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CLIMATE CHANGE CAPACITY BUILDING FOR JOURNALISTS

WORKSHOP MANUAL

Belize City, Belize
April 26 – 27, 2017

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SOCIAL MEDIA

Participants are encouraged to post workshop highlights on social media using #JCCCP and #climatejournalists hashtags. Tag @undpbarbados on Twitter and @japancaribbeanpartnership on Instagram.

WORKSHOP AGENDA

DAY 1		
8:30 a.m. - 9 a.m.	Registration/Pre-workshop evaluations	
9 a.m. – 10 a.m.	**Climate Change Communication Campaign Launch**	
10 a.m. – 10:30 a.m.	BREAK	
10:30 a.m. – 10:45 a.m.	Welcome/Introductions.	Shah
10:45 a.m. – 11:45 a.m.	**"Climate Change: Fundamentals, Myths and Realities":** Climate change involves complex science and policies that are often misunderstood. Participants will understand key terminology and concepts and learn some surprising/shocking facts about climate change in the Caribbean. We will explore where to find credible information and get tips for assessing information. **Activity:** What is real and not real in the climate change discussion?	Shah
11:45 a.m. – 1 p.m.	**Activity: "News literacy and climate change"**: Participants will work in groups to evaluate news stories about climate change and present their assessment to the group. Stories will be evaluated based on the author's use of sources, fairness, bias, story-telling techniques (re selective attention), reader relevance, visual elements.	Hosein
1 p.m. - 2 p.m.	LUNCH	
2 p.m. – 2:45 p.m.	**"Getting climate change on the front page":** Climate change issues touch many newsroom beats, including govt., business (banking/investment/insurance), tourism, environment and health.	Owen
2:45 p.m. – 3:15 p.m.	**Activity: "Beyond the nutgraph":** Following the technical session, participants will discuss in small groups possible story ideas that could be done. Participants will share/discussion some of their work about climate change and discuss challenges in their newsroom. Sharing with full group.	Owen
3:15 p.m. – 3:30 p.m.	BREAK	
3:30 p.m. – 6 p.m.	**Field Immersion – Visit to local communities of Southside, Belize City.** This community has experienced significant flooding as consequences of extreme weather and poor adaptive capacity. Journalists will have the opportunity to document the site and interview residents about their experiences.	Shah

WORKSHOP AGENDA

DAY 2		
8:30 a.m. – 9 a.m.	Welcome/Recap/Q&A/Quick review of assignment	Shah
9 a.m. - 10:15 a.m.	**"Communicating to impact behaviours":** An introduction to how journalists and climate change writers can use COMBI techniques to positively influence "climate proof" behaviours, actions and policies.	Hosein
10:15 a.m. – 10:30 a.m.	BREAK	
10:30 a.m. - 11:30 a.m.	**"Digital tools for storytelling":** Many digital tools are available to help journalists tell stories. Participants will share how they use technology in their work and learn some basic digital tools. The session will give tips for writing effective headlines, understanding social media algorithms, using cellphones for basic photography/videography and fair use best practices.	Owen
11:30 a.m. - 12:30 p.m.	**Interactive Session: "I don't get it: Interviewing technical experts":** Journalists often don't ask the right questions or ask good follow up questions. Participants will understand effective and important questions when writing about complex issues. (Guest panelist from the Belize Planners Association)	Owen
12:30 p.m. - 1:30 p.m.	LUNCH	
1:30 p.m. – 2 p.m.	**ACTIVITY: "Assignment: Develop your story".** Participants finalize their story pitches before the next activity.	
2 p.m. – 3:30 p.m.	**ACTIVITY: "Assignment: Pitch your story":** Participants will pitch story ideas that they plan to work on when they return home, including potential sources, angles and visual elements. Avoiding the MEGO Phenomenon. The group will give feedback.' (Guest panelist, TBA)	Hosein
3:30 p.m. - 4:00 p.m.	Q&A/Wrap-up/Post-workshop evaluation	Shah

WORKSHOP PRE-EVALUATION (PAGE 1)

In an effort to assess the effectiveness and impact of this training workshop, kindly complete the following evaluation form. Your responses will be invaluable in providing feedback on the overall workshop, identifying areas or emphasis and focus over the course of our two days together. (To facilitate processing, please print answers to open-ended questions)

Country: _____

Institution(s) you represent: _____

Title/Position: _____

Age 18-24 25-34 35-44 45-54 55-64 Over 64

Nationality _____ Gender M F

1. Briefly explain your journalism experience, including what beats you have primarily covered and how long, and newsroom roles you have held and how long.

2. What type of climate change stories have you covered?

3. How do you use both technology and social media for your job?

4. Briefly identify what lessons, skills and/or information you hope to gain by attending this workshop?

WORKSHOP PRE-EVALUATION (PAGE 2)

Instructions: Please respond to following statements by circling your response.

1. I have a firm enough grasp of the science of climate change and related concepts (e.g. greenhouse gases, emissions, global warming etc.) to produce high quality reporting.

Strongly Disagree Disagree NeutralAgree Strongly Agree

2. I have a comprehensive enough understanding of international, regional and national climate change policies and political discourses to produce high quality reporting.

Strongly Disagree Disagree NeutralAgree Strongly Agree

3. I know exactly where and how to access credible and useable climate change data, information and expert opinions on climate change issues for my reports/ stories/writing.

Strongly Disagree Disagree NeutralAgree Strongly Agree

4. I feel capable enough to properly assess and analyze climate change data and information and incorporate in my reporting/ writing/ stories.

Strongly Disagree Disagree NeutralAgree Strongly Agree

5. Reporting/ writing about climate change and related issues is a priority for my organization.

Strongly Disagree Disagree NeutralAgree Strongly Agree

6. I can produce reports/ news/ stories that can influence readers to take positive actions and demonstrate responsible behaviours that combat climate change.

Strongly Disagree Disagree NeutralAgree Strongly Agree

7. It is important for my organization to utilize digital media platforms (e.g. websites, blogs, twitter) to report on climate change issues.

Strongly Disagree Disagree NeutralAgree Strongly Agree

8. I am confident enough in my understanding of climate change issues to conduct interviews with technical experts on climate change topics in order to provide high quality reporting.

Strongly Disagree Disagree NeutralAgree Strongly Agree

9. I am confident enough in my climate change reporting knowledge and capabilities to successfully pitch stories/reports/ news idea to my editors.

Strongly Disagree Disagree NeutralAgree Strongly Agree

WORKSHOP FACILITATORS

Valinor is a specialized sustainability management consulting firm that helps the public, private, non-governmental and international development sectors recognize and act on environmental, social and economic risks and opportunities. Our business is strategic corporate sustainability, social and environmental responsibility from conceptualization through design to implementation, communications and reporting. We are committed to helping clients solve their unique challenges, achieve meaningful results, performance and brand recognition and build sustainable value. Our goal is to assist organizations to position sustainability as a key lever to long-term success by leveraging their assets and capabilities to drive innovation and profitable growth while striving for a positive long term economic, environmental and social impact. Valinor is headquartered in Richmond Hill, Ontario, Canada. http://valinorrc.com

Kalim Shah, Ph.D. / 1kalshah1@gmail.com
Managing Director, Valinor Research & Consulting

With almost 15 years of experience in the Wider Caribbean region and other small island developing states (SIDS), Kalim is a well-recognized climate change and energy policy expert. He has over 20 peer-reviewed research publications in these fields and is one of the most cited researchers on Caribbean climate and environmental policy in the last decade. Most recently he was a featured speaker on Caribbean climate change at the Inter-American Development Bank and the Woodrow Wilson Center in Washington DC. In 2016 Kalim was Lead Climate Change Trainer to the U.S. Department of State, Foreign Service Training Institute where he designed and conducted workshops for U.S. foreign service and federal officers being deployed/in deployment in the Caribbean/ Central American region. He was also nominated and served as Coordinating Lead author of the recent UNEP Global Environmental Outlook assessment and has provided expert consulting services in the Caribbean to the UNDP, UNEP, UNECLAC, IDB, WB and Canada Foreign Affairs. A former Fulbright Scholar with a doctorate in Environment and Public Policy from George Mason University, Kalim is a professor at Indiana University and has been on faculty at institutions in The Caribbean, Canada and the United States. He is a citizen of Trinidad & Tobago and Canada.

Everold Hosein, Ph.D. / everold@gmail.com
Media & Communications Training Expert

Everold is an international communication specialist with over 45 years of experience in strategic communication, integrated marketing communication, advocacy and public relations, communication for development (C4D), health education, and IEC (information-education-communication), related to social development issues and behavioural impact/behaviour change. He is the founder of the strategic communication methodology, COMBI – Communication for Behavioural Impact, adopted and refined at WHO since 2000 and UNICEF's Communication for Development (C4D). He has completed over 300 consulting assignments around the world including the Caribbean, for WHO, UNICEF, UNFPA, UNDP, FAO, UNIDO, UNESCO, the World Bank, Inter-American Development Bank, Rockefeller Foundation, Emirates Foundation, Asia Development Bank, USAID, the German Government, Ministry of Health/France, Ministry of the Environment/Singapore and others. Everold's expertise includes integrated marketing communication, public relations, advertising, social mobilization, health education, public education, public information campaign strategy planning, audience/market research, communication programme reviews/evaluation and new programme development, communication training, audio-visual and print materials production, radio-television-video-print media production and dissemination, media relations, and promotional special events.

Mary Owen, MPA / owenmary@gmail.com
Media & Journalism Training Expert

Mary is a writer, editor and photographer who has worked in journalism for 15 years. Currently, she is a Digital Content Producer for ABC News in Chicago, responsible for the network's digital platform in the third-largest TV market in the United States. Her other experience includes copy editing for the Global Press Journal, which features news stories by women, youth and impoverished communities around the world. Mary spent nearly 10 years as a metro reporter for the Chicago Tribune and Detroit Free Press, covering primarily social justice, policy, legislation and courts. As a professional journalism trainer, she was the Chicago market Program Manager for the national non-profit, the News Literacy Project, which teaches youth about how to be smarter news producers and consumers in the Digital Age. With passion and experience in global journalism, she was a U.S. Peace Corps volunteer in the Philippines where she first developed professional development trainings for journalism teachers and practitioners across the island nation. She serves on the board of the National Peace Corps Association and Chicago Area Peace Corps Association, where she spearheads fundraisers, social events and national service projects, as well as oversee the organization's social media presence. She is a U.S. citizen who graduated from Michigan State University with a B.A. in political science and earned an M.P.A. from Indiana University. (Twitter: @MsMaryOwen)

1. WORKSHOP SCHEDULE

DAY 1

Session 1:

Presentation:	Climate Change: Fundamentals and Myths vs. Reality
Descriptor:	Climate change involves complex science and policies that are often misunderstood. Participants will understand key terminology and concepts and learn some surprising/shocking facts about climate change in Caribbean. We will explore where to find credible information (databases, cheat sheets) and get tips for assessing information. **ACTIVITY:** The internet has a plethora of information, some of which is confusing and misleading. What is real and not real in the climate change discussion?
Duration:	1 hour
Lead Trainer:	Shah

Session 2:

Activity:	News literacy and climate change
Descriptor:	Participants will work in groups to evaluate news stories about climate change and present their assessment to the group. Stories will be evaluated stories based on the author's use of sources, fairness, bias, story-telling techniques (re selective attention), reader relevance, visual elements.
Duration:	1 hour, 15 minutes
Lead Trainer:	Hosein

Session 3:

Presentation:	Getting climate change on the front page
Descriptor:	Climate change issues touch many newsroom beats, including government, business (banking/investment/insurance), tourism, environment and health. Participants will understand key components of quality climate change journalism (Storytelling/human impact, credible sources, fairness, no bias, visual elements, call to action) and get tips for finding/pitching climate change stories to editors.
Duration:	45 minutes
Lead Trainer:	Owen

Session 4:

Activity:	Beyond the nutgraph
Descriptor:	Participants will discuss in small groups possible story ideas that could be developed, given the technical and policy oriented sessions engaged in earlier. Participants will share/discussion some of their work about climate change and discuss challenges in their newsroom. Sharing with full group.
Duration:	30 minutes
Lead Trainer:	Owen

Session 5:

Structured Field Visit:	Exploring Belize City
Descriptor:	Explore and research Belize City for possible climate change story ideas and begin to develop story ideas about journalists' own community that they can work on when returning home. Emphasis is placed on 'the human story', community, climate inequalities and monitoring progress.
Duration:	2 hours 45 minutes
Lead Trainer:	Shah
Facilitators/ Guides:	UNDP representatives will guide participants through projects and activity sites

Day 2

Session 6:

Presentation:	Communicating to impact behaviours
Descriptor:	An introduction to how journalists and climate change writers can use COMBI techniques to positively influence "climate proof" behaviours, actions and policies.
Duration:	60 minutes
Lead Trainer:	Hosein

Session 7:

Presentation:	Digital tools for storytelling
Descriptor:	Many digital tools are available to help journalists tell stories. Participants will share how they use technology in their work and learn some basic digital tools. The session will give tips for writing effective headlines, understanding social media algorithms, using cellphones for basic photography/videography and fair use best practices.
Duration:	60 minutes
Lead Trainer:	Owen

Session 8:

Activity:	I don't get it: Interviewing technical experts
Descriptor:	Journalists often do not ask the right questions or ask good follow up questions. Participants will understand effective and important questions when writing about complex issues.
Duration:	60 minutes
Lead Trainer:	Owen
Panelists:	One (1) representative each from the University of Belize and the Caribbean Community Climate Change Centre

Session 9:

Activity:	Develop and Pitch your story
Descriptor:	Participants will pitch story ideas that they plan to work on when they return home, including potential sources, angles and visual elements. Avoiding the MEGO Phenomenon. The group will give feedback.
Duration:	90 minutes, plus 30 minutes participant prep
Lead Trainer:	Hosein

SESSION CURRICULA

Session 1:

Presentation:	Climate Change: Understanding the Fundamentals
Descriptor:	Climate change involves complex science that is often misunderstood. Participants will understand key terminology and concepts and learn some surprising/shocking facts about climate change in Caribbean.
Duration:	45 minutes
Lead Trainer:	Shah

Course Description

This session provides participants with an overview /recap of the science of climate change and the debates, policy issues and measures designed to mitigate and adapt to global warming and increased climate variability. Changes in climate and climate variations in the past and present are explained in relation to natural and anthropogenic causes, while environmental, economic and social impacts are considered at a variety for geographical scales and for selected mitigation and adaptation options.

The first section examines how weather patterns are changing today, and how such changes can affect natural systems, human society and the economy. Scientific and proxy evidence for climate change both in the past and present are examined in detail. The Ice Age is used as an example of the dramatic impact of past climates on the earth, while climate modelling and climate change projections offer scenarios for the future. The modern climate system is examined in relation to spatial and temporal oscillations such as El Nino. The earth's natural greenhouse effect introduces an analysis of global warming and it likely impacts, while the increase in the magnitude of extreme weather events such as drought and tropical storm suggests increasing variability of climate.

The climate change debate covers issues relating to science and political economy and the arguments of climate change sceptics. Specific mitigation policies such as carbon markets and carbon trading are examined in the context of natural carbon reservoirs and carbon recycling, while case studies of Caribbean examples of climate mitigation and adaptation conclude the course.

Training Objectives:

1. Review the evidence for climate change past and present, and describe how global climates have changed during the recent geological past.
2. Explain the main meteorological processes which determine the earth's modern climate system and account for spatial and temporal oscillations such as El Nino.
3. Explain the physical processes which create the natural greenhouse effect, evaluate the impact of industrialization on greenhouse gas emissions, and use data to show how they are contributing to global warming.

4. Show how climate modelling is used to derive climate change projections and describe some of the limitations of current models.
5. Examine the impacts of global warming and increasing climate variability on environmental, economic and social systems at different geographical scales.
6. Review the main arguments in the climate change debate and assess the contributions of the IPCC Reports.
7. Explain carbon cycling and carbon reservoirs and show how these ideas have influenced global mitigation policies such as carbon markets and emissions trading.
8. Suggest how climate change mitigation and adaption projects can be mobilized at the local community level the wider Caribbean region.

RESOURCES/REFERENCES

Climate Change – Caribbean Situation

- Caribbean Community Climate Change Center, Belize
    - http://www.caribbeanclimate.bz/
    - https://www.youtube.com/watch?v=NkJQM8Ihad4

http://unccelearn.org/

http://climate.nasa.gov/climate_resources/25/

https://www3.epa.gov/climatechange/links.html

http://www.amnh.org/exhibitions/climate-change/climate-change-promos/for-educators/climate-change-online-resources/

http://www.aag.org/cs/teachingclimatechange

http://www.geoknow.net/anthroposphere/climatechange.html

Climate Variability and Observed Impacts

- The Caribbean has experienced significant sequences of climate events in the last 10-15 years.
- Highest hurricane activity (2005-2008)
- Highest rise in sea surface temperatures
- Most widespread, severe drought (2009-2011)

Direct effects of high intensity and frequency of extreme weather events plus **linkages** with natural cyclical events such as El Nino.

Potential Impacts

- With a 1.5°C - 2.0°C rise in global temperature:
- Decreased length rainy season; increased length dry season (~10% by 2050)
- ~20% increased frequency of intense rains
- 30-50cm seal level rise by 2080
- Increased intensity and strengthened hurricanes
- Increased aridity and drought in prone areas

Impacts on Tourism

Direct Climate Impacts e.g. length and quality of tourist season, weather extremes, food and water supply and the overall impact of these on tourism demand

Indirect Environment Change Impacts e.g. water availability, bio-diversity loss, altered agricultural production, increased hazards, coastal erosion and inundation, increase in vector-borne Diseases

Impacts of **Mitigation Policies** on Tourist Mobility: Mitigation policies to Reduce GHG emission and the impact on tourist flows and cost of transport

Indirect Societal Change Impacts: potential economic impact to mitigate CC measures resulting in curtailed economic growth and less discretionary income to grow tourism

Theory becomes reality: Dengue, Zika

Over the coming decades, global warming is likely to increase the range and speed of the life cycle of the particular mosquitoes carrying these viruses, encouraging their spread deeper into temperate countries like the United States.

KEY TERMS YOU NEED TO KNOW TO UNDERSTAND CLIMATE CHANGE

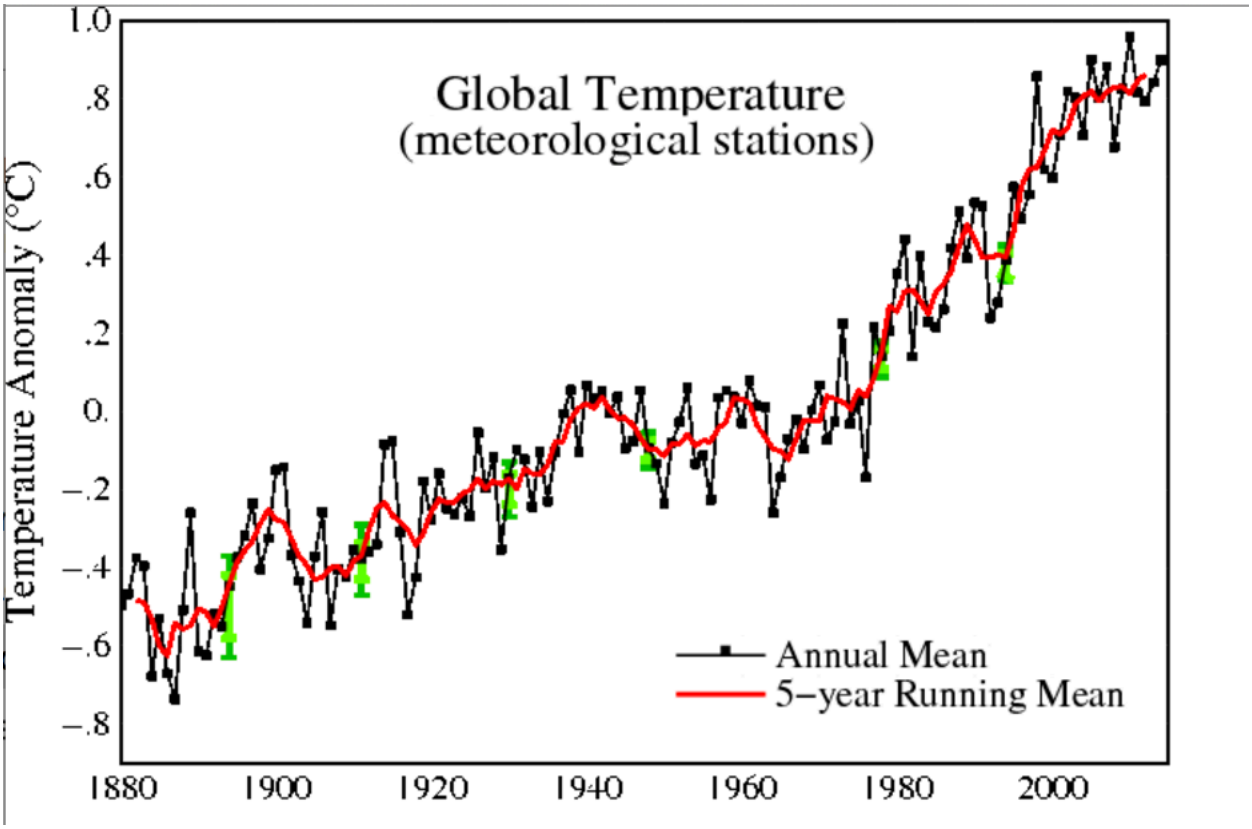
1. CARBON DIOXIDE (CO2)
The chemical compound carbon dioxide (also known by its shorthand CO2) is the primary greenhouse gas and driver of climate change. It's an integral part of life cycles on earth, produced through animal respiration (including human respiration) and absorbed by plants to fuel their growth, to name just two ways. Human activities are drastically altering the carbon cycle in many ways. Two of the most impactful are: one, by burning fossil fuels and adding more carbon dioxide into the atmosphere; and two, by affecting the ability of natural sinks (like forests) to remove carbon dioxide from the atmosphere.

2. GREENHOUSE GAS
A greenhouse gas is a chemical compound found in the Earth's atmosphere, such as carbon dioxide, methane, water vapor, and other human-made gases. These gases allow much of the solar radiation to enter the atmosphere, where the energy strikes the Earth and warms the surface. Some of this energy is **reflected back towards space as infrared radiation**. A portion of this outgoing radiation bounces off the greenhouse gases, trapping the radiation in the atmosphere in the form of heat. The more greenhouse gas molecules there are in the atmosphere, the more heat is trapped, and the warmer it will become.

3. EMISSIONS
In the climate change space, emissions refer to greenhouse gases released into the air that are produced by numerous activities, including burning fossil fuels, industrial agriculture, and melting permafrost, to name a few. These gases cause heat to be trapped in the atmosphere, slowly increasing the Earth's temperature over time.

4. WEATHER VS CLIMATE
It's all about timing when it comes to differentiating **weather and climate**. Weather refers to atmospheric conditions in the short term, including changes in temperature, humidity, precipitation, cloudiness, brightness, wind, and visibility.
While the weather is always changing, especially over the short term, climate is the average of weather patterns over a longer period of time (usually 30 or more years). So the next time you hear someone question climate change by saying, "You know it's freezing outside, right?", you can gladly explain the difference between weather and climate.

5. GLOBAL WARMING VS CLIMATE CHANGE
Many people use these two terms interchangeably, but we think it's important to acknowledge their differences. Global warming is an increase in the Earth's **average surface temperature** from human-made greenhouse gas emissions.



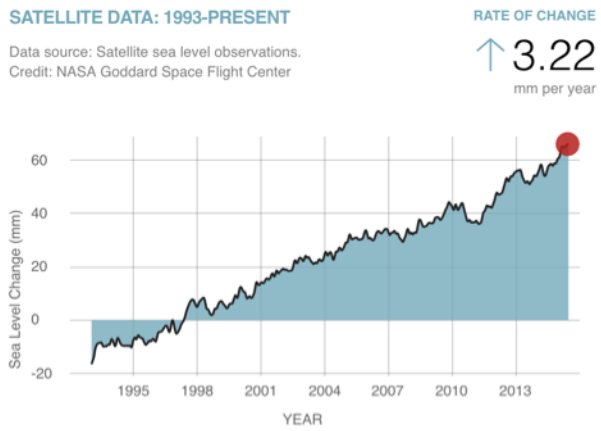
On the other hand, climate change refers to the **long-term changes in the Earth's climate**, or a region on Earth, and includes more than just the average surface temperature. For example, variations in the amount of snow, sea levels, and sea ice can all be consequences of climate change.

6. FOSSIL FUELS

Fossil fuels are sources of non-renewable energy, formed from the remains of living organisms that were buried millions of years ago. Burning fossil fuels like **coal and oil to produce energy** is where the majority of greenhouse gases originate. As the world has developed and demand for energy has grown, we've burned more fossil fuels, causing more greenhouse gases to be trapped in the atmosphere and air temperatures to rise.

7. SEA-LEVEL RISE

Sea-level rise as it relates to climate change is **caused by two major factors**. First, more water is released into the ocean as glaciers and land ice melts. Second, the ocean expands as ocean temperatures increase. Both of these consequences of climate change are accelerating sea-level rise around the world, putting millions of people who live in coastal communities at risk.



8. GLOBAL AVERAGE TEMPERATURE

Global average temperature is a long-term look at the Earth's temperature, usually over the course of 30 years, on land and sea. Because weather patterns vary, causing temperatures to be higher or lower than average from time to time due to factors like ocean processes, cloud variability, volcanic activity, and other natural cycles, scientists take a longer-term view in order to consider all of the year-to-year changes.

9. RENEWABLE ENERGY

Renewable energy is energy that comes from naturally replenished resources, such as sunlight, wind, waves, and geothermal heat. By the end of 2014, renewables were estimated to make up almost 28% of the world's power generating capacity, enough to supply almost 23% of global electricity. Because renewables don't produce the greenhouse gases driving climate change, shifting away from fossil fuels to renewables to power our lives will put us on the path to a safe, sustainable planet for future generations.

10. COP AND UNFCCC

These two abbreviations are best described together as they work hand-in-hand. The United Nations Framework Convention on Climate Change (UNFCCC) is an environmental treaty that nations joined in 1992, with the goal of stabilizing greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous human interference with the climate system.

Meanwhile, the Conference of the Parties (COP) to the UNFCCC is a yearly international climate conference where nations assess progress and determine next steps for action through the UNFCCC treaty. This year marks the 21st Conference of the Parties (COP 21), which will be held in Paris beginning November 30. Here, a historic global agreement to reduce greenhouse gas emissions is on the table and, if passed, will mark a landmark achievement in the fight against climate change.

11. INDC

INDC stands for "Intended Nationally Determined Contribution." In preparation for the UN climate talks later this year, countries have outlined what actions they intend to take beginning in 2020 under a proposed global climate agreement. These plans are known as INDCs, which will play a big part in moving us forward on the path toward a low-carbon, clean energy future.

12. IPCC
IPCC is the acronym for the Intergovernmental Panel on Climate Change. First set up in 1988 under two UN organizations, the IPCC surveys the research on climate change happening all around the world and reports to the public about the current state of our scientific knowledge.

13. PPM
PPM stands for "parts per million," which is a way of expressing the concentration of one component in the larger sample. Climate scientists and activists use the term to describe the concentration of pollutants, like carbon dioxide or methane, in the atmosphere. Many scientists agree that carbon dioxide levels should be at 350 PPM to be considered safe; **we're at about 400 PPM right now** and this number is growing by approximately 2 PPM each year.

14. PRE-INDUSTRIAL LEVELS OF CARBON DIOXIDE
Pre-industrial levels of carbon dioxide refers to carbon dioxide concentration in the atmosphere prior to the start of the Industrial Revolution. Scientists estimate these pre-industrial levels were about 280 PPM, well below where we are today.

15. METHANE
Methane is a chemical compound that's the main component of natural gas, a common fossil fuel source. Just like carbon dioxide, methane is a greenhouse gas that traps heat in the atmosphere. Methane accounts for about 10 percent of all US greenhouse gas emissions (using 2013 figures), second only to carbon dioxide.
Many people don't understand the negative effects of methane as an alternative to other fossil fuels. While methane doesn't stay in the atmosphere as long as carbon dioxide, **it absorbs 84 times** more heat, making it very harmful to the climate.

16. MITIGATION
Mitigation refers to an action that will reduce or prevent greenhouse gas emissions, such as planting trees in order to absorb more CO2. It can also include developing and deploying new technologies, using renewable energies like wind and solar, or making older equipment more energy efficient.

Sources:

https://www.climaterealityproject.org/

Session 2:

Activity:	News literacy and climate change
Descriptor:	Participants will work in groups to evaluate news stories about climate change and present their assessment to the group. Stories will be evaluated stories based on the author's use of sources, fairness, bias, story-telling techniques (re selective attention), reader relevance, visual elements.
Duration:	1 hour, 15 minutes
Lead Trainer:	Hosein

Delivery:

10 minutes	Trainer provides guidance on evaluation criteria for assessing the quality of climate change news stories.
20 minutes	Participants break into approx. 8 groups of 4-5 persons each. Each group is provided with four (4) media news stories on climate change, on which they will complete a rapid evaluation based on the evaluation criteria guidance provided. Each of the media stories will be evaluated by four (4) groups for a comparative discussion.
20 minutes	Trainer goes through the evaluation of the news stories, hearing about the evaluation done by the groups.
10 minutes	Trainer summarizes key points and lesson learned

RESOURCES/REFERENCES

- The Phenomenon and Challenge of “Selective Attention”: The power of the reader/viewer/listener to decide selectively to attend or not attend to a story
- The Journalist’s Skills at Beating Selective Attention: That Headline, That Lead, And What Follows
- The Journalist’s Skill at Beating the MEGO Phenomenon: “My Eyes Glaze Over”
- The Personal Angle: Any Personal Behavioural Implications? And is this relevant at all?
- Other criteria: Sources, Fairness/Bias, Story-telling techniques and the human interest dimension, reader relevance, visual elements.

Session 3:

Presentation: Getting climate change on the front page
Descriptor: Climate change issues touch many newsroom beats, including govt., business (banking/investment/insurance), tourism, environment and health. Participants will understand key components of quality climate change journalism (Storytelling/human impact, credible sources, fairness, no bias, visual elements, call to action) and get tips for finding/pitching climate change stories to editors.
Duration: 45 minutes
Lead Trainer: Owen

Summary: Climate change is an important story for journalists. Readers want and need to be informed about these issues, however, the science, policy and issues can be complicated. Journalists play a significant role in educating citizens about the issue. This session will outline components of good climate change stories and how they can get their editor's support.

Learning Objectives

- Understand key elements of good story-telling about climate change
- Learn tips for pitching and developing stories for their publications

Outline

- Readers are interested in climate change
- How do we reach readers?
    - Human impact
        - Good story-telling
    - Simple language
        - Avoid complicated jargon and science
        - Reporters must become experts
        - Only compelling data/don't overwhelm readers
    - Strong nut graph
        - A nutgraph explains to readers "why they should care"
    - Sources
        - Credible sources
        - Fair/unbiased reporting/writing
- Pitching stories
    - Pre-reporting
        - Do some reporting before pitching stories
    - Talking to your editor
        - Working with photographers/web producers
        - Working with other departments, i.e., business, metro, etc.

REFERENCES/RESOURCES

- Readers are interested in climate change
    - Climate Change Knowledge, Attitudes and Practices Study - St. Lucia 2016 (http://www.adaptation-undp.org/resources/reports/climate-change-knowledge-attitudes-and-practices-study-st-lucia-2016)
    - Climate Change Knowledge, Attitudes and Practices Study - St. Vincent and the Grenadines, 2017 (http://www.adaptation-undp.org/resources/reports/climate-change-knowledge-attitudes-and-practices-study-st-vincent-and-grenadines)
    - Climate Change Knowledge, Attitudes and Practices Study - Jamaica, 2016 (http://www.adaptation-undp.org/resources/reports/climate-change-knowledge-attitudes-and-practices-study-jamaica-2016)
    - Climate Change Knowledge, Attitudes and Practices Study - Guyana, 2016 (http://www.adaptation-undp.org/resources/reports/climate-change-knowledge-attitudes-and-practices-study-guyana-2016)
    - Climate Change Knowledge, Attitudes and Practices Study - Grenada, 2016 (http://www.adaptation-undp.org/resources/reports/climate-change-knowledge-attitudes-and-practices-study-grenada-2016)
    - Climate Change Knowledge, Attitudes and Practices Study - Dominica, 2016 (http://www.adaptation-undp.org/resources/reports/climate-change-knowledge-attitudes-and-practices-study-dominica-2016)
    - Climate Change Knowledge, Attitudes and Practices Study - Belize, 2016 (http://www.adaptation-undp.org/resources/reports/climate-change-knowledge-attitudes-and-practices-study-belize-2016)
    - Climate Change Knowledge, Attitudes and Practices Study - Suriname, 2016 (http://www.adaptation-undp.org/resources/reports/climate-change-knowledge-attitudes-and-practices-study-suriname-2016)

- How do we reach readers? ---- SHOW HUMAN IMPACT

May Byrou, the owner of Aunt May's Fish Place, stands near her restaurant at Jamaica's Hellshire Beach. Byrou estimates that the erosion of the beach has reduced her business by 25 to 50 percent. Thomson Reuters Foundation/Rebekah Kebede

HUMAN IMPACT

ENERGY & ENVIRONMENT

In America's Heartland, Discussing Climate Change Without Saying 'Climate Change'

By HIROKO TABUCHI JAN. 28, 2017

Doug Palen, a fourth-generation grain farmer in Glen Elder, Kan., uses a no-till farming method that prevents erosion and keeps carbon in the soil.
Christopher Smith for The New York Times

GLEN ELDER, Kan. — Doug Palen, a fourth-generation grain farmer on Kansas' wind-swept plains, is in the business of understanding the climate. Since 2012, he has choked through the harshest drought to hit the Great Plains in a century, punctuated by freakish snowstorms and suffocating gales of dust. His planting season starts earlier in the spring and pushes deeper into winter.

To adapt, he has embraced an environmentally conscious way of farming that guards against soil erosion and conserves precious water. He can talk for hours about carbon sequestration — the trapping of global-warming-causing gases in plant life and in the soil — or the science of the beneficial microbes that enrich his land.

In short, he is a climate change realist. Just don't expect him to utter the words "climate change."

"If politicians want to exhaust themselves debating the climate, that's their choice," Mr. Palen said, walking through fields of freshly planted winter wheat. "I have a farm to run."

MASTER THE LANGUAGE/BE AN EXPERT, THEN USE SIMPLE LANGUAGE

SIMPLE LANGUAGE

- Journalists must master the language
  - Reporters must become experts
- Avoid complicated jargon and science
- Don't overwhelm readers with data
  - Only use compelling data

How would you explain it to your mother?

Be clear about the science

- The overarching issue is as settled as things get in science: The planet is warming and humans are largely responsible. As a result, the earth is warming. New, contradictory evidence could come along -- science is always subject to revision. **But the idea that humans are causing climate change is not scientifically controversial.**

- Write a strong nut graph

The NUT GRAPH has several purposes:

- It justifies the story by telling readers **why they should care.**
- It provides a transition from the lead and explains the lead and its connection to the rest of the story.
- It often tells readers why the story is timely.
- It often includes supporting material that helps readers see why the story is important.

Tips about NUT GRAPHS

- Never give away the ending of the story.
- Anticipate the questions that readers might be asking early in a story, and address them.
- Give readers a concrete reason or reasons to move on.
- Should be in 2nd to 5th paragraph
- FINALLY, is it clear enough that **YOUR MOM WOULD UNDERSTAND?**

- **HAVING TROUBLE? Talk to someone about your story. Think about how you explained the story to them. What did you highlight?**

SAMPLE NUT GRAPH

Belize reef die-off due to climate change?

http://news.nationalgeographic.com/news/2003/03/0325_030325_belizereefs.html

NATIONAL GEOGRAPHIC NEWS

REPORTING YOUR WORLD DAILY

MAIN ANIMAL NEWS ANCIENT WORLD ENVIRONMENT NEWS CULTURES NEWS SPACE/TECH NEWS WEIRD PHOTOS VIDEO

Belize Reef Die-Off Due to Climate Change?

Brian Handwerk with Lauri Hafvenstein
for National Geographic News
March 25, 2003

Tim McClanahan, a conservation zoologist with the Bronx, New York-based Wildlife Conservation Society, has studied the coral barrier reefs of Belize for the past decade.

McClanahan said he was "hooked" when he noticed that the Belize Barrier Reef System, the world's second largest, showed signs of ill health similar to damaged reefs near densely populated locations like Jamaica. "Why would these reefs out in the middle of the Caribbean, far from land, located near a small country with a small population, not look like they should?" McClanahan recalled.

Printer Friendly
Email to a Friend

SHARE What's This?
Digg
StumbleUpon
Reddit

RELATED
Expedition to Explore Belize's Barrier Reef
Belize Biologist Leads Fight to

For years, scientists have known that localized human factors such as pollution and overfishing damage coral reefs. But what about the effects of global environmental changes? Many reefs lay close to densely populated countries, making it difficult to distinguish between changes caused directly by humans from those with more widespread origins.

When the health of Belize's reefs began to decline, McClanahan and other scientists saw a unique opportunity. "The Belize situation is quite unique, and it suggests global change because the country is small and the pollution and human effects are less than they might be

LATEST PHOTO NEWS
SPACE PHOTOS THIS WEEK: Tiny Galaxy, Sun's Iron, More

LATEST VIDEO NEWS
Stuck Mars Rover About to Die?

Most Viewed News

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SPACE PHOTOS THIS WEEK: Tiny Galaxy, Sun's Iron, More

SPACE PHOTOS THIS WEEK: Tiny Galaxy, Sun's Iron, More

For years, scientists have known that localized human factors such as pollution and overfishing damage coral reefs. But what about the effects of global environmental changes? Many reefs lay close to densely populated countries, making it difficult to distinguish between changes caused directly by humans from those with more widespread origins.

When the health of Belize's reefs began to decline, McClanahan and other scientists saw a unique opportunity. "The Belize situation is quite unique, and it suggests global change because the country is small and the pollution and human effects are less than they might be in many other Caribbean countries,"

JOURNALISM ETHICS

- Fair/unbiased reporting/writing
  - Watch your language
- Don’t make promises about coverage
- Avoid the temptation to hype new research findings
- Always ask who paid for research
- FOLLOW THE MONEY: Who benefits from a new project with environmental concerns? Who has been looking the other way?

PITCHING STORIES

- Pre-reporting – DO IT!
  - Do at least one interview before talking to your editor
  - Do give your editor a list of who you will be talking to
  - Do GET OUT OF THE OFFICE!
    - Routing government meetings are gold mines!
  - Do work with other departments
    - Is this an opportunity for collaboration with business, entertainment or metro reporters?
  - Do work with photographers/web producers/graphics
    - Good photos can land you on the front page
    - Photo galleries help with web traffic

Find ways to engage the public

- Crowdsourcing
  - Social media
  - What's your story?
- Events
  - Panel discussions/town halls
- Investigative reporting
  - Changing public policy/people's lives

AP memo: Instead of climate change skeptics, use 'those who reject mainstream climate science'

http://www.poynter.org/2015/ap-memo-instead-of-climate-change-skeptics-use-those-who-reject-mainstream-climate-science/374470/

The Associated Press updated its global warming entry on Tuesday, according to a memo.

> ***We are adding a brief description of those who don't accept climate science or dispute the world is warming from man-made forces:***
>
> ***Our guidance is to use climate change doubters or those who reject mainstream climate science and to avoid the use of skeptics or deniers.***

Paul Colford, vice president and director of media relations at the AP, wrote about the memo from Stylebook editors Sally Jacobsen, Dave Minthorn and Paula Froke. The memo also included a bit about how the AP makes decisions on stylebook changes.

Here's the full climate change entry:

GLOBAL WARMING: The terms global warming and climate change can be used interchangeably. Climate change is more accurate scientifically to describe the various effects of greenhouse gases on the world because it includes extreme weather, storms and changes in rainfall patterns, ocean acidification and sea level. But global warming as a term is more common and understandable to the public.

Though some public officials and laymen and only a few climate scientists disagree, the world's scientific organizations say that the world's climate is changing because of the buildup of heat- trapping gases, especially carbon dioxide, from the burning of coal, oil and gas. This is supported by more than 90 percent of the peer-reviewed scientific literature.

In a joint publication in 2014, the U.S. National Academy of Sciences and the Royal Society of the United Kingdom stated: "Human activities – especially the burning of fossil fuels since the start of the Industrial Revolution – have increased atmospheric carbon dioxide concentrations by about 40 percent, with more than half the increase occurring since 1970. Since 1900, the global average surface temperature has increased by about 0.8 degrees Celsius (1.4 degrees Fahrenheit). This has been accompanied by warming of the ocean, a rise in sea level, a strong decline in Arctic sea ice, and many other associated climate effects. Much of this warming has occurred in the last four decades."

To describe those who don't accept climate science or dispute the world is warming from man-made forces, use climate change doubters or those who reject mainstream climate science. Avoid use of skeptics or deniers.

Session 4:

Activity:	Beyond the nutgraph
Descriptor:	Participants will discuss in small groups possible story ideas that could be developed, given the technical and policy oriented sessions engaged in earlier. Participants will share/discussion some of their work about climate change and discuss challenges in their newsroom. Sharing with full group.
Duration:	30 minutes
Lead Trainer:	Owen

Summary: After a morning of technical sessions about the complicated science and policy of climate change, journalists will start to think about how they will implement the knowledge in their own newsrooms. The session will also allow journalists to talk about newsroom challenges and brainstorm how to work with limited resources or difficult editors.

Learning Objectives

- Brainstorm ideas about stories that could be done in their community
- Share stories about climate change coverage in other countries and news organization
- Discuss challenges in each journalists' newsroom and ways to work around/solve them
- Network with other journalists

Outline

1. (15 Minutes) In groups, journalists will discuss:
    a. How to localize stories based on the morning technical sessions about the science and policy of climate change
    b. Challenges they face covering environmental issues

2. (15 Minutes) Groups will share with larger group. Facilitator will write story ideas on the board and help brainstorm ideas for overcoming challenges

SAMPLE CLIMATE CHANGE STORY (Included in Reference Articles)

Iconic Jamaican beach vanishing as pollution, climate change take toll
http://news.trust.org/item/20170327010812-7x2ms/

POYNTER NEWSU: Principals of good climate change coverage

http://www.newsu.org/angel/content/internews_climateChange09/index2.php?m=5&s=1&t=0

1. Do not conflate science and policy.

They are separate things. Science informs policymaking but it does not dictate what policies should be chosen. If a climate activist tells you that the latest research on the risk of dangerous impacts shows that the U.S. Senate must pass cap-and-trade legislation, know that scientific research can do no such thing. What it may be able to show, however, is this: If steps are not taken to prevent global average temperature from rising more than a certain amount, the risk of dangerous impacts will increase substantially. That statement does require that action be taken. Different people may reach different conclusions, depending on what they value.

2. Never refer to "the global warming debate," or the "climate change debate" and never write that the "debate is settled."

There is no single debate; there are separate debates within science, within policy and within economics, and about how scientific findings should guide policy. By conflating the two, you mislead your audience into thinking that nothing is settled. So, which debate are you talking about? Be specific. If you find yourself writing something like this, you are probably referring to the big attribution question: Are humans causing global warming? Yes, we are (See Tip No. 3). That's settled. But the policy debates certainly are not.

3. Keep in mind that some big debates in climate science have long been settled even though others have not.

Despite what a small handful of skeptics with credible expertise in climate science say, the big, overarching "attribution" issue is as settled as things get in science: The planet is warming and humans are largely responsible. Moreover, this is already causing myriad impacts such as melting of glaciers and ice sheets. That is not to say that new, contradictory evidence will never come along. Science is always subject to revision. But the idea that humans are causing climate change is not scientifically controversial, period.

4. Do not treat different environmental processes as one.

Doing this often highlights debate where in fact there may be significant consensus. For example, scientists may agree that significant melting of ice in Greenland is occurring. But whether melting is occurring is actually a different — if related — question than how long it might take for sea levels to rise to a point that would threaten major cities. Be very clear what process you are talking about in your coverage, and make sure to accurately describe the status of scientific knowledge in that particular field.

5. Don't get stuck in "global warming: yes or no?" coverage.

Opponents of action on climate change want to keep it stuck there, but it is not your job to oblige them. It is your job to go where the story is heading. And much of the debate that is relevant to your audience is now centered around policy — what should we do, if anything, about climate change?

- Although there are still many scientific questions to be answered, the center of gravity of the climate change story has shifted to policy. And remember that policy action can proceed even though significant scientific uncertainties remain.
- Along these lines, keep in mind this quote from the late statistician Lincoln Moses: "There are no facts about the future." And even though that is true, in countless realms of human endeavor we routinely make decisions about the future. For example, governments routinely make immensely consequential decisions about fiscal policy under great uncertainty. And there is no reason why climate change should be any different.

6. Avoid being a stenographer or playing judge and jury; be a referee.

Don't simply balance opposing claims (in either science or policy) with comments from dueling experts. And if you are not a columnist or blogger, don't simply pass judgment on who is right and wrong. Be a referee who subjects conflicting claims to independent scrutiny. Examine the evidence — in the form of primary literature, such as scientific papers and reports. And enlist the help of impartial experts who can help you put claim from partisans wielding conflicting results and opinions into proper perspective. Your goal is to help your audience weigh the merits of these varying positions, and to alert them when one side in a debate is cherry picking the data, or exaggerating, or committing other kinds of fouls (like making stuff up!).

7. Understand and distinguish between legitimate analyses and what Eric Pooley calls "weapons of mass persuasion."

We certainly need to tell our audiences what the persuaders are trying to accomplish, whether they are trying to speed or derail action on climate change. They are part of the policymaking process, and so they must be part of our coverage. But we should not conflate what they say in the public square with rigorous, peer-reviewed research. When partisans present information that they claim is scientific, scrutinize it. Did a recognized expert in the field conduct the research? Where did the funding come from? (A study funded by ExxonMobil may not be as credible as one funded by, say, the U.S. National Science Foundation.) Was it published in a peer-reviewed publication? If so, what has other research in this field turned up? And what do impartial experts have to say?

8. Similarly, quote experts with credible authority to speak on your topic.

When you need someone to help you analyze the latest science on, say, melting glaciers, don't quote a meteorologist — even if that meteorologist has a popular blog and has written copiously about his views on global warming. For that matter, don't quote an activist or even a policy expert about the particulars of the science. Find a glaciologist who has a track record of conducting research in this area, who publishes in the peer-

reviewed literature, and who has had a recognized impact on contributing new knowledge to this field. For example, an IPCC lead author, or if you need to localize the story, a glaciologist at a university in your town who has been actively engaged in peer-reviewed research in this field.

That being said, a policy expert might be a good choice if you need to put the latest science into a broader context — for example, what might new research on melting ice sheets have to contribute to the policy process?

Similarly, when you need someone to help you report on the latest economic analyses of climate policy, your best choice may not be a fervid blogger, however well-known, whose main motivation is to push for one policy action over another.

9. Remember that mitigation of climate change through cap-and-trade, a carbon tax or similar policies is by no means the only possible response — and certainly not the only thing you can cover. Many untold and important stories can be found in other areas.

- Energy efficiency and production technology: Without new technologies for increasing efficiency and producing non-carbon energy, mitigation will fail. This is one area in which there is significant agreement among otherwise conflicting stakeholders. What efforts are being made where you live to boost efficiency and adoption of alternative energy? Are there companies near you who are working on these technologies? Is local government involved in some way? What are citizens doing?
- Reducing deforestation: Cutting and burning of forests is responsible for about 20 percent of human greenhouse gas emissions. That means it's unlikely that we'll be able to tame global warming without coming to grips with this problem. In your coverage, don't forget this critically important aspect of climate change. And also keep in mind that it may be quite easy for you to find a local angle, since deforestation is a problem in many parts of the world.
- Carbon capture and storage technology: There may not be a way to localize this story where you live, but it is still worth remembering that this approach may be gaining momentum.
- Adaptation: Climate impacts are already turning up, and no matter what mitigation policies we adopt now, more are inevitable. So how should societies be adapting? This is one area that should be easy to localize. For example, how can drought-prone areas fortify against impacts from climate change? How much room is there for significant conservation? Is it possible to build new reservoirs?
- Geo-engineering: Increasingly, climate experts are telling journalists (sometimes off the record) that deliberate efforts to cool the climate will likely be a last resort if carbon emissions aren't reduced.
- Ethics: How do we resolve the divide between rich and poor nations over climate change? What historical responsibilities do rich countries have for helping poor nations deal with climate impacts? What responsibilities do all of us share for protecting other species and future generations from climate change? A rich array of stories are waiting to be told in this area.

10. Never forget that the climate change story is ultimately about people, so make sure to humanize your stories.

It's not about saving the planet. Earth has suffered mind-boggling episodes of climate change in the past, not to mention asteroid impacts that wiped out more than 90 percent of all the species on the planet. Yet Earth survived. Do not lose sight of the fact that first and foremost, climate change has the potential to cause a great deal of human conflict and suffering. And that means the good, old-fashioned journalistic practice of humanizing stories with compelling characters is essential.

Session 5:

Structured Field Visit:	Exploring Belize City
Descriptor:	Explore and research Belize City for possible climate change story ideas and begin to develop story ideas about journalists' own community that they can work on when returning home. Emphasis is placed on "the human story." community, climate inequalities and monitoring progress.
Duration:	2 hours 45 minutes
Lead Trainer:	Shah
Facilitators/ Guides:	UNDP representatives will guide participants through projects and activity sites

Session 6:

Presentation:	Communicating to impact behaviours
Descriptor:	An introduction to how journalists and climate change writers can use COMBI techniques to positively influence "climate proof." behaviours, actions and policies.
Duration:	60 minutes
Lead Trainer:	Hosein

The ten steps for designing effective climate change communication products in the media world and especially geared towards Caribbean and SIDS audiences.

The steps that will be described include:

1: State overall goal
2: State tentative specific behavioural objectives
3: Conduct situational "market" analysis for communication keys (smack) vis-à-vis specific behavioural objectives
4: Develop the combi strategy for achieving stated behavioural
5: Present the combi plan of action
6: Management
7: Monitoring
8: Impact assessment
9: Scheduling: the work plan
10: Budget

THE FOUR C's OF INTEGRATED MARKETING COMMUNICATION

(Replacing the Four P's of Marketing)

C^1 = Consumer Need/Want/Desire

and Related Product/Service/Behavior. (No longer the "P" for Product.)

–We do not sell a product/service/behaviour

–We offer a solution to your Need/Want/Desire

–We do not create Needs/Wants/Desires; we

respond to what is there; if latent, we bring to the top-of-the mind.

C^2 = Cost in relation to benefit/value and in relation

to the Competition. (No longer the"P" for Price)

–Not just price; but time, effort, etc.

–Reducing cost by incentives affects cost/value ratio

–Increasing value by branding affects cost/value

C^3 = Convenience to get product or service or to carry out behaviour.

(No longer the "P" for Placement)

C^4 = Communication

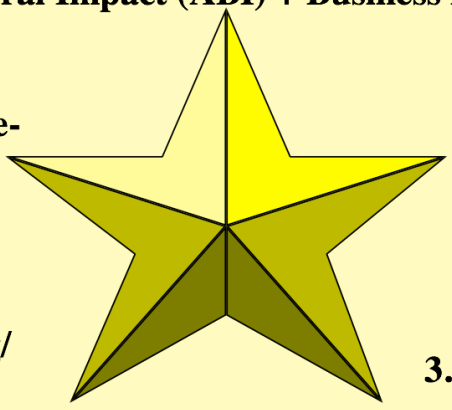
Integrated, Engaged Communication—

Using the Five-Point Star Blend of Communication Interventions

*"We have a great product/service/behaviour in response to your need/want/desire **(C^1)** at a wonderful cost/value ratio **(C^2)** and easily available **(C^3)**."*

The Five Integrated Communication Actions

1. Administrative Mobilization/ Public Relations/Advocacy for Behavioural Impact (ABI) + Business Partnership



5. Point-of-service-promotion

2. Community Mobilization

4. Personal selling/ Interpersonal Communication

3. Advertising

M-RIP **with** **Behavioral Hooks** | Six Hits Role of Media | Not Cheap

© Everold Hosein

Session 7:

Presentation: Digital tools for storytelling
Descriptor: Many digital tools are available to help journalists tell stories. Participants will share how they use technology in their work and learn some basic digital tools. The session will give tips for writing effective headlines, understanding social media algorithms, using cellphones for basic photography/videography and fair use best practices.
Duration: 60 minutes
Lead Trainer: Owen

Summary: Journalists have many digital tools available to help them improve how they tell stories. This session will discuss some basics of how journalists can use technology for storytelling.

Learning Objectives

- Understand effective online publishing (SEO, headline writing, linking multimedia embedding, coding, etc.)
- Understand best practices for social media
- Cellphone hacks for better reporting

Outline

ACTIVITY: Participants will be required to live tweet this session. Will review tweets at end of session to evaluate effective tweeting.

1. Online publishing
    a. SEO (search engine optimization)
    b. Headline writing/meta keywords
    c. Linking
    d. Multimedia (photo galleries/graphics/videos)
    e. Embedding social media
    f. Analytics
    g. Coding
2. Social media
    a. Facebook algorithm
    b. Facebook Live
    c. Effective tweeting
    d. Fair use/User generated content
    e. Engaging audiences
3. Cellphone hacks
    a. Recording interviews
    b. Photography
    c. Video

SOCIAL MEDIA - FACEBOOK

- The Facebook Algorithm is CONFUSING, SECRET AND EVER-CHANGING!
  - Right now, Facebook Live! is prioritized in the algorithm.
  - Facebook Live! pushes ALL of your posts up
  - Avoid # - Facebook reads this as a post from somewhere else
  - Increasing likes improves your algorithm score
  - PHOTOS, PHOTOS, PHOTOS
  - Use short URLS to help track
  - Post at peak times – morning, lunch, before bed

ANATOMY OF A GOOD FACEBOOK POST

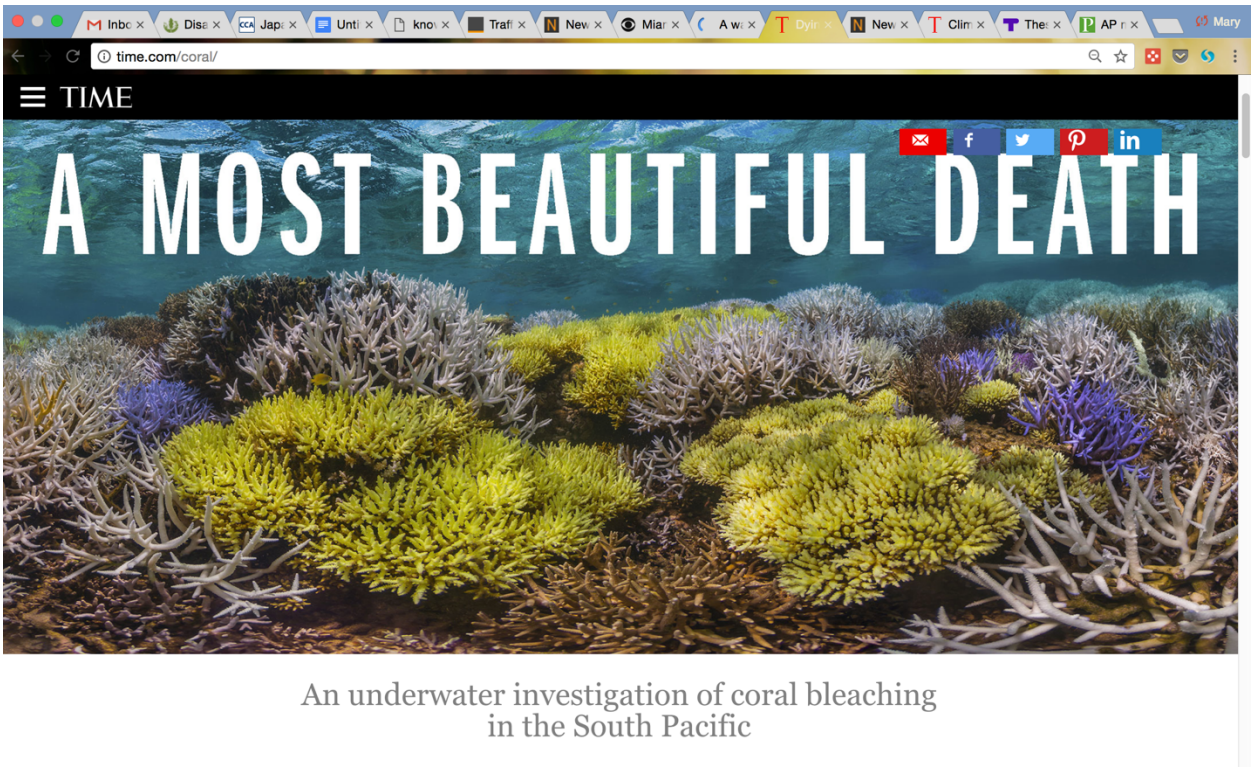
- Start with a 2-4 word phrase in caps to draw people in. Followed this by a colon and a brief summary, not in caps.
- Get the major information at the top. Remember that you are competing for attention in people's busy newsfeed so use short, clear, concise information. It's ok if they have to "click for more" to expand the post, but assume that people will not.

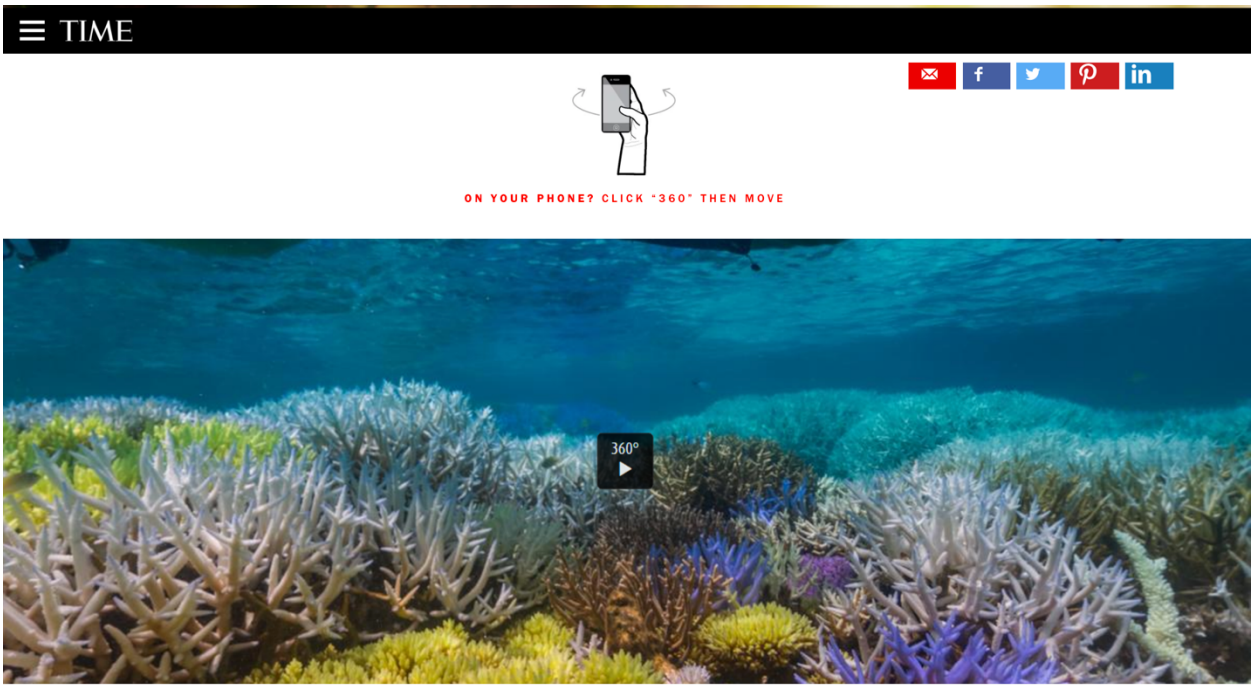
TWITTER

- If you are not on Twitter, get on Twitter
- Very different from Facebook
  - No algorithm, immediate
  - Use to break news
    - COVERING AN EVENT? TWEET IT!
  - Use hashtags
    - #ClimateChange
  - Good way to engage readers/sources

REFERENCES/RESOURCES

TIME: A Most Beautiful Death, coral bleaching in the South Pacific
http://time.com/coral/





Session 8:

Activity:	I don't get it: Interviewing technical experts
Descriptor:	Journalists often do not ask the right questions or ask good follow up questions. Participants will understand effective and important questions when writing about complex issues.
Duration:	60 minutes
Lead Trainer:	Owen
Panelists:	One (1) representative each from the University of Belize and the Caribbean Climate Change Center

Summary: Journalists rarely are educated in science, which makes it challenging to master the language of technical experts. As a result, journalists don't always ask the right questions when conducting interviews. This session will model effective interviewing with a technical expert from the Caribbean Community Climate Change Center.

Outline

Facilitator will model interviews with technical expert.

Prior to interview, will review some key tips:

1. Do research BEFORE an interview
2. Fully vet this person, background, political agenda, etc.
3. Ask the stupid questions. "Explain this to me like I'm a 5-year-old."
4. Keep the expert focused
5. Visit them "in the field"
6. Ask for copies of any studies/reports that they reference
7. Repeat information back to interviewee to make sure you are understanding
8. Get a phone number/email for follow up and don't be afraid to circle back with questions, multiple times, if needed
9. Take a photo/video of them

Session 9:

Activity:	Develop and Pitch your story
Descriptor:	Participants will pitch story ideas that they plan to work on when they return home, including potential sources, angles and visual elements. Avoiding the MEGO Phenomenon. The group will give feedback.
Duration:	90 minutes plus 30 minutes participant prep.
Lead Trainer:	Hosein

WORKSHOP POST-EVALUATION

In an effort to assess the effectiveness and impact of this training workshop, kindly complete the following evaluation form. Your responses will be invaluable in providing feedback on the overall workshop, identifying areas for improvements in future efforts. (To facilitate processing, please print answers to open-ended questions)

Country: _____

Institution(s) you represent: _____

Title/Position: _____

How long have you been involved with covering/ reporting/ writing about climate change issues?

□ <1 yr. □ 5- 10 yrs.
□ 1-5 yrs. □ >10 yrs.

Instructions: Please respond to following statements and questions by selecting and highlighting or circling your response.

Climate Change Journalism

1. I have a firm enough grasp of the science of climate change and related concepts (e.g. greenhouse gases, emissions, global warming etc.) to produce high quality reporting.

Strongly Disagree Disagree Neutral Agree Strongly Agree

2. I have a comprehensive enough understanding of international, regional and national climate change policies and political discourses to produce high quality reporting.

Strongly Disagree Disagree Neutral Agree Strongly Agree

3. I know exactly where and how to access credible and useable climate change data, information and expert opinions on climate change issues for my reports/ stories/writing.

Strongly Disagree Disagree Neutral Agree Strongly Agree

4. I feel capable enough to properly assess and analyze climate change data and information and incorporate in my reporting/ writing/ stories.

Strongly Disagree Disagree Neutral Agree Strongly Agree

5. Reporting/ writing about climate change and related issues is a priority for my organization.

Strongly Disagree Disagree Neutral Agree Strongly Agree

6. I can produce reports/ news/ stories that can influence readers to take positive actions and demonstrate responsible behaviours that combat climate change.

Strongly Disagree Disagree Neutral Agree Strongly Agree

7. It is important for my organization to utilize digital media platforms (e.g. websites, blogs, twitter) to report on climate change issues.

Strongly Disagree Disagree Neutral Agree Strongly Agree

8. I am confident enough in my understanding of climate change issues to conduct interviews with technical experts on climate change topics in order to provide high quality reporting.

Strongly Disagree Disagree Neutral Agree Strongly Agree

9. I am confident enough in my climate change reporting knowledge and capabilities to successfully pitch stories/reports/ news idea to my editors.

Strongly Disagree Disagree Neutral Agree Strongly Agree

Substantive content and usefulness of the workshop

10. How would you rate the Training Workshop overall?

Very Poor Poor Fair Good Very Good

11. How would you rate the substantive content of the Training Workshop?

Very Poor Poor Fair Good Very Good

12. The workshop lived up to my initial expectations.

Strongly Disagree Disagree Neutral Agree Strongly Agree

13. The workshop was relevant training for the work of my organization.

Strongly Disagree Disagree Neutral Agree Strongly Agree

14. the analyses and recommendations formulated at the Workshop will be useful for my work?				
Very Poor	Poor	Fair	Good	Very Good

15. How useful did you find the workshop for engaging in conversations and exchanging experiences with representatives of other countries and institutions?				
Very Poor	Poor	Fair	Good	Very Good

Organization of the workshop

16. How would you rate the quality of the workshop materials provided?				
Very Poor	Poor	Fair	Good	Very Good

17. Were the durations of the sessions appropriate?				
Very Poor	Poor	Fair	Good	Very Good

18. How would you rate the quality of the infrastructure (room, sound, catering)?				
Very Poor	Poor	Fair	Good	Very Good

19. How would you rate the quality of support from the UNDP to facilitate logistics for your participation in the event?				
Very Poor	Poor	Fair	Good	Very Good

20. Please feel free to add any other comments about the Workshop:

REFERENCE ARTICLES

Iconic Jamaican beach vanishing as pollution, climate change take a toll

by Rebekah Kebede | @rkebede | Thomson Reuters Foundation
Monday, 27 March 2017 01:01 GMT

Pollution and warmer temperatures have killed reefs off the shore of Hellshire Beach, allowing waves to pound it and wash away the sand

By Rebekah Kebede

KINGSTON, March 27, 2017 (Thomson Reuters Foundation) - Hellshire Beach, one of Jamaica's cultural icons, has appeared in countless documentaries, movies and travelogues about the island nation. The strip of sand, a half-hour drive from the capital and backed by seafood restaurants, is a weekend favourite for Kingstonians, a place to kick back and "lyme" – the local term for "chill".

But Hellshire Beach is fast disappearing. What once was a wide strip of sand in front of Aunt May's Fish Place has vanished so quickly that Kingstonians find themselves digging through old photos to make sure their memories aren't playing tricks on them.

One of them is Kamilah Taylor, a 30-year-old U.S. software engineer who grew up going to Hellshire. She remembers people riding horses and children playing on a wide expanse of beach.

When she visited last year, she was shocked to see that much of it was gone.

"To go from that to basically shops that look like they are on cliffs … it blew my mind how different it was. It was a totally different scene," said Taylor in a telephone interview with the Thomson Reuters Foundation.

Experts say that a combination of pollution and warmer temperatures linked to climate change have killed the once-thriving coral reefs offshore, allowing waves to pound the beach and wash away the sand.

"I've never seen anywhere along the Jamaican coast change so significantly. ... It's a domino effect starting with the death of the reef," said Mona Webber, a marine ecologist and director of the University of the West Indies' Centre for Marine Sciences.

DISAPPEARING REEF

Webber carried out her graduate work in the sea off Hellshire in the 1980s, studying the impact of pollution from Kingston harbour on the reef. Back then, as she used a small skiff to collect water samples along the reef, its structure was so dense that it could be a challenge not to bump into it.

But now the reef is completely gone, she said.

Hellshire sits downstream from Kingston harbour, where industrial and other wastes over decades made their way into the water. As the beach's popularity grew, it also suffered from water pollution created by bathers and fishermen who gutted fish in the water, Webber said.

"Coral reefs cannot handle poor water quality. They really are affected by excess nutrients and algal overgrowth," Webber said. Studies in the 1990s showed that a big day out for Kingstonians at Hellshire led to algae doubling in the bay two to three days later, she said.

Climate change, which can cause rising sea temperatures and additional stress on coral, may have been the "last nail in the coffin" for the reef, Webber said. Once parts of the reef had weakened or died, other parts of it became more vulnerable to storms, she said.

Locals like Nehemiah "Natty" Thomson, 66, a long-time fisherman who now cooks up fish in one of the seaside restaurants, remember the hurricanes that slowly dismantled the reef.

"Ivan, Gilbert, Dean … every one come cut off a piece," Thomson said.
Parts of the dead reef remain offshore in a pile of coral rubble. Once the reef had been slowly swept away by hurricanes, it left the bay vulnerable, Webber said.

"Once you lose your reef, the seagrass gets exposed to too much high wave action and then the beach itself is also compromised. All those systems help to hold the sand in place," Webber said, adding that the structures on Hellshire have cut the beach off from dunes that could replenish it.

VISITORS – AND PROFITS – DOWN

For Kingstonians, the shrinking beach has meant losing one of the few free public beaches near the city. For the fishermen and vendors, it is a threat to their livelihoods.

"There is definitely a decline in the number of people coming to Hellshire… It's affecting business as well," said Glaston White, chairman of the Half Moon Bay Fisherman's Association, the non-profit group responsible for managing the beach.

May Byrou, who owns Aunt May's Fish Place, a long-popular beachfront seafood restaurant, estimates that her business is down 25 to 50 percent due to the disappearance of the beach.

Parthenope James, who goes by the nickname Pie and owns another seafood restaurant, said she's also felt the impact, even though her restaurant is not on the beachfront.

"When the people come and see how it stay, they go somewhere else," Pie said. For beach-goers, what little beach is left has been transformed. Doryck Boyd, a semi-retired dental surgeon who has been coming to Hellshire since the 1970s, said the difference is startling.

Sandbags are used to try and prevent the sand from washing into the sea at Hellshire Beach, near Kingston, Jamaica. In the background, Doryck Boyd, a dental surgeon who has been coming to Hellshire since the 1970s, marks the spot where he says the coastline used to be. Thomson Reuters Foundation/Rebekah Kebede

"You could walk way out and the water would be up to your waist," Boyd said. But without a reef the currents have gotten stronger, and the water increasingly unsafe, he said.

For now, the Half Moon Bay Fishermen's Cooperative has tried to stem some of the erosion by putting in a groyne - a wall that extends from the beach out into the water. The cooperative is looking to raise funds do more recovery work, White said.

Some restaurant owners also have stacked sandbags and tires on the beach in hopes of shoring up the sand.

But Webber suggests one of the best solutions might be abandoning the beach entirely to let it recover – or at least restricting access.

"There is such a thing as carrying capacity," she said.

White said fishermen are coming to terms with that fact.

"They are aware that the time may come that we'll be asked to evacuate," he said. "They are basically bracing to see if that's going to be a possibility."

Latin America needs to climate proof infrastructure - World Bank

by Sophie Hares | @SophieHares | Thomson Reuters Foundation
Monday, 10 April 2017 14:48 GMT

"We need to figure out what future you have to prepare for"

By Sophie Hares

TEPIC, Mexico, April 10 (Thomson Reuters Foundation) - Melting glaciers, intense storms and other climate-related shocks are expected to ramp up pressure on Latin America's infrastructure, which needs to be stronger to stand the test, the World Bank said.

Better infrastructure could also help reduce inequality, lift people out of poverty and promote development, it said in a new report.

Reliance on hydropower makes the region's clean energy supplies vulnerable, while drought could menace water-stressed cities, it added.

"It's becoming increasingly visible that it's necessary to make infrastructure more resilient," said report co-author Marianne Fay, chief economist with the World Bank's sustainable development division.

"We need to figure out what future you have to prepare for," she told journalists. "We also suggest to take approaches that have no regrets - that make sense whatever happens."

Latin America and the Caribbean spent 2.8 percent of gross domestic product last year on infrastructure, compared with around 4 to 8 percent in other regions, the report said.

The challenge is how to make that investment more efficient and better targeted in the region that often has poor or non-existent services outside major cities, said the bank.

To limit disruptions, transport, water and sewage systems must be bolstered to withstand growing pressure from climate change, the report said.

Electricity demand will likely rise due to increased heat waves, while extreme weather patterns will necessitate flood-prevention measures, it added.

A mix of engineered infrastructure, ecosystem services and mapping of risks and vulnerabilities could help combat problems, it said.

RETROFITTING SLUMS

Fay highlighted Latin America's poor sanitation and high dependency on solid cooking fuels as major public health challenges in the middle-income region, where countries face tight budget constraints.

Water-supply coverage is relatively high, but its quality is inadequate and less than 30 percent of wastewater is treated. More than 20 million people, mainly in rural areas, still lack access to improved drinking water, noted the report.

Overall electricity access is high, it said, but 22 million do not have power - mainly in Haiti, Peru and Guatemala. Meanwhile, 87 million have no access to non-solid fuels, with Mexico and Brazil among those most affected.

"Low quality of life, severe health problems, poor education and medical care, and limited opportunities for raising incomes and living standards are associated with a lack of electricity and non-solid fuels," said the report.

The "last mile" challenge to get water and electricity to the region's poorest is compounded by their remoteness, and demands innovative technology, delivery and funding, it said.

Transport is expensive and often unsafe, with cities congested and some rural areas isolated, said the report, noting the density of paved roads is similar to that in Africa.

Costly retrofitting may be the only way to improve sprawling slums in megacities, but medium-sized cities still have the chance to incorporate low-cost housing into their urban design, said Fay.

Governments should address the region's service gaps, and focus on "spending better on the right thing", she added.

The New York Times | https://nyti.ms/2nQSbAH

SundayReview | OPINION

What You Can Do About Climate Change

By MICHAEL SIVAK and BRANDON SCHOETTLE MARCH 25, 2017

ANN ARBOR, Mich. — What can you — just one concerned person — do about global warming?

It may feel like a more urgent problem these days, with proposed cuts to the Environmental Protection Agency and each year warmer than the previous one.

You could drive a few miles fewer a year. Reduce your speed. Turn down your thermostat in winter. Replace your incandescent light bulbs with LEDs. Reduce your meat consumption. Any one of those actions would help.

But none would come close to doing as much as driving a fuel-efficient vehicle. If vehicles averaged 31 miles per gallon, according to our research, the United States could reduce its carbon dioxide emissions by 5 percent.

Improving fuel economy carries particular salience after the Trump administration announced this month that it would re-examine the progressively more stringent Obama-era fuel economy standards for vehicles in model years 2022 to 2025.

This would be a big mistake as we try to slow down the warming of our planet and meet our international commitments on climate change. The simple fact is that American drivers are a significant contributor to greenhouse gas pollution, so having a vehicle fleet that burns less fuel can have an outsize impact on total

emissions.

Though the United States has just 4 percent of the world's population, it is responsible for 14 percent of man-made greenhouse gases that end up in the atmosphere. Transportation accounts for 27 percent of those emissions. And 60 percent result from driving personal vehicles.

Over two years, the average American driver travels a distance equal to the circumference of the earth. The average new vehicle gets only about 25 miles per gallon, which corresponds to about three-quarters of a pound of greenhouse gas emissions for each mile driven. Each year in the United States, 214 million drivers (with 240 million registered vehicles) drive 2.7 trillion miles, emitting about 2.4 trillion pounds of carbon dioxide into the atmosphere, based on the current fleet average of 21.4 m.p.g.

Changing how much we drive is not easy; it often requires a major change in lifestyle, like moving closer to work or making more frequent use of public transportation, which often takes longer and is less convenient than driving. It is much easier to buy a more fuel-efficient vehicle; cars with fuel economy much better than the new-vehicle average of 25 m.p.g. are widely available.

As our monthly monitoring of vehicle fuel economy shows, the average for new vehicles has increased to about 25 m.p.g. for model year 2014 from about 21 m.p.g. for model year 2008. Notably, however, the fuel economy of model years 2015 and 2016 vehicles did not improve.

The main reason was the drop in the price of gasoline to $2.14 in 2016 from $3.36 a gallon in 2014. Now, fueling a less fuel-efficient but more spacious vehicle like an S.U.V. or pickup truck costs no more than fueling a small sedan did a few years ago. And buyers have responded by buying more of those bigger, less fuel-efficient vehicles.

This is where the role of government and its fuel-economy standards for new vehicles becomes important.

These standards have obvious direct effects on the industry in terms of what vehicles are made and sold, and their actual on-road fuel-economy performance.

Significant increases in fuel-economy standards for all vehicles, but especially for pickups and S.U.V.s, are even more important when relatively low gas prices motivate buyers to choose larger vehicles over smaller ones.

One of the last important acts of the Obama administration was to reaffirm the more stringent fuel-economy standards for model year 2022-25 vehicles, benchmarks that were originally proposed in 2012. Those standards would have ensured that the improvements in fuel economy that have stalled in recent years would resume.

But the recently announced review of those standards by the Trump administration is bad news for the prospects of reducing both transportation emissions and the country's reliance on fossil fuels. And that will make it that much harder to reduce the greenhouse gas emissions that are warming the planet to dangerous levels.

Michael Sivak is a research professor and Brandon Schoettle is a project manager at the University of Michigan Transportation Research Institute.

A version of this op-ed appears in print on March 26, 2017, on Page SR2 of the New York edition with the headline: What You Can Do About Climate Change.

Climate change impacting ‘most’ species on Earth, even down to their genome

www.theguardian.com/environment/radical-conservation/2017/apr/05/climate-change-life-wildlife-animals-biodiversity-ecosystems-genetics

Jeremy Hance

A female kangaroo lies dead after she was hit by a car while moving to higher ground away from floodwaters in Rockhampton, Tuesday, April 4, 2017. Flood waters are expected to hit levels not seen in 60 years. Climate change is intensifying extreme weather events such as these as well as making them hit more frequently. Such events, as well as other climate impacts, are forcing animals to move around the world, often resulting in population decline and local extinction. Photograph: Dan Peled/AAP

Three recent studies point to just how broad, bizarre, and potentially devastating climate change is to life on Earth. And we’ve only seen one degree Celsius of warming so far.

Climate change is rapidly becoming a crisis that defies hyperbole.

For all the sound and fury of climate change denialists, self-deluding politicians and a very bewildered global public, the science behind climate change is rock solid while the impacts – observed on every ecosystem on the planet – are occurring faster in many parts of the world than even the most gloomy scientists predicted.

Given all this, it’s logical to assume life on Earth – the millions of species that cohabitate our little ball of rock in space – would be impacted. But it still feels unnerving to discover that this is no longer about just polar bears; it’s not only coral reefs and sea turtles or pikas and penguins; it about practically everything – including us.

Three recent studies have illustrated just how widespread climate change’s effect on life on our planet has already become.

> *There has been a massive under-reporting of these impacts.*

“It is reasonable to suggest that most species on Earth have been impacted by climate change in some way or another,” said Bret Scheffers with the University of Florida. “Some species are negatively impacted and some species positively impacted.”

Scheffers is the lead author of a landmark Science study from last year that found that current warming (just one degree Celisus) has already left a discernible mark on 77 of 94 different ecological processes, including species’ genetics, seasonal responses, overall distribution, and even morphology – i.e. physical traits including body size and shape.

Woodland salamanders are shrinking in the Appalachian Mountains; the long-billed, Arctic-breeding red knot is producing smaller young with less impressive bills leading to survival difficulties. Marmot and martens in the Americas are getting bigger off of longer growing seasons produce more foodstuffs, while the alpine chipmunks of

Yellowstone National Park have actually seen the shape of their skulls change due to climate pressure.

A photo from the XL Catlin Seaview Survey on March 21, 2016 shows a diver filming a reef affected by bleaching off Lizard Island in the Great Barrier Reef. Rising temperature have caused an epidemic of bleaching across the Great Barrier Reef. Photograph: AFP/Getty Images

Life is proving just as strange under our new climate regime when it comes to genetics. Pink salmon genetics are evolving for earlier migrations – with fewer salmon encoding their genes for earlier migrations. In making its way north, the southern flying squirrel has begun hybridising with the northern flying squirrel. The water flea has seen its genetics change over just a few decades to respond to higher water temperatures.

But the fact that so many species are undergoing genetic changes doesn't mean they are successfully adapting to our warmer world.

"In many instances genetic diversity is being lost due to climate change, not just in nature but also in resources that human's depend on such as crops and timber," Scheffers said. "It is important to not confuse species responses and adaptation as an indicator that everything will be okay."

Scheffers and his colleagues' findings are furthered by a study in Nature Climate Change this February that found that 47 percent of land mammals and 23 percent of birds have already suffered negative impacts form climate change. In all, nearly 700 species in just these two groups are flagging under climate change, according to this research.

> *We now have evidence that entire ecosystems, some the size of entire states within the USA, are changing.*

"There has been a massive under-reporting of these impacts," co-author James Watson with the University of Queensland said in a press release, pointing out that the IUCN Red List only considers seven percent of mammals and four percent of birds as threatened by climate change and severe weather. The IUCN often drags behind the latest science – many species wait decades for an update while most species on Earth have never been evaluated.

In worst-case scenarios, species are simply vanishing.

A third study – this one in PLOS Biology – found that more than 450 plants and animals have undergone local extinctions due to climate change. Local extinction, as its name implies, doesn't mean the species are gone for good, but that they vanish from a portion of their range. For example, the barren ground shrew has seen its range constrict aggressively as its tundra home warms.

"If global warming continues, species that cannot change or move quickly enough may go globally extinct," the study's author, John Wiens with the University of Arizona, said.

Such global extinctions have already happened. Last year, scientists discovered that the Bramble Cay melomys – an Australian rat-like rodent – went extinct recently (it was last seen in 2007) due to rising seas inundating its tiny coral island.

It's the first mammal confirmed to be pushed to extinction entirely due to climate change – or one could say our fossil fuel addiction.

Wiens' study also found that local extinctions were happening more in the tropics than in temperate areas. This is worrying since the tropics hold the vast bulk of the world's biodiversity, with many tropic species still unstudied and even undiscovered by scientists.

But changes are rippling even beyond single extinctions.

"We now have evidence that entire ecosystems, some the size of entire states within the USA, are changing in response to climate change," said Scheffers. He pointed to kelp forests that he said "are dying" and being replaced by rocky, less-productive ecosystems.

Made up of giant brown algae, kelp as tall as trees provide essential nurseries for fish, protect coastlines against worsening storm surges, store vast amounts of carbon, and provide homes for species like sea otters. But warming waters combined with ocean acidification is taking its toll.

And Scheffers expects more "ecosystem shifts," as scientists describe them, in the future. Cloud forests are at risk of becoming high altitude grasslands, coral reefs of becoming algal-dominated ecosystems, and Arctic sea ice – open ocean.

"Given what we are seeing now, just imagine what will happen to all these species when temperatures increase by four of five times that amount," said Wiens.

If global society doesn't kick its fossil fuel addiction – and quick – scientists estimate that temperatures could rise 4-5 degrees Celsius by the end of the century. Such a rise would be not so much catastrophic, but apocalyptic.

"One thing that is certain is that this global response to climate change points to an increasingly unpredictable future for humans," Scheffers said.

More than half of the world's humans today live in cities – but that won't make any of us immune to the changes going on in nature. According to Scheffer's research, humans will see a drop in productivity of various crops or timber species, a drastic loss in marine fisheries, a potential rise in new diseases as well as disease spreading to places they'd never been before. Meanwhile, declines in coral reefs, kelp forests and mangroves could lead to more lives lost in climate-fueled storms. Loss of global biodiversity will also have knock-on effects in societies around the world, from less productive ecosystems to impacts we simply can't predict today.

"I was not surprised," Scheffers said of his research. "But I was alarmed. The extent of impacts is vast and has impacted every ecosystem on the Earth."

Is all this alarmist? Sure. But it's high time we set off the alarms – they should have started ringing in the 1980s and been deafening by the early 1990s.

Does all this imply nothing can be done? Of course not.

"Governments and large organisation can invest and commit to reducing carbon emissions and protecting natural ecosystems that increase resilience to climate change not only for nature but for people as well," Scheffers said. "These include large areas of connected forests which cool local and regional climate, pristine coral and oyster reefs that not only provide food but reduce storm surges, and well managed watersheds that will maintain adequate fresh water."

Wiens agreed, but added that "there also needs to be more, bolder, large-scale efforts to reduce the carbon that is already in the atmosphere."

Read more

A number of companies have already produced technologies that do just that: they pull carbon out of the atmosphere. But to date, lack of money and support have delayed rolling out such devices en masse.

Meanwhile, the researchers agree that the Paris Agreement – the only global agreement to tackle climate change – must be protected.

“Wisdom comes from combining truth with beliefs. There is a global scientific consensus around climate change and its impacts on nature and humans. It is truth that climate change will have devastating impacts on human health and quality of life,” Scheffers said, noting that the Trump Administration’s current flirtation with pulling out of the Paris Agreement “is not only an unwise decision but a dangerous decision.”

A warning from the sea

www.latimes.com/local/la-me-oysters13-2008jul13-story.html

For decades, the unwritten motto at shellfish hatcheries in the Pacific Northwest was "Better oysters through science."

Scientists mated the heartiest, fastest-growing stock to produce plumper, sweeter oysters for slurping raw on the half-shell or frying up to dip in tangy sauces.

They probed the genetic code to select for the most desirable traits of the Pacific oyster, an import from Japan that now weighs in, pound for pound, as the No. 1 aquacultured crop in the world: 4.5 million tons a year (shells included) valued at $3 billion.

They even bred out sexual organs that at certain times of the year can take up more than a third of an oyster's body weight and give it a soft, mushy texture.

With selective breeding and genetic fingerprinting, they were on their way to developing a super oyster resistant to summer mortality, keeping one step ahead of a warmer, more polluted planet. Or so they thought.

Suddenly, oyster research bogged down as a riotous bloom of bacteria went on a West Coast killing spree, wiping out billions of oyster larvae.

The outbreak first shut down an oyster brood stock program run by Oregon State University in Newport, Ore., in 2005. "All we saw was our larvae were dying," said fisheries professor Chris Langdon, "and we couldn't put our finger on why."

Then the microscopic culprit overran commercial hatcheries in Washington and Oregon, crippling production over the last couple of years and causing a shortage of oyster "seed" needed to replant tideland farms from Southern California to Canada.

"It's pretty scary," said Sue Cudd, owner of Whiskey Creek Shellfish Hatchery in Netarts, Ore. The hatchery, she said, has been drowning in costs and failing to produce sufficient oyster larvae for West Coast shellfish farmers. "We almost decided to close, and people panicked. I realized if I go out of business, I take a lot of people with me."

Science has identified the culprit, a strain of bacteria called *Vibrio tubiashii*, which is harmless to humans but fatal to baby oysters. It attacks them in their vulnerable, free-swimming larval stage before they settle to the seafloor, latch onto rocks or other oysters and grow thick shells.

The *Vibrio* blooms appear to be linked to warmer waters in estuaries and the oxygen-starved "dead zones" that have showed up this decade off the coast of Oregon and Washington, researchers said.

These low-oxygen waters correlate with stronger winds coming from a warming planet.

Scientists note that *Vibrio tubiashii* has an advantage over other microscopic life in the sea. This bacterium thrives in oxygen-starved dead zones, feasting on decaying plant and animal matter littering the seafloor. And when brought to the surface with water welling up from the deep, it can switch survival strategies to flourish in warm, well-oxygenated waters.

Researchers were not surprised to find this type of bacteria in seawater but were stunned that it had become so dominant over other microbes: It was nearly a pure concentration of this one bacteria, one that happens to be deadly to oyster larvae.

"It seems to be logical that the dead zone is playing a role," said Ralph Elston, who runs a veterinary medical practice in Sequim, Wash., that offers advice to shellfish farmers. "It's the perfect bacterial setup, and we get these explosive blooms along the coast."

Edmund Jones removed a pinch of brown silt and smeared it across a glass slide. Tanks of seawater gurgled in the background. A salty tang hung in the moist air.

Jones, who manages Taylor Shellfish Farms' hatchery here on Dabob Bay, fiddled with a knob, bringing into focus a dozen or more 9-day-old oyster larvae.

He pointed out a few healthy ones, dark round discs scuttling around, propelled by hair-like cilia. Most didn't move at all. Light shined through them, revealing empty insides. They hadn't been feeding. If they weren't dead already, they were dying.

"When your job is to grow larvae and you see that on the screen," Jones said, "it's extremely frustrating to see. Unfortunately, what this tells me is we'll probably be dumping that tank tomorrow."

That meant jettisoning 30 million larvae.

Failures of this kind have become so regular that Taylor's hatchery is producing less than a quarter of its capacity, far short of what is needed to reseed its oyster beds or to sell to other shellfish farmers looking to do the same.

The shortage of oyster seed, or "spat," will have its greatest effect in several years, when oyster beds left fallow would otherwise be ready for harvest. That may set the stage for shortages and economic upheaval in the West Coast's $110-million-a-year shellfish industry, said Bill Dewey, a division manager at Taylor Shellfish.

"We don't have the seed to replace these crops you see here," Dewey said, standing on a Samish Bay tidal flat in hip-waders, watching a work crew fill baskets with 4- and 5-year-old oysters.

Shellfish growers, Dewey said, often provide "the first indication that there's a problem out there, because the animals we are farming are telling us that."

What the dead larvae are saying is that something is wrong with coastal waters, he said. "Whether it's climate change" or something else, he said, "it's likely something that man has done to our environment that is creating this problem for us."

Alan Trimble, a researcher at the University of Washington, has noticed similar problems in the wild. Sampling seawater in Willapa Bay, Wash., he found that the oyster and clam larvae had disappeared in the last two years from waters where bacteria counts had been high.

Hatchery operators inadvertently pump in the bacteria along with seawater they use to bathe their infant oysters and grow the green algae used to feed larvae. The microbes even drift in on the sea breeze, launched into the air by bubbles bursting at the ocean's surface.

The shutdown of Oregon State's experimental hatchery prompted university officials to develop a multistage filtering system that blasts seawater with ultraviolet light to kill bacteria, skims the harmful bacteria's lingering toxins and then reinoculates the cleaned water with a healthful balance of microbes.

The Whiskey Creek Hatchery has adopted the same filtering system, which helped revive half of its larvae production. The hatchery run by Taylor Shellfish, the largest grower in the country, is experimenting with similar techniques to get its production going again.

Growers have sought the help of university researchers and asked Congress for emergency funds to look for solutions.

The U.S. Department of Agriculture, which funds the Molluscan Broodstock Program at Oregon State's hatchery, is exploring microbial warfare.

Gary Richards, a USDA researcher at the University of Delaware, has been screening seawater samples to find a virus, or bacteriophage, that would seek out and destroy *Vibrio tubiashii*. Marine bacteria often have such natural enemies. An intervention, such as releasing the right "phage," as they are called, could avoid "an ecological disaster of monumental proportions," Richards wrote in an e-mail to scientists and hatchery managers.

As filter feeders, shellfish clean seawater of excess algae and nutrients, maintaining healthy coastal waters. When oysters disappear, as they did in the Chesapeake Bay, an estuary's water can turn murky and foul.

"With the loss of oysters, the water in the Chesapeake became more turbid, restricting light penetration to plants and sea life, and the higher nutrient levels made algal blooms more common," Richards wrote. "The West Coast needs to avoid this at all cost."

So scientists like Donal T. Manahan and Dennis Hedgecock at USC, among others, have spent decades hovering over bubbling tanks of oysters to improve on nature. They've been selecting stocks with more productive pedigrees that offer the double benefit of cleaning coastal waters and multiplying the bounty of this gastronomic treat.

"Our hybrids do better than wild oysters," producing two to three times more oyster meat per acre of shellfish beds, Hedgecock said. Yet as the bacterial outbreak reminded them, the first step of any successful breeding program is to make sure oysters don't die.

The episode has moved disease resistance to the top of the list of characteristics researchers want to tease out of the mollusk's genetic code, said Langdon, from Oregon State's hatchery.

"We need to find those oysters that are most resistant to this bacterium," he said. "This whole problem has created a new target for the selective-breeding program."

ken.weiss@latimes.com

Miami Herald

ENVIRONMENT
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Climate change shrinking South Florida reefs sooner than expected

BY JENNY STALETOVICH
jstaletovich@miamiherald.com

South Florida's shrinking reefs may be vanishing faster than expected.

In a new study published Monday in the journal Global Biogeochemical Cycles, researchers found that climate-related coral erosion projected to start between 2050 and 2060 has already started near Miami. The situation is better moving south and away from Miami's dense coast, where pollution may be worsening conditions. But researchers say Miami could serve as a glimpse of things to come for the Florida reef tract.

"We tend to think we have a lot of time and this study shows we have maybe 30 years less time," said lead author Chris Langdon, a University of Miami marine biologist. "We need to get serious sooner rather than later."

Monday's report comes just days after another study concluded a reef tract near Miami took a hit from another unlikely threat: the U.S. government.

In its first assessment of a $205 million dredging of PortMiami, the National Marine Fisheries Service last week concluded that sediment stirred up by the work smothered and killed many of the coral near the Government Cut channel. The report contradicts findings earlier this year by the U.S. Corps of Engineers, which managed the project and blamed the deaths for an outbreak of white plague disease.

The findings follow months of warnings from NMFS and environmentalists, including the Miami Waterkeeper, that dredging the channel to 50 feet, and then barging that sediment to an offshore dump site, was spreading a plume of sand damaging far more coral than anticipated, including some threatened species.

NMFS divers surveyed more than 165 acres north of the channel that was hardest hit by the work and found sediment on about 158 acres, the report said. Sand piled up on more than six acres so thickly that the habitat is no longer functioning as a reef and likely won't until the sand is removed. Divers also found severe to moderate damage from sediment on about 120 more acres.

Corps officials, however, defended their assessment that included over 7,000 dives covering 252 acres and concluded white plague, not dredging work, killed 85 percent of the coral.

The Corps "performed significant mitigation for the Miami Harbor deepening up-front and also during the project. Those efforts have been very successful and will lead to a net increase in the amount of listed staghorn coral colonies and seagrass beds," spokeswoman Susan Jackson said in an email. "Completed mitigation features of the project include the creation of 17 acres of new seagrass beds and more than 11 acres of new artificial reef with thousands of coral relocations."

In environmental circles, the debate over damage has sometimes turned bitter, with the Waterkeepers suing over management of the project and Corps' contractors crying foul. Ecologist Bill Precht, who supervised the Corps' assessment, plans on making a presentation later this month at a Coconut Grove restaurant to debunk what he described in an email as "dramatic statements by project opponents."

Florida's reef tract once stretched from the Dry Tortugas north to Palm Beach County but has shrunk to just a fraction of that historic range, pounded by pollution, over-fishing and damage from anchors.

A year ago, National Oceanic and Atmospheric Science researchers warned that warming temperatures could cause an increase in bleaching events for the region a dozen years sooner than expected.

Langdon's findings are even more alarming: Fowey Rocks, a popular dive spot in Biscayne National Park off Key Biscayne, is disappearing today, he said.

Typically reefs flourish in the summertime, when temperatures rise and plants grow, soaking up carbon making conditions just right for tropical coral to grow. In winter, the opposite can happen. Langdon said. Seagrass and other marine life dies, putting carbon back into the water. Historically, summer growth outpaced winter die-offs. But increasing acidification is expected to start slowing summer growth and worsening winter erosion.

Langdon's team found patterns both seasonal and geographic. Reefs closer to Miami's polluted coast did the worst with reefs getting progressively better heading south. That trend may reflect pollution, he said, as well as its unique position: most reefs are tropical and South Florida's set on a gradient range of sub-tropical.

The study also found that transplanting corals or finding hardier species won't be enough to protect a $7.6 billion asset estimated at creating 70,000 South Florida jobs.

"Those will have short-term benefits. But if the reef framework is dissolving under them, that's not going to be a solution. So we really need to get serious about the carbon solution," he said. "We have a real financial stake in trying to keep this ecosystem healthy."

An earlier version of this story misstated the number of jobs supported by coral reefs in South Florida and Bill Precht's position on the Corps' reef assessment.

ENVIRONMENT NOVEMBER 25, 2016 2:34 PM

Everglades mangroves might hold billion-dollar fix for climate change

1 of 2

Scientists say mangroves, like this one in Hell's Bay in Everglades National Park, can help combat climate change by storing carbon. They put the value of that storage in the park alone at between $2 billion to $3.4 billion. **Curtis Morgan** - Miami Herald Staff

BY JENNY STALETOVICH
jstaletovich@miamiherald.com

The price of fighting climate change in South Florida has so far focused largely on the billions needed to install pumps, raise roads and retrofit the sprawling infrastructure that keeps the region above sea level. But South Florida might already have a valuable weapon that for ages has been sucking up carbon and keeping the planet cool: mangrove wetlands in the Everglades.

To figure out just how valuable, scientists crunched some numbers to assign a price tag to Everglades National Park's mangroves. It turned out way bigger than anyone thought.

"It was kind of an alarming thing, like oh my gosh, who knew?" said Evelyn Gaiser, a wetland ecologist who has overseen Everglades research at Florida International University for nearly a decade.

For about 360,000 acres of mangrove wetlands, the cash value totaled between $2 billion and $3.4 billion, or nearly seven times the amount Miami Beach plans to spend on new pumps to keep its streets dry.

$2 billion to $3.4 billion

The dollar value of carbon stored in Everglades National Park's mangrove wetlands

In the study published in the journal Environmental Science & Policy, FIU economists worked with biologists to perform a kind of cost-benefit analysis, building on earlier calculations that looked at storage capacity but failed to include carbon already trapped in the wetlands. They say they wanted to provide a benchmark in dollars so that a larger audience could understand that the value of the Everglades extends beyond providing drinking water and wildlife habitat.

They had another, equally important objective: to show the cost of inaction. Nearly 16 years into a massive, restoration plan, the Everglades continue to suffer, hammered by decades of flood control and rising sea level that, if left unfixed, could alter the system. Instead of absorbing carbon dioxide, the gas emitted by burning fossil fuels that has sped up climate change since the industrial revolution by trapping more and more heat in the atmosphere, unrestored and eroding wetlands could begin emitting carbon.

> **WE'RE NOT ASKING FOR ANY PAYMENTS BY PUTTING A DOLLAR VALUE ON IT. IT'S ONLY TO UNDERSTAND THIS IS THE VALUE AND THE WORTH AND IF WE LOSE IT, THIS IS GOING TO COST US.**
>
> Meenakshi Jerath, risk analyst at Florida International University's Extreme Events Institute.

"This is an extremely important service they're providing for society's well-being," said lead author Meenakshi Jerath, a risk analyst at FIU's Extreme Events Institute. "We're not asking for any payments by putting a dollar value on it. It's only to understand this is the value and the worth and if we lose it, this is going to cost us."

Reducing carbon dioxide in the atmosphere is considered one of the key fixes to climate change. It's also one of the most politically divisive. Last year, President Barack Obama committed to reducing the nation's carbon emissions by up to 28 percent over the next decade when he signed the Paris agreement. He also enacted a Clean Power Plan requiring power plants nationally to reduce emissions by 32 percent by 2030. Many utilities, including Florida Power & Light, have already met the new limits.

Both initiatives are now under attack.

States, most led by Republicans and including Florida, have sued over the power plant plan. On the campaign trail, President-elect Donald Trump vowed to pull out of the Paris deal. In his first 100 days in office, he also has promised to cancel billions in payments to U.N. climate change programs, although last week in an interview with New York Times staffers he back-pedaled, saying he now believes there is a human connection to climate change, a position he took before his presidential bid. In the Times interview, he says he'll now have an "open mind" about the Paris agreement.

That's just the kind of opening researchers are counting on.

Mangrove wetlands, along with the world's oceans, are a major sponge for carbon. Wetland forests photosynthesize faster and trap more carbon than their terrestrial cousins. They make up just seven-tenths of the planet's tropical forests, yet mangrove deforestation contribute 10 percent of the carbon from global deforestation because they store so much.

Thanks to Everglades National Park, large swaths of South Florida's mangrove forests have been saved. But decades of flood control and steadily rising seas over the past century are starting to take their toll. Scientists are particularly worried about the zone between the mangrove forests and the sawgrass marshes where for thousands of year peat has built up, a boggy soil incredibly effective at storing carbon and more sensitive to the mix of fresh and saltwater.

> **IN LAYMAN'S TERMS, IT'S A LOCKBOX.**
>
> FIU natural resources economist Mahadev Bhat

“In layman’s terms, it’s a lockbox,” said the study’s co-author, FIU natural resources economist Mahadev Bhat.

With saltwater increasing in these areas, the peat is collapsing. If it continues, the collapse will release carbon that for thousands of years have been stored in the soil back into the atmosphere, not to mention transforming one of the planet’s most unique ecosystems.

“It appears to be turning the ecosystem from a [consumer] of greenhouse gases to one that is adding to it,” Gaiser said.

Putting a price on the wetlands’ value could also add to the argument for speeding up Everglades restoration. Florida and the U.S. have been struggling to fix the marshes for 16 years under the Comprehensive Everglades Restoration Plan, originally expected to cost about $8 billion and now double that. The work stalled after Congress failed to pass regular waterworks bills between 2007 and 2014. This fall, the two houses finally passed bills that included a suite of projects aimed at the central Everglades, but they still need to reconcile differences in the bills when a new Congress reconvenes in January.

> **IT HELPS PEOPLE DEAL... [WHEN THEY’RE] BEING ASKED TO SPEND BILLIONS OF DOLLARS TO SAVE AN ECOSYSTEM AND THEY DON’T UNDERSTAND WHY.**
>
> FIU wetlands ecologist Evelyn Gaiser

“It gives you a number that you can use in a trade-off model,” Gaiser said. “It helps people deal ... [when they’re] being asked to spend billions of dollars to save an ecosystem and they don’t understand why.”

The new study also significantly raises the dollar value over previous studies, revealing the difficulty in calculating carbon storage costs in a complex mix of ecosystems and a still-emerging market.

In 2014, the National Park Service took a look at carbon sequestration in park lands across the nation, including Everglades National Park. The study used a 2013 government estimate that calculated the “social cost of carbon,” including damages from increased flooding, changes in farming and human health and included only annual amounts of carbon stored. They gave all of Everglades National Park a carbon sequestration value of $50.5 million.

But the FIU team wanted to look deeper and include legacy carbon, believing the capacity of old-growth forests added value, Bhat said. They focused on mangrove wetlands, a fraction of the vast ecosystem, as a starting point because previous research has shown their efficiency at trapping and holding carbon.

“This is just a first estimate,” Jerath said. “It is by no means a perfect one, but it is one we want to propose and we hope will encourage the same kind of calculation for the Everglades marshes and other surrounding communities.”

For their appraisal, they considered the storage capacities of different elements in the wetlands, including soils, roots and above-ground branches based on the fieldwork of co-author Victor Rivera-Monroy, a Louisiana State University wetlands ecologist who specializes in soil chemistry. In addition to “social costs” the team also included abatement costs — they used a more conservative $8 billion dollar Everglades restoration price rather than new estimates — and looked at market prices for carbon storage from a nine-state exchange set up in New England in 2005 to cap and trade carbon emissions. They believe what they arrived at is a more realistic price that provides a more reasonable comparison to real infrastructure costs.

> **IF YOU LET IT ESCAPE, IT’S LIKE A GENIE IN A BOTTLE. IT’S GOING TO CAUSE MORE DAMAGE.**
>
> FIU natural resources economist Mahadev Bhat

“If you let it escape, it’s like a genie in a bottle. It’s going to cause more damage,” Bhat said.

“That’s why we have to keep it trapped,” he added. “Carbon in the Everglades should not be for sale. It’s the opposite. Because it is so valuable, we do not want to sell it.”

Follow Jenny Staletovich on Twitter @jenstaletovich

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COMMENTS

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Robert Flowers
In some locales, Mangroves are protected, in other places, they are illegal and considered invasive. There are many species too, Even with climate change, one species or another should fill the available niche requirement in the everglades.
Like · Reply · Nov 25, 2016 2:39pm

John Dubose · Houston, Texas
Every blade of grass.. Every weed.. Every little plant in every pond is sucking CO2 out of the atmosphere. All we have to do is let them.
Like · Reply · 1 · Nov 25, 2016 5:36pm

Art W Peets
This sounds like the moon is made out of green cheese scam. All these waco's forget that this change is not caused by one solitary thing. As it continues the change will ramp up in speed as the methane trapped in the bottom of the ocean, lakes, tundra is being released as well. Is that factored in??? We are long past the tip point and need to be modifying and changing the way we do things to accomodate it not fight it. You can not win against Mother Nature.
Like · Reply · 3 · Nov 25, 2016 6:42pm

Everett L. Lee · Branell College
We are fighting a losing battle
Like · Reply · Nov 25, 2016 10:28pm

Carl Kaiserman · The City College of New York
We (Florida) are barely waging war in this 'battle'. More like we are burying our heads in the sand, with denial and ignorance (as in ignore) our defensive weapons.
Like · Reply · 2 · Nov 28, 2016 10:32am

Kevin Morrison · Chief executive officer at Retired
As a Florida resident off and on since 1958 I can tell you as bold a plan as this sounds, it is destined to failure. The simple fact is that two thirds of Florida will be under water within 75 years or less at the rate global warming is accelerating. And if anyone out there thinks that the trillions of dollars needed to dike our entire coastline will magically appear from the Federal Govt. you are more delusional than the folks who think that global warming doesn't exist.
Like · Reply · Nov 25, 2016 11:12pm

TRINIDAD and TOBAGO NEWSDAY

Climate change being tackled by maritime sector

VERNE BURNETT Thursday, March 9 2017

THE maritime sector has to make a fair and just contribution to the fight against climate change, according to Arend Biesebroek, Ambassador of the European Union Delegation to Trinidad and Tobago.

He was speaking yesterday at the launch of the Maritime Technology Cooperation Centre - Caribbean at the UTT Maritime Campus at Chaguaramas. The centre is the first of five to be established around the world by the European Union in partnership with the International Maritime Organisation.

Biesebroek said the maritime shipping sector was the only one not covered by Global Greenhouse Gasses Emissions Reduction commitments although the world has the technology right now to reduce harmful emissions from the ships.

The aim of the centre is to reduce greenhouse gas emissions from ships as part of the global effort to mitigate the impact of climate change.

This will be done by promoting the use of energy-efficient technologies on board vessels trading in the Caribbean area and building capacity across 16 Caribbean territories for the monitoring of greenhouse gasses.

Biesebroek said climate change is happening now and it is accelerating and this acceleration began more than a hundred years ago and is one of the serious challenges facing today's world.

He said the European Union recognises that climate change can cause unprecedented reversal in the progress toward wiping out poverty and can undermine efforts toward sustainable and inclusive development.

He said this is why the fight against climate change, both in Europe and globally, is so important.

Also speaking at the event was Minister of Works and Transport Rohan Sinanan who said the European Commission, in its Climate Action Report, estimated that maritime transport emits about one thousand million tons of carbon dioxide a year and is responsible for about 2.5 percent of global greenhouse gas emissions.

He said it was even more alarming that shipping emissions are predicted to increase by between 50 percent and 250 percent by the year 2050 depending on future economic and energy developments.

He said ship energy consumption and carbon dioxide emissions could be reduced by up to 75 percent by applying operational measures and implementing existing technology.

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‘T&T needs to do more on climate change’

Geisha Kowlessar
Published: Friday, June 24, 2016

Despite numerous discussions on climate change the country needs to do much more, especially as T&T is an energy-based one, says deputy permanent secretary of the Ministry of Planning Beverly Khan.

Office of Disaster Preparedness and Management CEO, Dr Stephen Ramroop, left, speaks with Regional Programme on Climate change co-ordinator Cayetano Casado and Energy, Environment and Disaster Management of T&T programme officer Rosemary Lall during the United Nations Development dialogue on climate resilience for small island developing states in the age of the sustainable development goal: The case of Trinidad and Tobago, at Hyatt Regency, Port-of-Spain, yesterday. PHOTO: NICOLE DRAYTON

Khan spoke on behalf of Planning Minister Camille Robinson-Regis at the UNDP’s Development Dialogue on Climate Resilience for Small Island Developing States in the Age of the Sustainable Development Goal held at the Hyatt Regency Hotel, yesterday.

Khan said the projected impact of climate change on this country was particularly worrying given the inherent constraints of capacity to address these impacts.

“Increase in temperatures, rising sea levels, the projected increase in extreme weather patterns and weather events, and changes in rainfall with their impact on important ecological and economic sectors present challenges that we have not yet faced before,” Khan said were areas of grave concern.

She said this country was faced with a particular dilemma especially as a fossil-fuel-based economy.

“The socio-economic consequences are now forcing us to ask and answer difficult questions about our future as on the one hand our economy is supported by a resource base that has been attributed as the de facto cause of global warming and climate change,” Khan said.

On the other, she said, T&T may be faced with existential threats arising our of the impasse of climate change.

Saying that climate change was inevitable, she warned that the country must prepare for this while at the same time mitigate future emissions to minimise the amplitude of future temperature increases.

What must also be avoided, Khan added, was signing multilateral agreements which were soon forgotten with little or no implementation at the national level.

Building climate resilience and charting a low carbon path were two policy aspects being examined by the Government.

Khan said the national climate change policy of 2011 was expected to be reviewed this year.

Rosemary Lall, programme officer, Energy, Environment and Disaster Management T&T who delivered remarks on behalf of Richard Blewitt, UN

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Bread and highways

I miss Jack Warner and Louis Lee Sing’s 2012 west Port-of-Spain traffic plan. Do you?

Point tennis suffers lack of facilities, broken promises

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Tennis development in the deep southland of Point Fortin is being stifled according to reigning Tranquility tennis queen Shenelle Mohanmed.

Radical response needed to fight crime

A few weeks ago, on the CNC3 People Meter question, the nation was asked if prayer can stop crime. Eighty per cent answered, Yes.

Sharing and caring at the heart of Zippy’s Friends

“Our Zippy’s corner has become a safe place, where students listen, share stories and care for each other,” said Bernadine Subero-Dogan of Tabaquite RC Primary School, as she shared her experience...

Chile spanks Stickwomen 9-1

T&T’s senior women’s hockey team, led by captain Patricia Wright-Alexis, had a tough opening to its campaign at the FIH Women’s World League Round Two qualifiers, losing 9-1 to Chile in West...

Gupte to go after Duke

The contention between President of the Public Services Association (PSA) Watson Duke and Chairman of the Chaguaramas Development Authority (CDA) Gupte Lutchmedial over allegations that zoo...

Resident Co-ordinator and UNDP Resident Representative T&T said it could be argued that small states such as T&T were among the countries that faced the greatest need to formulate and implement comprehensive approaches to combat the negative impacts of climate change.

She said the Caribbean region as a whole was faced with seasonal events such as droughts, heatwaves, heavy rains and violent winds.

There was also the issue, Lall added, of slow onset events such as increased temperatures that affect sea and land surfaces, sea level rise, coastal erosion and coral bleaching.

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As the murder rate continues to spiral despite Government's efforts to clamp down on the criminal elements, corrupt cops are hindering the fight against crime.

Young men caught up in Enterprise gang life find it impossible to escape

When the street gets you, it sinks its claws in deep and it is very difficult to escape.

Durant wins 100m gold at Southern Games

Simplex's Kamaria Durant repeated as the women's 100 metres champion at the 53rd annual Southern Games held at Petrotrin Sports Club at Guaracuara Park, Point-a-Pierre, yesterday.

Trini-born doctor makes medical discovery

A Trinidad-born orthopaedic surgeon has made a discovery in the field of medicine.

Carmona to youth: Time to tackle climate change

Published on Jul 25, 2016, 11:00 pm AST

By Leah Sorias

President Anthony Carmona has urged young people from across the region to help tackle the problem of climate change and coastal erosion in the Caribbean as it can no longer be left up to the adults to do so.

“I do not personally feel or get this sense of heightened urgency within the Caribbean as it relates to climate change and coastal erosion at the level of Governments of the Caribbean and its citizenry,” Carmona said.

“We need to radically change this indifference and sensitise all. You, our young people, must become the vanguard because your parents and your grandparents will not suffer from the negatives of climate change as you will. You, your children and your grandchildren are the ones who will suffer so you have a vested interest in doing right in this environment of ours,” he added.

Carmona was at the time addressing a cocktail reception at The University Inn and Conference Centre, St Augustine, on Saturday night, where scores of young people from 13 countries across the region were in attendance. The youngsters are in Trinidad for about two weeks to participate in the 37th Annual Adventurous Journey, hosted by the Caribbean Awards Sub-regional Council (CASC).

“This cascading beauty of the natural world we often take for granted is in jeopardy and I do hope that your experience during the 2016 Adventurous Journey will create in you

awareness and foresight to champion the fight against climate change and environmental degradation in your respective countries," Carmona told them.

He stated that during the 15th Meeting of Presidents and Governor Generals, in Antigua and Barbuda earlier this year, Antigua's Ambassador on Climate Change, Dianne Black Lane, presented some worrying information.

"She told us that by the year 2100, 149 resorts, or in other words 149 revenue owners, throughout the Caribbean, will be at grave risk of total inundation. Think about this and its impact on the economies of those countries. So therefore, sustainable economic security must become an individual and collective responsibility of the young people of the region," he said.

Paris: A site for climate revolution

Published: Tuesday, December 1, 2015
Dizzanne Billy

People marching for local action on climate change on Sunday, Nov 29 at the Queen's Park Savannah, Port-of-Spain. Among them is Hedi Picquart, ambassador of France to T&T (in white shirt, straw hat and shades at far right). Important international climate talks are now ongoing in France, where public marches have been banned due to recent terrorism. The group IAMovement organised the local march around the Queen's Park Savannah. PHOTO: Dylan Quesnel

Thousands of slippers and other flower-filled footwear decorated the Place de la Republique, Paris. Even as T&T marched in Port-of-Spain, a state of emergency in Paris prevented what could have been the world's largest people's climate march.

This did not stop the planned marches from taking place across the world. More than 600,000 people took to the streets in 175 countries calling for a strong deal in Paris—a deal to champion the transition from fossil fuels to renewable energy.

In spite of the singular interruption in Paris and the recent attacks in the city, the mobilisation must continue. Why? Climate revolution is needed for the survival of all future generations, and now the global momentum for climate action is at an all-time high.

Where in the world is more suited for this climate revolution than France? France is steeped in revolutionary history. From the Enlightenment to the French Revolution, this country has been the ground for great historical change. This week, the heat is turned all the way up in Paris.

While we don our winter boots, leaders from over 190 countries will descend upon the city of lights to agree on a global climate agreement to direct climate change policy. The hope is that this agreement will follow suit and be revolutionary. It must create drastic change.

A truly ambitious climate agreement is needed; one which mirrors the resilience and tenacity of the people inhabiting the city. People much like the Honourable Heidi Picquart (French ambassador to T&T), who notified me that France is looking forward to the realisation of a climate agreement which is ambitious and legally binding.

He added that there needs to be periodical revisions to improve country contributions to climate action as this will lead to greater overall effectiveness of the climate movement. The global public is showing its support for revolutionary, paradigm-shifting climate action in a way that has never before been demonstrated. Now, it is up to the negotiators to do their part.

Climate change is no longer a negotiable topic. Even in the face of the tragedy which befell Paris, the ambassador was quick to add that the future of the world was at stake and therefore we must carry on, we must persevere for the sake of those which will come after us.

France is committed to climate change action, added Monsieur Stéphane Dovert (French Regional Cultural Action and Cooperation Adviser). This is a

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Lewis lashes Pakistan

To the strains of MX Prime's 'hold dem and wuk dem' Evin Lewis took cue and did exactly that against the Pakistanis, as he took West Indies to their first win of the series at the Queen's Park...

Pressure to make kids with guns probe public

Attorney General Faris Al-Rawi says the issue of whether the T&T Defence Force makes public the findings of its probe into the matter of children being photographed with high-powered weapons...

Point tennis suffers lack of facilities, broken promises

WALTER ALIBEY

Tennis development in the deep southland of Point Fortin is being stifled according to reigning Tranquility tennis queen Shenelle Mohanmed.

BREXIT BEGINS

The United Kingdom officially launched its Brexit policy last Wednesday under Article 50 of the Treaty of Lisbon which permits member states of the European Union to withdraw.

A SLICE OF THE GOOD LIFE

The American playwright Neil Simon (Barefoot in the Park, 1963 and The Odd Couple 1965) once postulated that, "There are two laws in the universe: the Law of Gravity and everybody likes Italian...

Radical response needed to fight crime

A few weeks ago, on the CNC3 People Meter question, the nation was asked if prayer can stop crime. Eighty per cent answered,

global conference which will require collective actions even as each country brings its own concerns to the table. Dovert stated that everyone needs to be concerned and we are each responsible for changing our personal behaviour; we will only move forward when everyone is concerned about climate change.

Through climate revolution, change will happen. Perhaps Paris is the perfect place for this dynamic change. Perhaps, after 21 years of negotiations, the planets have aligned for the climate movement. Keep your fingers crossed for a climate revolution.

lifestyle

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Yes.

Army: Let Samaroo's family grieve in peace


The T&T Defence Force (TTDF) is again appealing to the public to stop circulating false, unsubstantiated and spurious remarks surrounding the death of Omar Samaroo, and is calling for more...

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Bread and highways


I miss Jack Warner and Louis Lee Sing's 2012 west Port-of-Spain traffic plan. Do you?

Young, old need jobs in San Rafael


Unemployment and lack of activities for young people are the top priorities for residents of San Raphael, a village in east Trinidad.

MIAMI-DADE COUNTY MARCH 24, 2017 6:33 PM

Climate change ‘the biggest challenge the city of Miami will ever face,’ mayor says

1 of 3

Miami Mayor Tomas Regalado is greeted by well-wishers before his final State of the City address on Friday. **C.M. Guerrero**

BY DAVID SMILEY
dsmiley@miamiherald.com

With two decades in public office coming to a close, the Republican mayor of Miami looked to the future Friday and saw a coastal city threatened by rising seas.

Referring to climate change as “the biggest challenge the city of Miami will ever face,” Tomás Regalado reserved a rare forward-thinking moment during a reflective 2017 State of the City address to warn of sea-level rise.

The two-term mayor, who will step down in November at the age of 70 because of term limits, wants to use property tax dollars to fund $100 million in projects protecting the city from sea-level rise — a problem he acknowledges Miami has been slow to address. He hopes to give voters a chance to approve a bond referendum as they head to the polls to name his successor.

Mayor Tómas Regalado and the State of the City Address

Referring to climate change as "the biggest challenge the city of Miami will ever face," Tomás Regalado reserved a rare forward-thinking moment during a reflective 2017 State of the City address to warn of sea-level rise.

C.M. Guerrero - The Miami Herald

"Mind you, this bond issue will not increase property taxes," said Regalado, noting that Miami plans to negate any tax increases by taking on new debt only as old debt expires. "It will ensure that our grandchildren will still be able to call Miami a home."

> **[CLIMATE CHANGE IS] THE BIGGEST CHALLENGE THE CITY OF MIAMI WILL EVER FACE.**
> Mayor Tomás Regalado

Regalado, first elected 20 years ago to the city commission, spent about an hour at Miami City Hall reflecting on his tenure and touting his accomplishments. In a speech that steered clear of any controversies, he spoke about expanding Miami's trolley system, inflating the city's tax base to record highs, and building a city government capable of fighting everything from Zika to Florida Power & Light.

Ever mindful of messaging, the populist politician and former journalist seemed eager to define himself as "The Peoples' Mayor."

"I'm proud to say that for 22 years I've done what is best for the citizens of Miami, whether it was popular or not, with total disregard for what is best politically," he said, although critics will surely disagree. "That is what my legacy is."

He proudly told the audience that architectural work is under way at the historic Miami Marine Stadium, a long-stalled pet project where a different bond initiative will fund $37 million in renovations in the near future. But Regalado placed an emphasis on investing in flood prevention, an effort that has already stalled once.

Last year, commissioners shot down his administration's proposal to place a $275 million bond referendum on the presidential ballot, calling the idea half-baked. They said the list of projects was slapped together without much thought or public input — a problem that some are still concerned about.

"So far they're not doing enough," said Commissioner Ken Russell, who wants Regalado's administration to conduct a host of neighborhood meetings before coming up with a final wish list.

Miami City Manager Daniel Alfonso said the city plans to begin neighborhood meetings next month and expects to bring a comprehensive package to commissioners by July. The city, which recently hired resiliency officer Jane Gilbert and signed the Mayors' Climate Action Pledge Friday, is also updating an outdated stormwater master plan that left unaccounted future projections for sea level rise.

Alfonso has about four months until a deadline to get commission approval to put a referendum on the ballot. Regalado, who won't be around City Hall to oversee the projects should they be approved, said he wants to see it happen as a private citizen.

"I have lived all my life in the city of Miami. I will remain a resident for the rest of my life," he said. "We live in the best city of the world. Let's keep it that way."

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Gary Hford · Fort Lauderdale, Florida
Seems clear the Mayor has spent far too much time at a wine tasting.
Like · Reply · 1 · Mar 24, 2017 6:04pm

Jorge Ituarte
When will the people rise up. I mean like REALLY RISE UP!
Like · Reply · Mar 24, 2017 6:54pm

Jorge Martinez
Cyclical climate has being changing since the world has being turning. Liberals should leave man out of this. #MAGA
Like · Reply · Mar 24, 2017 6:54pm

Jose Testx ·
"Liberals" and conservative scientists who study the field are recording and analyzing what they see. Not their fault.
Like · Reply · 1 · Mar 25, 2017 1:58am

Jose Testx ·
You also seem confused about the meaning of "climate". It isn't the same as weather. Climate is the average across decades and longer. Weather is the up and down oscillations (that are very difficult to predict precisely even a few days out).
Like · Reply · 1 · Mar 25, 2017 2:00am

Marty Maher
CLIMATE CHANGED 4 TIMES TODAY
I WOKE UP IT WAS COOL
THEN IT RAINED
THEN IT WAS HUMID
THEN IT GOT WINDY
Like · Reply · 1 · Mar 24, 2017 7:36pm · Edited

Jose Testx ·
You using "climate" when you mean "weather". The climate when a certain dinosaur was around doesn't refer to whether it was rainy in the morning and foggy in the afternoon. It's the average across long periods of time. Our average is changing, the temperature is rising, because of CO2.
Like · Reply · 3 · Mar 25, 2017 1:57am