

# YEARS OF LIVING DANGEROUSLY



## THE YEARS OF LIVING DANGEROUSLY - EDUCATIONAL COMPANION

Provided to you by the *National Wildlife Federation*

### INTRODUCTION

#### About the Series

This groundbreaking documentary event series explores the human impact of climate change. From the damage wrought by Hurricane Sandy to the upheaval caused by drought in the Middle East, *YEARS OF LIVING DANGEROUSLY* combines the blockbuster storytelling of top Hollywood movie makers with the reporting expertise of Hollywood's brightest stars and today's most respected journalists.

#### Purpose

As the educational partner for the *YEARS OF LIVING DANGEROUSLY*, *National Wildlife Federation*...

#### How To Get The Most Out Of This Educational Experience

Around the country our schools are providing students with unique, experiential, and applied learning opportunities. The Years of Living Dangerously is one of those opportunities you don't want to miss. As the series unfolds the biggest stories of our time students become emotional involved in the lives of those represented and through your instruction and facilitation will become agents of change, empowered by knowledge and evidence to create and solve our problems today and into the future.

### EPISODE 1 – LESSON 1

#### Episode Summary: "End of the Woods"

In episode two, Harrison Ford continues his investigation into the global effects of the palm oil industry and further explores the corruption that has ravaged the Indonesian landscape resulting in the country being one of the world's largest emitters of greenhouse gases through deforestation. Meanwhile, [former] Governor Arnold Schwarzenegger joins an elite team of wild-land firefighters—known as the "Hot Shots"—as they battle a new breed of forest fires, one made more deadly by climate change. He also discovers another killer wiping out trees at an even faster rate than forest fires

#### LESSON SUMMARY

Students will use the stories in episode two to better understand the long term impacts deforestation and longer wildfire seasons have on the environment

#### Story 1 – The End of the Woods

*Correspondent:* Arnold Schwarzenegger

*Location:* Pocatello & Diggs, ID, Missoula & Superior, MT, Albuquerque, NM, and Prescott, AZ

*Story:* Arnold Schwarzenegger joins an elite team of wildland firefighters as they battle a new breed of forest fire, one made more deadly by climate change. And he discovers another killer, one wiping out trees at an even faster rate than forest fires



## THE YEARS OF LIVING DANGEROUSLY - EDUCATIONAL COMPANION

### Story 2 – The conclusion of Last Stand

*Correspondent:* Harrison Ford

*Location:* Java, Sumatra, & Borneo, Indonesia,  
Mountain View & Los Angeles, CA

*Story:* YEARS correspondent Harrison Ford travels to Indonesia to investigate how corruption, illegality and the world's seemingly unquenchable appetite for palm oil have combined to ravage the landscape and make the country the world's largest emitter of greenhouse gases through deforestation.



## LEARNING OBJECTIVES EPISODE 2: LESSON 1

1. Students will examine evidence and sources of evidence to draw conclusions and make predictions.
2. Students will analyze climate maps, including positive and negative trends, correlations, and make predictions based on evidence and patterns over time.
3. Students will recognize the connection between climate change and the increase in quantity and severity of wildland fires and be able to support this understanding with scientific fact.

## TEACHER BACKGROUND

### A little science from Smokey the Bear

The word “fire” refers to the natural phenomenon that occurs whenever a combustible fuel comes into contact with oxygen at an extremely high temperature. Fire is the byproduct of a chemical reaction in which a combustible fuel is converted to a gas. A fire’s flame refers to the visual indication of light that occurs once the gas is heated, and is evidence that a fire has taken place.

From this perspective there are many ways we can use fire to teach scientific concepts to students, e.g. chemical reactions, combustion, forms of energy, etc., but for this lesson we want to focus on how climate change is affecting the length and intensity of our nation’s fire season and on the impact wildland fires have on the environment, the economy and the community.

From January 4, 2014 to April 10, 2014 there has been approximately 114, 143 acres burned in the U.S. Fire season officially begins, April 15th and with states such as California, New Mexico, and Texas in the death grips of an “extreme to exceptional” drought and almost every state east of the Mississippi suffering at various levels of drought severity, it’s time to take a look at the connection between climate change and the fires that wreak havoc on our nation’s communities and wildscapes. Utilize this lesson along with the stories in episode two to help you facilitate a meaningful learning experience for your students.



# THE YEARS OF LIVING DANGEROUSLY - EDUCATIONAL COMPANION

## MATERIALS

1. Science notebook
2. Internet access for every student or pair of students – reading articles and analyzing data

### Sites to access:

- <http://gazette.com/a-reason-the-schools-survived-campuses-feared-lost-in-black-forest-fire-are-largely-uncscathed/article/1502592>
  - <http://earthobservatory.nasa.gov/NaturalHazards/view.php?id=81473>
3. Optional: Print copy of The Gazette's story, A reason the schools survived: Campuses feared lost in Black Forest fire are largely unscathed

## VOCABULARY

Anecdotal, evidence, burn scar, carbon cycle, carbon sinks, climate, climate change, correlation, corruption, credible, deforestation, distribution, drought, equal and just, evidence, deforestation, emissions, fact, greenhouse gases, Green Peace, interconnectedness, impact, local v. global, natural cycle, opinion, peat, qualitative data, quantitative data, religion, scarcity, science, sequester, trend line, want versus need, weather

## WHAT TO DO

Before beginning assess your student's prior knowledge around events and issues presented in the lesson and in episode 2. See page 4 for a print copy or have students take the online version.

### Engage:

1. Have students watch the beginning of the Black Forest Fire as reported by the citizen who called 911. 1:06 <http://photos.denverpost.com/2013/06/12/video-black-forest-fires-first-911-caller/>
2. Have students answer the following questions in their science notebook.
  - What evidence is shown in the video that a fire is present? What evidence in the video shows the fire has spread?
  - What makes this source credible or not credible? Explain.
  - Based on this video predict the impact this fire had on the area.
  - This fire left a large burn scar. Without looking and using context define, "burn scar".
  - How could this fire, and others of the last decade be linked to climate change?



## THE YEARS OF LIVING DANGEROUSLY - EDUCATIONAL COMPANION

### Explore:

1. Watch Episode two. If you are unable to view episode two in its entirety then students will need to watch the following segments to support their learning experience.
  - Minute 1 to 2:30
  - Minute 16:57 to 19:20
  - Minute 20:40 to 21:51
  - Minute 29:48-33:07
2. As students watch each segment have them stop and answer each of the questions below in their science notebook. Encourage students to add to or modify their thinking after each segment of the episode.
  - Deforestation accounts for 20% of the world's carbon emissions, more than all types of transportation put together. Explain what happens to carbon when the deforestation technique called "slash and burn" is used – a common practice in Indonesia.
  - Provide evidence from this episode or from the segments above for how wildland fires, and fires set through slash and burn techniques effect the economy, effect communities, and effect the environment. There are several pieces of evidence for each sector and not all are explicit.
  - Explain the science behind "fighting fire with fire". This saying was used when the Hot Shots were fighting a wildland fire in Superior, MT.

### Explain:

1. There are three components that affect wildfires, temperature, wind, and moisture. Ask your students to come up with these components. Since they have watched this episode and/or segments they should be able to come up with at least one, if not all of these components. Have a brief discussion, allowing students to share the components they came up with, decide as a class which ones are valid or not valid and why.
2. Provide students with the three maps on page 10 - 12.



## THE YEARS OF LIVING DANGEROUSLY - EDUCATIONAL COMPANION



3. Have students work in groups of three to analyze the maps. They will need to work together and be able to answer questions about all three maps. Pose these questions for the students:
  - a. What is the map about?
  - b. What does the x and y axis tell you?
  - c. What does the key tell you?
  - d. Decide if the trend line is downward or upward and whether or not that is a positive or negative for our earth system.
  - e. Summarize in 2-3 sentences, what the data tells the investigator (student). In essence, put the data into words.
4. Share out as a class. Allow students from each group the opportunity to share the responses to one or two of the questions associated with one of the three maps.
5. Again students will work in their groups of three to reanalyze the maps checking for a correlation between the three data sets, temperature, precipitation, and drought. Students need to answer these two questions in their science notebooks:
  - a. Is there a correlation between the data presented in all three maps? Yes or No, and explain.
  - b. If there is a correlation is it negative or positive – meaning is this good news for earth systems or bad news? Negative or Positive, and explain.
  - c. If there is a correlation what is the connection to wildland fires? Do the trends lead us to predict an increase or decrease in wildland fires? Increase or Decrease, and explain.
  - d. What would your predictions for CO<sub>2</sub> be based on your response to question 5C.

**\*Special Note\*** Students may or may not understand the word “correlation” from math class. If needed, provide the following information for the term correlation.

“co” = together    “relation” is Latin for bring back

When two or more sets of data are strongly linked together, there appears to be a connection or relationship among the data sets.

## THE YEARS OF LIVING DANGEROUSLY - EDUCATIONAL COMPANION

6. As students are working together in their groups to answer question series 5, provide the class with charts as a way to share the direction the class is leaning in their understanding. Do this for each question for question series 5. Use tally marks or strip post-it's for the charts. Example below.
7. After students have completed working in their notebooks and have placed their responses on the 5 charts, spend some time talking about the responses to each question. You hope to see that all groups see evidence of a correlation between all maps. That this correlation negatively effects the earth's systems and will increase the quantity and severity of wildland fires. Lastly, you want students to conclude that with increased fires come increase CO2 in the atmosphere which contributes to climate change.

### Elaborate: 20 minutes

1. Take a Stand – You will provide students with a statement to which they will either agree or disagree. Assign a side of the room that will represent “agree” and a side of the room that will represent “disagree”. Explain there is no middle ground, thus the title – Take a Stand.
2. Let students know you will be asking to students to share why they chose the side they did as well as provide strong evidence for their agreement or disagreement. If you have never done this before with your students it can be like pulling teeth, but after using this type of tool you will find it has strengthen your student's ability to think critically, support their claims with evidence, as well as build their confidence.

*\*Important Note\** This activity should reflect a zero tolerance atmosphere. Students should feel free to share their voice without penalty or criticism from the class.

3. Choose from anyone or more of the following statements.
  - Losing the entire population of orangutans or elephants will have a ripple effect throughout many ecosystems.
  - Wildfires that are so hot they burn the soil are bad, but it will be okay because they will grow back some day.
  - There are no costs associated with wildfires.
  - There is evidence to support corruption within the Indonesian government.
  - I can't vote so I can't make a difference.
  - Tree rings, bark beetles, weather measurements, and personal accounts are all pieces of evidence that help support human caused climate change.



## THE YEARS OF LIVING DANGEROUSLY - EDUCATIONAL COMPANION

Evaluate: 10-15 minutes

Assessment Tools:

- A. Justified True/False – see below
- B. Online Pre/Post Quiz

### TAKE OUR ONLINE QUIZ:

1. Forests store vast amounts of carbon from the atmosphere. *True/False*
2. Palm oil is found in over 50% of the products we buy from the store. *True/False*
3. All palm plantations are harvested sustainably. *True/False*
4. Wildfires impact communities, economies, and wildlife. *True/False*
5. Tree rings can only provide evidence as to the age of a tree. *True/False*
6. Orangutans are endangered because their natural habitats are being destroyed for palm plantation production. *True/False*
7. 85% of the world's palm oil comes from Indonesia and Malaysia. *True/False*
8. Impacts related to climate change have created conditions within trees that allow the bark beetle to survive and grow and increased numbers. *True/False*
9. Biodiversity is not necessary to sustain an ecosystem. *True/False*
10. A fair and just government can be defined as one whose officials use their powers for illegitimate private gain. *True/False*



# THE YEARS OF LIVING DANGEROUSLY - EDUCATIONAL COMPANION

Name: \_\_\_\_\_

Date: \_\_\_\_\_

Period: \_\_\_\_\_

## JUSTIFIED TRUE OR FALSE STATEMENTS

### EPISODE 101 – DRY SEASON

Justified True or False Statements provide a set of claims or statements that are examined by you. You are meant to draw on evidence from what you have learned to analyze the validity of the statements, and then describe the reasoning used to decide whether each claim is true or false.

**\*NOTE\*** Please use grade appropriate spelling and grammar.

STATEMENT	T	F	WHY I THINK SO...
1. Wildfires do not hurt the economy or communities.			
2. Palm oil is found in many of the items we purchase at the grocery store.			
3. Climate change has created shifts in our temperatures which have benefited the pine bark beetle.			

Use this space to include more evidence to support your claim and or to draw a model if applicable.

## TAKING ACTIONS AND DESIGNING SOLUTIONS

Taking actions and/or designing solutions to our local, national, and global problems are a personal journey. Via Facebook /yearsofliving and Twitter @yearsofliving #YEARSproject, share how you are taking action to combat climate change or if you've designed potential solutions share those on Instagram - yearsofliving or make a Vine.

### Want to engage your school?

Check out these two programs of the National Wildlife Federation, Eco-Schools USA and Schoolyard Habitats [www.eco-schoolsusa.org](http://www.eco-schoolsusa.org) and [www.nwf.org/schoolyardhabitats](http://www.nwf.org/schoolyardhabitats)

### Want the opportunity to showcase your investigative reporting skills?

Check out National Wildlife Federation's Young Reporters for the Environment-USA

[www.yre-usa.org](http://www.yre-usa.org)



## WRITER'S CORNER

Without language there is no science. To be practicing scientists and derive new knowledge, we need language – reading, writing, talking, listening, enacting, and visualizing. Writing is one way to communicate understanding of our learning while allowing us to be creative in our delivery and provide insight and possible solutions to problems.

1. Writing from the perspective of a Hot Shot, write 5 journal entries that take place over the course of a week depicting the experiences encountered while fighting a wildfire in California.
2. Write a script for a commercial that will let consumers understand the problem and know what they can do to help solve the problem. Resources to help you with details and facts can be found at the sites below.
  - Rainforest Action Network, RAN - <http://ran.org/palm-oil>
  - World Wildlife Fund – Which everyday products contain palm oil? - <http://worldwildlife.org/pages/which-everyday-products-contain-palm-oil>
  - Green Palm Sustainability - <http://www.greenpalm.org/en/about-palm-oil/what-is-palm-oil>
3. Start a writing letter campaign to your local and state government officials about the need to address climate change in your state as a way to combat extended, harsher fire seasons. It won't be long till your vote counts! Need to know who and where to write?

<http://www.usa.gov/Contact/Elected.shtml>

## CAREERS – AGENTS OF CHANGE

Inspired by Episode 2? Thinking about your future? You have the power to make a difference today and in the future. Check out our episode 2 profile on Dr. Michael Mann and look into other careers inspired by the issues presented in Episode 2: End of the Woods.

### Episode Career Profile

Dr. Michael Mann

#### Occupation:

Director of the Penn State Earth System Science Center and a member of the Penn State University Faculty, holding joint positions in the Departments of Meteorology and Geosciences, and Earth and Environmental Systems Institute

#### Education:

B.S in Physics and Applied Math – University of California at Berkeley, M.S. in Physics – Yale University, Ph.D. in Geology & Geophysics from Yale University

**Why He's Involved:** "We've seen the tip of the iceberg, there are some pretty severe impacts from extreme weather that we think is related to climate change, greater drought, more wildfires, and a whole range of phenomena that we know are linked to climate change and are already happening."



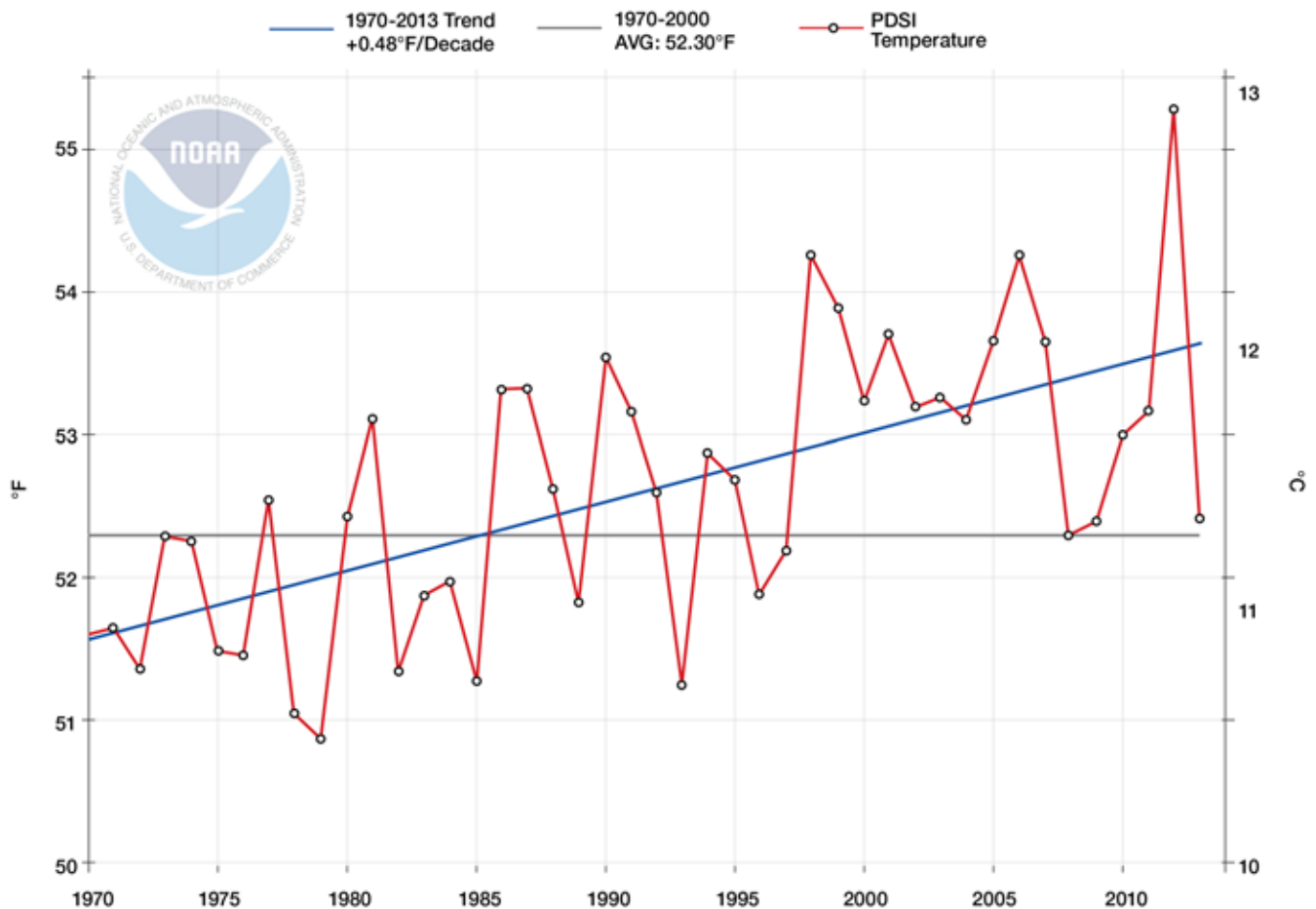
Learn more about Dr. Mann's work and contributions to climate science

<http://yearsoflivingdangerously.com/science-advisor/michael-mann-ph-d/>

# THE YEARS OF LIVING DANGEROUSLY - EDUCATIONAL COMPANION

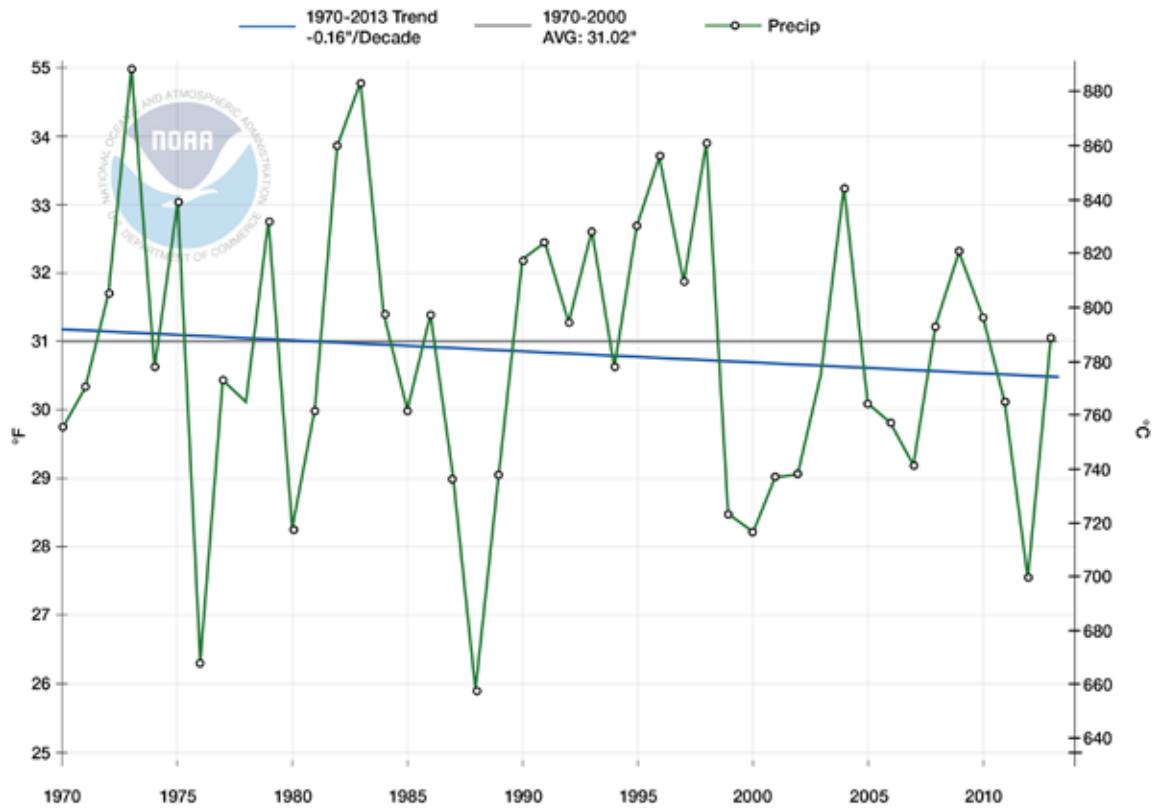
- Climatologist or Atmospheric Scientist– [<http://www.bls.gov/ooh/life-physical-and-social-science/atmospheric-scientists-including-meteorologists.htm>] Atmospheric scientists study the weather and climate and how it affects human activity and the earth in general. They may develop forecasts, collect and compile data from the field, assist in the development of new data collection instruments, or advise clients on risks or opportunities caused by weather events and climate change.
- Wildlife Biologist – <http://www.bls.gov/ooh/life-physical-and-social-science/zoologists-and-wildlife-biologists.htm> Zoologists and wildlife biologists study animals and other wildlife, and how they interact with their ecosystems. They study the physical characteristics of animals, animal behaviors, and the impacts humans have on wildlife and natural habitats.
- Forest Fire Fighter – <http://www.fs.fed.us/fire/people/employment/> or <http://www.smokeybear.com/front-line.asp> America’s wildland firefighters have earned a reputation for being among the best in the world. These dedicated men and women endure exhausting work, harsh living conditions, and long separations from friends and family to protect our nation’s natural resources from the ravages of unwanted wildfire.

Contiguous U.S., Temperature January-December

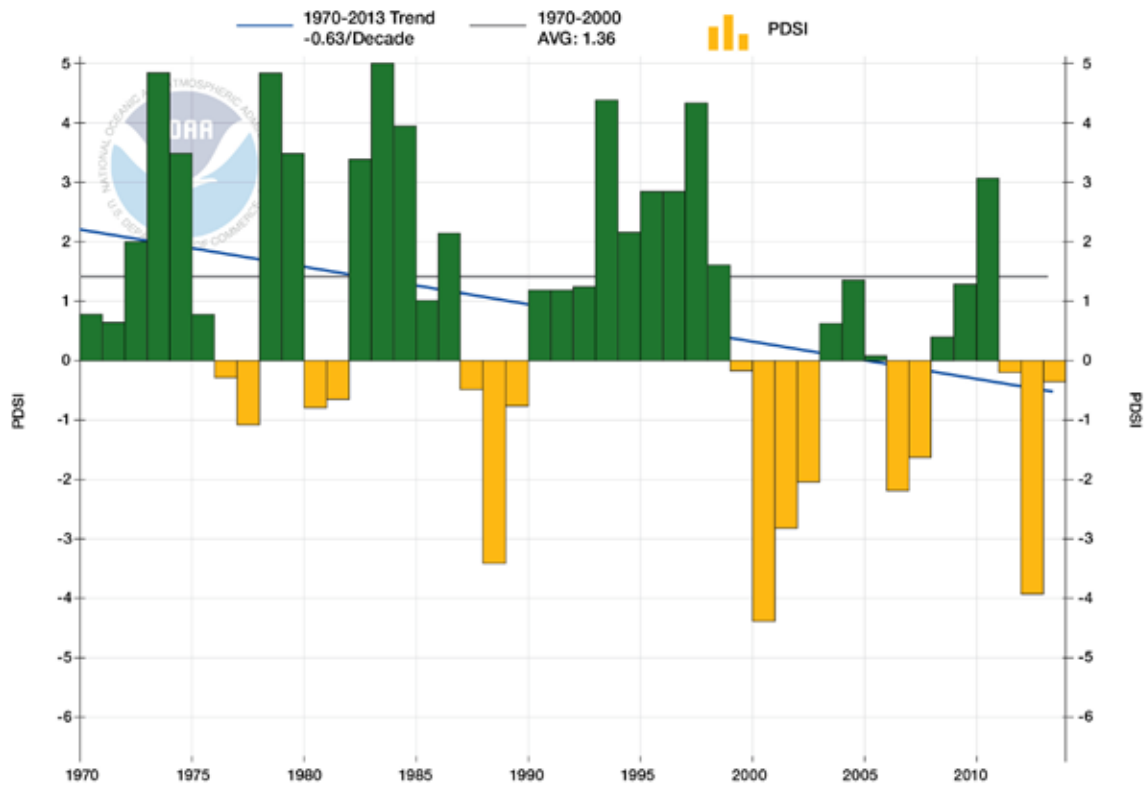


# THE YEARS OF LIVING DANGEROUSLY - EDUCATIONAL COMPANION

## Contiguous U.S., Precipitation, January-December



## Contiguous U.S., PDSI, January-December



# THE YEARS OF LIVING DANGEROUSLY - EDUCATIONAL COMPANION

21st CENTURY SKILLS	NGSS SCIENCE AND ENGINEERING PRACTICES
<b>LEARNING &amp; INNOVATION</b>	<b>1</b> Asking Questions & Defining Problems
Critical Thinking and Problem Solving	<b>2</b> Analyzing & Interpreting Data
Communication and Collaboration	<b>3</b> Using Mathematics & Computational Thinking
<b>INFORMATION, MEDIA, &amp; TECHNOLOGY SKILLS</b>	<b>4</b> Constructing Explanations & Designing Solutions
Media Literacy	<b>5</b> Engaging in Argument from Evidence
<b>LIFE &amp; CAREER SKILLS</b>	<b>6</b> Obtaining, Evaluating, & Communicating Information
Flexibility and Adaptability	
Social and Cross-Cultural Skills	

NGSS - MIDDLE SCHOOL
<b>ECOSYSTEMS: INTERACTIONS, ENERGY, AND DYNAMICS</b>
<b>Students who demonstrate understanding can:</b>
<i>MS-LS2-1.</i> Analyze and interpret data to provide evidence for the effects of resource availability on organisms and populations of organisms in an ecosystem.
<i>MS-LS2-4.</i> Construct an argument supported by empirical evidence that changes to physical or biological components of an ecosystem affect populations.
<b>EARTH'S SYSTEMS</b>
<b>Students who demonstrate understanding can:</b>
<i>MS-ESS2-5.</i> Collect data to provide evidence for how the motions and complex interactions of air masses results in changes in weather conditions.
<b>EARTH AND HUMAN ACTIVITY</b>
<b>Students who demonstrate understanding can:</b>
<i>MS-ESS3-2.</i> Analyze and interpret data on natural hazards to forecast future catastrophic events and inform the development of technologies to mitigate their effects.
<i>MS-ESS3-5.</i> Ask questions to clarify evidence of the factors that have caused the rise in global temperatures over the past century.

# THE YEARS OF LIVING DANGEROUSLY - EDUCATIONAL COMPANION

## CCSS – ELA – SCIENCE AND TECHNICAL SUBJECTS, WRITING, AND HISTORY/SOCIAL STUDIES – MIDDLE SCHOOL

### KEY IDEAS AND DETAILS

*RST.6-8.1* Cite specific textual evidence to support analysis of science and technical texts.

*RST.6-8.2* Determine the central ideas or conclusions of a text; provide an accurate summary of the text distinct from prior knowledge or opinions.

### CRAFT AND STRUCTURE

*RST.6-8.4* Determine the meaning of symbols, key terms, and other domain- specific words and phrases as they are used in a specific scientific or technical context relevant to grades 6–8 texts and topics.

### INTEGRATION OF KNOWLEDGE AND IDEAS

*RST.6-8.7* Integrate quantitative or technical information expressed in words in a text with a version of that information expressed visually (e.g., in a flowchart, diagram, model, graph, or table).

*RST.6-8.8* Distinguish among facts, reasoned judgment based on research findings, and speculation in a text.

*RST.6-8.9* Compare and contrast the information gained from experiments, simulations, video, or multimedia sources with that gained from reading a text on the same topic.

### TEXT TYPES AND PURPOSES

*WHST.6-8.1* Write arguments focused on discipline content.

*WHST.6-8.2* Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.

### PRODUCTION AND DISTRIBUTION

*WHST.6-8.4* Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.

### RESEARCH TO BUILD AND PRESENT KNOWLEDGE

*WHST.6-8.9* Draw evidence from literary or informational texts to support analysis, reflection, and research.

### RANGE OF WRITING

*WHST.6-8.10* Write routinely over extended time frames (time for reflection and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline- specific tasks, purposes, and audiences.

*RH.6-8.1* Cite specific textual evidence to support analysis of primary and secondary sources.

*RH.6- 8.4* Determine the meaning of words and phrases as they are used in a text, including vocabulary specific to domains related to history/social studies.

*RH.6-8.7* Integrate visual information (e.g., in charts, graphs, photographs, videos, or maps) with other information in print and digital texts.

*RH.6-8.8* Distinguish among fact, opinion, and reasoned judgment in a text.

# THE YEARS OF LIVING DANGEROUSLY - EDUCATIONAL COMPANION

## NCSS – MIDDLE SCHOOL

### CULTURE

#### Learners will understand:

How culture influences the ways in which human groups solve the problems of daily living;

That culture may change in response to changing needs, concerns, social, political, and geographic conditions.

#### Learners will be able to:

Evaluate how data and experiences may be interpreted differently by people from diverse cultural perspectives and frames of reference;

Draw inferences from data about the ways in which given cultures respond to persistent human issues, and how culture influences those responses.

### TIME, CONTINUITY, AND CHANGE

#### Processes – Learners will be able to:

Identify and use a variety of primary and secondary sources for reconstructing the past, such as documents, letters, diaries, maps, textbooks, photos, and other sources;

Use methods of historical inquiry to make informed decisions as responsible citizens to propose policies and take action on an issue of importance today.

#### Learners will be able to:

Acquire, organize, and analyze information and use geographic tools to draw conclusions about historic or current national and global environmental change;

Evaluate the consequences of human actions in environmental terms.

### PEOPLE, PLACES, & ENVIRONMENTS

#### Learners will understand:

The theme of people, places, and environments involves the study of the relationships between human populations in different locations and geographic phenomena such as climate, vegetation, and natural resources;

Past and present changes in physical systems, such as seasons, climate, and weather, and the water cycle, in both national and global contexts;

Human modifications of the environment;

Factors that contribute to cooperation and conflict among peoples of the nation and world; including language, religion, and political beliefs;

The use of a variety of maps, globes, graphic representations, and geospatial technologies to help investigate the relationships among people, places and environments.

#### Learners will be able to:

Acquire, organize, and analyze information and use geographic tools to draw conclusions about historic or current national and global environmental change;

Evaluate the consequences of human actions in environmental terms.

# THE YEARS OF LIVING DANGEROUSLY - EDUCATIONAL COMPANION

## NCSS CONTINUED

### INDIVIDUALS, DEVELOPMENT AND IDENTITY

#### Learners will understand:

How personal, social, cultural, and environmental factors contribute to the development and the growth of personal identity.

#### Learners will be able to:

Examine the impact of conformity and altruism on identity;

Identify the relationships between individual qualities and career or professional choices.

### INDIVIDUALS, GROUPS, AND INSTITUTIONS

#### Learners will understand:

That groups and institutions change over time;

That when two or more groups with differing norms and beliefs interact, accommodation or conflict may result;

That groups and institutions influence culture in a variety of ways.

#### Learners will be able to:

Understand examples of tensions between belief systems and governmental actions and policies;

Evaluate how groups and institutions work to meet individual needs and promote or fail to promote the common good.

### POWER, AUTHORITY & GOVERNANCE

#### Learners will be able to:

Examine persistent issues involving the rights of individuals and groups in relation to the general welfare;

Analyze and evaluate conditions, actions, and motivations that contribute to conflict and cooperation among groups and nations.

Production, Distribution, & Consumption

#### Learners will understand:

The economic choices people make have both present and future consequences.

#### Learners will be able to:

Ask and find answers to questions about the production and distribution of goods and services in the state and nation; and in a global context.

### SCIENCE, TECHNOLOGY, AND SOCIETY

#### Learners will understand:

Society often turns to science and technology to solve problems;

Our lives today are media and technology dependent;

Science and technology have had both positive and negative impacts upon individuals, societies, and the environment in the past and present;

## NCSS CONTINUED

Science and technology have changed peoples' perceptions of the social and natural world, as well as their relationship to the land, economy and trade, their concept of security, and their major daily activities;

Values, beliefs, and attitudes that have been influenced by new scientific and technological knowledge;

### **Learners will be able to:**

Ask and find answer to questions about the ways in which science and technology affect peoples' lives today in different places, and have done so in the past;

Use diverse types of media technology to read, write, create, and review a variety of messages;

Select, organize, evaluate, and communicate information about the impact of science or technology on a society today or in the past;

Use scientific findings and forms of technology to formulate possible solutions to real-life issues and problems, and predict outcomes.

## GLOBAL CONNECTIONS

### **Learners will understand:**

Spatial relationships that relate to ongoing global issues (e.g. pollution, poverty, disease, and conflict) affect the health and well-being of Earth and its inhabitants;

Global problems and possibilities are not generally caused or developed by any one nation;

### **Learners will be able to:**

Analyze examples of conflict, cooperation, and interdependence among groups, communities, regions, societies, and nations;

Explore the causes, consequences, and possible solutions related to persistent, current, and emerging global issues, such as health, resource allocation, economic development, and environmental quality;

## CIVIC IDEALS AND PRACTICES

### **Learners will understand:**

The theme of civic ideals and practices helps us to learn about and know how to work for the betterment of society;

The importance of becoming informed in order to make positive civic contributions.

### **Learners will be able to:**

Ask and find answers to questions about how to become informed and take civic action;

Build background through research in primary and secondary sources, make decisions, and propose solutions to address problems;

Develop a position on a public policy issue, and defend it with evidence.



### RESOURCES AND LINKS

- “Aftermath of Colorado’s Most Destructive Wildfire: Natural Hazards.” Aftermath of Colorado’s Most Destructive Wildfire: Natural Hazards. NASA, June 2013. Web. 10 Apr. 2014. <http://earthobservatory.nasa.gov/NaturalHazards/view.php?id=81473>.
- “Climate at a Glance.” National Climatic Data Center (NCDC). N.p., n.d. Web. 15 Apr. 2014. <http://www.ncdc.noaa.gov/cag/>.
- Department of Labor Statistics. <http://www.bls.gov/ooh/home.htm>
- “How Wildfires Work.” HowStuffWorks. HowStuffWorks.com, 29 May 2001. Web. 14 Apr. 2014. <http://science.howstuffworks.com/nature/natural-disasters/wildfire2.htm>.
- Kelley, Debbie. “‘A Reason the Schools Survived:’ Campuses Feared Lost in Black Forest Fire Are Largely Unscathed.” Colorado Springs Gazette. N.p., 21 June 2013. Web. 10 Apr. 2014. <http://gazette.com/a-reason-the-schools-survived-campuses-feared-lost-in-black-forest-fire-are-largely-unscathed/article/1502592>.
- Rainforest Action Network. Palm Oil. <http://ran.org/palm-oil>
- “Statistics.” National Interagency Fire Center. N.p., n.d. Web. 10 Apr. 2014. [http://www.nifc.gov/fireInfo/fireInfo\\_statistics.html](http://www.nifc.gov/fireInfo/fireInfo_statistics.html).
- The Front Line. <http://www.smokeybear.com/front-line.asp>
- Wildfire Science. <http://www.smokeybear.com/wildfire-science.asp>
- U.S. Forest Service. Fire & Aviation Management. <http://www.fs.fed.us/fire/people/employment/>

