

LAND OF ANCIENT LAKES AND RIVERS

ENGLISH 



LAND OF ANCIENT LAKES AND RIVERS

This geo-route offers a nice and simple day walk that allows to appreciate some unique ecological features in the northeast sector of the Province. The route runs along the Caldera River, towards the village of Río Nío, and from there along the homonymous river. The area is characterized by

gentle hills generated when the Andes rose, being livestock and agriculture activities the main economic activities. In this route, we see rocks that represent old rivers and lakes developed 50 million years ago.



DESCRIPTION OF THE ROUTE

Se recomienda posicionar el odómetro del vehículo en cero en la plaza Independencia a efectos de localizar las paradas propuestas de manera más eficiente. El recorrido se inicia en San Miguel de Tucumán, tomando hacia el norte por la Avenida Juan B. Justo hasta empalmar con la ruta provincial Nro. 305. En el camino se visitan las localidades de Alta Gracia y El Timbó.

PARADA 1

Situada XX kilómetros del inicio del recorrido, se aprecia un deslizamiento de ladera generado durante la época estival.

PARADA 2

En el mirador ubicado a XX kilómetros del punto anterior se logra una panorámica hacia el norte de la sierra, así como de su pedemonte.

PARADA 3

En la localidad de Villa Nougues se visitan el área de la Hostería y Capilla.

PARADA 4

A la vera de la ruta 341, en el kilómetro XXXX se aprecian las rocas más antiguas.

PARADA 5

Pasando la localidad de San Javier, y en el kilómetro XXX del recorrido se ingresa hacia la cascada del Parque Sierra de San Javier.

PARADA 6

En el kilómetro XXX, a unos XX minutos de coche, nos detenemos sobre el puente de La Sala.

PARADA 7

Sobre el kilómetro XXX y en una curva cerrada en bajada y hacia el oeste nos detenemos a observar el punto de interés.

PARADA 8

En el kilómetro XXX del recorrido y sobre la ladera se puede apreciar algunos procesos de erosión típicos del área.

PARADA 9

Kilómetro XXX, en cercanías del monasterio y en el cauce del arroyo El Siambón que corre a la vera de la ruta.

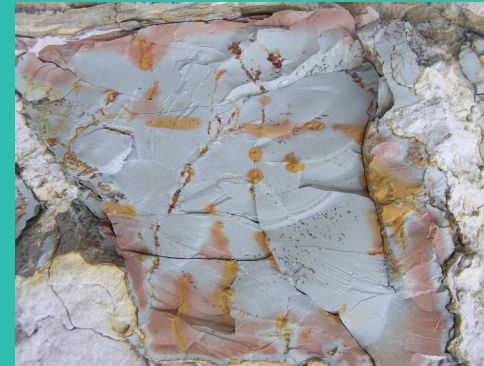
PARADA 10

El último punto de interés se ubica a la vera del camino, a XX kilómetros hacia el este del cruce de las rutas provinciales 340 con 341.

Sandstones with gypsum
Sedimentary rocks sedimented by rivers and lakes some eleven million years ago (Miocene).



Claystones
Sedimentary rocks generated by mud deposition on lakes. These are transformed to rock by different processes that involve time, pressure and mobility of fluids.



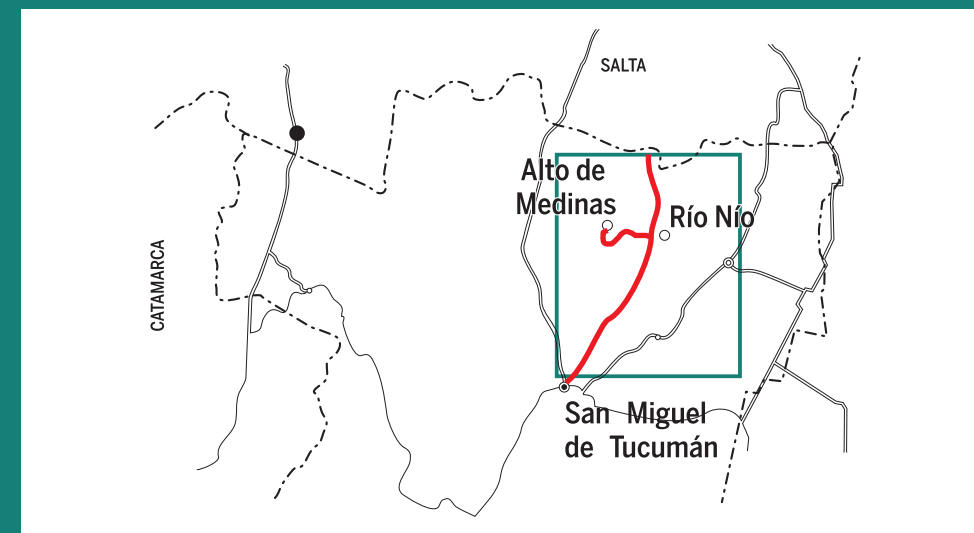
Conglomeratic sandstones
Sedimentary rock composed of different sized fragments where sands are dominant. In this particular situation the rock has a fluvial origin.



Sandstones
Sedimentary rock, formed by the accumulation mainly of Quartz grains. This accumulation could have been generated as a result of a fluvial or eolic transport.



GUIDE FOR ROCK IDENTIFICATION IN THE FIELD



CHARACTERISTICS

Longitude: 230 kilometres
By vehicle: 8 hours
Maximum altitude: 1.500 m.a.s.l.

Recommendations:

- Dirt roads are common.
- Available for cars, buses and motorbikes.
- Driven motorbikes keep on the roads.
- Be respectful with environment.
- Regular buses reach to Río Nío Village from the main bus station at San Miguel de Tucumán.
- As an alternative you can return to the city by routes 310 and 304.

Respect the flora, fauna and the geological resources of the circuit.
If a fire is lit up, do it in authorized areas, and later on, make sure it is entirely extinguished.

Part of the circuit is done by "Parque Sierra San Javier", a protected area that must be respected.
Do not throw litter. Put it away in containers and trash cans in Villa Nougues, San Javier or Raco.

When walking along the route, do it by the road side and in opposite direction to the traffic.

STOP 1



Low-relief hills generated by andean movements that lifted the mountains of NW Tucumán. Tectonic structures are developed on Cretaceous / Tertiary aged rocks set on top of the Precambrian/Cambrian basement.

STOP 2



Sandstones and shales with clay and interbedded coarse materials that represent the development of sporadic water streams. These runned on lowlands in the last thousand of years. Some old soil levels can also be observed (paleosoils).

STOP 3




Sedimentary sequence formed by multi-colored sandstones and shales representing varied environmental conditions while rocks were formed. The yellow line separates different aged rocks and display an abandoned river bed.

STOP 4



Nature takes advantage of minerals. This sandstone outcrop is used by cattle to feed on needed salt. Obtained salts are usually represented by Mesozoic / Cenozoic chlorides and sulfates sedimented on fluvial and lacustrine paleoenvironments.

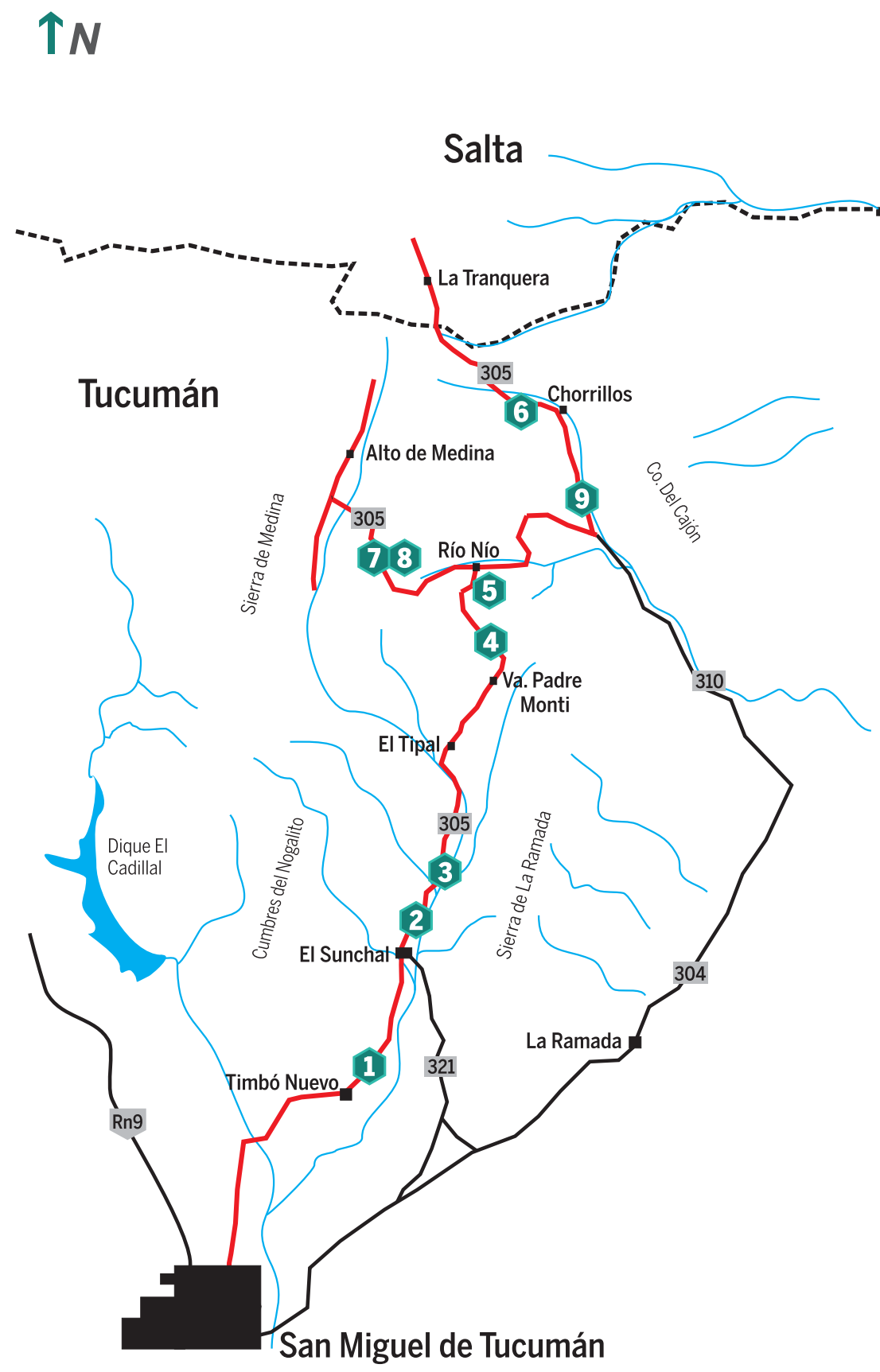
STOP 5



12 million years old wind dunes. On the northern flank of the Nío River by the homonimus village, whitish sandstones represent ancient dunes bordering the Atlantic ocean in Tucumán! Eolic dunes are followed by reddish fluvial sandstones. The contact surface between them is by means of an unconformity that denotes a process that erased some strata and scientific information from the sequence. The contact is displayed by a clast supported conglomerate interbedded on sandstones that represents a notable change in the environment's energy.

GeoRoute
4 Río Nío > Alto de Medinas
 DIFFICULTY: **LOW**

Scan the code with your cell phone to see the circuits in the web:





STOP 6




Cenozoic multi-colored shales and interbedded sandstones (last 60 Million years). The great variation on the palette speaks on the environmental and sedimentary framework where these material was deposited.

PARADAS 7 8



Thick reddish sandstones sedimented on desert-like fluvial paleoenvironments. Horizontal scars on the wall were developed by a process called "differential erosion". This is produced by a weak lithification on certain levels of the sedimentary sequence. This particular situation is exploited by environment to attack and dissolve certain areas of a given rock.

STOP 9



Natural healing of the mountain
 Atmospheric processes associated to the rock characters (type of material, structures, etc.) are the main actors altering the nature of natural scenery. Slides as seen here whipe out large areas of forest, and colonization of vegetal species start again short after the catastrophic process. In this locality you can compare the differences on the original forest and new developed grassland areas.

GEOLOGIC TIME CHART

PRECAMBRIAN	PALEOZOIC						MESOZOIC			CENOZOIC		
	Cambrian	Ordovician	Silurian	Devonian	Carbonif.	Permian	Triassic	Jurassic	Cretaceous	Paleogene	Neogene	Cuaternary
STOPS 1 4 Age of rocks forming the main cores of Tucumán ranges. 542 millions years ago	There are no rocks of this age in this route						There are no rocks of this age in this route			STOPS 2 3 7 8 9 - Erosion and formation of the actual shape of the area. - Sedimentation of multi-colored rocks in the Calchaqui Valley - Rise of the Andes 65.5 millions years ago		