

# 1

# Chile and its geographic diversity

## Look and say

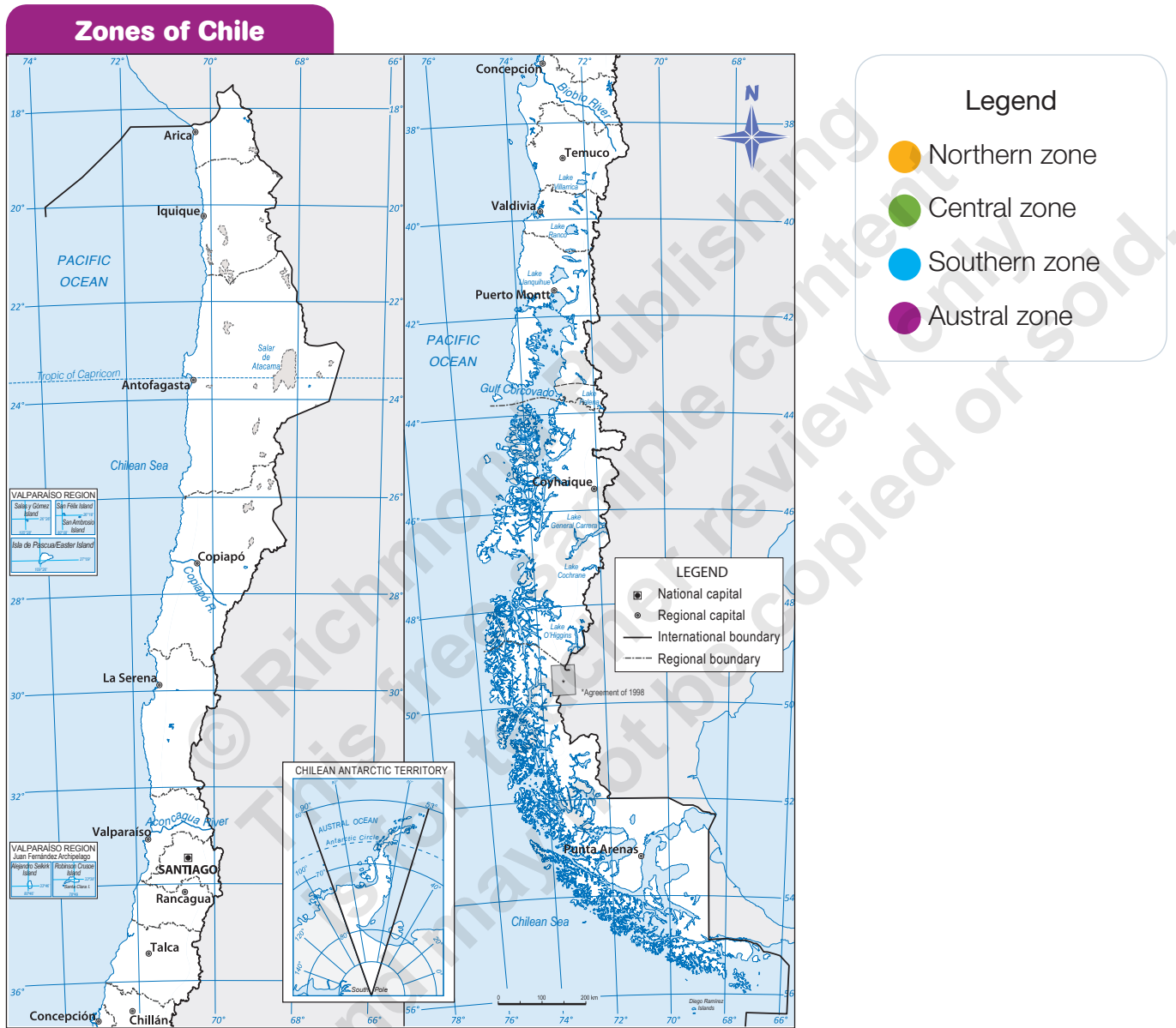
- Can you recognize any of the places in the pictures?
- What can you say about the places where the pictures were taken? Are they similar?

## Unit objectives

- Identify the five natural regions in which Chile can be organized and distinguish its most important characteristics.
- Understand and describe the main natural risks of the Chilean territory and determine the safety measures that you must take to face them.
- Recognize geographic space using tools, orient yourself in it, and obtain information about this space from different sources of information.
- Establish ties of belonging with your natural environment and practice civic attitudes, such as caring for the environment.

# Refresh your memory

1 Color the map according to the legend.



2 Look at the following pictures, and determine to which zone they correspond and why.



\_\_\_\_\_ Zone  
 Why? \_\_\_\_\_



\_\_\_\_\_ Zone  
 Why? \_\_\_\_\_

# The natural zones of Chile

## The natural zones and relief of Chile

► Objective: learn and locate on a map the natural regions of Chile and the large relief units.

### The natural regions

A **natural zone** is a large portion of the territory that has similar climate, relief, river, flora, and fauna characteristics. Let's see which are the main natural areas of Chile.

#### Norte Grande

A zone with scarce rain and vegetation. In this area we find the driest desert in the world, the Atacama Desert. It extends from the northern limit of Chile to the Copiapó River.

#### Norte Chico

There is more precipitation than in the Norte Grande, but it continues being arid in some places. It has large valleys. It is located between the Copiapó River and the Aconcagua River.

#### Central zone

It has moderate temperatures and precipitation concentrated in winter. It is the most populated area of Chile and it has big cities. It covers from the Aconcagua to the Biobío Rivers.

#### Southern zone

This area has abundant rain all year, although it decreases in summer. It has many rivers, lakes, and volcanoes, and abundant vegetation. It covers from the Biobío River to the Gulf of Corcovado.

#### Austral zone

It is a cold area, with a lot of rain and snow fall, and strong winds. It has a dismembered mountain relief. It is located between the Gulf of Corcovado, south of Chiloé and the Chilean Antarctic Territory.

### ACTIVITIES

- Based on the map, write in your notebook what regions, or parts of them, are present in each of the natural zones of Chile. *Distinguish*



## The relief

In Chile, four **macroforms of relief** or **large relief units** can be distinguished.

### Coastal plains

They are low-rise reliefs, which extend between the Pacific Ocean and the Coastal Mountain Range along the Chilean coast. Their width varies according to the region. Coastal cities are located in them, like Concepción, Iquique, and Valparaíso. Fishing is a very important activity in Chile, due to the presence of the Humboldt Current.

### Coastal Mountain Range

It is an exclusive Chilean mountain range that runs north to south, parallel to the Andes Mountain Range, from the south of Arica to the Taitao Peninsula (Aysén Region).

### Intermediate depression

It is a flat relief located between the Coastal and Andes Mountain Ranges. It extends from the extreme north of the country to Reloncaví, south of Puerto Montt. It is the most inhabited relief unit and the most suitable for agriculture. Cities like Santiago and Temuco are part of it.

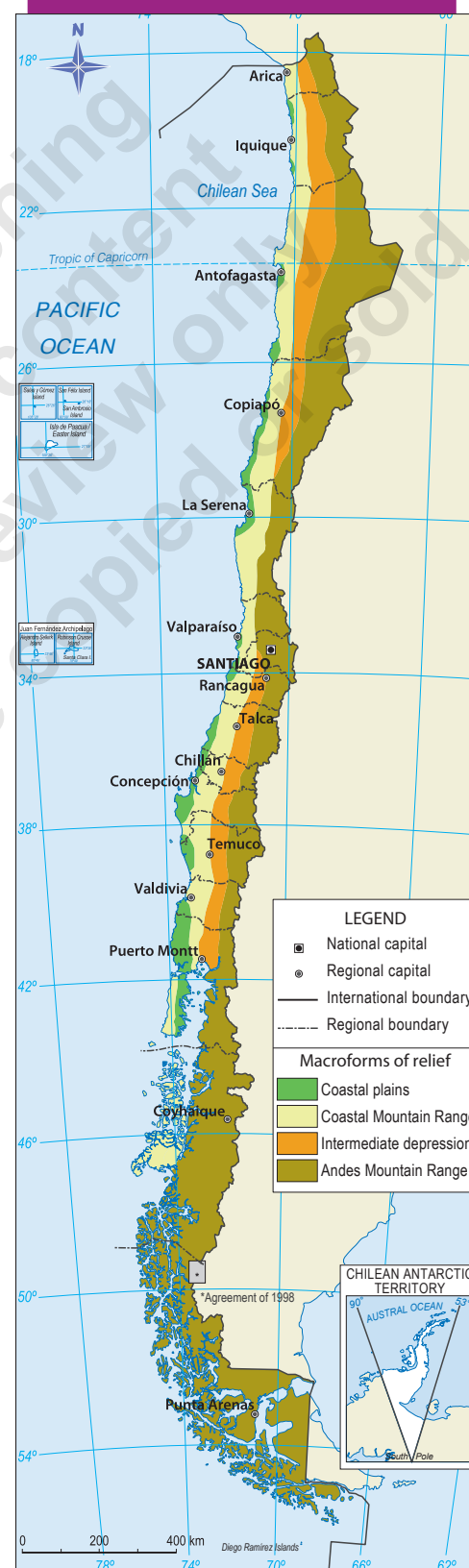
### Andes Mountain Range

It is a great mountain chain that crosses all South America and it is the most predominant relief unit of Chile. It crosses the national territory from the north end to Cape Horn, where it sinks under the sea to reappear in Antarctica. This macroform has a great mining wealth and important reserves of fresh water.

## ACTIVITIES

- Based on the map, answer the questions according to the place where you live. *Recognize*
  - In which natural zone is it located?
  - What macroforms can be found in your natural zone?

### Macroforms of the Chilean relief



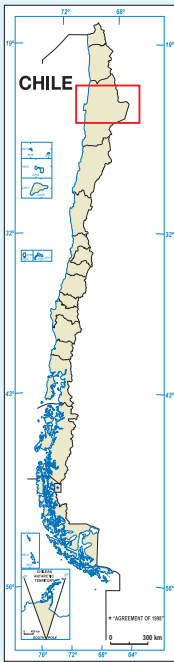
# Norte Grande zone

► Objective: recognize the characteristics of the Norte Grande relief.

This area extends between the northern limit of Chile and the Copiapó River in the Atacama Region. It is characterized by the **lack of water** and the **arid landscapes**, which make it a very dry place.

## Relief

### Infographics of the Norte Grande relief



#### Coastal Mountain Range

It is born south of Arica, where it is narrow and very high. In some areas, it falls abruptly to the sea, which is known as **coastal cliff**. **1**

#### Andes Mountain Range

It is arid, high, and solid with peaks above 6,000 m. The **altiplano** is located in it. In this area, the mountain range presents volcanic activity.



Coastal cliff on the coast of Antofagasta.

Pacific Ocean

#### Coastal plains

The coastal plains are very narrow and sometimes disappear when they are cut by the Coastal Mountain Range.

#### Intermediate depression

The intermediate depression is presented as an inclined plain, where the **Pampas** are located. The **Atacama Desert** is located there.

#### Altiplano

It is a flat or plain area that is at a high altitude in the Andes Mountain Range.

## Pampas

Pampas are large flat territories or plains where there is little vegetation. The most extensive and important one is the Pampa del Tamarugal, which is named after a type of shrub called tamarugo.



Pampa del Tamarugal, Tarapacá Region. Tamarugos require little water to survive.

## Desert

In this area you will find the Atacama Desert, which is the most arid of our planet. Life there is very limited. Its clear skies are ideal for astronomical observation, as is the case of ALMA and Paranal observatories in the Antofagasta Region.



Moon Valley, Atacama Desert. In the background, the Licancabur Volcano stands out.



## ACTIVITIES

- 1 Study the infographics of Norte Grande on page 12, and describe its relief from west to east (from the coast to the Andes). *Describe*
- 2 Choose among coastal cliff, pampa, or desert, and indicate two of its characteristics. Then, answer in your notebook: How do you think life in this place is? *Infer*

## Norte Grande zone

► Objective: identify the main physical and population characteristics of the Norte Grande.

### Climate and hydrography

In this area, **the desert** climate prevails, which is extremely arid and it almost never rains. Because of this, there is very little vegetation, and both flora and fauna are adapted to these conditions.

On the coast, there is a mist called *camanchaca*, which is very important because it provides humidity. People manage to capture small particles of water from the *camanchaca* with special nets called fog collectors. This way, they can get water.

Another characteristic of this area is the great **difference in temperature** between day and night. For example, in the city of Calama, in January the temperature can reach 25°C during the day and go down to 8°C at night.

Due to the lack of rainfall, the rivers in the Norte Grande are **narrow**, they carry **little water**, and only some flow permanently to the sea, such as the Lluta and **Loa** **1**. This last one, being 440 km long, is the longest in Chile. Many rivers are intermitent, which means, they are activated when there is rain in summer (known as 'Altiplanic winter' or 'Bolivian winter') and run through the ravines or cracks of the land.



### Work with the picture

- How do you think flora can survive under the arid conditions of this area?

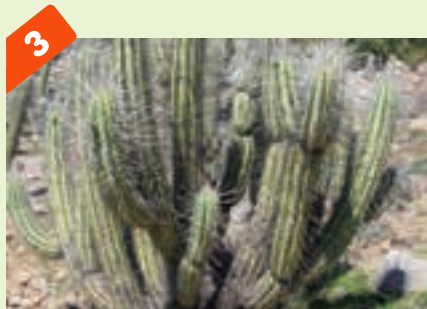


This picture shows the Loa River and next to it a very common herb of this area known as *paja brava*.

### Flora and fauna

The **flora** of this area is characterized for being specially **adapted** to the lack of water, the low temperatures during the night and a very intense sun during the day. Within the flora we find llaretas **2**, cactus **3**, tamarugos, and chañares.

The **fauna** is characterized by camelids (vicuñas, guanacos, llamas **4**, and alpacas), birds such as pink flamingos **5**, and other mammals, like vizcachas and foxes.



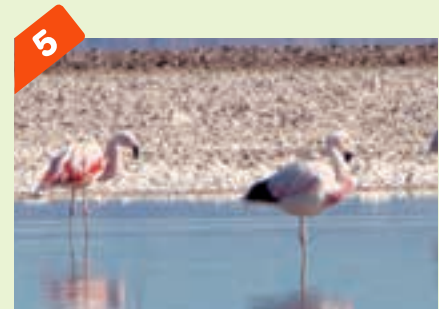
In this area we can find different types of cactus.



Llama in the altiplano.



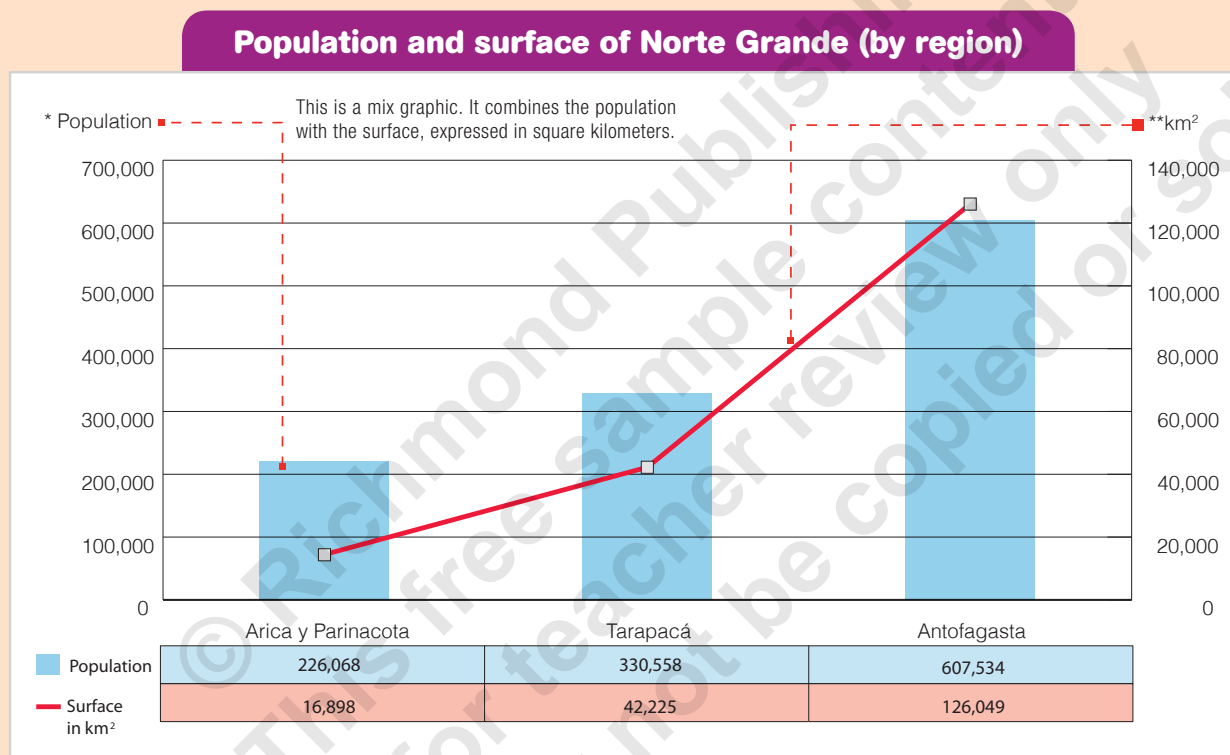
The llareta is a plant that grows on the rocks of the altiplano and looks like a green cushion; it's very hard and compact.



Pink flamingos in the Salar de Atacama, Antofagasta Region.

## Population

The population in Norte Grande is predominantly urban, since it concentrates primarily on the cities located on the coastal plains, such as Arica, Iquique, Tocopilla, and Antofagasta. In contrast, the scarce inland population lives in small towns, such as Putre, Pica, Huara, and San Pedro de Atacama.



\* Population data in: INE (2017). *Resultados definitivos Censo 2017. Efectivamente censados*. Santiago, Chile: Ministerio de Economía, Fomento y Turismo

\*\* Surface data in: INE (2011). *Compendio estadístico*. Santiago, Chile: Ministerio de Economía, Fomento y Turismo. It does not include the Atacama Region, although part of it is considered as Norte Grande.

## ACTIVITIES

- 1 Draw a landscape in your notebook, including four characteristics of the Norte Grande and explain to your classmates why they belong to this area. *Represent*
- 2 From these pages, answer the following questions in your notebook. *Explain.*
  - a. What region of Norte Grande has more inhabitants?
  - b. Why does the population of Norte Grande prefer to live in coastal areas? In your answer consider the weather and relief.
- 3 In some parts of the altiplano, summer rains happen between December and March. They are known as 'Bolivian winter.' These rains make the rivers carry more water than usual. Considering the characteristics of the Norte Grande, how do you think this phenomenon can benefit the inhabitants, the flora, and the fauna of this area? *Estimate*

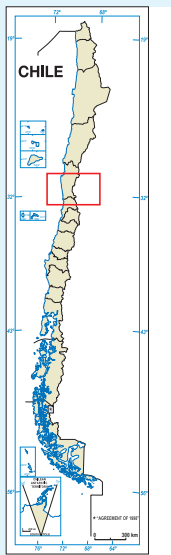
# Norte Chico zone

► Objective: recognize the characteristics of the Norte Chico relief.

This area extends between the Copiapó River and the Aconcagua River. It differs from the Norte Grande in the increase of rainfall (in the form of water and snow) and the decrease of aridity or dryness. Its main characteristics are the presence of transverse valleys and the development of agriculture.

## Relief

### Infographics of the Norte Chico relief



#### Coastal plains

In this area there are large and extensive coastlines where important ports are located, such as Coquimbo, and cities such as La Serena.

#### Intermediate depression

In this area, the intermediate depression is interrupted or cut by several transverse valleys: Copiapó, Huasco, Elqui, Choapa **1**, and Aconcagua.



Pacific Ocean

#### Coastal Mountain Range

This area is cut by the mouths of the rivers that cross the intermediate depression and it decreases its height as it moves to the south.

#### Andes Mountain Range

The Norte Chico has the highest altitudes of this mountain range in the Chilean territory, such as the Nevado Ojos del Salado (6,891 meters above sea level). Also, there is no volcanic activity in this area.

### Transverse valleys

They are basins or depressions of the land formed by rivers that are between hills or mountain ranges. These deep valleys interrupt the intermediate depression.

The transverse valleys have favorable climate conditions for agriculture and, therefore, concentrate a lot of population.

One of the most important transverse valleys of this area is the one from Elqui River. It stands out because there are many fruit and vegetable crops, especially grapes, and also because of tourism.



Valley of the Elqui River, Coquimbo Region.

### Physical map of Norte Chico



### ACTIVITIES

1 Many reservoirs have been built in Norte Chico. They are large accumulations of freshwater that allow farmers to have water throughout the year. From what you have studied so far, answer the following questions with a classmate. *Infer*

a. Why have large reservoirs not been built in Norte Grande just as in Norte Chico?

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b. What is the importance of the development of agriculture in the transverse valleys for the people who inhabit them?

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## Norte Chico zone

► Objective: recognize the characteristics of the Norte Chico relief.

### Climate and hydrography

In Norte Chico, the **desert** and **semiarid** climates predominate. The semiarid climate is characterized, in the interior of the valleys, for presenting high temperatures during the day and low temperatures at night. The humidity is low and the winter precipitations, although still scarce, increase from La Serena to the south.

Due to the influence of the sea, the **climate varies on the coast**: there is more humidity than in the valleys and the day and night temperatures are not so different. Generally, there are cloudy mornings and there is presence of camanchaca.

Unlike Norte Grande, **most of the rivers** in this area **flow into the sea**. They feed on the waters produced by the melting of snow in summer and the scarce rain that falls in winter.

The most important rivers are Copiapó, Huasco, Elqui, Choapa, and Aconcagua. The Puclaro **1** and Recoleta Reservoirs also stand out.



Puclaro Reservoir, Coquimbo Region.

### Flora and fauna

In this area, as in the Norte Grande, the **flora** is adapted to live with little water. Among the species of flora we find shrubs, like algarrobo tree, the chañar **2**, and flowers like the ñañañuca **3**.

Between Copiapó and Vallenar there is a desert territory which, thanks to the fact that there is more rain than in normal winters, hundreds of plants flourish during spring. This is known as **desert bloom**.

Some of the **fauna** species are the Andean fox **4**, the kestrel (bird), the Copiapó lizard, the chinchilla **5**, the vizcacha, and the Humboldt penguin, among others.



Chañar.

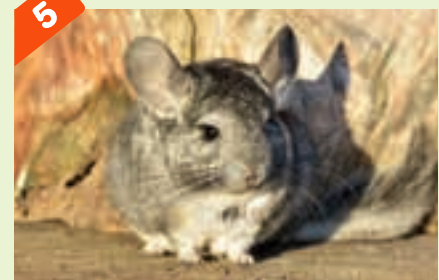


Ñañañuca in the desert bloom.



Andean fox. It lives in both low and highlands, although it concentrates on the latter.

Wikimedia Commons / Mar del Sur

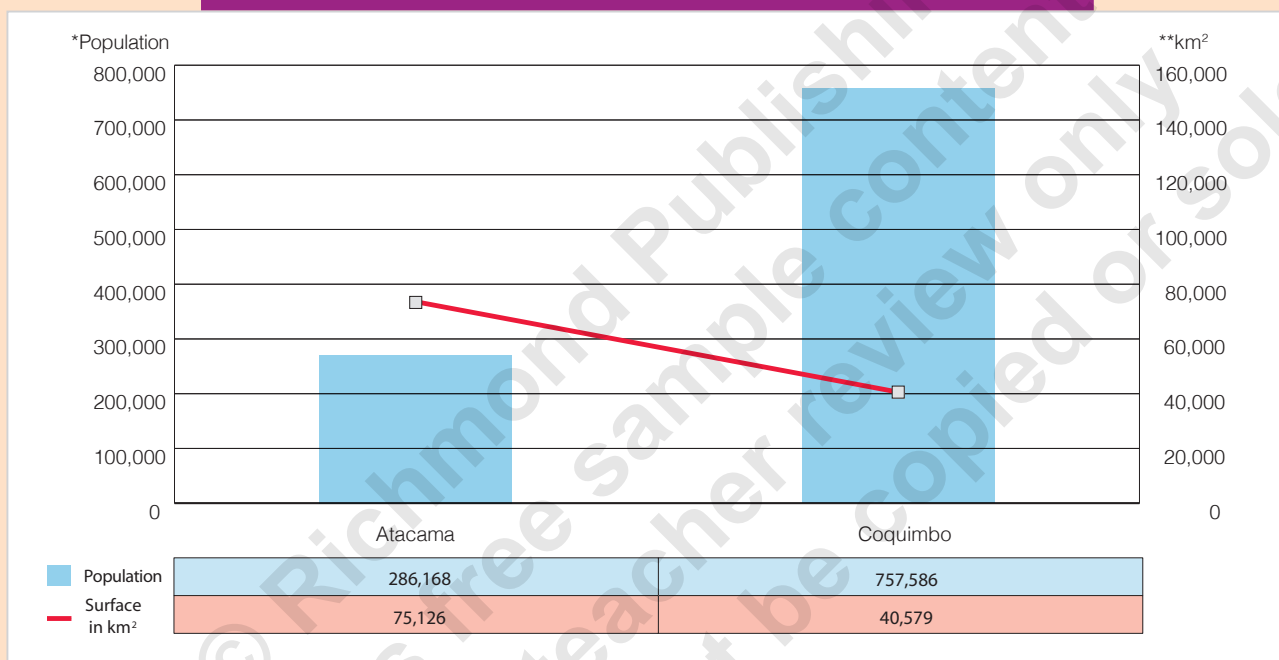


Chinchilla. This species of rodent is currently protected because it used to be very hunted for its skin.

## Population

The population in this natural area has increased progressively in recent years and it concentrate mainly in the coastal plains and in the transverse valleys.

**Population and surface of the Norte Chico (by region)**



\* Data population in: INE (2017). *Resultados definitivos Censo 2017. Efectivamente censados*. Santiago, Chile: Ministerio de Economía, Fomento y Turismo.

\*\* Surface data in: INE (2011). *Compendio estadístico*. Santiago, Chile: Ministerio de Economía, Fomento y Turismo. It does not include the Valparaíso Region, part of which is considered as Norte Chico.

## ACTIVITIES

1 Answer the following questions regarding the general characteristics of the Norte Chico. [Explain](#)

a. Why is it possible to find more agriculture in this area than in Norte Grande?

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b. Why is the population of this area concentrated in the transverse valleys and on the coastal plains? What is the advantage of these areas?

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# Central zone

► Objective: recognize the characteristics of the relief of the Central zone.

The Central zone extends between the Aconcagua and Biobío Rivers. It assembles a large part of the population of the country because of its large flat relief. The fertility of its lands and its climate are very suitable for human life and for the development of different productive activities, where agriculture stands out.



## Work with the picture

- What is the characteristic of the intermediate depression that makes it favorable to be inhabited?

## Relief

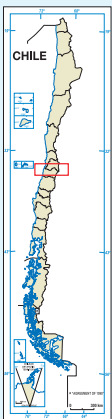
### Infographics of the Central zone relief

#### Coastal plains

They are wide and extensive, suitable for the settlement of population. There are cities located in them such as Concón, Pichilemu and Penco, and important ports such as Valparaíso, San Antonio, and Talcahuano.

#### Intermediate depression

In the Santiago Metropolitan Region and the Libertador General Bernardo O'Higgins Region it is present as **basins** or relief depressions. From this point towards the south, the **longitudinal valley** or proper intermediate depression is present.



Santiago basin. You can see part of the mountain ranges that surround it.

Pacific Ocean

#### Coastal Mountain Range

In this area, the highest peaks of this unit of relief are present: Altos of Cantillana (2,318 meters above sea level). They descend from north to south. In the Ñuble Region, a piece of the Coastal Mountain Range corresponds to the Nahuelbuta Range.

#### Andes Mountain Range

This area is high and solid, and volcanoes reappear in it. It is an important source of freshwater for human consumption and irrigation because of the ice it possesses and the rivers that are born in it. The nutrients from the volcanic ash have made the soils fertile in this area.

### Basin

It is a flat terrain surrounded by mountain ranges, such as the basin of Santiago city.

### Longitudinal valley

It is a very wide valley, with a north-south orientation, and it is formed by a series of undulating plains.



Maule Valley, Maule Region.

### Physical map of the central zone



### ACTIVITIES

1 Complete the following activities. Evaluate

a. Compare the relief of Norte Chico to the Central zones. Name one difference and one similarity.

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b. Identify and explain two advantages of the Central zone that benefit settlements.

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2 In pairs, answer: What do you think are the advantages and disadvantages of the high concentration of population in the Central area?

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## Central zone

► Objective: recognize the characteristics of the relief of the Central zone.

### Climate and hydrography

In this area predominates the temperate **Mediterranean climate**, characterized by rainy winters and hot summers, although there are some variations: it is more humid on the coast and colder in the Andean area. In general, the four seasons are well defined and clearly differentiated from each other.

Due to the increase of rainfall and humidity, there is a greater abundance of vegetation in the Central zone compared to the previous ones.

The **rivers** of this area **lead to the sea** and most of them are originated in the Andes Mountain Range. Some important rivers are the Maipo River **1** and the Maule River. There are lakes such as Rapel and Vichuquén, and lagoons like Maule and Laja.

Due to its climatic and relief characteristics, the Central zone is favorable for the **development of agriculture**.



Maipo River, Metropolitan Region.

### Flora and fauna

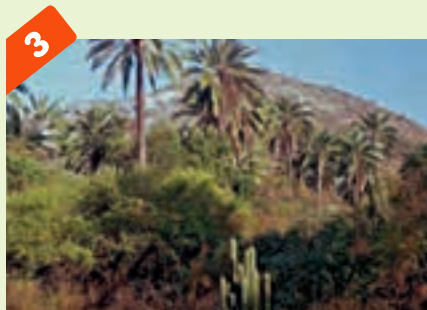
In the Central zone we find a **greater diversity of flora and fauna** in comparison with the north of Chile because the climatic conditions allow their greater presence and development.

Among the species of **flora** there are different trees and shrubs, such as hawthorn, litre, boldo, maitén, quillay **2**, and the Chilean palm **3**.

In this area there is a varied fauna. Among birds, condor **4**, the trichahue parrot, the hummingbird, and the thrush stand out; and mammals such as the puma **5**, chingue (skunk), and vizcacha (rodent).



Quillay, a native tree of the Central zone. It is used in many ways, including as an ingredient for shampoo.



Chilean palm, originally from the Central zone. Palm syrup is produced from its trunk.



The condor appears in the national coat of arms and it is a protected species. It lives in the Andes, from Venezuela to the extreme south of Chile.

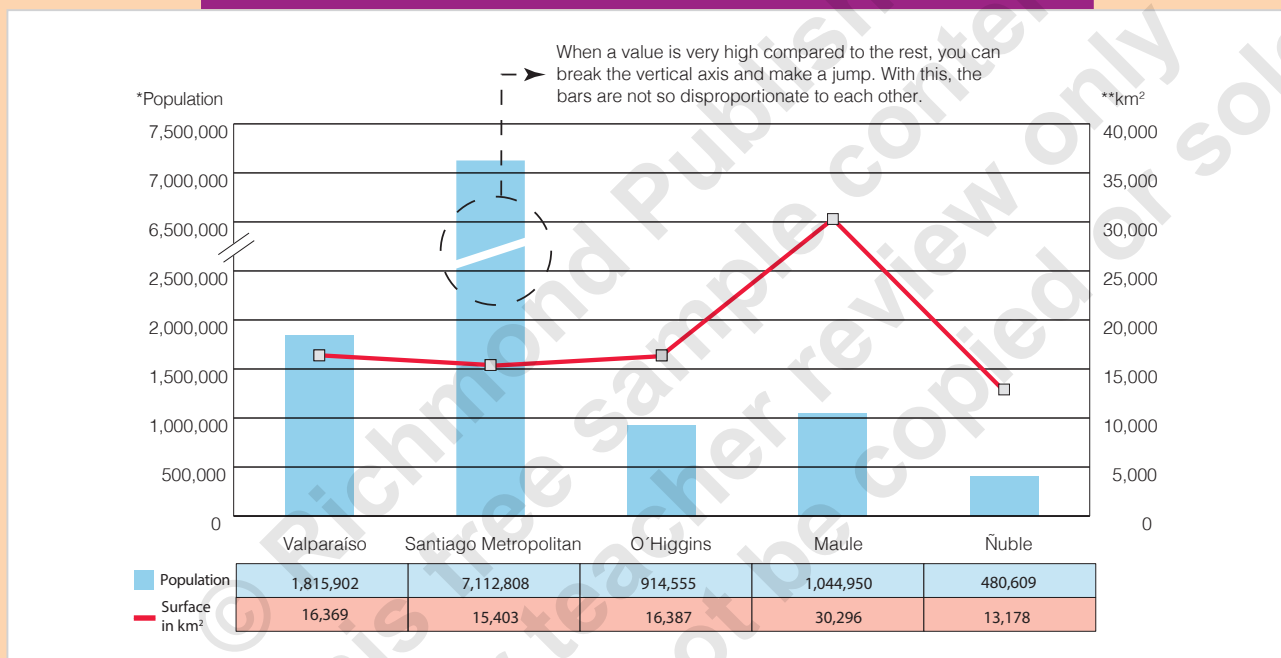


The puma inhabits preferably in the mountain zones, from the Coquimbo Region to the south. They live away from the people.

## Population

The Central zone has the largest population: seven out of ten inhabitants of Chile live there. This is due to the fact that, for example, the relief and climate of this area favor the development of human life.

### Population and surface of the Central zone (by region)



\* Population data in: INE (2017). Census results 2017. Effectively registered. Santiago, Chile: Ministerio de Economía, Fomento y Turismo.

\*\* Surface data in: INE (2011). Statistical compendium. Santiago, Chile: Ministerio de Economía, Fomento y Turismo. It does not include the Biobío region, part of which is considered as part of the Central zone.

## ACTIVITIES

- 1 Why is the relation between surface and inhabitants important? What problems may arise from having too many inhabitants in a small surface?

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## Southern zone

► Objective: recognize the characteristics of the relief of the Southern zone.

The South zone extends between the Biobío and the Gulf of Corcovado and is characterized specially by having rains throughout the year. Therefore, it has abundant vegetation and lush forests. Its rivers are wide and abundant, which means they carry a lot of water, and their different lakes are very large. There are also many active volcanoes in this area.

### Relief

#### Infographics of the Southern zone relief



#### Coastal plains

Coastal plains are **discontinuous**, because they are cut by the river mouths that reach the sea, but at the same time they are very extensive.

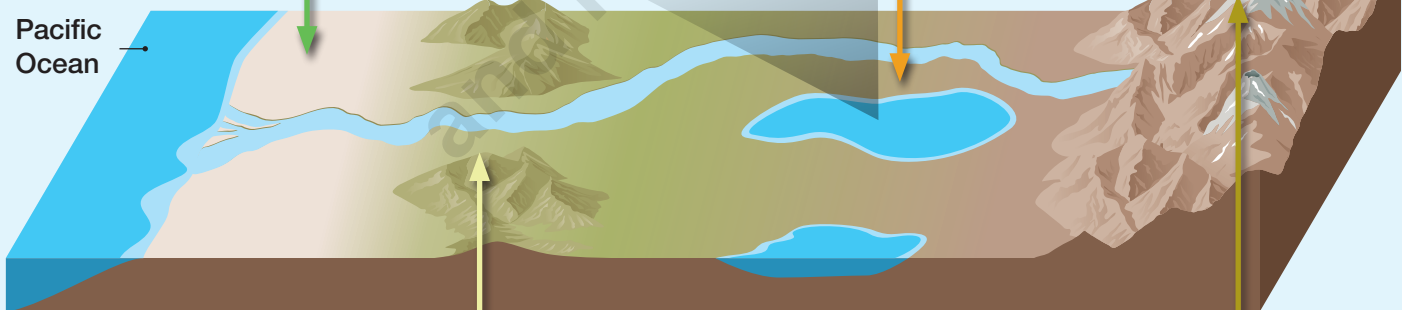


Todos los Santos Lake, Los Lagos Region.

#### Intermediate depression

It is very wide and low, with soft hills. It is crossed by abundant rivers and it has many lakes.

Pacific Ocean



#### Coastal Mountain Range

The Coastal Mountain Range is interrupted and it has soft hills worn away by the action of rivers.

#### Andes Mountain Range

In this area, the mountain range is lower than in the north and center of Chile. The highest altitudes correspond to volcanoes.

## Lakes

The South zone is characterized by lakes, which are large masses of freshwater separated from the sea. Because of their beauty, they are very popular among tourists.



Villarrica Lake, with the volcano of the same name in the background. La Araucanía Region.

## Volcanoes

In this zone there is a high level of volcanism, which is the combination of phenomena related to volcanoes, their origins, and activity. Furthermore, in this zone there are volcanoes that are considered the most dangerous because of the damage they can cause to people, flora, fauna, and the environment. Examples of volcanoes are Llaima, Villarrica, Calbuco, and Osorno.



Eruption of the Calbuco Volcano in 2015, Los Lagos Region.

## Physical map of the Southern zone



## ACTIVITIES

- 1 From the information on these two pages, build a story of 10 lines. You can incorporate pictures. The story should explain the characteristics of the relief of the South zone. *Represent*
- 2 How does this area benefit from the many lakes and rivers that exist there? Share your answer with a classmate and give two examples. *Criticize*

## Southern zone

► Objective: recognize the characteristics of the relief of the Southern zone.

### Climate and hydrography

In this area the **rainy climate** predominates, which is characterized by abundant rainfall throughout the year and, sometimes, snow. Average temperatures go down as you move south.

The landscape of this area is characterized by its **many rivers and lakes**. Some rivers of this area are the Biobío, the Toltén, and the Valdivia **1**, and some lakes are the Caburgua and Puyehue, among others.



Valdivia River, Los Ríos Region.

### Flora and fauna

Due to the climate, this area is characterized by its **abundant vegetation** and a great variety of flora and fauna.

The **flora** that we find in this area are the larch, the araucaria **2** and the raulí, species that make up native forests, or autochthonous forests which must be protected in order to prevent their disappearance. In addition, the national flower, the copihue **3**, grows in this area.

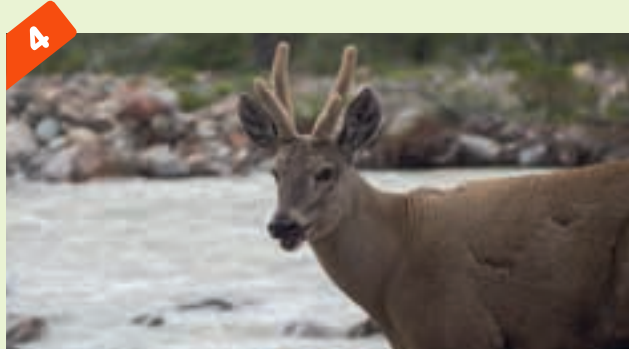
As for the **fauna**, different species of foxes, rodents and birds inhabit this area. In addition, we find the huemul **4** and pudú **5**, the first one is in the national coat of arms along with the condor.



Araucaria or pehuen. With its fruits, the *piñón*, flour is made, which is the basis for different preparations of the Mapuche people.



The copihue grows in forests of central and southern Chile. It's an endangered species, so it cannot be cut, bought or sold.



The huemul is the most southern deer in the world and it is an endangered specie.

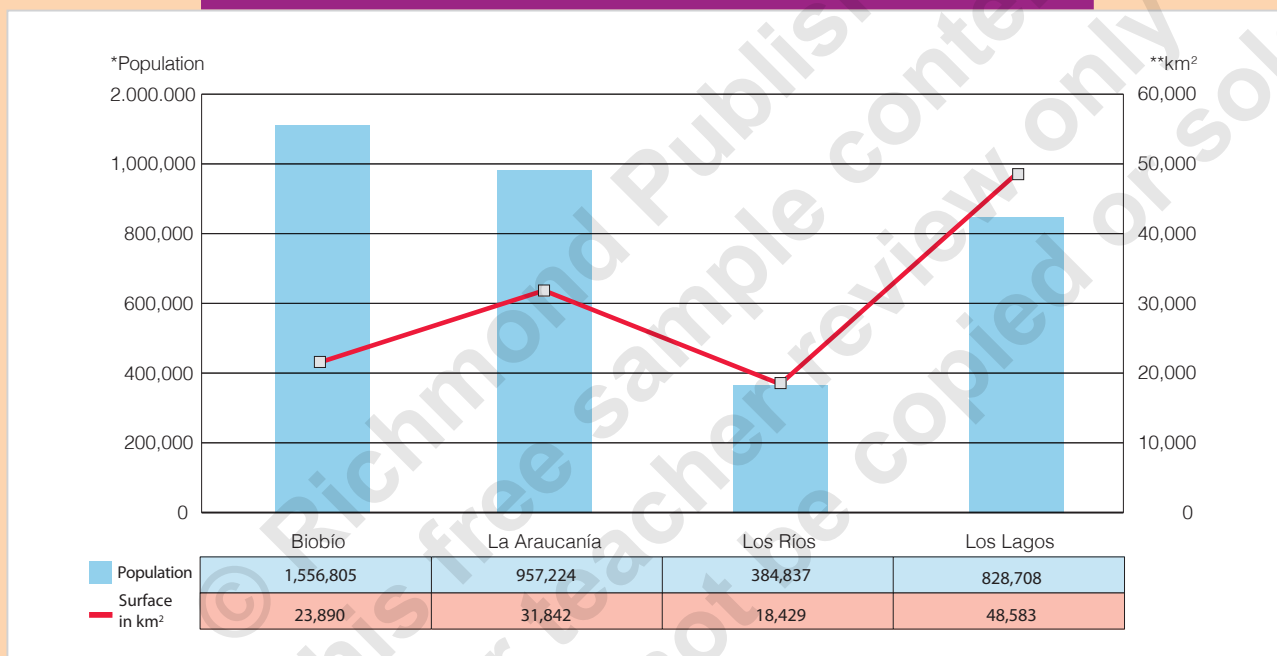


The pudú lives in dense forests and, like the huemul, is herbivorous.

## Population

The population density is lower than in the Central zone due to the climate and the irregularity of the mountainous relief. However, there are important cities, such as Concepción, Valdivia, and Puerto Montt on the coastal plain, and Temuco and Osorno, in the intermediate depression.

**Population and surface of the Southern zone (by region)**



\* Population data in: INE (2017). Census results 2017. Effectively registered. Santiago, Chile: Ministerio de Economía, Fomento y Turismo.

\*\* Surface data in: INE (2011). Statistical compendium. Santiago, Chile: Ministerio de Economía, Fomento y Turismo.

## ACTIVITIES

- 1 From what you know about the south zone, answer in your notebook the following questions

Explain

- Which area has the largest population? The Central zone or the Southern zone? Why?
- What advantages do the mountain relief and climate of this area provide for tourism?
- What aspects of this area do you think are favorable for people to inhabit?
- What difficulties could the population of the Southern zone face in relation to the relief present in it? Justify with a real or fictional example and discuss with the rest.

- 2 Draw in your notebook a landscape of the South area that includes at least three characteristics of it in terms of its relief, climate and hydrography, flora or fauna. In addition, mark those characteristics in the drawing and explain them to your classmates. Represent

# Austral zone

► Objective: recognize the characteristics of the relief of the Austral zone.

This area extends from the Gulf of Corcovado to the Chilean Antarctic Territory. The four large units of relief of Chile cannot be distinguished clearly: no coastal plains are present; the Coastal Mountain Range and the intermediate depression sink under the sea and the height of the Andes Mountain Range continues to descend. This situation causes that the highest elevations that can be seen are the islands. For this reason, the relief of this area is very different from the rest of the country. The archipelagos (groups of islands), the canals and the glaciers are prevalent in the zone.

## Fiords

In this area, many fiords, which are narrow sea entrances on the mainland, are to be found. They are formed from the flooding of a dug-out valley or a valley carved by glaciers.

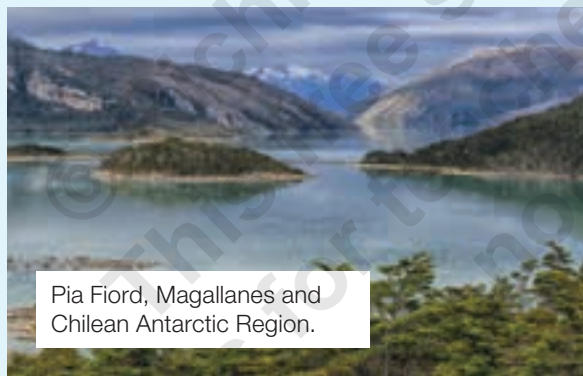
## Relief

### Infographics of the Austral zone relief



#### Coastal plains

They are not present in this area, they disappear when they sink under the sea to the south of Isla Grande de Chiloé, at Los Lagos Region.



Pia Fiord, Magallanes and Chilean Antarctic Region.

#### Intermediate depression

To the south of Puerto Montt (Los Lagos Region), the intermediate depression disappears under the sea, in what is known as Sine of Reloncaví.



#### Coastal Mountain Range

It is presented in the form of islands and archipelagos. They sink under the sea more to the south, at the Peninsula of Taitao (Aysén Region).

#### Andes Mountain Range

It loses its height until it sinks into the sea, to reappear in the Antarctic territory under the name of Antartandes.

To the east of the Andes are the Patagonian plains, where cities such as Puerto Natales and Punta arenas are located.

## Glaciers

**Glaciers** are large masses of ice that move very slowly by the action of gravity, as if they were rivers in slow motion. Chile has many glaciers that are natural freshwater reserves, so we must take care of them.



Serrano Glacier, Magallanes and the Chilean Antarctic Region.

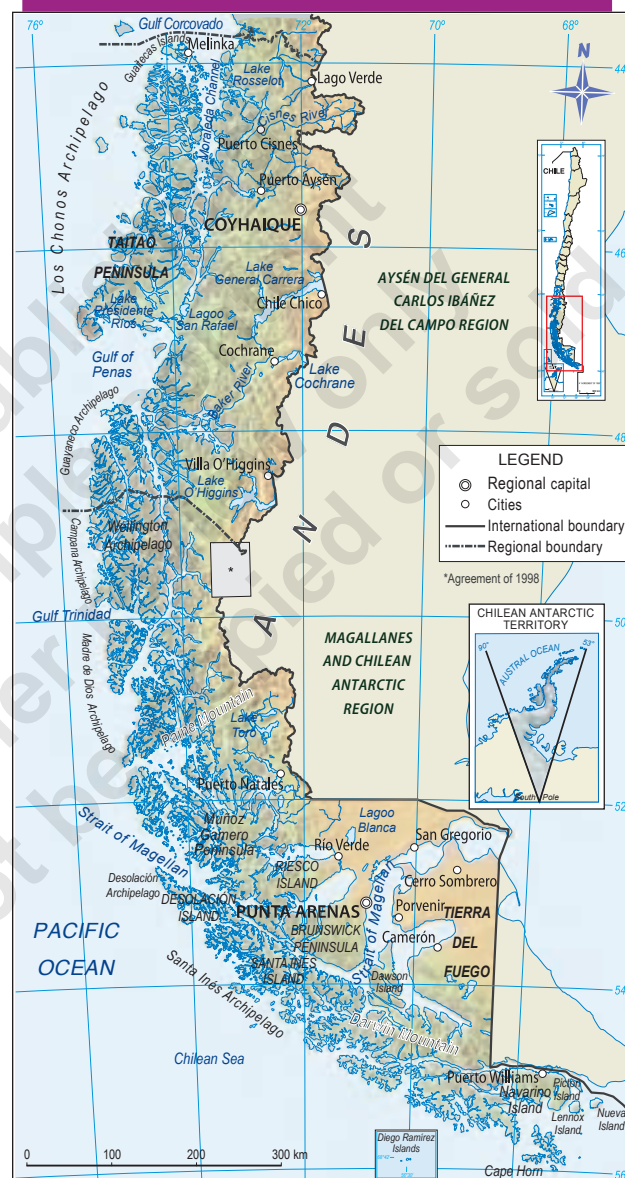
## Chilean Antarctic

Within the southern zone is included an area of the Antarctic. This place is covered with ice and snow; Very few people live in it and just for short periods of time.



Las Estrellas Valley, Magallanes and the Chilean Antarctic Region.

## Physical map of the Austral zone



## ACTIVITIES

- 1 The Austral zone has the largest number of glaciers in Chile. Using specialized material, research about them and answer in your notebook the following questions. *Infer*
  - a. Why are most glaciers melting? How could the disappearance of the glaciers affect the planet and the life in it?
  - b. What could you and your classmates do to cooperate in reducing glacier melting? Discuss your answers and make a commitment as a class.

## Austral zone

► Objective: recognize the characteristics of the relief of the Austral zone.

### Climate and hydrography

In the coastal region of this area, the **climate** is **rainy maritime**, and it is characterized by low temperatures and lots of rain. In the interior of Patagonia, the climate is **steppe cold**, there is less rain than on the coast, but the low temperatures are maintained. In the Antarctic territory the **weather** is **polar**, where temperatures are below 0 °C and snowfalls are recurrent throughout the year.

The **rivers** of this area are very **abundant**, that is to say, they carry a lot of water as a consequence of the abundant rainfalls throughout the year. Some examples are the Baker River **1**, Simpson, and Serrano. There are also lakes, such as the General Carrera or the O'Higgins, and lagoons, like the San Rafael.



Baker River, Aysén Region.

### Flora and fauna

The species of **flora** in this area are the mañío **2**, the lenga **3**, the ñirre, as well as a great variety of mosses and lichens. All the flora can live with low temperatures throughout the year. Without considering the Antarctic territory, the southern zone has the largest area of native forest of Chile, with more than 7 million hectares, according to Conaf.

The **fauna** varies depending on the area, since in the coastal zone there are whales and king crabs and inside we can find pumas and sheep **4**. At the Antarctic zone there are Magellan penguins **5**, among others.



Wikimedia Commons / Lin linao

The mañío is adapted to the climatic conditions of this area.



Lenga. Its wood is very resistant, so it is used a lot in constructions.



Sheep in Magallanes.

Wikimedia Commons / Elvis Boaventura



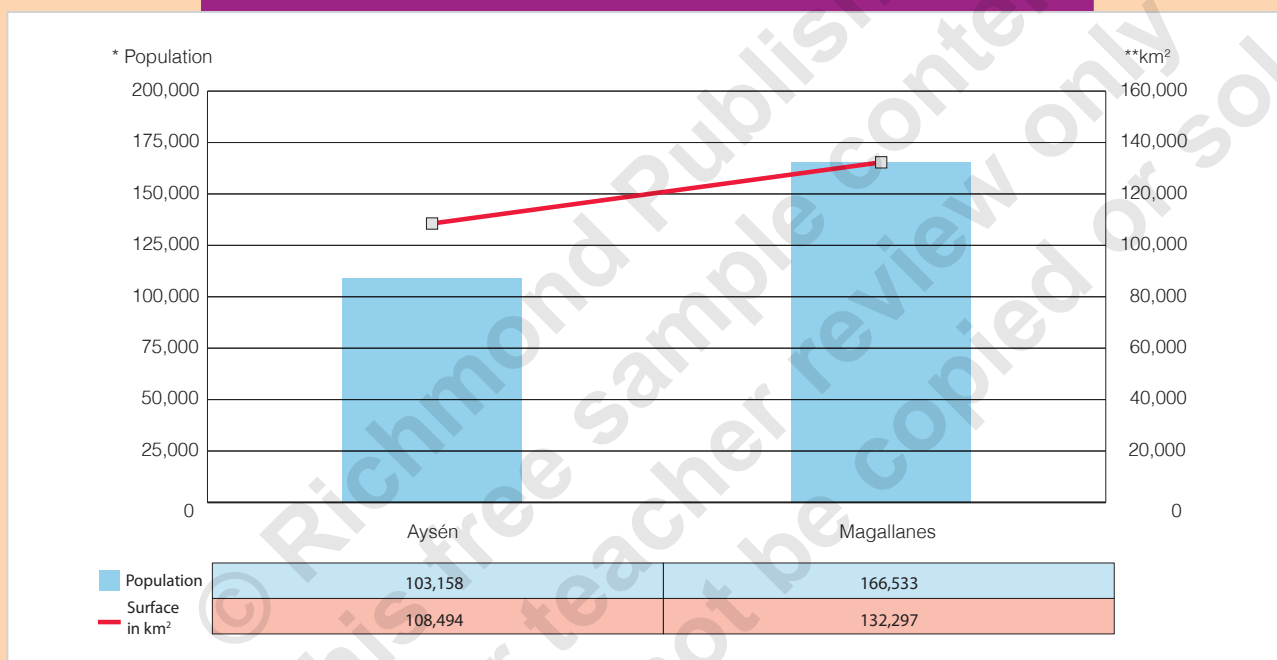
Magellan penguin. Otway Sine, Magallanes Region.

Wikimedia Commons / Mirko Thiessen

## Population

The problems of connectivity generated by its relief, the cold climate and the fact that more than 50% of its surface corresponds to conservation areas, make the Austral zone the one with the smallest population in relation to its territory. However, there are important cities, such as Coyhaique and Punta Arenas.

**Population and surface of the Austral zone (by region)**



\* Data population in: INE (2017). Census results 2017. Effectively registered. Santiago, Chile: Ministerio de Economía, Fomento y Turismo.

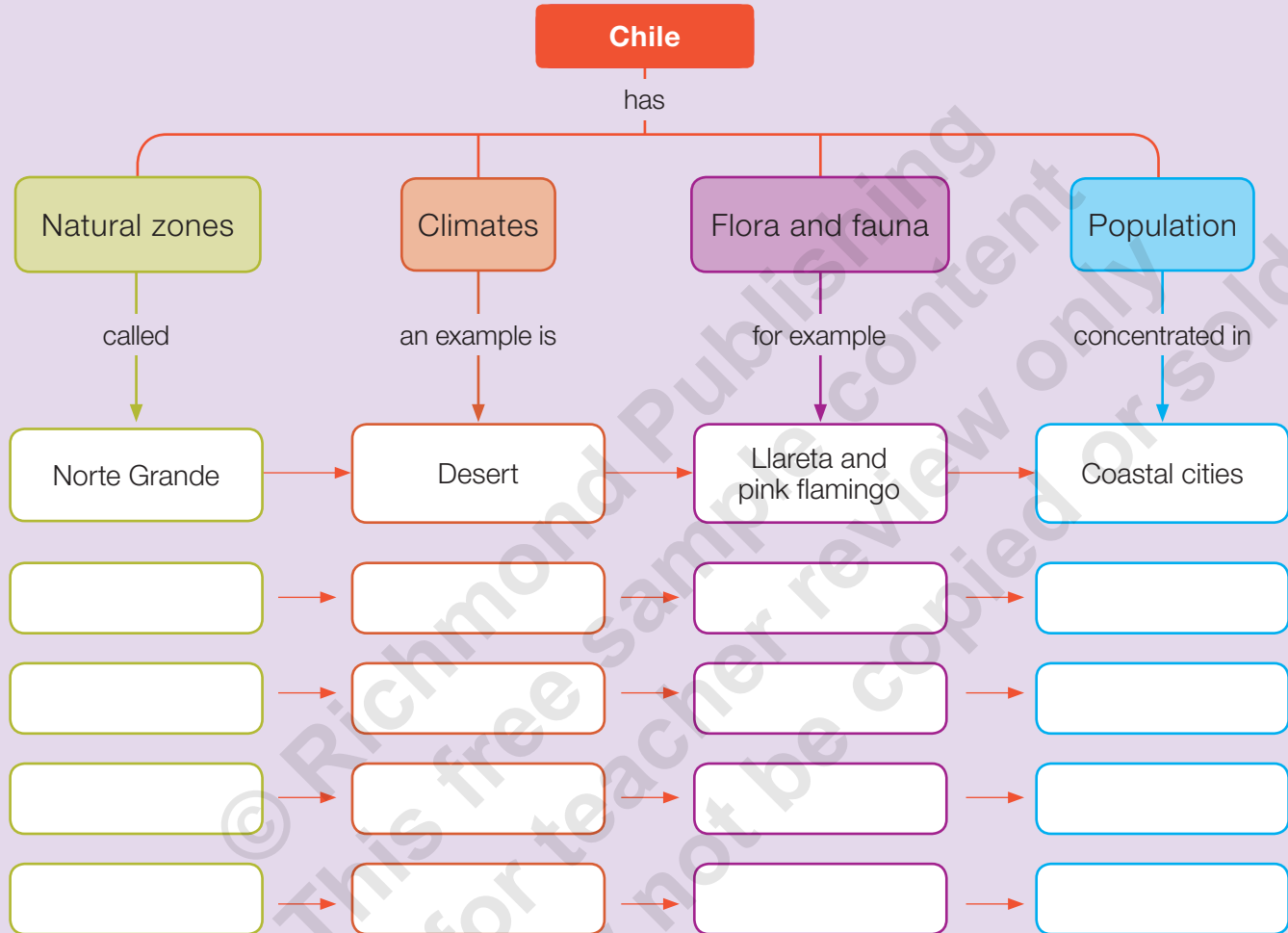
\*\* Surface data in: INE (2011). Statistical compendium. Santiago, Chile: Ministerio de Economía, Fomento y Turismo.

## ACTIVITIES

- 1 In your notebook draft a summary table with the population and surface information of the five zones worked on Topic 1. From that, answer the questions. [Compare](#)
  - a. How does the number of people from north to south vary in the zones of Chile?
  - b. There are zones with a large surface, but they have less population than others. What relationship can be established between the number of inhabitants and the geographical characteristics of each zone?
- 2 Why is there a greater protected area in the southern areas than in others? [Infer](#)
- 3 How can conservation areas benefit future generations? [Criticize](#)

# Show what you know

1 Complete the following diagram. Follow the examples.



2 Read the document and then answer the questions.

The Beagle [name of the boat] continued its journey through the canals of southern Chile and the Strait of Magellan. Charles Darwin was amazed at everything he saw: great whales and mighty glaciers. Then, the Beagle went to Chiloé, to the coasts and its surroundings. Darwin got off the Beagle and explored the territory by land, reaching the most secluded places of Chiloé. On his journey he saw all kinds of birds, animals, and plants.

Pavez, A. and Fuentes, O. (2008). *Darwin: Un Viaje al Fin del Mundo*. Santiago: Editorial Amanuta.

- What natural zones did Darwin travel on the Beagle?
- What elements described in the document allowed you to identify the natural zones?

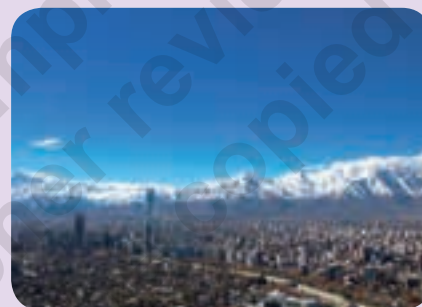
3 Look at the following pictures and write to which natural zone each one corresponds.












4 Answer the following questions.

a. Imagine that you are traveling to the Atacama Desert in Norte Grande. What kind of clothes should you wear if you visit it by day? What if you went by night?

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b. How do the characteristics of the relief and climate affect the place where people live? Give an example.

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