The ENSO Student Research Campaign
What is El Niño?

El Nino and La Nina are important climatic phenomena that can have effects on the global climate.
Understanding El Niño Locally

• What are the main differences between a normal year and a El Niño year?
• Is the effect of El Niño the same in all parts of the world?
How can you participate? – Become a GLOBE School

1. Become a member of the ENSO Campaign Community:
   • Click on Log in: Enter your username and password
   • Go to the El Niño Student Research Campaign website: http://www.globe.gov/es/web/el-nino/el-nino-campaign
   • Select the "members" link of the left menu
   • On the "member" page click on "join community" you will see a message in green when you successfully joined the group
Next Steps to Participate

• Record data for at least two of the six protocols in the GLOBE Data Entry
• Fill the form to participate in the webinars (optional, but highly recommended)

• Everyone can share their stories on Story Maps and the H2yYou Project:
  • http://www.smartbasins.com/storymaps/
  • http://h2youproject.com
Protocols that are part of the campaign: Collect Data for at least two of six protocols

- Precipitation
- Maximum/Minimum/Actual Air Temperature
- Surface Temperature
• Soil Temperature

SMAP Soil Moisture

Biometry: Canopy and Ground Cover
<table>
<thead>
<tr>
<th>Dates</th>
<th>Northern Hemisphere</th>
<th>Southern Hemisphere</th>
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</thead>
<tbody>
<tr>
<td>March 1 - May 31</td>
<td>Spring</td>
<td>Fall</td>
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<td></td>
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<td>Wet/Dry</td>
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<td>June 1 – August 31</td>
<td>Summer</td>
<td>Winter</td>
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<td>Dry</td>
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<td>September 1 - November 30</td>
<td>Fall</td>
<td>Spring</td>
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<td></td>
<td></td>
<td>Dry/Wet</td>
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<tr>
<td>December 1 - February 28/29</td>
<td>Winter</td>
<td>Summer</td>
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<tr>
<td></td>
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<td>Wet</td>
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</tbody>
</table>
Taking the Data to the Next Level
Story Tellers:

How Does El Niño Affect Us?

• We want to invite you to investigate more about what happens with El Niño in your region and to tell a story about it.

• The stories can be amazing educational tools because they connect with the student, involve the use of metaphors and are emotionally significant.

• To start, you can make a list of events,
  • Determine the lead characters for your story.
  • Decide how the characters relate to the facts of El Niño.
  • Use all your creativity!

ENSO: Japanese character that means circle. Absolute symbolizes enlightenment, fortune, elegance and creativity.
Share Your Stories: Story Maps

https://www.surveymonkey.com/r/LFVK7H3

If you have links to photos or videos you can do it through this link.

You can also share your photos and stories by sending an email to stories@smartbasins.com
Sharing Stories: H2yOu Project

- How does water affect you and your region?
- Educators and their students, local explorers and travelers can share water stories
- Read others’ stories from around the world and compare and contrast your stories

http://h2youproject.com
Sharing Stories

- Stories
- Activity with science students
- Observations
- Testimonies
- Collaborative Projects
An Example of a Story and Research

Developing awareness of the impacts of ENSO and human phenomenon activities on land cover

Proyecto Colaborativo GLOBE
Argentina, Perú y Uruguay
Región de América Latina y El Caribe
Con soporte de Portugal
Collaborative Project: El Niño

Online Collaborative Tools

Video conferences

Workshop in Buenos Aires

Workshop in Junín de los Andes
SCIENTIST SUPPORT

Dr. Madeleine Renom from Uruguay (Meteorology Specialist)

Dr. Ricardo Chrobak from Argentina (Specialist on Science Teaching)

Dr. Vasco Mantas from Portugal (Remote Sensing Specialist)
The BIG Questions

• How does the ENSO phenomenon affect each country?

• Does the ENSO phenomenon affect all countries in the same way?

• How does ENSO affect human activities and land cover?
Data Analysis - NDVI

Annual precipitation 940 mm

Neutral Period

Annual precipitation 655 mm

El Niño period

Annual precipitation 1476 mm

La Niña period
Data Analysis - NDVI

Annual precipitation 840 mm
Neutral Period - 2003

Current - September 2013

Annual precipitation 1059 mm
El Niño Period - 2002

Annual precipitation 745 mm
La Niña Period - 1999

Argentina

Annual precipitation 840 mm
Neutral Period - 2003

Current - September 2013

Annual precipitation 1059 mm
El Niño Period - 2002

Annual precipitation 745 mm
La Niña Period - 1999

Argentina

Annual precipitation 840 mm
Neutral Period - 2003

Current - September 2013

Annual precipitation 1059 mm
El Niño Period - 2002

Annual precipitation 745 mm
La Niña Period - 1999

Argentina
Data Analysis - NDVI

Neutral Period - 2003
Annual precipitation 1240 mm

Niño Period - 2009
Annual precipitation 1350 mm

Niña Period - 1999
Annual precipitation 1240 mm
Conclusions

• Vegetation cover decreases during the period of La Niña in Argentina and Uruguay and increases in Peru.

• During El Niño, rainfall is much higher in Argentina and Uruguay, while in Peru rainfall is decreased.

• The ENSO does not have the same effect on Argentina, Uruguay and Peru.
The Team

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• Ann Martin  SSAI (Virginia)
• Kevin Czajkowski  University of Toledo (Ohio)
• Oluwafemi Olawale  Nigerian Space Agency’s CGG (Nigeria)
• Claudia Caro  National Agrarian University (Peru)
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• Vasco Mantas  University of Coimbra (Portugal)
• Kristin Wegner  GLOBE Implementation Office (Colorado)
• Julie Malmberg  GLOBE Implementation Office (Colorado)
Thank You!

and Welcome!