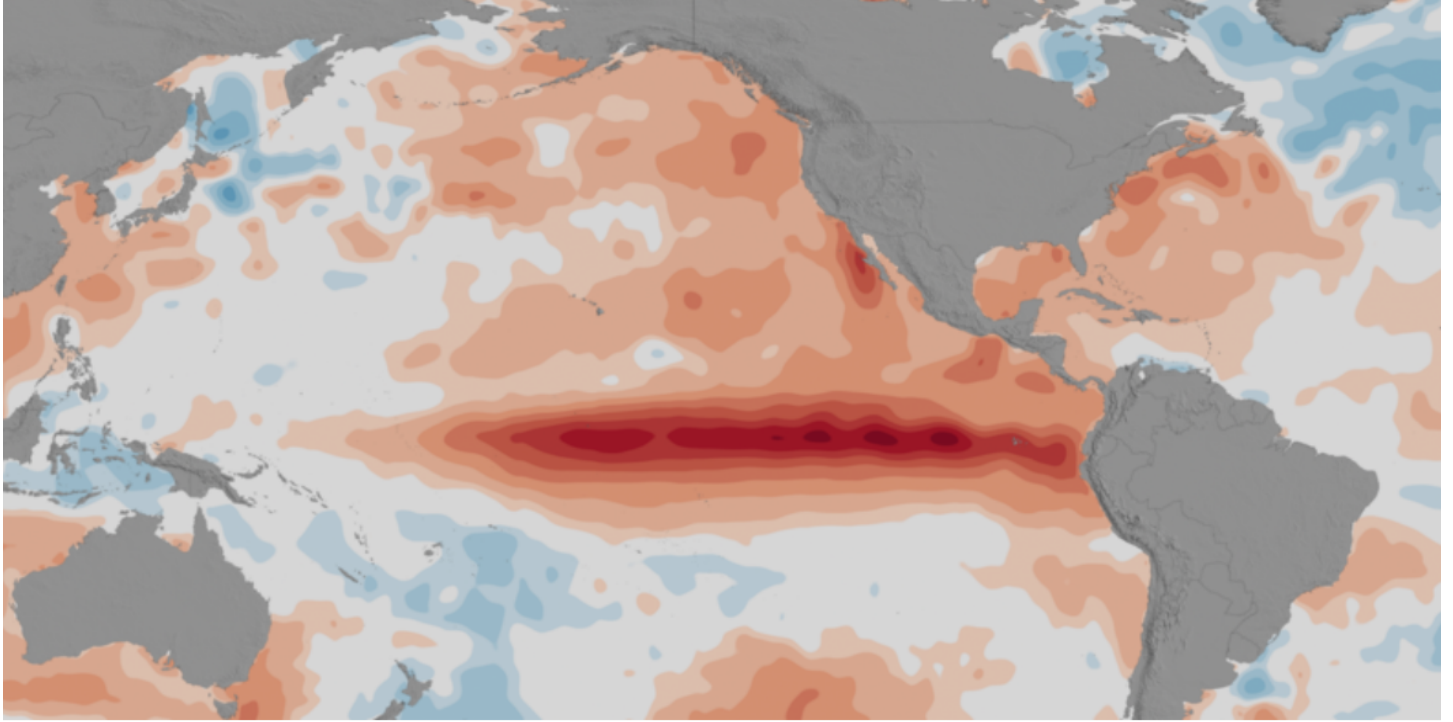

My NASA Data - Mini Lesson/Activity

El Niño & Spread of Human Disease



Student Directions

El Niño is a recurring climate event, characterized by unusually-warm ocean water in the Pacific ocean, which has an effect on weather patterns around the world.

Read the article "[2015-2016 El Niño triggered disease outbreaks across globe](#)" and how different diseases are spread by different animals. Then review the associated video on a NASA study examining the effects of the 2015-2016 El Niño and health around the world. When you have reviewed the materials, answer the questions below.

[Video: How the 2015-2016 El Niño Triggered Outbreaks Across the Globe](#)

Video

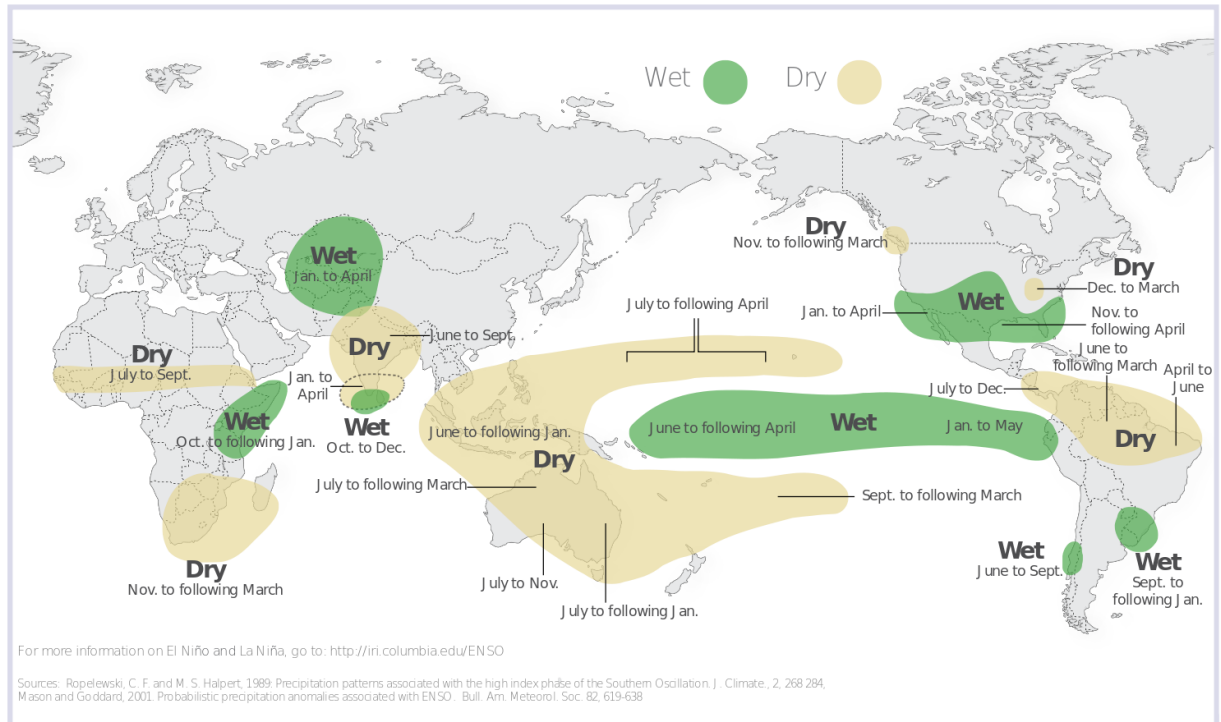
How the 2015-2016 El Niño Triggered Outbreaks Across the Globe |
<https://www.youtube.com/watch?v=HMJjAxtX4ZQ> | Source: NASA Goddard

Steps:

1. Check with your instructor on how to submit your answers.
2. Reflect on what you learned in the article and video.
3. Analyze the 2 maps below of [El Niño and Rainfall](#) and [Elevated disease risk](#). Answer the following questions.

El Niño and Rainfall

El Niño conditions in the tropical Pacific are known to shift rainfall patterns in many different parts of the world. Although they vary somewhat from one El Niño to the next, the strongest shifts remain fairly consistent in the regions and seasons shown on the map below.

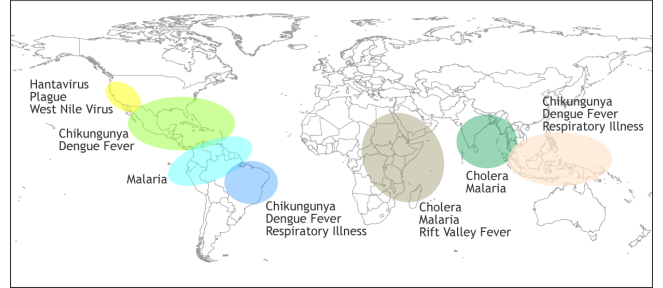


El Niño and Rainfall

Source: NOAA, [Climate.gov](https://www.climate.gov)

<https://www.climate.gov/news-features/blogs/enso/enso-and-your-health-how-2015-16-el->

2015-2016 elevated disease risk



NOAA Climate.gov
Data: Assaf Anyamba

[2015-2016 Elevated Disease Risk](#)

Source: NOAA, Climate.gov

<https://www.climate.gov/news-features/blogs/enso/enso-and-your-health-how-2015-16-el-ni%C3%B1o-led-early-warnings-global-disease>

1. What environmental changes are associated with El Niño events?
2. Identify which diseases were elevated in Colorado and New Mexico. What do these states have in common?
3. Which disease were elevated in Tanzania?
4. Identify which disease were elevated in Brazil and Southeast Asia. What do these countries have in common and what was the impact?
5. Explain how the environmental changes caused by El Niño caused the spreading of certain diseases (plague, hantavirus, cholera, and dengue fever)?
6. Observe both maps. Then draw a model that illustrates how environmental factors affect the spread of disease.

[ni%C3%B1o-led-early-warnings-global-disease](https://www.climate.gov/news-features/blogs/enso/enso-and-your-health-how-2015-16-el-ni%C3%B1o-led-early-warnings-global-disease)

Teachers, these mini lessons/student activities are perfect "warm up" tasks that can be used as a hook, bell ringer, exit slip, etc. They take less than a class period to complete. Learn more on the "[My NASA Data What are Mini Lessons?](#)" page.

Teachers who are interested in receiving the answer key, please complete the [Teacher Key Request and Verification Form](#). We verify that requestors are teachers prior to sending access to the answer keys as we've had many students try to pass as teachers to gain access.

My NASA Data Visualization Tool

- [Earth System Data Explorer](#)