Supporting text: Historical Geographies

Keywords: history, change over time, reconstruction, source, point of view.

What are historical geographies?

Reconstructing the past

Historical geographies look at:

1. The ways in which geographical phenomena have changed over time.
2. Geographical phenomena at one specific point in time.

Geographers gather information from different **sources** to create a snapshot of an event or period of time in the past.

Let's zoom in: the El Niño phenomenon in the past

The image shows a newspaper cover with the words "PIURA: Reporting the tragedy". It shows an image of a house destroyed by flooding.

The history of El Niño in Peru

The history of El Niño is embedded in the history of Peru, as its cyclical events have deeply and consistently impacted the country's populations for thousands of years.

While the phenomenon is common knowledge at the national level, it has been experienced differently on local, regional, and international scales. For this reason, there are many perspectives of the history of El Niño.

How do we know this?

How do we know that El Niño has been happening for thousands of years, and the different perspectives people have of the events?

There are many different sources of information which outline the events, including, but not limited to, newspaper archives, governmental archives, oral histories, environmental evidence, written stories, and more.

Reconstructing El Niño through physical science

Using environmental evidence to reconstruct the physical science of El Niño events in the past can include both instrumental measures and natural records. They usually use *quantitative* measures, meaning it looks as the quantities.

Instrumental measures

Instrumental measures rely on technological devices to quantify the effects of El Niño events, which can be complex - like using satellite imagery, or more simple - like a vial collecting rainwater. Our introductory course showed us some of the factors that change when an event happens, including sea surface temperature and precipitation. Other factors that might also show different records during an event are air temperature and humidity. On the right, we have measures of rainfall since the 1970s that show when levels of rainfall go above average, indicating an El Niño event. These are the 1983, 1997/98, and 2017 events. While these sources are more accurate, they do not go far back in history as they require the presence of instruments and monitoring for data collection.

Natural records

Natural records show the ways in which the landscape is impacted by an El Niño event. When scientists are able to align certain features with a timeline, it is then possible to indicate when an El Niño event might have happened. For example, sedimentation (left) shows the layers of soil which accumulate over time. When an area floods with rainfall or river overflow, sediment is transported to new areas and shows as a new layer in the landscape. Scientists look at pollen and different indicators in the soil to find the dates in which the event will have happened. Second, tree rings are often associated with time passing and show indications of increasing water in the area. Finally, coastal strands - or the average level at which sea water sits, can also indicate sea level rise or fall as a result of precipitation.

Reconstructing El Niño through human sciences

Using sources of information from the human sciences allows us to reconstruct people's experiences of El Niño events. These sources can include old written records, such as boat logs or personal diaries, archives and historical documents which can be governmental or other, as well as archaeological research. These mainly qualitative sources might be less accurate but will provide more detail on the experiences of these events.

Archaeology: El Niño and ancient civilisations

Looking into archaeological sites where ancient civilisations have been buried can show us how these may have engaged with El Niño events. Here we gave a timeline of different civilisations occupying pre-colonial Peru and different El Niño events they may have faced.

Excavations of the Chavín culture, present in 1200 BC, found buildings which had been collapsed and buried by mudslides, pointing to an excess of rainfall which may have been from an El Niño event.

The indications of the Chavín culture facing an El Niño event are again seen at an archaeological complex (a site where infrastructure was dug up), where evidence of crop fields being ruined and flooded rivers displaced communities was found.

Excavation of the Vicus culture, in 1000 BC, showed that the civilisation went through three major El Niño events.

The Moche culture, present in 100 AD, was thought to have been hit twice by El Niño. It is theorised that the poor state management of these events was a large factor in the collapse of the civilisation.

Finally, excavations of the Chimú culture, present in 1200 AD, found that canals had been destroyed and obstructed, presumably as a result of El Niño events.

From this, we know that archaeological finds can show us how El Niño has been present over thousands of years. It also points to how populations experienced the event and the impacts they had on their infrastructure, food systems, and, more generally, their state management.

The Chusís Archaeological Complex

Here we take a look at one specific archaeological site, the Chusís Archaeological Complex, to see how we find out more about this. We are going to be looking at the Vicus and Moche civilisations that we heard about in the previous slide.

Video
The attached video is a 9-minute video of the Chusís archaeological complex. It describes how archaeological studies can reveal how the Chusís societies interacted and lived with the El Niño phenomenon. *For English subtitles, select Settings on the bottom bar (the gear symbol) > Subtitles > English (United Kingdom).*

Zooming in on one time period: the Viceroyalty of Peru

The Viceroyalty of Peru was implemented after the Spaniards colonised the American continent in 1532. It overtook the Incan Empire as an imperial district of the Spanish Empire. The Viceroyalty lasted from 1542 to 1824, when the Republic of Peru gained independence.

The image depicts a violent battle between the Spanish Empires looking to expand their territory, and the Incan Empire seeking to protect their land.

El Niño events during the Viceroyalty

This timeline starts some 300 years after our previous timeline of ancient, pre-colonial civilisations.

Here we can see a timeline of the first 200 years of the Viceroyalty. Peru was conquered in 1532 and the Viceroyalty of Peru was implemented in 1542. The dates with red circles indicate the recorded El Niño events based on a reconstruction by researchers.

Events such as those of 1568 and 1728 show the extent of the abundant rainfall which changes landscapes. However, more notably, many of the events show the relation between the El Niño events and the societies experiencing it. This shows the negative impacts, including the destruction of towns in 1720. However, it also shows how the rains were positive, such as the 1578 “mega” El Niño event that promoted agricultural activity.

Human and environmental ties

Let’s take a closer look into the connections between populations and the El Niño events.

At the time, indigenous populations carried out their habitual economic activities of agriculture, fishing, and salt production, and paid taxes to colonial authorities. These activities were strongly influenced by El Niño events and carried larger societal consequences.

Two strong examples which show how populations experienced the events are the following:

- In 1578, the Mega El Niño event brought abundant and beneficial rains to the Piura region. It is thought that the economic growth it supplied helped the foundation of the city of Sechura.
- In 1686, however, the El Niño event which caused the river to overflow led to conflict between farmers trying to outline their farmlands.

Why is the history of El Niño important?

Activity
Hold an open discussion about the importance of history. Allow students to elaborate on how we learn from history and how this might be the case for El Niño. *This might include more specific answers, such as mechanisms to prepare for or respond to floods, or more general thoughts, such as the importance of maintaining ancestral knowledge for a cohesive and representative narrative of El Niño events.*

- Knowing how previous societies acted on El Niño can inform how we act on events to better prepare for the future.
- We learn more about social and environmental ties that are often overlooked.
- It also helps to write the story of how El Niño has been beneficial over millennia, adding to the debate of the “disaster narrative”.

Activity
Ask the students to summarise the main points learned throughout the lesson before taking them through to the conclusions.

Conclusions

1. Historical geographies aim to explain how a phenomena changes over time, or to look at the phenomena in one specific time period.
2. There are many sources that have helped reconstruct the story of El Niño in Peru. These include physical records such as temperature and tree rings, or human records, like boat logs or archaeology.
3. Historical sources give us a better understanding of human and nature relations and how these change.