery of the site San Ramón 15 (SR-15) in the northern coast of Chile (Lat. 25 S.) shows that these early coastal groups conducted a complex operation to mine iron oxide, probably for ritual purposes.

The San Ramón 15 site is located in a ravine 800 m from the coastline in the arid coast of northern Chile. The settlement is associated with an iron oxide mine with a stratigraphic sequence of 6 m, which was heavily exploited during early (12,543 CALYBP) and late (4350 CALYBP) Holocene times. Evidence of mining and cutting technology consists of numerous lithic hammers and debitage. Also present are some essentially marine faunal remains (Salazar et al. 2011).

Evidence from early levels includes trimming debitage from biface pieces and a discoidal stone, which, in conjunction with its chronology (Table 1), links this settlement to groups with a marine/coastal adaptation regionally

Table 1. Radiocarbon dates of the San Ramón 15 (Salazar et al., 2011).

Lab no.	¹⁴ C date, RCYBP	Calibrated age, CALYBP (2σ)	Stratigraphic provenience	Material
Beta -255687	9160 ± 80	10,519–9948	Unit 2/Layer 2-3	Charcoal
UGAMS – 5440	9250 ± 30	10,490–10,246	Unit 1/Layer 4	Charcoal
UGAMS – 5441	9360 ± 30	10,651–10,301	Unit 1/Layer 6	Charcoal
UGAMS – 5442	9390 ± 30	10,666–10,421	Unit 1/Layer 7	Charcoal
POZ – 32943	9310 ± 50	10,570–10,264	Unit 1/Layer 9	Charcoal
Beta – 280992	10,430 ± 60	12,543–12,095	Unit 2/Layer 5	Shell

known as the Huentelauquén cultural complex (Jackson and Méndez 2005; Llagostera 1979; Llagostera et al 2000). Possibly related to the San Ramón mine is a small shelter some 9 km north of the site called Quebrada Cascabeles, with two occupational events attributed to the Huentelauquén cultural complex dating to 11,000 CALYBP (Casteletti et al. 2009).

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The stratigraphy of the early levels of the San Ramón mine reveals evidence of repeated mining operations using lithic hammers along with fragments of mollusks (*Choromytilus chorus*, *Argopecten purpuratus*, and *Concholepas concholepas*). Striations and signs of wear suggest they were used to extract iron oxide from narrow seams and veins.

The associated faunal remains consist of unidentified mammal skeletons, bird remains (penguin, *Spheniscus sp.*) and at least five fish species (*Citharichthys gilberti*, *Hydrolagus macrophthalamos*, *Synodontis violacea*, *Trachurus symmetricus* and *Paralichthys microps*). Marine fauna remains consist of 19 mollusk species (MNI 221), including 10 gastropod, 6 poliplacofor, and 3 bivalve, and one echinoderm species, all of them present in the rocky intertidal zone. Marine faunal remains show signs of fire exposure, suggesting they were transported to the site and consumed as food by workers engaged in mining.

The exceptional evidence from this site shows a diversified settlement pattern that included systematic mining exploitation in a hunter-gatherer-fisher context, in which pigments were acquired for multiple uses, probably linked to ritual activities. The multiplicity of activities suggests a more complex and sophisticated society than previously thought.

Research funded by FONDECYT 1080666 grant.

References Cited

- Casteletti J., O. Reyes, G. Maltrain, I. Martínez, P. Galarce, H. Velásquez, and J. Ogalde 2009 Ocupaciones en abrigos rocosos en la costa de Taltal: Patrón de uso del espacio desde momentos Holocénicos Tempranos. Actas del XVII Congreso Nacional de Arqueología Chilena, pp. 685–95. Valdivia, Chile.
- De France, S., D. Keefer, J. Richardson, and A. Umire 2001 Late Paleo-Indian Coastal Foragers: Specialized Extractive Behavior at Quebrada Tacahuay, Perú. *Latin American Antiquity* 12(4):413–26.
- Jackson D., and C. Méndez 2005 Primeras ocupaciones humanas en la costa del semiárido de Chile: Patrones de asentamiento y subsistencia. Actas del XVI Congreso Nacional de Arqueología Chilena, Ediciones, Museo de Historia Natural de Concepción, pp.493–502.
- Llagostera, A. 1979 9,700 Year of Maritime Subsistence on the Pacific: An Analysis by Means of Bioindicadores in the North of Chile. *American Antiquity* 44(2):309–24.
- Lavallée D., M. Julien, P. Béarez, P. Usselman, M. Fontugney, and A. Bolaños 1999 Pescadores-Recolectores Arcaicos del Extremo Sur Peruano. *Bull. Inst. Fr. Études Andines* 28(1):13–52.
- Llagostera, A., R. Weisner, G. Castillo, M. Cervellino, and M. Costa-Junqueira 2000 El Complejo Huentelauquén bajo una perspectiva macroespacial y multidisciplinaria. *Contribuciones Arqueológicas Museo Regional de Atacama* 5:461–80.
- Salazar D., D. Jackson, J. Guendon, H. salinas, D. Morata, V. Figueroa, G. Manríquez, and V. Castro 2011 Early Evidence (ca. 12,000 B.P.) for Iron Oxide Mining in the Pacific Coast of South America. *Current Anthropology*, 52 (5):463–75.
- Sandweiss, D., H. Mcinnis, R. Burger, A. Cano, B. Ojeda, R. Paredes, M. Sandweiss, and M. Glascock 1998 Quebrada Jaguay: Early South American maritime adaptations. *Science* 281:1830–32.
- Stothert, K. 1988 *La prehistoria temprana de la Península de Santa Elena, Ecuador: Cultura Las Vegas. Miscelánea Antropológica Ecuatorina*. Serie Monográfica 10.