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Chile Country Profile

Dr. Hardin

Introduction

The country of Chile is in the Southern and Western Hemispheres. As shown in Figure 1. Chile is located in South America on the western coast. The Pacific Ocean is the major body of water bordering Chile to the west, while Argentina, Bolivia, and Peru are bordering countries. Some significant regions within Chile are Arica, Parinacota, Tatapaca, Atacama, and Valparaiso ("Regions of Chile: Consult Chile"). The dimensions of Chile are 292,260 mi2. Chile is a very elongated country that spreads along almost the entire west coast. Its world ranking in size is 37th. It has a land area of about 287.19 mi2 and a water area of about 4745.20 mi2.

Plate Tectonics and Diastrophism

The country of Chile sits on certain plate tectonics that can cause some serious environmental factors. Looking at Figure 2. Chile sits on top of two different plates, those being the Nazca/ South American Plate and the Antarctic Plate. The tectonic plate boundary types affecting these are called the East Pacific and Chile Rise, and the Peru-Chile Trench. There are a couple tectonic hot spots located in Chile. These are called the Easter hotspot, Juan Fernández hotspot, and Galápagos hotspot. Hot spots are volcanic regions fed by underlying mantle.

As seen in Figure 3. there are many beautiful natural mountains found in Chile. One of these main mountain ranges is the Andes (see Figure 4.). This is not only a mountain range, but also a prime example of warping and folding and fracturing and faulting. Fracturing and faulting is when there is tension pulling apart the rocks which causes the middle to fall down. This results in a flat bottom in some places. As the Andes mountains is one of the world's longest mountain ranges it runs north to south through South America (Nelson).

Due to tectonic plates and hot spots there are many active volcanoes found in Chile. Some of these active volcanoes are called Calbuco and Puyehue-Cordon Caulle. Chile is also home to some extinct or inactive volcanoes called Villarrica and Llamia. Volcanoes can be very devastating and may cause some people to not want to live there if they fear an eruption. The highest point in Chile is located in the Andes, in the region of Atacama and is called Ojos Del Salado. This Spanish name translates to say, "Eyes of the Salty One." Given this name because of big salt deposits that form lagoons that are found in the glaciers. Ojos Del Salado is a stratovolcano and is the highest active volcano in the world, sitting at 22,615 ft. ("Ojos Del Salado," 2019). It is also the second highest mountain in all of the Western and Southern Hemispheres. As Chile is bordered by the Pacific Ocean at 0 ft., this is the lowest point in the country.

Erosion

Erosion is the movement of already weathered down materials. Erosion plays a key role in shaping some of Chile's landscape. Glacial landforms in Chile are Patagonian Ice Sheet and the Río Baker valley preserves. The Patagonia Ice Sheet is centered in the southern Andes and covered all of Puerto Montt. The Atacama Desert was a wind-produced landform. The Atacama Desert is one of the driest places in the world located in northern Chile. It has very stony terrain, salt lakes, sand, and felsic lava. Some of the Karst features in Chile are the Madre de Dios Island, Guarello Island, and Magallanes. Significant bodies of water in Chile are the South Pacific Ocean, Bay of Penas, Drake Passage, Loa River, and Baker River. With the Baker River being a delta, which is formed by the deposition of sediment that is carried by a river as the flow leaves its mouth and enters slower-moving water. A drainage basin is the Huasco River Basin.

Geomorphological Natural Hazards

As mentioned earlier, volcanoes can be a major push factor and cause some residents to not want to live in Chile. Along with volcanoes there are earthquakes and tsunamis that accompany them. This is mainly due to Chile's location along the Pacific Ring of Fire. This area is known for intense volcanoes and earthquakes (Australis, 2016). All of these things can be very dangerous for the native people that inhabit it. For example, in 2010 Chile was hit by a magnitude 8.8 earthquake which was a result from the tectonic plates of South America and Nazca Plates sliding against each other. This disastrous earthquake, which was followed by a tsunami and strong aftershocks caused at least five hundred people to die. Chile was reported to get eighteen major earthquakes each year and to get at least one with a magnitude of 8 or higher each year (Bieri, 2003).

After the earthquake in 2010 Chile has reflected and taken many serious precautions to protect its citizens from these natural disasters. There are a couple different ways that people can adapt to these geomorphological hazards. Residents are able to be informed by Chile's warning systems about potential tsunamis before they hit and are able to evacuate with their families safely. There have also been regulations put into place for buildings and houses that are strictly followed. These new building codes have been able to save many lives when disaster strikes (Center for Excellence in Disaster Management and Humanitarian Assistance, 2017).

Atmosphere and Hydrosphere

The country of Chile is elongated and experiences a couple different types of climate and weather. The northern region of Chile is affected by subtropical high-pressure air masses which can determine large-scale patterns of wind circulation. These subtropical highs are like a sponge

and can hold more water, causing this area to be more wet. While the southern region of Chile is affected by Westerlies. These winds have no land masses to slow them down, so winds can get up to thirty or forty mph.

Looking at Figure 6. there is an obvious difference in the northern and southern rainfall patterns in these various regions. Precipitation varies depending on latitude. While 45 degrees south receives annual precipitation of 2250 mm, while at 53 degrees south receives annual precipitation of 430 mm. There are also dominant wind belts that play a role. These being Southeast Pacific anticyclones that influence climate on the west coast resulting in minimal precipitation. This is accompanied by strong gales known as westerly winds. Chile is also known for the Camanchaca. This is thick fog that is caused by westerly winds and storms.

Chile has a maritime climate. Even though Chile's climate is vastly different from north to south, maritime climate has stable temperature ranges and predictable precipitation patterns year-round ("What Is Maritime Climate? - Definition from WineFrog"). This is due to oceanic winds and temperatures. Ocean currents that have an effect on the climate in Chile are the Humboldt current. The Humboldt current originates in sub-Antarctic waters off the Pacific coast. This causes temperatures to decrease drastically.

Weather/biomes

Dominant sources of rainfall in Chile are convectional and orographic precipitation. The Nahuelbuta Mountains and the Pacific Ocean causes an orographic source of precipitation in coastal southern Chile (Garreaud, 2016). The seasons in the Southern Hemisphere are opposite of those in the Northern Hemisphere. In the Northern Hemisphere where they experience the summer season from June to August and winter from December to March. In the Southern

Hemisphere this is opposite. Their winter occurs from June to August and summers from December to March. Rainfall also varies depending where in the country you are. In many parts of the country such as Santiago, the capital, rainfall increases in the winter. You can also observe this different in winter and summer months in Figure 5. and how the temperature drops from June to August. Chile reaches its coldest temperature in the winter in June, when temperatures get to about 48 degrees Fahrenheit. The hottest is in January, the summer, when temperatures are at about 69 degrees Fahrenheit.

Along with this the varying temperatures and rainfall throughout Chile, there are also several different major biomes found in this country. The three major biomes are the Subtropical High Desert, Mediterranean, and Marine West Coast. Along with these various biomes, Chile is home to many notable plant and animal species. Such as the Magellanic penguins, Pudú (small deer), Rhea, Guanaco, Andean fox, Monkey puzzle tree, Prosopis tamarugo, and Jubaea chilensis. There are many endangered species here as well that need protecting. These include the Acacia saligna (tree), Aedes albopictus (insect), Egeria densa (aquatic plant), and Argentine grey fox (Pierce, 2017). Some environmental problems in Chile that humans cause are things such as deforestation. This can result in soil erosion that destroys pulp and made way for industrial tree farms. There is also a lot of pollution in the air, water, and land from industries.

Population

The total population in Chile currently is about 17.91 million people. Chile is in a stage four population pyramid (see Figure 9). There are 13.3 births per one thousand population and 6.1 deaths per one thousand population. The fertility rate is about 1.8 births per woman. But the rate of natural increase is decreasing by 1.16 percent, meaning that they are not having enough

children to keep the population growing. In Chile there is a greater percentage of kids under 15 than older than 65. With there being a 20.3 percent of kids under 15 to 10.5 percent of people older than 65.

According to FAOSTAT, the total land area of Chile is 287,079.3 square miles. Some of this land is used for farming. Arable land is land that is farmable, but not farmed. The total amount of arable land area is 347,858.8 square miles, with 0.44 percent being farmable and farmed. While the agricultural land area, which is land that is devoted to farming, is only 60,779.4 square miles. With the percent that is actually farmed being about 21.17 percent. The arithmetic density is 61.5 persons per square mile. The physiologic density is 50.7 people per square mile. Finally, with the agricultural density being 290.4 people per square mile. The share of employment in agriculture is 9.56 percent of the population (FAOSTAT, 2019).

Migration

In Chile there is a positive migration balance. This means that there are more people migrating into Chile than are leaving. There are certain issues that can cause immigrant push and pull factors. These can be political, economic, or even environmental. In Chile, some of the pull factors that make people want to come in and live in Chile are environmental and economic. Chile is home to so many beautiful views that make people want to live in the warmth or on the coast. Economic factors have to do with the increased job opportunities found in Chile. Many people are in need of jobs and if somewhere else has better opportunities then people will want to live there.

There are also emigration issues that cause people to want to leave Chile and not live there. One of these main push factors being also environmental. Even though the beautiful views

can be fun and different for a while, they are also very dangerous to live around. With many active volcanoes that can cause so much damage to houses this can drive families out. Also, with frequent earthquakes that may also be followed by tsunamis that can be a very devastating thing to live around and have to deal with. Some countries have a major refugee crisis. However, Chile is not very bad, but they are accepting Venezuelan refugees and Syrians. So, these people are coming in to find a better home than where they were.

Culture

Chile is a rich country that is filled with so much culture. The culture found in Chile has shaped it into what it is today. With the official language being Spanish, there are also a couple indigenous groups that have their own form of language. These groups being the Mapudungun, Quechua, and Rapa Nui (see Figure 11). These groups can also be called a lingua franca. Which is a language that is adopted as a common language between speakers whose native languages are different. The major religions practiced in Chile are Christianity, Catholic, and Protestant. Looking at Figure 12. you can see a popular Christian church that is used for worship in Santiago.

Religion does play a role in much of daily society in Chile, however it does not play an extreme role today. There are three main ethical groups called the European, Mestizo, and Mapuche. There is slight conflict going on with the Mapuche people currently. They are demanding that they want their land restored. Their communities are fighting for greater autonomy, and rights, along with the recovery of their land.

Political

Chile runs under a representative democratic republic. This means that the citizens of Chile get a say in the decisions made for their country. The president of Chile is Sebastián Piñera. Chile was originally a colony of the Spanish Empire. It was run by a crooked governor. Chile was able to gain its independence from Spain on September 18th, 1810 (Minster, 2018.). Water ways are controlled by a water resources management and is shared among the private sector for trading and to control copper mining. Other resources can play a significant strategic resource in making Chile an attractive target to large powers. These resources include not only copper, but also coal and nitrate. There is also food processing, chemicals, wood, and agriculture in Chile.

Certain countries played a role in the Cold War. During the Cold War the Chilean Communist Party was one of the oldest and strongest in the Western Hemisphere which gave them an advantage. The United States has a military base in Chile. It is located on the coast of Valparíso. The United States has been involved with affairs dealing with Chile before. The U.S. involvement started during the War of Chilean Independence and they influenced both economic and political areas. Chile is an elongated country and has the natural border of the Pacific Ocean. This however does not interfere with governmental communications and control. Chile is economically controlled by trade. With it mainly exporting things to China, the United States, and Japan. While importing things from the United States, China, and Brazil.

Agriculture

Chile has 20 percent of its labor force employed in agriculture. With exports driving Chile's economy, they are concentrated mainly in copper and in its agricultural sectors ("Chile – Agricultural Sector," 2018). Major agricultural products grown in Chile are grapes, apples,

onions, wheat, corn, oats, and peaches (see Figure 13.). Subsistence agriculture is when you grow food not for money, but just for your family to eat. There is only minor subsistence agriculture being practiced in Chile today. One place this is happening is near the Loa River, where there is a great source of water ("Agriculture in Chile," 2019).

There is a significant agricultural biome that Chile bases its agriculture. Central Chile has a Mediterranean environment that is used for commercial farming. Commercial farming is when a product is grown in enormous bulk and sold for profit. One of the main things Chile produces being wine in their grape fields (see Figure 14.). Northern Chile, in the Atacama Desert region, is located in the Andean Highland agricultural hearth. This hearth is known for its potatoes, which is another important crop of Chile. Chile will consume their own potatoes and apples but is mostly reliant on food imports for their own consumption. They import maize and wheat and about 86 to 94 percent of the food energy consumed is imported from other countries (Crop Trust). So, Chile is not a net food importer.

Industry and Services

Copper mining is one of the main extractive activities found in Chile today. It is a huge industry and about 6.7 percent of people are engaged in this work. This can gain Chile a lot of their income, but the environment will take a toll. Not only are they digging into the land to mine the copper, (see Figure 15.), but it is said that they are dumping the leftover sludge into the ocean (Augliere,2018). This can be very dangerous for plants and animals living there. Significant raw material resources in Chile other than copper, are molybdenus, iron, nitrates, and other concentrated minerals. Important industrial raw materials that Chile exports are copper ore, sulfate chemical woodpulp, and raw copper (OEC - Chile (CHL) Exports, Imports, and Trade

Partners). Chile has a significant forest resource that is are utilized in the temperate rainforests. They use this wood to export it as logs, chips, and lumber.

Urban Geography

The capital of Chile is Santiago. Santiago, seen in Figure 16., is also the largest city in Chile. Santiago is not a primate city based on size, but it is when looking at the population found there. There are almost five million people concentrated in the capital. All roads in Chile seem to lead to the capital ("What to Do in Chile: Our Highlights Guide | Chile Guides," 2016). There are 822 slums in Chile that lack basic services such as water, sewage, and electricity. Measures are being taken to get these slums headed in the right direction.

Conclusion

Chile is a very interesting place to learn about with many different geographical factors going in to shape it into the country it is today. It is home to many beautiful natural features that can also be dangerous. Not only is the physical geography playing a role in its development, but many other social and economic factors contribute to its evolution. It was very interesting to get to learn so much about a new country. If I ever get to travel to Chile I feel very prepared to know what to look for and how life is there.

Figures

Figure 1. Location map of Chile

Figure 2. Tectonic Plate Features in Chile

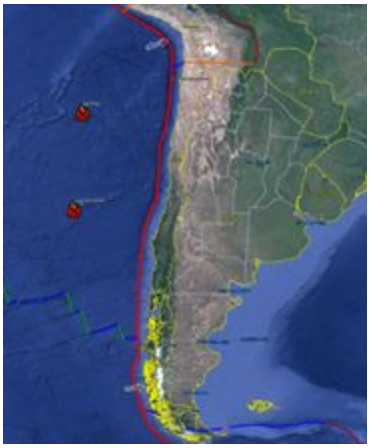
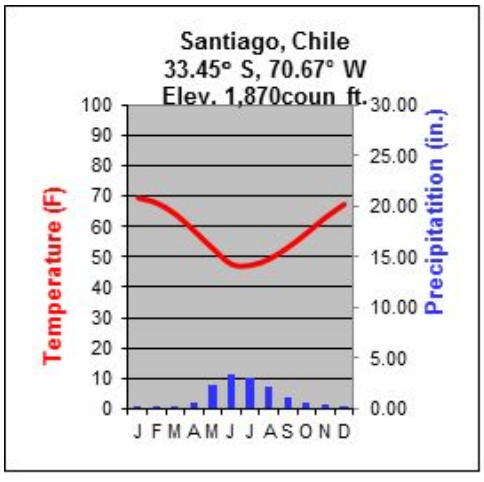


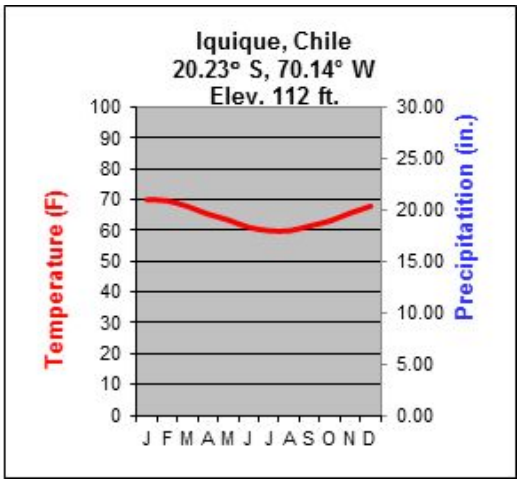
Figure 3. Physiographic map of Chile

Figure 4. Picture of Chile's physiography

Figure 5. Climagraphs of Chile Mediterranean



Mediterranean



Hot Desert

Figure 6. Rainfall map of Chile

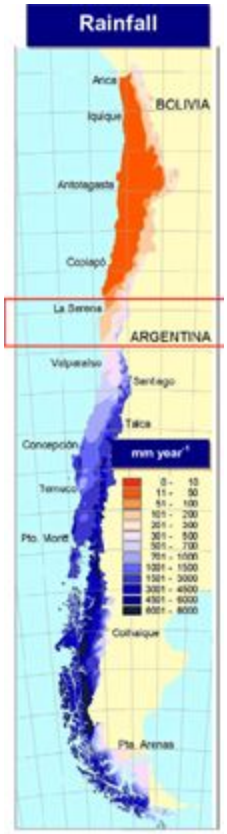


Figure 7. Climate map of Chile

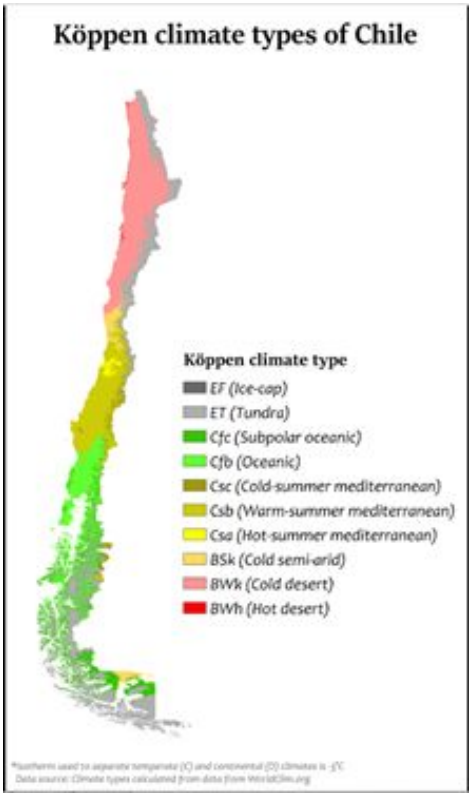


Figure 8. Picture of Chile's climates

Subtropical High Desert: Atacama

Marine West Coast: Lake District in Chilean Patagonia

Figure 9. Population pyramid for Chile

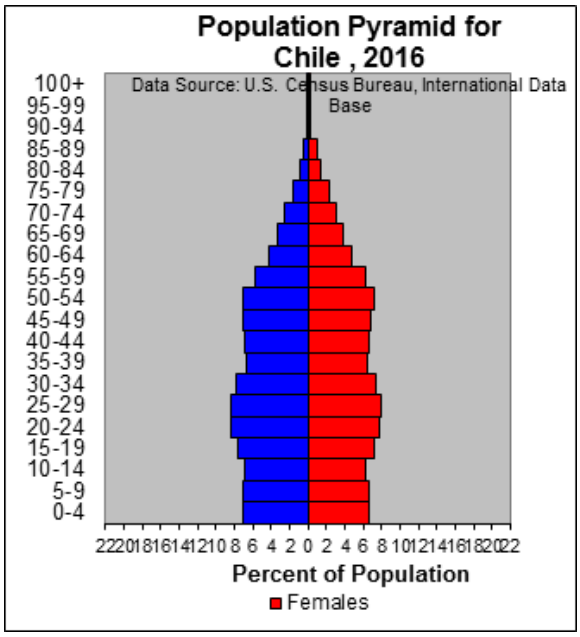


Figure 10. Population density map for Chile

Figure 11. Ethnicity map of Chile's Magallanes

Figure 12. Picture of religious landscape in Chile

Figure 13. Agriculture map of Chile

Figure 14. Picture of agriculture landscape in Chile

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