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Nestle Nespresso Sa

Nespresso Announces First Fruits of The Positive Cup, Its 2020 Sustainability Strategy

2015 JUL 13 (VerticalNews) -- By a News Reporter-Staff News Editor at The Business of Global Warming -- Marking the one-year anniversary of The Positive Cup, Nespresso's 2020 sustainability strategy, Jean-Marc Duvoisin, CEO of Nestle Nespresso, announced that significant progress had been made towards improving the lives of thousands of coffee farmers in countries ranging from South Sudan to Colombia, as part of the company's AAA Sustainable Quality Program.

Mr Duvoisin commented: "Through our sustainability investments, the first steps have been taken to rebuild the coffee industry in South Sudan, and we are helping to initiate a better future for farmers in Colombia through a retirement savings plan. These are small steps given the scale of the challenges, but I am proud that we can do our part to help farmers, while securing the future supply of the highest quality coffees for our business and our Club Members."

Over the past two years Nespresso has been working with its partner TechnoServe to help re-build the coffee sector in South Sudan, resulting in the country's first-ever coffee exports in 2013, and its first non-oil export to Europe. Nespresso aims to produce a new rare coffee from South Sudan, while providing alternative sources of sustainable income to local farmers.

"TechnoServe is proud to partner with Nespresso to help improve the livelihoods of thousands of South Sudan's enterprising farmers," said William Warshauer, President and CEO of TechnoServe. "As a nonprofit focused on business solutions to poverty, we believe that these kinds of investments hold great promise for long-term development impact."

"I have seen that there is great change within the community. We want to produce the right quality. People now have hope. We will be able to pay school fees for children and in the end develop the country," said Joseph Malish Thomas, a South Sudanese farmer taking part in the Nespresso AAA Program.

Nespresso aims to source 100 per cent of its coffee from its AAA Sustainable Quality Program by 2020. This depends heavily on the extension of the program into Kenya and Ethiopia, to support a more skilled, self-sufficient and sustainable farming community. In the last 12 months Nespresso and TechnoServe have provided training and technical assistance to over 10'000 farmers, and will reach 50,000 farmers by 2020.

In addition to the expansion of the AAA Program in Africa, Nespresso has also made progress to implement innovative welfare solutions to ensure that coffee farming remains attractive to younger generations. Nespresso launched last year a pilot retirement savings plan, together with the Colombian Ministry of Labour, Fairtrade International and local coffee cooperatives, for farmers taking part in its AAA Program in Caldas, Colombia. Already 850 AAA Fairtrade certified farmers entered the retirement savings plan, set up within the framework of the Colombian Beneficios Economicos Periodicos (BEPS) scheme. The first savings were transferred into farmers' dedicated bank accounts in May 2015.

"It gives us hope to be able to retire, so that when we reach our retirement age, we can rest and enjoy our old age quietly," said AAA farmer Delio Gonzalez.

"Coffee farmers work very hard their whole lives, yet they don't have the means to support themselves when they reach old age. That is why Nespresso and Fairtrade International are collaborating with the farmers in Colombia on an innovative retirement savings plan. Nespresso began sourcing Fairtrade certified coffee in 2014 from the Aguadas cooperative in Caldas, Colombia and so far over 800 farmers have decided to invest part of the Fairtrade Premium in actively planning for their retirement," said Harriet Lamb, CEO of Fairtrade International. "Our hope is that this will also help the younger generation see coffee farming as a viable career, so preserving this essential part of the Colombian economy and heritage."

Nespresso has also progressed with its agroforestry plan. The reintroduction of trees in coffee producing regions helps protect natural ecosystems, thereby strengthening coffee farms' resilience to climate change and ensuring sustainable coffee production for the future. Around 130,000 trees were planted in 2014 in Guatemala and Colombia as part of pilot programs. In the first half of 2015, approximately 200,000 trees have been planted in Ethiopia and Guatemala, and another 300,000 will be planted by the end of 2015 in Mexico and Colombia.

"The Rainforest Alliance has been working with Nespresso and the AAA Program since it was first created in 2003. Together we have seen great achievements that have delivered tangible improvement to lives of coffee farmers, families and communities, as well as environmental and biodiversity benefits," said Tensie Whelan, President of the Rainforest Alliance. "The progress being delivered by Nespresso, the Rainforest Alliance and Pur Projet through the agroforestry plan is building on that success, helping farmers to improve their resilience to the real and present threat that is climate change. Working together we are showing that care for the environment and for coffee farmers is a fundamental part of supplying the highest quality coffee to Nespresso's consumers around the world."

The Nespresso AAA Sustainable Quality Program was developed with the NGO the Rainforest Alliance to secure the supply of highest quality coffees, protect the environment and improve farmer welfare. Over 63'000 farmers are now taking part in the program in 11 countries, benefiting from technical assistance, trainings, price premiums and investments in infrastructures.

Keywords for this news article include: Climate Change, Global Warming, Nestle Nespresso Sa.

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Duquesne University

Nobel Laureate to Join Other Climate Change Experts at Duquesne Conference

2015 JUL 13 (VerticalNews) -- By a News Reporter-Staff News Editor at The Business of Global Warming -- Duquesne University, a Catholic, Spiritan institution, will tackle the topics of climate change and human relationship with the environment in its inaugural Presidential Conference on the Integrity of Creation in September.

The conference occurs at a critical time of influence and impact, falling between the religious discussion of climate change fostered by Pope Francis' just-released environmental encyclical and its secular bookend, the United Nations' Climate Change Conference in December. Additionally, Pope Francis will visit Philadelphia just days before the Duquesne conference, which is scheduled on its Pittsburgh campus Wednesday, Sept. 30, through Friday, Oct. 3.

Notables such as Dr. Richard Alley, a member of the Nobel-Peace-Prize-winning intergovernmental panel on climate change, will speak at the conference built around concern for the environment, a key facet of Duquesne's mission. President Charles J. Dougherty established a University endowment to support the annual conference series, which aligns with Duquesne's strategic plan to have respect for the environment shape academic and business decisions.

"The general conference theme, the Integrity of Creation, reflects the Spiritan mission of Duquesne University that celebrates global solidarity and environmental diversity on our planet," said Dr. Gerald Magill, chair of the conference committee. "There is a profound obligation of stewardship that we must honor, especially now when there is international understanding of the extensive global problems that climate change causes. The urgency and importance of climate change have inspired this inaugural conference."

Global health, housing in coastal areas, clean air and water, agriculture diversity and international security are among the areas climate change impacts, Magill said. "Our responsibility for and accountability to the common good connects the disparate elements of environmental degradation and destruction that arise from human-caused climate changes," said Magill, who also holds the Gallagher Chair for the Integration of Science, Theology, Philosophy and Law.

Keywords for this news article include: Climate Change, Global Warming, Duquesne University.

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Climate Resolve

Path To Positive: Los Angeles Launches At L.A. City Hall

2015 JUL 13 (VerticalNews) -- By a News Reporter-Staff News Editor at The Business of Global Warming -- A standing-room only crowd assembled in the Tom Bradley Room of Los Angeles City Hall on Thursday, June 25, for the launch of "Path to Positive: Los Angeles--Leveraging Regional Action for Global Impact on Climate Solutions," an initiative jointly organized by the nonprofits Climate Resolve and ecoAmerica.

Path to Positive: Los Angeles is a project to empower local leaders in five sectors--faith, health, business, higher education, and local municipalities--to engage Angelenos in climate solutions. For the three-year initiative, ecoAmerica and Climate Resolve will support the leaders and organizations who sign up with monthly webinars and other online resources targeted to their sectors. Also announced at the event: a Path to Positive conference on November 6, 2015 at the Cathedral of Los Angeles.

"It's not just environmentalists that are going to lead on climate change--it's everyone," said Jonathan Parfrey, Executive Director of Climate Resolve. "When we focus on communities, we can engage Angelenos on support for policy solutions and public action at the state and local level. While U.S. EPA is being blocked by the Supreme Court, it is more important than ever to take local action."

Among the local officials who spoke about collective efforts to tackle climate change in Los Angeles and Southern California: Long Beach Mayor Robert Garcia; State of California Treasurer John Chiang; State of California Controller Betty Yee; Los Angeles City Attorney Mike Feuer; and Los Angeles City Controller Ron Galperin. Mayor Garcia discussed the greening of the Port of Long Beach and the city's soon-to-be introduced sustainability plan, adding that the most exciting element was its focus to "make Long Beach a climate-resilient city."

"We need to convert climate change from special interest to public interest," said Bob Perkowitz, President of ecoAmerica. "With Path to Positive, we are trying to use LA as an example for the rest of the world. It's encouraging that 100 have already signed on."

Nurit Katz, the Chief Sustainability Officer at UCLA, was among those representing higher education and spoke about schools being "a living laboratory for sustainability." Allis Druffel of Interfaith Power & Light took the opportunity to discuss how the Pope's encyclical is "about people and how we treat the poor and vulnerable among us." To that point, Malcolm Carson of Community Health Councils discussed the issue from a health frame, pointing out that communities that contribute the least to climate change often suffer the most from the urban heat island effect. On the business front, Tom Bowman, a member of the California Business Alliance for a Clean Economy, shared his own success in making climate change central to business--"cutting emissions and saving money while doing it."

Keywords for this news article include: Climate Change, Global Warming, Climate Resolve.

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Climate Research

Data from King Abdul-Aziz University Provide New Insights into Climate Research (Antarctic near-surface air temperatures compared with ERA-Interim values since 1979)

2015 JUL 13 (VerticalNews) -- By a News Reporter-Staff News Editor at The Business of Global Warming -- Data detailed on Climate Research have been presented. According to news reporting from Jeddah, Saudi Arabia, by VerticalNews journalists, research stated, "ERA-Interim reanalysis for near-surface air temperature agrees well with land stations in most regions with the principal exception of the Antarctic. Here we compare annual and monthly values from 40 manned and automatic weather stations (AWSs) with ERA-Interim between 1979 and 2013."

The news correspondents obtained a quote from the research from King Abdul-Aziz University, "In terms of absolute differences between ERA-Interim and the station observations, ERA-Interim is biased warm (by up to 5 degrees C) at the few inland stations, but biased cool at lower latitudes between 65 degrees S and 78 degrees S (by up to 6 degrees C) at some locations. These biases tend to reduce between the period 1979-1990 and 2002-2013 at many sites, but they increase at three sites on the Antarctic Peninsula. Comparisons of differences in variability show one or nine stations have standard deviation values for ERA-Interim 20% less or more than the station series. Time series agreement in terms of monthly correlations of anomalies is good (r 0.89) for most of the stations, but seven are below 0.80, with ten between the two thresholds. Finally, we produce an Antarctic average time series by simple averaging of the 40 stations and ERA-Interim time series, as well as calculating an average based on all land points across the Antarctic from ERA-Interim."

According to the news reporters, the research concluded: "The series based on all land points is more variable on the year-to-year timescale and trends for the overall period are reduced."

For more information on this research see: Antarctic near-surface air temperatures compared with ERA-Interim values since 1979. *International Journal of Climatology*, 2015;35(7):1354-1366. *International Journal of Climatology* can be contacted at: Wiley-Blackwell, 111 River St, Hoboken 07030-5774, NJ, USA. (Wiley-Blackwell - www.wiley.com/; *International Journal of Climatology* - [onlinelibrary.wiley.com/journal/10.1002/\(ISSN\)1097-0088](http://onlinelibrary.wiley.com/journal/10.1002/(ISSN)1097-0088))

Our news journalists report that additional information may be obtained by contacting P.D. Jones, King Abdulaziz Univ, Center Excellence Climate Change Res, Dept. of Meteorol, Jeddah 21413, Saudi Arabia.

Keywords for this news article include: Asia, Jeddah, Saudi Arabia, Climate Research

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Climate Change

Data from University of Tasmania Provide New Insights into Climate Change (Self and world in lay interpretations of climate change)

2015 JUL 13 (VerticalNews) -- By a News Reporter-Staff News Editor at The Business of Global Warming -- Investigators discuss new findings in Climate Change. According to news reporting out of Hobart, Australia, by VerticalNews editors, research stated, "This paper aims to report on an in-depth qualitative study that focuses on the convergence of the interpretive activities of knowing, living in and valuing the world in lay reasoning about climate change. Although awareness is growing that lay people interact with scientific knowledge about climate change in complex ways, relatively little is known about this interaction."

Our news journalists obtained a quote from the research from the University of Tasmania, "Much quantitative research on public attitudes to climate change does little to draw out the cognitive and experiential processes by which lay people arrive at understandings of climate change. Design/methodology/approach - Through narrative analysis of qualitative interviews, this paper examines lay rationalities of climate change as a process of not only knowing the world (epistemology), but of being oriented towards the world (ontology) and valuing the world (axiology). The findings emphasise the extent of individual variation in lay interpretations of climate change, and their internal complexity. Almost all participants display differences in reasoning about climate change when considering their personal lives as compared to the wider, public world. Distinct accounts of self and world in lay rationalities are evident in the ways that participants imagine the future and express their feelings of culpability for and responsibility to act on climate change."

According to the news editors, the research concluded: "Originality/value - This paper argues that lay reasoning about climate science does not just engage ways of knowing the world but also ways of being in and valuing the world so as to open up multiple trajectories for comprehension."

For more information on this research see: Self and world in lay interpretations of climate change. *International Journal of Climate Change Strategies and Management*, 2015;7(2):140-153. *International Journal of Climate Change Strategies and Management* can be contacted at: Emerald Group Publishing Limited, Howard House, Wagon Lane, Bingley BD16 1WA, W Yorkshire, England. (Emerald Group Publishing - www.emeraldinsight.com; *International Journal of Climate Change Strategies and Management* - www.emeraldinsight.com/journals.htm?issn=1756-8692)

Our news journalists report that additional information may be obtained by contacting R.J. Denniss, University of Tasmania, Sch Geog & Environm Studies, Hobart, Tas, Australia.

Keywords for this news article include: Hobart, Climate Change, Global Warming, Australia and New Zealand

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Climate Change

Data on Climate Change Discussed by Researchers at National Autonomous University (Disentangling the drivers of change in Common Teal migration phenology over 50 years: land use vs. climate change effects)

2015 JUL 13 (VerticalNews) -- By a News Reporter-Staff News Editor at The Business of Global Warming -- Fresh data on Climate Change are presented in a new report. According to news reporting originating in Mexico City, Mexico, by VerticalNews journalists, research stated, "A large body of research has accumulated on the impact of climate change on wildlife movements and distributions, especially for migratory birds. We used large ringing datasets for the Common Teal (*Anas crecca*) from the Camargue, southern France, to compare historic (from 1956-1975) spatiotemporal patterns of teal recovery with those seen in modern (2002-2012) years and assess whether the migration phenology of these ringed birds and their use of the Camargue as winter quarters has changed."

The news reporters obtained a quote from the research from National Autonomous University, "Because teal are short-distance migrants (i.e., they breed in northern Europe and winter north of the Sahara), they would be predicted to delay their autumn migration in response to climate change. Conversely, ring recoveries showed that teal are now arriving much earlier: a stable 80 % of the recoveries were made locally in the Camargue each week between mid-November and late January in the modern dataset, whereas this percentage was only 53 % on average in the older data, and the proportion of recoveries made locally in the Camargue gradually increased through the autumn and winter until late January. This suggests that Camargue habitats have changed markedly and become more attractive to teal compared to other potential wintering areas, consistent with known changes in local habitat management practices and improvements in the body condition of the birds."

According to the news reporters, the research concluded: "Despite the fact that global climate change will likely be one of the main drivers of wildlife distribution over the long term and at large spatial scales, local habitat management should not be overlooked, as it can increase habitat attractivity to migratory birds."

For more information on this research see: Disentangling the drivers of change in Common Teal migration phenology over 50 years: land use vs. climate change effects. *Journal of Ornithology*, 2015;156(3):647-655. *Journal of Ornithology* can be contacted at: Springer, 233 Spring St, New York, NY 10013, USA. (Springer - www.springer.com; *Journal of Ornithology* - www.springerlink.com/content/2193-7192/)

Our news correspondents report that additional information may be obtained by contacting M. Guillemain, National Autonomous University of Mexico, Inst Ecol, Dept. of Ecol Evolut, Mexico City 04510, DF, Mexico. Additional authors for this research include C.A. Pernollet, G. Massez, F. Cavallo, G. Simon and J. Champagnon.

Keywords for this news article include: Mexico City, Climate Change, Global Warming, North and Central America

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Climate Research

Data on Climate Research Reported by L.P. Guo and Co-Researchers (Variation of the proportion of precipitation occurring as snow in the Tian Shan Mountains, China)

2015 JUL 13 (VerticalNews) -- By a News Reporter-Staff News Editor at The Business of Global Warming -- New research on Climate Research is the subject of a report. According to news reporting originating in Urumqi, People's Republic of China, by VerticalNews journalists, research stated, "Snowfall in mountainous areas provides indispensable water sources for arid and semi-arid watersheds. Changes in snowfall and snowmelt regimes have significantly impacted the water resources' variations and management."

The news reporters obtained a quote from the research, "This study addresses the ratio of snowfall to precipitation (S/P) in the Tian Shan Mountains, China. It aims to examine changes in S/P ratio and its synchronization with climate change. The results show that the average S/P ratio experienced a downward trend under the precipitation and snowfall increases as well as temperature increases during the cold seasons in 1961-2010. Spatially, the S/P ratios show an increasing trend in the Boertala Valley and the southern slope of the middle Tian Shan Mountains, but a decreasing trend in Yili Valley, and the western and the northern slope of the middle Tian Shan Mountains. The S/P ratios decreased significantly in middle altitudes with elevation ranging from 1500 to 2500 m, but either decreased or increased at elevations below 1500 m due to a temperature inversion in the elevation belt. In high altitudes with elevation over 3500 m, the magnitudes of the decreased S/P ratios were small because the temperature was always below freezing. The decreases in S/P ratio was mainly attributed to the relative changes in snowfall (dS/S) being less than that in precipitation (dP/P), whereas the increases in S/P ratio resulted from the relative changes in snowfall (dS/S) being more than that in precipitation (dP/P)."

According to the news reporters, the research concluded: "Temperature increases have also lead to the decreases in S/P ratios to some extent."

For more information on this research see: Variation of the proportion of precipitation occurring as snow in the Tian Shan Mountains, China. *International Journal of Climatology*, 2015;35(7):1379-1393. *International Journal of Climatology* can be contacted at: Wiley-Blackwell, 111 River St, Hoboken 07030-5774, NJ, USA. (Wiley-Blackwell - www.wiley.com/; *International Journal of Climatology* - [onlinelibrary.wiley.com/journal/10.1002/\(ISSN\)1097-0088](http://onlinelibrary.wiley.com/journal/10.1002/(ISSN)1097-0088))

Our news correspondents report that additional information may be obtained by contacting L.P. Guo, Xinjiang Key Lab Water Cycle & Utilizat Arid Zone, Urumqi, People's Republic of China.

Keywords for this news article include: Urumqi, Climate Research, People's Republic of China

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Greenhouse Gases

Data on Greenhouse Gases Discussed by Researchers at Nanjing Agricultural University [Annual net greenhouse gas balance in a halophyte (*Helianthus tuberosus*) bioenergy cropping system under various soil practices in Southeast China]

2015 JUL 13 (VerticalNews) -- By a News Reporter-Staff News Editor at The Business of Global Warming -- Current study results on Greenhouse Gases have been published. According to news reporting from Jiangsu, People's Republic of China, by VerticalNews journalists, research stated, "A full accounting of net greenhouse gas balance (NGHGB) and greenhouse gas intensity (GHGI) was examined in an annual coastal reclaimed saline Jerusalem artichoke-fallow cropping system under various soil practices including soil tillage, soil ameliorant, and crop residue amendments. Seasonal fluxes of soil carbon dioxide (CO₂), methane (CH₄), and nitrous oxide (N₂O) were measured using static chamber method, and the net ecosystem exchange of CO₂ (NEE) was determined by the difference between soil heterotrophic respiration (R-H) and net primary production (NPP)."

The news correspondents obtained a quote from the research from Nanjing Agricultural University, "Relative to no-tillage, rotary tillage significantly decreased the NPP of Jerusalem artichoke while it had no significant effects on the annual R-H. Rotary tillage increased CH₄ emissions, while seasonal or annual soil N₂O emissions did not statistically differ between the two tillage treatments. Compared with the control plots, soil ameliorant or straw amendment enhanced R-H, soil CH₄, and N₂O emissions under the both tillage regimes. Annual NGHGB was negative for all the field treatments, as a consequence of net ecosystem CO₂ sequestration exceeding the CO₂-equivalents released as CH₄ and N₂O emissions, which indicates that Jerusalem artichoke-fallow cropping system served as a net sink of GHGs. The annual net NGHGB and GHGI were estimated to be 11-21% and 4-8% lower in the NT than in RT cropping systems, respectively. Soil ameliorant and straw amendments greatly increased NPP and thus significantly decreased the negative annual net NGHGB."

According to the news reporters, the research concluded: "Overall, higher NPP but lower climatic impacts of coastal saline bioenergy production would be simultaneously achieved by Jerusalem artichoke cultivation under no-tillage with improved saline soil conditions in southeast China."

For more information on this research see: Annual net greenhouse gas balance in a halophyte (*Helianthus tuberosus*) bioenergy cropping system under various soil practices in Southeast China. *Global Change Biology Bioenergy*, 2015;7(4):690-703. *Global Change Biology Bioenergy* can be contacted at: Wiley-Blackwell, 111 River St, Hoboken 07030-5774, NJ, USA.

Our news journalists report that additional information may be obtained by contacting S.W. Liu, Nanjing Agr Univ, Jiangsu Key Lab Low Carbon Agr & GHGs Mitigat, Nanjing 210095, Jiangsu, People's Republic of China. Additional authors for this research include C. Zhao, Y.J. Zhang, Z.Q. Hu, C. Wang, Y.J. Zong, L. Zhang and J.W. Zou.

Keywords for this news article include: Jiangsu, Climate Change, Global Warming, Greenhouse Gases, People's Republic of China

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Global Warming and Climate Change

Extreme makeover: Mankind's unprecedented transformation of Earth

2015 JUL 13 (VerticalNews) -- By a News Reporter-Staff News Editor at The Business of Global Warming -- Human beings are pushing the planet in an entirely new direction with revolutionary implications for its life, a new study by researchers at the University of Leicester has suggested.

The research team led by Professor Mark Williams from the University of Leicester's Department of Geology has published their findings in a new paper entitled 'The Anthropocene Biosphere' in *The Anthropocene Review*.

Professor Jan Zalasiewicz from the University of Leicester's Department of Geology who was involved in the study explained the research: "We are used to seeing headlines daily about environmental crises: global warming, ocean acidification, pollution of all kinds, looming extinctions. These changes are advancing so rapidly, that the concept that we are living in a new geological period of time, the Anthropocene Epoch - proposed by the Nobel Prize-winning atmospheric chemist Paul Crutzen - is now in wide currency, with new and distinctive rock strata being formed that will persist far into the future.

"But what is really new about this chapter in Earth history, the one we're living through? Episodes of global warming, ocean acidification and mass extinction have all happened before, well before humans arrived on the planet. We wanted to see if there was something different about what is happening now."

The team examined what makes the Anthropocene special and different from previous crises in Earth's history. They identified four key changes:

In total, the team suggests that these changes represent a planetary transformation as fundamental as the one that saw the evolution of the photosynthetic microbes which oxygenated the planet 2.4 billion years ago, or that saw the transition from a microbial Earth to one dominated by multicellular organisms half a billion years ago.

Professor Williams added: "We think of major changes to the biosphere as the big extinction events, like that which finished off the dinosaurs at the end of the Cretaceous Period. But the changes happening to the biosphere today may be much more significant, and uniquely are driven by the actions of one species, humans."

Keywords for this news article include: University of Leicester, Global Warming and Climate Change.

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Climate Research

Findings from Delft University of Technology Update Understanding of Climate Research (Sea level rise projections for northern Europe under RCP8.5)

2015 JUL 13 (VerticalNews) -- By a News Reporter-Staff News Editor at The Business of Global Warming -- Fresh data on Climate Research are presented in a new report. According to news reporting from Delft, Netherlands, by VerticalNews journalists, research stated, "Sea level rise poses a significant threat to coastal communities, infrastructure, and ecosystems. Sea level rise is not uniform globally but is affected by a range of regional factors."

The news correspondents obtained a quote from the research from the Delft University of Technology, "In this study, we calculate regional projections of 21st century sea level rise in northern Europe, focusing on the British Isles, the Baltic Sea, and the North Sea. The input to the regional sea level projection is a probabilistic projection of the major components of the global sea level budget. Local sea level rise is partly compensated by vertical land movement from glacial isostatic adjustment. We explore the uncertainties beyond the likely range provided by the IPCC, including the risk and potential rate of marine ice sheet collapse. Our median 21st century relative sea level rise projection is 0.8 m near London and Hamburg, with a relative sea level drop of 0.1 m in the Bay of Bothnia (near Oulu, Finland). Considerable uncertainties remain in both the sea level budget and in the regional expression of sea level rise."

According to the news reporters, the research concluded: "The greatest uncertainties are associated with Antarctic ice loss, and uncertainties are skewed towards higher values, with the 95th percentile being characterized by an additional 0.9 m sea level rise above median projections."

For more information on this research see: Sea level rise projections for northern Europe under RCP8.5. *Climate Research*, 2015;64(1):15-23. *Climate Research* can be contacted at: Inter-Research, Nordbunte 23, D-21385 Oldendorf Luhe, Germany. (Inter-Research Science Center - www.int-res.com; Climate Research - www.int-res.com/journals/cr/cr-home/)

Our news journalists report that additional information may be obtained by contacting A. Grinsted, Delft University of Technology, Dept. of Geosci & Remote Sensing, NL-2628 CN Delft, Netherlands. Additional authors for this research include S. Jevrejeva, R.E.M. Riva and D. Dahl-Jensen.

Keywords for this news article include: Delft, Europe, Netherlands, Climate Research

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Climate Research

Findings from Hadley Center Provide New Insights into Climate Research (Uncertainties in gridded area-average monthly temperature, precipitation and sunshine for the United Kingdom)

2015 JUL 13 (VerticalNews) -- By a News Reporter-Staff News Editor at The Business of Global Warming -- Investigators publish new report on Climate Research. According to news reporting originating from Devon, United Kingdom, by VerticalNews editors, the research stated, "We assess the uncertainties in the monthly 5-km resolution gridded values and derived areal averages of UK temperature and precipitation since 1910, and sunshine since 1929, developed by the Met Office National Climate Information Centre. Subsampling experiments are used to estimate the sampling uncertainties as a function of the density of the observing network; these estimates are then ascribed to historical gridded values and area averages according to the historical sampling density."

Our news editors obtained a quote from the research from Hadley Center, "Available historical manuscripts could support future extension of gridded and areal-average records back to 1901 for temperature, about 1871 for precipitation and 1921 for sunshine, with sufficient sampling to provide reliable historical context for current events. We combine the sampling uncertainties since 1910 with estimated calibration and measurement uncertainties to yield total uncertainties that we tabulate and illustrate in association with selected series."

According to the news editors, the research concluded: "Methods and results are discussed in the light of existing estimates of uncertainties in Central England temperature and UK regional precipitation."

For more information on this research see: Uncertainties in gridded area-average monthly temperature, precipitation and sunshine for the United Kingdom. *International Journal of Climatology*, 2015;35(7):1367-1378. *International Journal of Climatology* can be contacted at: Wiley-Blackwell, 111 River St, Hoboken 07030-5774, NJ, USA. (Wiley-Blackwell - www.wiley.com/; International Journal of Climatology - [onlinelibrary.wiley.com/journal/10.1002/\(ISSN\)1097-0088](http://onlinelibrary.wiley.com/journal/10.1002/(ISSN)1097-0088))

The news editors report that additional information may be obtained by contacting T. Legg, Hadley Center, Met Off, Exeter EX1 3PB, Devon, United Kingdom.

Keywords for this news article include: Devon, Europe, United Kingdom, Climate Research

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Climate Research

Findings from King Abdul-Aziz University in the Area of Climate Research Described (Long-term temperature and precipitation records from the Falkland Islands)

2015 JUL 13 (VerticalNews) -- By a News Reporter-Staff News Editor at The Business of Global Warming -- Investigators publish new report on Climate Research. According to news originating from Jeddah, Saudi Arabia, by VerticalNews correspondents, research stated, "In this article, we develop long-term series of monthly average temperatures and precipitation totals for the modern recording site on the Falkland Islands (at Mount Pleasant Airport). The air temperature series extends back to 1895, but with 16 missing months in 1902 and 1907/8."

Our news journalists obtained a quote from the research from King Abdul-Aziz University, "The precipitation series extends back to 1904, but has all but four months missing in the period 1921-1923. All missing values during the early 1980s are infilled using the ERA-Interim Reanalysis."

According to the news editors, the research concluded: "We compare long-term variations in both variables with the nearest long-term record from Punta Arenas in Chile, and for air temperature with a sea surface temperature series from around the islands."

For more information on this research see: Long-term temperature and precipitation records from the Falkland Islands. *International Journal of Climatology*, 2015;35(7):1224-1231. *International Journal of Climatology* can be contacted at: Wiley-Blackwell, 111 River St, Hoboken 07030-5774, NJ, USA. (Wiley-Blackwell - www.wiley.com/; International Journal of Climatology - [onlinelibrary.wiley.com/journal/10.1002/\(ISSN\)1097-0088](http://onlinelibrary.wiley.com/journal/10.1002/(ISSN)1097-0088))

The news correspondents report that additional information may be obtained from D.H. Lister, King Abdulaziz Univ, Dept. of Meteorol, Center Excellence Climate Change Res, Jeddah 21413, Saudi Arabia.

Keywords for this news article include: Asia, Jeddah, Saudi Arabia, Climate Research

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Climate Change

Findings from Meteo-France Broaden Understanding of Climate Change (Climate change assessment for a small island: a Tahiti downscaling experiment)

2015 JUL 13 (VerticalNews) -- By a News Reporter-Staff News Editor at The Business of Global Warming -- New research on Climate Change is the subject of a report. According to news reporting originating from Toulouse, France, by VerticalNews correspondents, research stated, "This study addresses the projected 21st century changes in austral summer precipitation and future precipitation anomalies related to El Nina Southern Oscillation (ENSO) for a South Pacific island: Tahiti, French Polynesia. An approach involving 2 successive downscaling steps is proposed here as a first attempt to simulate precipitation over a small orographic island."

Our news editors obtained a quote from the research from Meteo-France, "First, the 50 km mesh global atmospheric model ARPEGE is forced by bias-corrected sea surface temperatures (SSTs) from a CMIP5 scenario. This model drives the limited area model ALADIN. The final 12 km mesh regional simulation coarsely captures the island of Tahiti. Historical and scenario runs (RCP4.5 and RCP8.5) are therefore available at the island scale. Linking station data and historical model outputs using quantile-quantile plots allows a correction of the biases of the regional simulation and an assessment of precipitation changes over the 21st century. For both scenarios, mean austral summer precipitation tend to increase over the century on the south-east side of Tahiti, following the present El Nina-like precipitation pattern. This trend could be a local manifestation of the large-scale drift of the tropical Pacific Ocean towards an El Nina-like spatial structure. This drift is indeed verified in the SST fields. Then, superimposed upon this slowly evolving mean state, future La Nina events would cause positive precipitation anomalies, whereas future La Nina events would cause negative precipitation anomalies."

According to the news editors, the research concluded: "However, in the last period of RCP8.5, future El Nina events do not seem to affect precipitation anymore, suggesting a damping of the warm events, probably due to a warmer mean state."

For more information on this research see: Climate change assessment for a small island: a Tahiti downscaling experiment. *Climate Research*, 2015;63(3):233-247. *Climate Research* can be contacted at: Inter-Research, Nordbunte 23, D-21385 Oldendorf Luhe, Germany. (Inter-Research Science Center - www.int-res.com; Climate Research - www.int-res.com/journals/cr/cr-home/)

The news editors report that additional information may be obtained by contacting M. Hopuare, Meteo France, Direct Climatol, Toulouse, France. Additional authors for this research include M. Pontaud, J.P. Ceron, M. Deque and P. Ortega.

Keywords for this news article include: France, Europe, Toulouse, Climate Change, Global Warming

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Climate Research

Findings from Nanjing University Broaden Understanding of Climate Research (A hybrid statistical downscaling model for prediction of winter precipitation in China)

2015 JUL 13 (VerticalNews) -- By a News Reporter-Staff News Editor at The Business of Global Warming -- Researchers detail new data in Climate Research. According to news reporting from Jiangsu, People's Republic of China, by VerticalNews journalists, research stated, "Downscaling techniques can effectively improve the coarse resolution and poor representation of precipitation predicted by general circulation model (GCM). In this study, a statistical downscaling (SD) method, based on the singular value decomposition (SVD), is proposed for better representing the coupled variation between predictors and winter precipitation in China."

The news correspondents obtained a quote from the research from Nanjing University, "By comparing current predictors from Climate Forecast System version 2 (CFSv2) of National Centers for Environmental Prediction and previous predictors from observation, the two best appropriate predictors, the winter sea level pressure (SLP) from the CFSv2 and the autumn sea-ice concentration (SIC) from observation, are selected to construct the SD model for prediction of winter precipitation in China. Three downscaling schemes are developed by involving the SLP, SIC, and both of them (i.e. SLP-scheme, SIC-scheme, and SS-scheme), respectively. Validations for the schemes show a considerable improvement of performance in predicting China winter precipitation, compared with the original CFSv2 output. The temporal and spatial anomaly correlation coefficient (ACC) and root mean square errors (RMSE) were estimated. For the cross validation, the spatial ACC are increased from approximate to 0.01 of the CFSv2 to ≥ 0.3 of the downscaling model. For the independent validation, the temporal RMSE from the downscaling schemes are all decreased more than 30%."

According to the news reporters, the research concluded: "In particular, the results using the SS-scheme showed relatively smaller RMSE than those of either the SLP-scheme or SIC-scheme, and hence can reproduce the precipitation anomaly in 2011 and 2012 winters more accurately."

For more information on this research see: A hybrid statistical downscaling model for prediction of winter precipitation in China. *International Journal of Climatology*, 2015;35(7):1309-1321. *International Journal of Climatology* can be contacted at: Wiley-Blackwell, 111 River St, Hoboken 07030-5774, NJ, USA. (Wiley-Blackwell - www.wiley.com/; *International Journal of Climatology* - [onlinelibrary.wiley.com/journal/10.1002/\(ISSN\)1097-0088](http://onlinelibrary.wiley.com/journal/10.1002/(ISSN)1097-0088))

Our news journalists report that additional information may be obtained by contacting Y. Liu, Nanjing Univ Informat Sci & Technol, Collaborat Innovat Center Forecast & Evaluat Meteoro, Nanjing, Jiangsu, People's Republic of China.

Keywords for this news article include: Jiangsu, Climate Research, People's Republic of China

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Climate Projections

Findings from Pusan National University in the Area of Climate Projections Reported (Regional climate projection over South Korea simulated by the HadGEM2-AO and WRF model chain under RCP emission scenarios)

2015 JUL 13 (VerticalNews) -- By a News Reporter-Staff News Editor at The Business of Global Warming -- Fresh data on Climate Projections are presented in a new report. According to news reporting from Pusan, South Korea, by VerticalNews journalists, research stated, "This study assesses the regional climate projection newly generated within the framework of the national downscaling project in South Korea. To obtain fine-scale climate information (12.5 km), dynamical downscaling of the HadGEM2-AO global projections forced by the representative concentration pathway (RCP4.5 and RCP8.5) scenarios is performed using the Weather Research and Forecasting (WRF) modeling system."

The news correspondents obtained a quote from the research from Pusan National University, "Changes in temperature and precipitation in terms of long-term trends, daily characteristics and extremes are presented by comparing two 30 yr periods (2041-2070 vs. 2071-2100) in which increasing rates of emission forcing between the RCP4.5 and RCP8.5 scenarios are relatively similar and quite different, respectively. The temperature increase presents a relevant trend, but the degree of warming varies in different periods and emission scenarios. While the temperature distribution from the RCP8.5 projection is continuously shifted toward warmer conditions by the end of the 21st century, the RCP4.5 projection appears to stabilize warming in accordance with emission forcing. This shift in distribution directly affects the magnitude of extremes, which enhances extreme hot days but reduces extreme cold days. Precipitation changes, however, do not respond monotonically to emission forcing, as they exhibit less sensitivity to different emission scenarios. An enhancement of high intensity precipitation and a reduction of weak intensity precipitation are discernible, implying an intensified hydrologic cycle."

According to the news reporters, the research concluded: "Changes in return levels of annual maximum precipitation suggest an increased probability of extreme precipitation with 20 yr and 50 yr return periods."

For more information on this research see: Regional climate projection over South Korea simulated by the HadGEM2-AO and WRF model chain under RCP emission scenarios. *Climate Research*, 2015;63(3):249-266. *Climate Research* can be contacted at: Inter-Research, Nordbunte 23, D-21385 Oldendorf Luhe, Germany. (Inter-Research Science Center - www.int-res.com; Climate Research - www.int-res.com/journals/cr/cr-home/)

Our news journalists report that additional information may be obtained by contacting E.S. Im, Pusan National University, Div Earth Environm Syst, Pusan 609735, South Korea. Additional authors for this research include J.B. Ahn and S.R. Jo.

Keywords for this news article include: Pusan, South Korea, Climate Change, Global Warming

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Climate Research

Findings from University of Kansas Update Understanding of Climate Research (Global climate, sea level cycles, and biotic events in the Cambrian Period)

2015 JUL 13 (VerticalNews) -- By a News Reporter-Staff News Editor at The Business of Global Warming -- New research on Climate Research is the subject of a report. According to news reporting originating from Lawrence, Kansas, by VerticalNews correspondents, research stated, "The developing high-resolution chronostratigraphy of the Cambrian provides an updated age model for various geologic and biotic events that occurred during this critical period of Earth history. Broad, time-specific patterns of lithofacies, such as organic-rich deposits, and biofacies appear to be consistent across all Cambrian paleocontinents."

Our news editors obtained a quote from the research from the University of Kansas, "Records of important evolutionary events including first appearances of certain metazoan taxa, migrations, and extinctions, tend to coincide with changes in eustatic sea level, as do the positions of many Konservat-Lagerstätten, concretion horizons, agnostoid-rich beds, and other sedimentary features. Most of these events or horizons also show a relationship to perturbations in the global carbon cycle. The positions of organic-rich deposits bear strong relationship to both paleogeographic position and sea level history. Cambrian strata show evidence of cyclicity at multiple scales."

According to the news editors, the research concluded: "Synchronous or near-synchronous global cyclicity is inferred to be associated with oceanographic and climatic cycles characteristic of glacial expansion and deglaciation."

For more information on this research see: Global climate, sea level cycles, and biotic events in the Cambrian Period. *Palaeoworld*, 2015;24(1-2):5-15. *Palaeoworld* can be contacted at: Elsevier Science Bv, PO Box 211, 1000 Ae Amsterdam, Netherlands. (Elsevier - www.elsevier.com; *Palaeoworld* - www.elsevier.com/wps/product/cws_home/706740)

The news editors report that additional information may be obtained by contacting L.E. Babcock, University of Kansas, Dept. of Geol, Lawrence, KS 66047, United States. Additional authors for this research include S.C. Peng, C.E. Brett, M.Y. Zhu, P. Ahlberg, M. Bevis and R.A. Robison.

Keywords for this news article include: Kansas, Lawrence, United States, Climate Change, Global Climate, Global Warming, Climate Research, North and Central America

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Climate Research

Findings in the Area of Climate Research Reported from Charles University (Characterizing joint effects of spatial extent, temperature magnitude and duration of heat waves and cold spells over Central Europe)

2015 JUL 13 (VerticalNews) -- By a News Reporter-Staff News Editor at The Business of Global Warming -- New research on Climate Research is the subject of a report. According to news reporting out of Prague, Czech Republic, by VerticalNews editors, research stated, "Heat waves (HWs) and cold spells (CSs) have pronounced impacts on the natural environment and society. The main aim of this study was to identify major Central European HWs and CSs since 1950 and assess their severity not only from the viewpoint of temperature and duration but also as to the affected area."

Our news journalists obtained a quote from the research from Charles University, "The HWs and CSs were delimited from the E-OBS gridded data set. An extremity index was proposed that captures joint effects of spatial extent, temperature and duration of HWs and CSs. During the 1950-2012 period, we identified 18 major HWs and 24 major CSs over Central Europe. The most severe HW occurred in summer 1994, followed by the 2006 HW; both these events were far more extreme over Central Europe than HWs in the well-known 2003 and 2010 summers. The most severe CSs occurred in the winters of 1955/1956 and 1962/1963. The recent winter of 2011/2012 was found to be the sixth coldest since 1950/1951 according to the seasonal sum of the extremity index. The HWs and CSs were classified through a hierarchical cluster analysis of their characteristics (temperature amplitude, spatial extent of the core and duration) into four basic types. The established list of major Central European HWs and CSs might be utilized in further analyses."

According to the news editors, the research concluded: "The extremity index may be applied over different areas to perform comparative studies and used also for evaluation of regional climate model simulations."

For more information on this research see: Characterizing joint effects of spatial extent, temperature magnitude and duration of heat waves and cold spells over Central Europe. *International Journal of Climatology*, 2015;35(7):1232-1244. *International Journal of Climatology* can be contacted at: Wiley-Blackwell, 111 River St, Hoboken 07030-5774, NJ, USA. (Wiley-Blackwell - www.wiley.com/; International Journal of Climatology - [onlinelibrary.wiley.com/journal/10.1002/\(ISSN\)1097-0088](http://onlinelibrary.wiley.com/journal/10.1002/(ISSN)1097-0088))

Our news journalists report that additional information may be obtained by contacting O. Lhotka, Charles Univ Prague, Fac Sci, Prague, Czech Republic.

Keywords for this news article include: Prague, Europe, Czech Republic, Climate Research

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Climate Research

Findings on Climate Research Reported by Investigators at Peking University (Daily temperature trend and sensitivity to grassland and cropland in eastern China during the past 32 years)

2015 JUL 13 (VerticalNews) -- By a News Reporter-Staff News Editor at The Business of Global Warming -- Data detailed on Climate Research have been presented. According to news reporting originating from Beijing, People's Republic of China, by VerticalNews correspondents, research stated, "In order to detect daily temperature trend in eastern China, observed daily temperature data spanning over 32 years (1979-2010) including daily maximum temperature (T-max), minimum temperature (T-min) and mean temperature (T-avg) were analysed. Besides, land cover conversions in grassland/cropland around 102 meteorological stations were also investigated to explore the sensitivity of temperature to grassland/cropland."

Our news editors obtained a quote from the research from Peking University, "Increasing trends were detected in observed T-max and T-min, with distinct connection to the distribution of grassland/cropland. T-max changed greatly in grassland and T-min in cropland. Besides, unique seasonal and spatial variability was discovered in T-max and T-min, respectively. Finally, percentile-based temperature indices derived from observed daily temperature data were further involved to demonstrate the sensitivity of temperature extremes to grassland/cropland, which showed that the annual occurrences of warm day, summer heat wave and winter warm night events were increasing, while those of cold night were decreasing."

According to the news editors, the research concluded: "Analysis of thresholds that distinguished summer heat wave and winter warm night events suggested higher temperature in grassland."

For more information on this research see: Daily temperature trend and sensitivity to grassland and cropland in eastern China during the past 32 years. *International Journal of Climatology*, 2015;35(7):1510-1518. *International Journal of Climatology* can be contacted at: Wiley-Blackwell, 111 River St, Hoboken 07030-5774, NJ, USA. (Wiley-Blackwell - www.wiley.com/; International Journal of Climatology - [onlinelibrary.wiley.com/journal/10.1002/\(ISSN\)1097-0088](http://onlinelibrary.wiley.com/journal/10.1002/(ISSN)1097-0088))

The news editors report that additional information may be obtained by contacting Y. Feng, Peking University, Coll Urban & Environm Sci, Beijing 100871, People's Republic of China.

Keywords for this news article include: Beijing, Climate Research, People's Republic of China

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Climate Research

Investigators at Ghent University Describe Findings in Climate Research (Droughts related to quasi-global oscillations: a diagnostic teleconnection analysis in North Ethiopia)

2015 JUL 13 (VerticalNews) -- By a News Reporter-Staff News Editor at The Business of Global Warming -- New research on Climate Research is the subject of a report. According to news reporting from Ghent, Belgium, by VerticalNews journalists, research stated, "This study presents a method to elaborate atmospheric teleconnections and applies it on the drought-prone region of North Ethiopia. By doing so, the relatively new procedure known as empirical orthogonal teleconnection analysis (EOT) was validated as an effective way for identifying the impact of atmospheric patterns in remote oceanic basins on rainfall trends at a particular location."

The news correspondents obtained a quote from the research from Ghent University, "Rainfall trends were investigated, and trend analysis on optimally interpolated rain gauge data (1948-2013) shows no significant decrease for kiremt rainfall (June-September) in North Ethiopia. However, EOT analysis of assimilated mean sea level pressure data reveals that not only El Nino Southern Oscillation (ENSO)/La Nina, but also the Indian Ocean Dipole (IOD) has a significant impact in North Ethiopia. Including the variability of the Southwest Monsoons (SWM), subsequent multivariate regression could model North Ethiopian kiremt rainfall from these three teleconnections ($R^2 = 0.64$), representing 89% of all dry years. In particular, the interaction between these three teleconnections was a major contributor to the 1983-1985 droughts and famine. The study hence finds a significant impact of three atmospheric teleconnections (ENSO, IOD, SWM) on North Ethiopian rainfall variability."

According to the news reporters, the research concluded: "Moreover, it is pointed out that EOT analysis is a useful tool to identify the relations between drought risk and remote atmospheric systems."

For more information on this research see: Droughts related to quasi-global oscillations: a diagnostic teleconnection analysis in North Ethiopia. *International Journal of Climatology*, 2015;35(7):1534-1542. *International Journal of Climatology* can be contacted at: Wiley-Blackwell, 111 River St, Hoboken 07030-5774, NJ, USA. (Wiley-Blackwell - www.wiley.com/; *International Journal of Climatology* - [onlinelibrary.wiley.com/journal/10.1002/\(ISSN\)1097-0088](http://onlinelibrary.wiley.com/journal/10.1002/(ISSN)1097-0088))

Our news journalists report that additional information may be obtained by contacting S. Lanckriet, University of Ghent, Dept. of Phys & Astron, B-9000 Ghent, Belgium. Additional authors for this research include A. Frankl, E. Adgo, P. Termonia and J. Nyssen.

Keywords for this news article include: Ghent, Europe, Belgium, Climate Research

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Climate Research

Investigators at University of North Carolina Discuss Findings in Climate Research (Snowfall event characteristics from a high-elevation site in the Southern Appalachian Mountains, USA)

2015 JUL 13 (VerticalNews) -- By a News Reporter-Staff News Editor at The Business of Global Warming -- Current study results on Climate Research have been published. According to news reporting from Asheville, North Carolina, by VerticalNews journalists, research stated, "Accurate assessment of snowfall patterns in high-elevation remote areas is essential to providing a foundation for further climatological analyses. The Southern Appalachian Mountain (SAM) region of the eastern US provides a unique study area due to its low latitude and proximity to the Gulf of Mexico and Atlantic Ocean."

The news correspondents obtained a quote from the research from the University of North Carolina, "Major snowstorms, such as the remnants of Hurricane Sandy in October 2012, can result in heavy snowfall of 100 cm or greater in favorable upslope regions. Understanding the behavior of these precipitation patterns is important due to flooding threats caused by a combination of factors including deep snowpack exposed to heavy rainfall, cloud immersion, and high dew point temperatures, further exacerbating flooding threats. To contribute to this understanding, we installed the Mobile Precipitation Research and Monitoring (MOPRAM) station at Roan Mountain (1875 m) on the Tennessee/North Carolina border in October 2012. MOPRAM allowed us to analyze liquid equivalent precipitation, new snowfall, snow depth, air temperature, and relative humidity at high temporal resolutions during the 2012-2013 snow season. We present the observed snowfall event characteristics (e.g. new snowfall, liquid equivalent precipitation, atmospheric conditions, and synoptic patterns) along with how these characteristics compare to other sites in the SAM. In our 25 event dataset, we observed the following patterns: conditionally unstable upstream lapse rates; predominantly northwest winds; high-to-low elevation precipitation enhancement near a factor of 3; and 364 mm of snow liquid equivalent on Roan Mountain."

According to the news reporters, the research concluded: "An estimated 391 cm of snow fell at Roan during the 2012-2013 season using nearby snow liquid ratios as an estimate for snowfall."

For more information on this research see: Snowfall event characteristics from a high-elevation site in the Southern Appalachian Mountains, USA. *Climate Research*, 2015;63(3):171-190. *Climate Research* can be contacted at: Inter-Research, Nordbunte 23, D-21385 Oldendorf Luhe, Germany. (Inter-Research Science Center - www.int-res.com; Climate Research - www.int-res.com/journals/cr/cr-home/)

Our news journalists report that additional information may be obtained by contacting D.T. Martin, University of North Carolina, Dept. of Atmospher Sci, Asheville, NC 28804, United States. Additional authors for this research include L.B. Perry, D.K. Miller and P.T. Soule.

Keywords for this news article include: Asheville, United States, North Carolina, Climate Research, North and Central America

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Greenhouse Gases

Investigators from Auburn University Zero in on Greenhouse Gases (Spatiotemporal patterns of evapotranspiration along the North American east coast as influenced by multiple environmental changes)

2015 JUL 13 (VerticalNews) -- By a News Reporter-Staff News Editor at The Business of Global Warming -- Current study results on Greenhouse Gases have been published. According to news reporting from Auburn, Alabama, by VerticalNews journalists, research stated, "The North American east coast has experienced significant land-use and climate changes since the beginning of the 20th century. In this study, using the Dynamic Land Ecosystem Model 2.0 driven by time-series input data of land use, climate and atmospheric CO₂, we examined how these driving forces have affected the spatiotemporal trends and variability of evapotranspiration (ET) in this region during 1901-2008."

The news correspondents obtained a quote from the research from Auburn University, "Annual ET in the North American east coast during this period was 648.3 +/- 38.6mm/year and demonstrated an increasing trend. Factorial model simulations indicated that climate variability explained 76% of the inter-annual ET variability. Although land-use change only explained 16% of the ET temporal variability, afforestation induced the upward trend of ET and increased annual ET by 12.8mm/year. Elevated atmospheric CO2 reduced annual ET by 0.84mm, and its potential impacts under future atmospheric CO2 levels could be much larger than estimates for the historical 1901-2008 period. Climate change determined the spatial pattern of ET changes across the entire study area, whereas land-use changes dramatically affected ET in watersheds with significant land conversions. In spite of the multiple benefits from afforestation, its impacts on water resources should be considered in future land-use policy making."

According to the news reporters, the research concluded: "Elevated ET may also affect fresh water availability for the increasing social and economic water demands."

For more information on this research see: Spatiotemporal patterns of evapotranspiration along the North American east coast as influenced by multiple environmental changes. *Ecohydrology*, 2015;8(4):714-725. *Ecohydrology* can be contacted at: Wiley-Blackwell, 111 River St, Hoboken 07030-5774, NJ, USA. (Wiley-Blackwell - www.wiley.com/; *Ecohydrology* - [onlinelibrary.wiley.com/journal/10.1002/\(ISSN\)1936-0592](http://onlinelibrary.wiley.com/journal/10.1002/(ISSN)1936-0592))

Our news journalists report that additional information may be obtained by contacting Q.C. Yang, Auburn University, Sch Forestry & Wildlife Sci, Int Center Climate & Global Change Res, Auburn, AL 36849, United States. Additional authors for this research include H.Q. Tian, X. Li, B. Tao, W. Ren, G.S. Chen, C.Q. Lu, J. Yang, S.F. Pan, K. Banger and B.W. Zhang.

Keywords for this news article include: Auburn, Alabama, United States, Climate Change, Global Warming, Greenhouse Gases, North and Central America

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Deforestation

Lax rules put Congo's forests, key carbon reserve, at risk

2015 JUL 13 (VerticalNews) -- By a News Reporter-Staff News Editor at The Business of Global Warming -- Without new conservation efforts, the Democratic Republic of Congo (DRC) could lose up to 20 percent of its forests, unleashing a 60 percent increase in carbon emissions, says a new study by researchers at the University of Vermont's Gund Institute for Ecological Economics.

Published by PLOS ONE, the study explores Central Africa's tropical forests, which are among the world's largest carbon reserves. While these forests have historically experienced low deforestation rates, pressures to clear land are growing due to development, foreign investment in agriculture, and shifting land use management, particularly in the DRC.

DRC has the greatest area of intact African forests, which store approximately 22 billion tons of carbon in aboveground live biomass. However, only 10 percent of its forests are protected, says UVM's Gillian Galford, the study's lead author.

"Our findings show that the current approach to forest management is insufficient to protect African forests and their carbon storage," says Galford, a Gund Fellow and professor in UVM's Rubenstein School of Environment and Natural Resources.

The research simulated changes in land use and carbon emissions based on three policy scenarios from 2010 to 2050 by developing the SimCongo model:

The study finds that passive protection of the DRC's forest and woodland savanna is insufficient to reduce deforestation. It also shows that increased conservation measures are needed to protect Congo forests, their unique ecology, and their important role in the global carbon cycle.

Greater conservation efforts, including new protected areas, land use zoning, and an emphasis on agricultural intensification over expansion, could reduce deforestation by more than half, compared to current trends, researchers say.

International support for REDD+, a proposed UN forest conservation and carbon reduction plan, could also help to achieve the DRC's conservation goals, researchers add.

Keywords for this news article include: Deforestation, Climate Change, Global Warming, Greenhouse Gases, University of Vermont.

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Climate Change

Major Midwest flood risk underestimated by as much as 5 feet, study finds

2015 JUL 13 (VerticalNews) -- By a News Reporter-Staff News Editor at The Business of Global Warming -- As floodwaters surge along major rivers in the midwestern United States, a new study from Washington University in St. Louis suggests federal agencies are underestimating historic 100-year flood levels on these rivers by as much as five feet, a miscalculation that has serious implications for future flood risks, flood insurance and business development in an expanding floodplain.

"This analysis shows that average high-water marks on these river systems are rising about an inch per year -- that's a rate ten times greater than the annual rise in sea levels now occurring due to climate change," said Robert Criss, PhD, professor of geology in the Department of Earth and Planetary Sciences in Arts & Sciences and author of the study.

Published this month in an advance online issue of the Journal of Earth Science, the findings are important, Criss said, because many of the nation's flood-control river levee systems are not engineered to withstand floods that rise much higher than the projected 100-year flood level.

Any flood that rises even a few inches over the top of a 100-year levee has the potential to cause a catastrophic breach of the flood control system, he warns.

Based on complicated equations currently used by key federal agencies, such as the Federal Emergency Management Agency (FEMA) and the U.S. Army Corps of Engineers (USACE), the official 100-year flood level is a key national index of potential flood severity. Levees are commonly designed to withstand floods at "100-year" levels and "100-year" flood zones are delineated on detailed flood insurance maps produced by FEMA.

Criss, a hydrogeologist who has studied water flows on major rivers for decades, has long argued that man-made river control systems, such as levees, locks, dams and navigation-enhancing dikes, have gradually increased the odds of catastrophic flooding by tightly constricting river channels and preventing floodwaters from flowing naturally into surrounding wetlands and floodplains.

Global warming and the resulting increase in extreme weather cycles has only added to the flooding risk in recent years, he said.

In his study, Criss argues that the statistical formulas now used to set federally-recognized official levels for 100-year flood events are grossly inaccurate because they assume conditions are the same as they were many decades ago, when the rivers were relatively untamed and global weather patterns were more consistent.

In a 2008 study, he showed that flooding patterns along the Mississippi River near Hannibal, Missouri, were already in an extreme range -- far beyond what would be expected using the official federal flood risk calculations.

Since the publication of that study, floods at Hannibal have exceeded the "10-year" flood levels in 2009, 2010 and 2011; in both 2013 and 2014, the area experienced stages that were officially designated as "50-year" floods, he said.

"Such outcomes are far too unlikely to be attributed to a nearly continuous succession of statistical flukes, and instead must be attributed to faulty calculation of flood risk," Criss said. "Many factors such as climate change and in-channel structures are causing flood levels to rise, so realistic estimation of future flood levels must take these changes into account."

Criss' study proposes a new statistical equation for the analysis of environmental variables that are changing over time. Criss applied his equation to the well-recorded history of peak water levels or "stages" that occur as a flood reaches its highest crest of the year.

"Official calculations emphasize discharges (flows) in flood risk analysis, yet many compelling reasons show that water levels (stages) should be used instead," Criss said. "Stages are easily understood and are, in fact, the most relevant quantity. If floodwaters are encroaching a home, the owner is concerned about the water level, not about the discharge of the river."

For example, he notes that the river level or "stage" of the Mississippi River at St. Louis has been recorded almost every day since 1861. A simple statistical analysis that assumes no change since 1861 in factors that might contribute to flooding would suggest that the St. Louis riverfront would experience an historic flood of about 44.6 feet about every hundred years, which is slightly less than that predicted by the discharge-based formulas currently used by the FEMA and the Corps of Engineers, Criss said.

Using the Criss equation, which gives more weight to modern river conditions, the present-day (2015) projected high water mark for a 100-year flood event on the St. Louis riverfront would be 51.5 feet, or more than 21 feet above flood stage.

For comparison, the official "100-year" flood levels at St. Louis would be only 46.1 feet according to USACE (2004), or 46.2 feet according to FEMA (2011).

"The official calculations for the '100-year' flood level at St. Louis are about 5.5 feet too low, primarily because they neglect both the tendency for the flood levels to increase over time and the increased volatility we're seeing with extreme weather swings," Criss said.

While a miscalculation of a few feet may not seem like a problem, it can make a huge difference when it comes to the reliability of our existing flood control systems.

In St. Louis, for instance, the present-day St. Louis flood wall was built in the 1960s at a height of 52 feet to handle a flood volume last experienced in St. Louis during 1844. The 100-year flood of 1993 rose to the highest level ever recorded in the city, reaching nearly 20 feet above flood stage and within two-and-a-half feet of overtopping the city's flood wall system.

"In other words, if we experience another flood on the Mississippi of the proportions seen in 1993, it's hard to say whether the floodwalls protecting St. Louis would be high enough to prevent extensive flooding in the downtown area," Criss said.

The Criss equation shows similar miscalculations of the official 100-year flood levels for many Midwestern cities and towns along the Mississippi, Missouri, Ohio, and Illinois rivers, including some large metro areas.

He suggests it's time for these communities to reassess their flood protection systems and to prepare now for higher flood crests.

Keywords for this news article include: Climate Change, Global Warming, Washington University in St. Louis.

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Climate Research

Reports Outline Climate Research Study Findings from Tungan University (Interdecadal shift of intense tropical cyclone activity in the Southern Hemisphere)

2015 JUL 13 (VerticalNews) -- By a News Reporter-Staff News Editor at The Business of Global Warming -- Investigators publish new report on Climate Research. According to news reporting originating in Taipei, Taiwan, by VerticalNews journalists, research stated, "The variability of intense tropical cyclone (TC) in the Southern Hemisphere and its relation to large-scale environmental parameters are examined through temporal and spatial principal component analysis (PCA). The results show that there was a shift from low intense TC activity during 1976/1977-1987/1988 (period 1) to high activity during 1988/1989-2007/2008 (period 2)."

The news reporters obtained a quote from the research from Tungan University, "Accumulated cyclone energy maps indicate that this shift is related to more occurrences of intense TCs in the southwestern Indian Ocean (SWIO) and northwestern Australian region during period 2. The spatial-mode PCA identifies distinct sea surface temperature anomaly (SSTA) patterns dominating in periods 1 and 2. The four dominating patterns in period 1 have low or negative SSTA in the TC development regions (especially over SWIO), whereas the five dominating ones in period 2 have much higher SSTA in the same regions. The temporal variability of the vertical wind shear (VWS) over the Indian Ocean (IO) is examined through the temporal-mode PCA. The first mode is El Nino Southern Oscillation (ENSO)-related, but there is no clear interdecadal variability identified. The second mode shows high VWS during the 1970s to early 1980s that is similar in length to period 1, followed by low VWS afterwards during period 2. This change in VWS thus may be responsible for the shift in intense TC activity over the IO. Linear correlative analysis shows that the mode of variability in VWS is significantly related to subtropical dipole events in the IO."

According to the news reporters, the research concluded: "Potential linkages of these findings with ENSO and Interdecadal Pacific Oscillation are discussed."

For more information on this research see: Interdecadal shift of intense tropical cyclone activity in the Southern Hemisphere. *International Journal of Climatology*, 2015;35(7):1519-1533. *International Journal of Climatology* can be contacted at: Wiley-Blackwell, 111 River St, Hoboken 07030-5774, NJ, USA. (Wiley-Blackwell - www.wiley.com/; *International Journal of Climatology* - [onlinelibrary.wiley.com/journal/10.1002/\(ISSN\)1097-0088](http://onlinelibrary.wiley.com/journal/10.1002/(ISSN)1097-0088))

Our news correspondents report that additional information may be obtained by contacting K.K.W. Cheung, Tungnan Univ, Dept. of Environm Management, Taipei, Taiwan. Additional authors for this research include N.B. Jiang, K.S. Liu and L.T.C. Chang.

Keywords for this news article include: Asia, Taipei, Taiwan, Climate Research

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Climate Change

Reports from Chinese Academy of Sciences Highlight Recent Findings in Climate Change (Genetic diversity and drivers of genetic differentiation of *Reaumuria songorica* of the Inner Mongolia plateau in China)

2015 JUL 13 (VerticalNews) -- By a News Reporter-Staff News Editor at The Business of Global Warming -- New research on Climate Change is the subject of a report. According to news reporting out of Hohhot, People's Republic of China, by VerticalNews editors, research stated, "We quantified genetic diversity and gene flow among eight populations of *Reaumuria songorica* in Inner Mongolia, China. Our results showed that genetic differentiation of *R. songorica* across the Inner Mongolian plateau is primarily clinal in nature and is driven primarily by differential landscape resistance across areas with changing patterns of seasonal precipitation, perhaps as a result of differential timing of reproductive phenology along precipitation gradients."

Our news journalists obtained a quote from the research from the Chinese Academy of Sciences, "Finding that seasonal patterns of precipitation, and not temperature, drive population connectivity and gene flow may have important implications for predicting the effects of climate change on this keystone foundation species and devising effective strategies to utilize it in restoration efforts to ameliorate ongoing desertification in the region. Genetic diversity was highest in the western part of the sampled population, perhaps indicating that this region has historically harbored the highest effective population size of the species or may have served as the source of recent range expansion to other parts of the sampled range which exhibited lower genetic diversity."

According to the news editors, the research concluded: "Understanding the ecological drivers of these relationships might be critical to resolving the causes of the geographical pattern of diversity, and could be important in understanding the ecology of the species sufficiently to anticipate climate change effects and effectively implement management strategies to restore the species and combat desertification."

For more information on this research see: Genetic diversity and drivers of genetic differentiation of *Reaumuria soongorica* of the Inner Mongolia plateau in China. *Plant Ecology*, 2015;216(7):925-937. *Plant Ecology* can be contacted at: Springer, Van Godewijkstraat 30, 3311 Gz Dordrecht, Netherlands. (Springer - www.springer.com; Plant Ecology - www.springerlink.com/content/1385-0237/)

Our news journalists report that additional information may be obtained by contacting J.Y. Yang, Inner Mongolia Academy Agr & Anim Husb Sci, Chinese Academy Sci, Inner Mongolia Prataculture Res, Hohhot 010031, People's Republic of China. Additional authors for this research include S.A. Cushman, X.M. Song, J. Yang and P.J. Zhang.

Keywords for this news article include: Hohhot, Climate Change, Global Warming, People's Republic of China

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Climate Change

Reports from Hunan University Describe Recent Advances in Climate Change (Elevation-dependent relationships between climate change and grassland vegetation variation across the Qinghai-Xizang Plateau)

2015 JUL 13 (VerticalNews) -- By a News Reporter-Staff News Editor at The Business of Global Warming -- New research on Climate Change is the subject of a report. According to news reporting from Xiangtan, People's Republic of China, by VerticalNews journalists, research stated, "As one of the most sensitive regions to climate change, the Qinghai-Xizang Plateau has been widely investigated as one unity for impacts of climate change on alpine grassland. However, previous findings might be confounded by distinct climate sensitivities at different elevations and different regional climates between Qinghai Province and Xizang Province, which lie at the two sides of Tanggula Mountains."

The news correspondents obtained a quote from the research from Hunan University, "In this study, we explored change trends of grassland vegetation, temperature and precipitation in growing season from 1982 to 2011, and elevation-dependent effects of climate change on grassland vegetation in the two provinces separately. The plateau grassland greenness gained improvement under climate warming and wetting during the past 30 years, especially in Qinghai Province. Temperature increased significantly with a warming magnitude of more than 1.5 degrees C over the plateau grassland. The interannual change of precipitation showed contrary trends between the two provinces. The main climate factor driving the grassland vegetation variation varied between the two provinces, with temperature being the main factor in Qinghai Province and precipitation being the main factor in Xizang Province."

According to the news reporters, the research concluded: "In particular, a more significant correlation between climate change and grassland vegetation variation was found at higher elevations, which reveals higher climate sensitivity in higher elevation areas of the plateau."

For more information on this research see: Elevation-dependent relationships between climate change and grassland vegetation variation across the Qinghai-Xizang Plateau. *International Journal of Climatology*, 2015;35(7):1638-1647. *International Journal of Climatology* can be contacted at: Wiley-Blackwell, 111 River St, Hoboken 07030-5774, NJ, USA. (Wiley-Blackwell - www.wiley.com/; International Journal of Climatology - [onlinelibrary.wiley.com/journal/10.1002/\(ISSN\)1097-0088](http://onlinelibrary.wiley.com/journal/10.1002/(ISSN)1097-0088))

Our news journalists report that additional information may be obtained by contacting J. Tao, Hunan Univ Sci & Technol, Coll Architecture & Urban Planning, Xiangtan, People's Republic of China. Additional authors for this research include Y.J. Zhang, J.W. Dong, Y. Fu, J.T. Zhu, G.L. Zhang, Y.B. Jiang, L. Tian, X.Z. Zhang, T. Zhang and Y. Xi.

Keywords for this news article include: Asia, Xiangtan, Climate Change, Global Warming, People's Republic of China

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Climate Research

Reports from University of Alaska Provide New Insights into Climate Research (Spatial and temporal changes in indices of extreme precipitation and temperature for Alaska)

2015 JUL 13 (VerticalNews) -- By a News Reporter-Staff News Editor at The Business of Global Warming -- Current study results on Climate Research have been published. According to news reporting originating from Fairbanks, Alaska, by VerticalNews correspondents, research stated, "Extreme temperature and precipitation events in Alaska are examined in an ensemble of global climate models (GCMs) and an atmospheric reanalysis. Extreme monthly maximum and minimum temperature and the monthly maximum 5-day precipitation amount are evaluated for a 30-year historical period and two 30-year future time slices (2050s and 2080s)."

Our news editors obtained a quote from the research from the University of Alaska, "Although biases exist, models capture the spatial pattern and seasonality of the extremes depicted by the ERA-40 reanalysis. Discrepancies between station data (Anchorage, Fairbanks and Barrow) and GCMs/reanalysis are larger than the model-reanalysis differences, and are consistent with (1) surface elevation differences arising from the models' resolution and (2) gauge undercatch of precipitation in the station data. GCMs project future changes that are 2-4 times larger than the across-model standard deviations. The largest changes projected by the GCMs are significantly different from the historical mean at the 95% confidence level. Changes in extreme minimum temperature and extreme 5-day precipitation projections are larger than changes in means. The extreme minimum temperatures are projected to increase 2-3 times as much as the extreme maximum temperatures in all seasons except summer, with the largest increases of extreme minima in coastal regions. By the 2080s, the increases in all three extremes indices are twice as large in the Representative Concentration Pathway (RCP) 8.5 as in the RCP 4.5 scenario. The magnitude of the projected increase of maximum 5-day precipitation is largest in southern and inland areas, although the percentage increase is largest in the north. In the RCP 8.5 simulations, the inter-annual variability of extreme temperatures narrows by the end of the century, most notably in autumn."

According to the news editors, the research concluded: "Record-breaking 5-day precipitation events become more common in the RCP 8.5 than in the RCP 4.5 scenario."

For more information on this research see: Spatial and temporal changes in indices of extreme precipitation and temperature for Alaska. *International Journal of Climatology*, 2015;35(7):1434-1452. *International Journal of Climatology* can be contacted at: Wiley-Blackwell, 111 River St, Hoboken 07030-5774, NJ, USA. (Wiley-Blackwell - www.wiley.com/; *International Journal of Climatology* - [onlinelibrary.wiley.com/journal/10.1002/\(ISSN\)1097-0088](http://onlinelibrary.wiley.com/journal/10.1002/(ISSN)1097-0088))

The news editors report that additional information may be obtained by contacting K.E. Bennett, University of Alaska, Int Arctic Res Center, Fairbanks, AK, United States.

Keywords for this news article include: Alaska, Fairbanks, United States, Climate Research, North and Central America

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Climate Research

Reports from University of East Anglia Advance Knowledge in Climate Research (Long-term changes in seasonal temperature extremes over Saudi Arabia during 1981-2010)

2015 JUL 13 (VerticalNews) -- By a News Reporter-Staff News Editor at The Business of Global Warming -- Current study results on Climate Research have been published. According to news reporting originating in Norwich, United Kingdom, by VerticalNews journalists, research stated, "Long-term changes in seasonal temperature extremes based on daily data across Saudi Arabia for the period 1981-2010 are analysed by assessing the trends for the four conventional seasons. Surface observations of daily maximum and minimum temperatures from high-quality datasets at 27 stations are used as the input."

The news reporters obtained a quote from the research from the University of East Anglia, "The trend throughout each season is then derived by employing Sen's slope estimator to four extreme value indices, four relative indices and three mean value indices. Warming trends for extreme value indices are observed for the majority of stations, particularly significant (at 95% level) in spring and summer seasons, however, mixed increase/decrease trends are found for the cold temperature extremes in autumn and winter seasons. Relative indices show significant warming trends for the majority of stations in all seasons; however, strong warming (above 5 days decade⁻¹) is witnessed in the spring, summer and autumn seasons. The rapid rise (fall) of the number of warm (cool) days compared to warm (cool) nights is observed in the winter, summer and autumn (winter and spring) seasons. Warming of cool/warm nights is insignificant for the majority of stations in winter. The national average of mean value index diurnal temperature range shows an increasing trend for all seasons; however, its mixed increase/decrease trends are observed for the majority of stations in summer and autumn seasons. Time series analysis reveals that irrespective of seasons, warming is clearly visible in Saudi Arabia after 1997."

According to the news reporters, the research concluded: "Variations of warming for different regions across the country are also noticed."

For more information on this research see: Long-term changes in seasonal temperature extremes over Saudi Arabia during 1981-2010. *International Journal of Climatology*, 2015;35(7):1579-1592. *International Journal of Climatology* can be contacted at: Wiley-Blackwell, 111 River St, Hoboken 07030-5774, NJ, USA. (Wiley-Blackwell - www.wiley.com/; *International Journal of Climatology* - [onlinelibrary.wiley.com/journal/10.1002/\(ISSN\)1097-0088](http://onlinelibrary.wiley.com/journal/10.1002/(ISSN)1097-0088))

Our news correspondents report that additional information may be obtained by contacting M.N. Islam, University of East Anglia, Sch Environm Sci, Climat Res Unit, Norwich NR4 7TJ, Norfolk, United Kingdom. Additional authors for this research include M. Almazroui, R. Dambul, P.D. Jones and A.O. Alamoudi.

Keywords for this news article include: Europe, Norwich, United Kingdom, Climate Research

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Climate Change

Reports from University of Stellenbosch Describe Recent Advances in Climate Change (Physiological and phenological responses of Protea 'Pink Ice' to elevated temperatures)

2015 JUL 13 (VerticalNews) -- By a News Reporter-Staff News Editor at The Business of Global Warming -- Investigators publish new report on Climate Change. According to news reporting originating in Stellenbosch, South Africa, by VerticalNews journalists, research stated, "Rising temperatures associated with global climate change may alter the physiology and phenology of Protea species and cultivars. Protea species are assumed to be well adapted to warm summers characteristic of their natural Mediterranean-type habitat, but their plasticity in responding to higher growth temperatures is not known."

The news reporters obtained a quote from the research from the University of Stellenbosch, "Using infrared lamps, a greenhouse-based temperature gradient was constructed, with temperatures ranging from ambient to ambient + 3.1 degrees C. Potted plants of Protea 'Pink Ice' (*P. compacta* R. Br x *P. susannae* Phill.) were grown at five positions along this gradient for 12 months under irrigation. Simultaneously, a field verification experiment in a nearby commercial 'Pink Ice' orchard was conducted under ambient temperature and ambient + 2.9 degrees C. Increased sclerophylly (leaf dry weight per unit area) with increasing temperature indicated leaf structural changes. While leaf area based gas exchange (net CO₂ assimilation rate, stomatal conductance and dark respiration rate) did not differ across the temperature gradient, leaf weight based CO₂ assimilation rate and dark respiration rate decreased significantly towards the upper end of the temperature range. The optimum temperature for net CO₂ assimilation rate (T-opt) showed seasonal adjustments, but increased in response to experimental warming only in the field experiment. Significant temperature elevation resulted in an earlier onset of spring bud break, but warming extended inflorescence initiation from the spring flush to the summer flush, leading to delayed flowering. Aboveground biomass allocation shifted from inflorescences to leaves and to a lesser degree to stems, with elevated temperatures, whereas root growth was stimulated in the middle of the warming range. The results of this study suggest that elevated temperature may prolong the vegetative growth period in some Protea cultivars where water is not limiting, at the expense of flower production. This could have significant economic and marketing consequences for commercial cut flower production systems."

According to the news reporters, the research concluded: "The findings are also of significance to ecologists studying the responses of Proteaceae to climate change."

For more information on this research see: Physiological and phenological responses of Protea 'Pink Ice' to elevated temperatures. *South African Journal of Botany*, 2015;99():93-102. *South African Journal of Botany* can be contacted at: Elsevier Science Bv, PO Box 211, 1000 Ae Amsterdam, Netherlands. (Elsevier - www.elsevier.com; South African Journal of Botany - www.elsevier.com/wps/product/cws_home/707238)

Our news correspondents report that additional information may be obtained by contacting E.L. Louw, University of Stellenbosch, Dept. of Hort Sci, ZA-7602 Stellenbosch, South Africa. Additional authors for this research include E.W. Hoffman, K.I. Theron and S.J.E. Midgley.

Keywords for this news article include: Stellenbosch, South Africa, Climate Change, Global Warming

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Climate Research

Reports from V.C. Slonosky and Co-Researchers Add New Data to Findings in Climate Research (Daily minimum and maximum temperature in the St-Lawrence Valley, Quebec: two centuries of climatic observations from Canada)

2015 JUL 13 (VerticalNews) -- By a News Reporter-Staff News Editor at The Business of Global Warming -- Data detailed on Climate Research have been presented. According to news reporting from St. Lambert, Canada, by VerticalNews editors, the research stated, "Climatological and meteorological observations in Canada begin in the first half of the 18th century. Continuous daily observations of the weather and climate for the province of Quebec start in the late 18th century."

The news correspondents obtained a quote from the research, "Estimates of daily minimum and maximum temperatures from historical fixed hour observations are provided from regression models based on hourly data from the modern period. Observations of temperature from different locations and observers are compared and regressions models are used to compile a single series of daily minimum and maximum temperatures extending back to 1742, with nearly continuous observations from 1798. Mean, absolute minimum and maximum values suggest considerable variability in the climate over the past two centuries. Based on a variety of climate indicators, exceptionally warm years include 1808, 1848, 1870, 1953 and 1998, while cold years include 1809, 1816, 1818, 1875 and 1904."

According to the news reporters, the research concluded: "Analysis of frost days and growing season length suggest a reduction in cold temperatures over past 200 years, while the incidence of cold spells and heat waves has decreased."

For more information on this research see: Daily minimum and maximum temperature in the St-Lawrence Valley, Quebec: two centuries of climatic observations from Canada. *International Journal of Climatology*, 2015;35(7):1662-1681. *International Journal of Climatology* can be contacted at: Wiley-Blackwell, 111 River St, Hoboken 07030-5774, NJ, USA. (Wiley-Blackwell - www.wiley.com/; *International Journal of Climatology* - [onlinelibrary.wiley.com/journal/10.1002/\(ISSN\)1097-0088](http://onlinelibrary.wiley.com/journal/10.1002/(ISSN)1097-0088))

Our news journalists report that additional information may be obtained by contacting V.C. Slonosky, ACRE Canada, Canadian Hist Climate Data Rescue Project, St Lambert, PQ, Canada.

Keywords for this news article include: Quebec, Canada, St. Lambert, Climate Research, North and Central America

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Climate Change

Reports on Climate Change Findings from Chinese Academy of Sciences Provide New Insights (Farmers' perceptions of climate change in China: the influence of social networks and farm assets)

2015 JUL 13 (VerticalNews) -- By a News Reporter-Staff News Editor at The Business of Global Warming -- Data detailed on Climate Change have been presented. According to news reporting originating from Beijing, People's Republic of China, by VerticalNews correspondents, research stated, "Farmers' perceptions of the local climate reflect their awareness of climate change and may affect their adaptation behaviors. However, current literature suffers a knowledge gap on farmers' perceptions of climate change."

Our news editors obtained a quote from the research from the Chinese Academy of Sciences, "This study examines farmers' perceptions of annual mean temperature, the consistency of these perceptions with meteorological record data, and what influences this relationship. The study found that > 70% of farmers in China perceived an increasing trend of annual mean temperature over the past 10 yr, while only 8% of farmers perceived a decreasing trend. Moreover, only 18% of farmers perceived a temperature change that was consistent with the meteorological record data. Econometric analysis shows that social networks can improve a farmer's ability to correctly perceive temperature changes. Additionally, those with a larger farm size are more likely to be able to consistently perceive temperature."

According to the news editors, the research concluded: "This study concludes with several policy and research implications."

For more information on this research see: Farmers' perceptions of climate change in China: the influence of social networks and farm assets. *Climate Research*, 2015;63(3):191-201. *Climate Research* can be contacted at: Inter-Research, Nordbunte 23, D-21385 Oldendorf Luhe, Germany. (Inter-Research Science Center - www.int-res.com; Climate Research - www.int-res.com/journals/cr/cr-home/)

The news editors report that additional information may be obtained by contacting L.L. Hou, Chinese Academy Sci, Center Chinese Agr Policy, Inst Geog Sci & Nat Resources Res, Beijing 100101, People's Republic of China. Additional authors for this research include J.K. Huang and J.X. Wang.

Keywords for this news article include: Beijing, Climate Change, Global Warming, People's Republic of China

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Climate Research

Reports on Climate Research Findings from University of Bucharest Provide New Insights (Spatial and temporal variability of climate extremes in Romania and associated large-scale mechanisms)

2015 JUL 13 (VerticalNews) -- By a News Reporter-Staff News Editor at The Business of Global Warming -- Current study results on Climate Research have been published. According to news reporting from Bucharest, Romania, by VerticalNews journalists, research stated, "The simultaneous variability of several climate extremes in Romania on the one hand and the understanding of the large-scale mechanisms responsible for this variability on the other are examined. Ten indices associated with temperature and precipitation extremes computed at high spatial resolution for the period 1961-2010 are analysed."

The news correspondents obtained a quote from the research from the University of Bucharest, "Significant increasing trends for the temperature extremes are detected in all seasons, except for autumn, with the highest increasing rate in summer and the lowest in spring. Regarding precipitation extremes, significant increasing trends over large areas in the frequency of very wet days and maximum daily amount during autumn and in the maximum duration of dry spells during summer are the only ones detected. The large-scale mechanisms responsible for these characteristics of variability, especially the simultaneous variability of several climate extremes, are identified through the canonical correlation analysis applied to a combination of various large-scale predictors and to combined climate extremes. In winter, it was found that the thermodynamic factor (represented by air temperature anomalies at 850 hPa) mainly controls the trends of temperature extremes in Romania, whereas the dynamic one (represented by the sea level pressure anomalies) controls the pattern of trend magnitude. Regarding precipitation extremes, the role of the two factors is reversed. The Carpathians' influence is noted for this season. In summertime, the thermodynamic factor is dominant for both temperature and precipitation extremes analysed in this article. For temperature extremes, the T850 alone could explain their variability characteristics, whereas for precipitation extremes (frequency and duration) the SH700 has the dominant role, except for the maximum duration of dry intervals, which is controlled by a combination of T850 and SH700 anomalies."

According to the news reporters, the research concluded: "The connections found in this study are strong and explain a great part of the total observed variance, showing that these results can be used in a future study to build skilful statistical downscaling models, simultaneously for several seasonal climate extremes, giving the results more physical coherence."

For more information on this research see: Spatial and temporal variability of climate extremes in Romania and associated large-scale mechanisms. *International Journal of Climatology*, 2015;35(7):1278-1300. *International Journal of Climatology* can be contacted at: Wiley-Blackwell, 111 River St, Hoboken 07030-5774, NJ, USA. (Wiley-Blackwell - www.wiley.com/; *International Journal of Climatology* - [onlinelibrary.wiley.com/journal/10.1002/\(ISSN\)1097-0088](http://onlinelibrary.wiley.com/journal/10.1002/(ISSN)1097-0088))

Our news journalists report that additional information may be obtained by contacting A. Busuioc, Univ Bucharest, Fac Phys, Bucharest, Romania. Additional authors for this research include A. Dobrinescu, M.V. Birsan, A. Dumitrescu and A. Orzan.

Keywords for this news article include: Europe, Romania, Bucharest, Climate Research

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Climate Change

Researchers at National Marine Fisheries Service Release New Data on Climate Change (Disentangling the effects of climate, abundance, and size on the distribution of marine fish: an example based on four stocks from the Northeast US shelf)

2015 JUL 13 (VerticalNews) -- By a News Reporter-Staff News Editor at The Business of Global Warming -- New research on Climate Change is the subject of a report. According to news reporting out of Woods Hole, Massachusetts, by VerticalNews editors, research stated, "Climate change and fishing can have major impacts on the distribution of natural marine resources. Climate change alters the distribution of suitable habitat, forcing organisms to shift their range or attempt to survive under suboptimal conditions."

Our news journalists obtained a quote from the research from National Marine Fisheries Service, "Fishing reduces the abundance of marine populations and truncates their age structure leading to range contractions or shifts. Along the east coast of the United States, there have been major changes in fish populations due to the impacts of fishing and subsequent regulations, as well as changes in the climate. Black sea bass, scup, summer flounder, and winter flounder are important commercial and recreational species, which utilize inshore and offshore waters on the northeast shelf. We examined the distributions of the four species with the Northeast Fisheries Science Center trawl surveys to determine if the along-shelf centres of biomass had changed over time and if the changes were attributed to changes in temperature or fishing pressure through changes in abundance and length structure. Black sea bass, scup, and summer flounder exhibited significant poleward shifts in distributions in at least one season while the Southern New England/Mid-Atlantic Bight stock of winter flounder did not shift. Generalized additive modelling indicated that the changes in the centres of biomass for black sea bass and scup in spring were related to climate, while the change in the distribution of summer flounder was largely attributed to a decrease in fishing pressure and an expansion of the length-age structure. While the changes in ocean temperatures will have major impacts on the distribution of marine taxa, the effects of fishing can be of equivalent magnitude and on a more immediate time scale."

According to the news editors, the research concluded: "It is important for management to take all factors into consideration when developing regulations for natural marine resources."

For more information on this research see: Disentangling the effects of climate, abundance, and size on the distribution of marine fish: an example based on four stocks from the Northeast US shelf. *ICES Journal of Marine Science*, 2015;72(5):1311-1322. *ICES Journal of Marine Science* can be contacted at: Oxford Univ Press, Great Clarendon St, Oxford OX2 6DP, England. (Oxford University Press - www.oup.com/; *ICES Journal of Marine Science* - icesjms.oxfordjournals.org)

Our news journalists report that additional information may be obtained by contacting R.J. Bell, Natl Marine Fisheries Serv, Northeast Fisheries Sci Center, Woods Hole, MA 02543, United States. Additional authors for this research include D.E. Richardson, J.A. Hare, P.D. Lynch and P.S. Fratantoni.

Keywords for this news article include: Woods Hole, Massachusetts, United States, Climate Change, Global Warming, North and Central America

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Climate Research

Researchers from Charles University Detail Findings in Climate Research (Spring-summer droughts in the Czech Land in 1805-2012 and their forcings)

2015 JUL 13 (VerticalNews) -- By a News Reporter-Staff News Editor at The Business of Global Warming -- Investigators publish new report on Climate Research. According to news originating from Prague, Czech Republic, by VerticalNews correspondents, research stated, "Drought is an extreme meteorological phenomenon involving serious economic consequences. In the Czech Lands, it is reflected in significant reductions in agricultural productivity, lack of water for hygiene and industry, and impacts of forest management."

Our news journalists obtained a quote from the research from Charles University, "Mean monthly temperature and precipitation series created for the Czech Lands for 1805-2012 were used to calculate spring (MAM) and summer (JJA) drought indices (SPI-1, SPI-12, SPEI-1, SPEI-12, Z-index and PDSI), which were then used for further analyses. Fluctuations in drought indices demonstrate an increasing long-term dryness in the Czech climate, statistically significant for SPEI-12 and PDSI in MAM and JJA (in MAM as well for SPEI-1 and Z-index). A significant concentration of drought episodes before 1880 may be attributed to a lack of precipitation, whereas the droughts of recent decades (particularly 2004-2012) are more strongly related to high temperatures. The effects of droughts are reflected in significant reductions in winter wheat and spring barley yields in the eastern province of Moravia. Regression analysis of drought forcings discloses the importance of the North Atlantic Oscillation phase and the aggregate effect of anthropogenic forcing (driven largely by increases in CO₂ concentration). Their magnitude of influence varies strongly with the type of drought index and season of the year. Other factors, such as solar irradiation and the Southern Oscillation phase make only minor contributions to drought variability."

According to the news editors, the research concluded: "The effects of volcanic activity and the Atlantic Multidecadal Oscillation are even weaker and statistically insignificant."

For more information on this research see: Spring-summer droughts in the Czech Land in 1805-2012 and their forcings. *International Journal of Climatology*, 2015;35(7):1405-1421. *International Journal of Climatology* can be contacted at: Wiley-Blackwell, 111 River St, Hoboken 07030-5774, NJ, USA. (Wiley-Blackwell - www.wiley.com/; *International Journal of Climatology* - [onlinelibrary.wiley.com/journal/10.1002/\(ISSN\)1097-0088](http://onlinelibrary.wiley.com/journal/10.1002/(ISSN)1097-0088))

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Keywords for this news article include: Prague, Europe, Czech Republic, Climate Research

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Climate Change

Researchers from Danish Technical University Report Recent Findings in Climate Change (Scalability of regional climate change in Europe for high-end scenarios)

2015 JUL 13 (VerticalNews) -- By a News Reporter-Staff News Editor at The Business of Global Warming -- Investigators publish new report on Climate Change. According to news reporting originating from Lyngby, Denmark, by VerticalNews correspondents, research stated, "With the help of a simulation using the global circulation model (GCM) EC-Earth, downscaled over Europe with the regional model DMI-HIRHAM5 at a 25 km grid point distance, we investigated regional climate change corresponding to 6 degrees C of global warming to investigate whether regional climate change generally scales with global temperature even for very high levels of global warming. Through a complementary analysis of CMIP5 GCM results, we estimated the time at which this temperature may be reached; this warming could be reached in the first half of the 22nd century provided that future emissions are close to the RCP8.5 emission scenario."

Our news editors obtained a quote from the research from Danish Technical University, "We investigated the extent to which pattern scaling holds, i.e. the approximation that the amplitude of any climate change will be approximately proportional to the amount of global warming. We address this question through a comparison of climate change results from downscaling simulations over the same integration domain, but for different driving and regional models and scenarios, mostly from the EU ENSEMBLES project. For almost all quantities investigated, pattern scaling seemed to apply to the 6 degrees simulation. This indicates that the single 6 degrees simulation in question is not an outlier with respect to these quantities, and that conclusions based on this simulation would probably correspond to conclusions drawn from ensemble simulations of such a scenario. In the case of very extreme precipitation, the changes in the 6 degrees simulation are larger than would be expected from a linear behaviour."

According to the news editors, the research concluded: "Conversely, the fact that the many model results follow a linear relationship for a large number of variables and areas confirms that the pattern scaling approximation is sound for the fields investigated, with the identified possible exceptions of high extremes of e.g. daily precipitation and maximum temperature."

For more information on this research see: Scalability of regional climate change in Europe for high-end scenarios. *Climate Research*, 2015;64(1):25-38. *Climate Research* can be contacted at: Inter-Research, Nordbunte 23, D-21385 Oldendorf Luhe, Germany. (Inter-Research Science Center - www.int-res.com; Climate Research - www.int-res.com/journals/cr/cr-home/)

The news editors report that additional information may be obtained by contacting O.B. Christensen, Danish Technical Univ, DTU Environm, Lyngby, Denmark. Additional authors for this research include S. Yang, F. Boberg, C.F. Maule, P. Thejll, M. Olesen, M. Drews, H.J.D. Sorup and J.H. Christensen.

Keywords for this news article include: Lyngby, Europe, Denmark, Climate Change, Global Warming

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Climate Research

Researchers from Environment Canada Report Recent Findings in Climate Research [Precipitation bias variability versus various gauges under different climatic conditions over the Third Pole Environment (TPE) region]

2015 JUL 13 (VerticalNews) -- By a News Reporter-Staff News Editor at The Business of Global Warming -- Current study results on Climate Research have been published. According to news reporting out of Saskatoon, Canada, by VerticalNews editors, research stated, "An international programme dedicated to the study of the Third Pole Environment (TPE) is now developing. The TPE region is centred on the Tibetan Plateau and concerns the interests of the surrounding countries and regions."

Our news journalists obtained a quote from the research from Environment Canada, "To improve input for hydrological research, we collected precipitation data on 241 meteorological stations across the TPE region; these data were obtained from various countries, thus including various types of gauges. Employing the procedure recommended by the World Meteorological Organization (WMO), a full version of bias adjustment was applied to the data, including adjustments for wind-induced error, wetting loss, evaporation loss and trace amount for each station. The results reveal that the average annual precipitation has increased considerably from a minimum of 4 mm to a maximum of 409 mm with an overall mean of 27% from the adjustment, the largest bias being found in the Chinese standard precipitation gauge (CSPG) which was used in the central TPE region. In addition, the bias shows variable spatial and temporal patterns in different climate zones throughout this area."

According to the news editors, the research concluded: "It is expected that this study and its results will be beneficial for hydrological and climatic studies over the TPE region."

For more information on this research see: Precipitation bias variability versus various gauges under different climatic conditions over the Third Pole Environment (TPE) region. *International Journal of Climatology*, 2015;35(7):1201-1211. *International Journal of Climatology* can be contacted at: Wiley-Blackwell, 111 River St, Hoboken 07030-5774, NJ, USA. (Wiley-Blackwell - www.wiley.com/; *International Journal of Climatology* - [onlinelibrary.wiley.com/journal/10.1002/\(ISSN\)1097-0088](http://onlinelibrary.wiley.com/journal/10.1002/(ISSN)1097-0088))

Our news journalists report that additional information may be obtained by contacting Y.Z. Ma, Environm Canada, Natl Hydrol Res Center, Saskatoon, SK, Canada. Additional authors for this research include Y.S. Zhang, D.Q. Yang and S. Bin Farhan.

Keywords for this news article include: Canada, Saskatoon, Saskatchewan, Climate Research, North and Central America

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Climate Modeling

Researchers from Nagoya University Describe Findings in Climate Modeling (Projection of Future Climate Change over Japan in Ensemble Simulations with a High-Resolution Regional Climate Model)

2015 JUL 13 (VerticalNews) -- By a News Reporter-Staff News Editor at The Business of Global Warming -- Investigators publish new report on Climate Modeling. According to news reporting originating from Nagoya, Japan, by VerticalNews correspondents, research stated, "Future changes in surface air temperature and precipitation over Japan by the end of the 21st century are projected by a well-developed non-hydrostatic regional climate model with a grid spacing of 5 km under the RCP8.5 scenario. Uncertainties in the projected temperature and precipitation are also evaluated with the results obtained from ensemble simulations using this high-resolution model."

Our news editors obtained a quote from the research from Nagoya University, "The projected future climate indicates robust increases in the annual-mean surface air temperature for all regions in Japan. In contrast, many regions do not exhibit statistically significant changes in annual precipitation. In some regions and months, however, monthly precipitation in a couple of members of the ensemble simulations has a statistically significant decrease or increase. Monthly precipitation over the eastern Japan Sea side (EJ) region in December has relatively robust decreases. These decreases are attributed to decreases or weakening of convection over the Japan Sea polar air-mass convergence zone, which is accounted for by the weakening of large-scale low-level northwesterly winds associated with the winter monsoon."

According to the news editors, the research concluded: "The relationship between precipitation and convergence in the EJ region is consistent with the results above: Convective clouds are shallower in the future climate compared with those in the present climate."

For more information on this research see: Projection of Future Climate Change over Japan in Ensemble Simulations with a High-Resolution Regional Climate Model. *SOLA*, 2015;11():90-94. *SOLA* can be contacted at: Meteorological Soc Japan, C, O Japan Meteorological Agency 1-3-4 Ote-Machi, Chiyoda-Ku, Tokyo, 100-0004, Japan. (Elsevier - www.elsevier.com; *SOLA* - www.elsevier.com/wps/product/cws_home/329)

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Keywords for this news article include: Nagoya, Climate Change, Global Warming, Climate Modeling

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Climate Change

Researchers from National Research Center Describe Findings in Climate Change (Effect of grazing period management on growth performances of camel in climate change condition)

2015 JUL 13 (VerticalNews) -- By a News Reporter-Staff News Editor at The Business of Global Warming -- Fresh data on Climate Change are presented in a new report. According to news originating from Rajasthan, India, by VerticalNews correspondents, research stated, "In order to decide the optimum time of grazing for camels during hot summer months, 10 growing camel calves were divided into 2 equal groups. First group was sent for grazing during 10:00 h to 16:00 h daily and second group allowed for grazing during therm neutral period."

Our news journalists obtained a quote from the research from National Research Center, "The climatic variables were recorded daily (April 2012 to March, 2013). The average daily gain and total body weight gain in calves sent for grazing during relatively cool parts of day (group 2) was significantly higher as compared to group 1 calves sent as per routine farm schedule. The average intake of fodder and water from manger was higher in group 1 calves. The average DMI from manger for group 1 calves was higher as compared to group 2 calves. The comparative biometrics of camel calves in different grazing management practices revealed that body length, heart girth, height at wither, neck length were significantly ($P < 0.01$) higher in group 2 calves as compared to group 1 calves. After 180 days of experimentation, hump circumference vertical and hind leg length were significantly ($P < 0.05$) increased in group 2 as compared to group I. Analysis of recorded data of climatic parameters revealed that average Maximum temperature was higher during June 2012. The values of THI also were higher in monsoon and post monsoon months hence the practice of sending camel calves during relatively comfortable part of hot and hot humid months was successful in getting good growth. The relative humidity was significantly higher during morning as compared to evening period for all months. The THI was significantly lower during morning as compared to evening hours for all months in different climate for whole year."

According to the news editors, the research concluded: "Economic analysis reveals that the cost of feed per kg body weight gain was quite less in group 2 as compared to group 1. So the practice of grazing of camel calves during cool hours of day remain profitable for farmers by looking at the body weight gain and better body conformation in climate change condition."

For more information on this research see: Effect of grazing period management on growth performances of camel in climate change condition. *Indian Journal of Animal Sciences*, 2015;85(6):638-642. *Indian Journal of Animal Sciences* can be contacted at: Indian Counc Agricultural Res, Kab-1, New Delhi 110012, India.

The news correspondents report that additional information may be obtained from C. Bhakati, Natl Res Center Camel, Bikaner 334001, Rajasthan, India. Additional authors for this research include S. Kumar and K. Nath.

Keywords for this news article include: Asia, India, Rajasthan, Climate Change, Global Warming

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Climate Research

Researchers from Technical University Provide Details of New Studies and Findings in the Area of Climate Research (Assessment of GCM capabilities to simulate tropospheric stability on the Arabian Peninsula)

2015 JUL 13 (VerticalNews) -- By a News Reporter-Staff News Editor at The Business of Global Warming -- Investigators publish new report on Climate Research. According to news reporting originating in Tharandt, Germany, by VerticalNews journalists, research stated, "Stability indices provide simple metrics to characterize tropospheric states favouring convection. Not only for regions where precipitation is mainly related to convective processes, important aspects of the climate comprising information from different levels and variables can therefore be summarized in scalar metrics."

The news reporters obtained a quote from the research from Technical University, "Although the linkage between tropospheric stability and convective precipitation is blurred by additional prerequisites often not resolved in atmospheric models, analysis of stability indices from global climate models (GCMs) provides a more process-orientated assessment than the separate analysis of the individual climate variables. This paper presents an assessment of GCM capabilities to simulate tropospheric stability on the Arabian Peninsula. Therefore, six stability indices (K-Index, Total Totals Index, Vertical Totals Index, Showalter Index, SWEAT and Cross Totals Index) were calculated for several GCMs from the Climate Model Intercomparison Project 3 archive for three locations. GCM indices were compared with reanalysis data from the National Centers for Environmental Prediction in collaboration with the National Center for Atmospheric Research as well as radiosoundings from the Integrated Global Radiosounding Archive. Comparison was done by means of a classification approach based on quantile values of the index distribution. Input parameters of the indices were also analysed and biases for indices as well as input parameters were identified. There are biases found for the different indices which can be attributed to some extent to biases of the input parameters. There is no input parameter which is biased in the same direction for all indices and locations. Due to the variability of the results, rankings of the models are characterized by large rank differences so that there is no overall best performing model."

According to the news reporters, the research concluded: "Nevertheless, this study provides some insight in the performance of the GCMs to simulate tropospheric stability at individual locations and so presents an alternative method of model performance assessment."

For more information on this research see: Assessment of GCM capabilities to simulate tropospheric stability on the Arabian Peninsula. *International Journal of Climatology*, 2015;35(7):1682-1696. *International Journal of Climatology* can be contacted at: Wiley-Blackwell, 111 River St, Hoboken 07030-5774, NJ, USA. (Wiley-Blackwell - www.wiley.com/; *International Journal of Climatology* - [onlinelibrary.wiley.com/journal/10.1002/\(ISSN\)1097-0088](http://onlinelibrary.wiley.com/journal/10.1002/(ISSN)1097-0088))

Our news correspondents report that additional information may be obtained by contacting K. Barfus, Technical University of Dresden, Inst Hydrol & Meteorol, D-01737 Tharandt, Germany.

Keywords for this news article include: Europe, Germany, Tharandt, Climate Research

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Climate Research

Researchers from University of Michigan Report on Findings in Climate Research (The use of atmospheric analogues to predict Alberta Clipper storm trajectories in a changing global climate)

2015 JUL 13 (VerticalNews) -- By a News Reporter-Staff News Editor at The Business of Global Warming -- Current study results on Climate Research have been published. According to news reporting originating in Ann Arbor, Michigan, by VerticalNews editors, the research stated, "Alberta Clippers are extratropical cyclones that form in Alberta, Canada and move east-southeastward over the Great Plains and Midwest regions. With the onset of global climate change and the potential shifts in atmospheric circulation patterns, however, this defined storm trajectory could be modified."

The news reporters obtained a quote from the research from the University of Michigan, "Since the affected regions support much of the national population and agricultural activity, the presence of the Alberta Clipper storm track influences regional climatological patterns. In this study, atmospheric analogues defined by global temperature and El Nino-Southern Oscillation (ENSO) characteristics are used to compare the trajectories of past Alberta Clipper storms to hypothesize how these could change with global warming."

According to the news reporters, the research concluded: "The results indicate that, although the trajectory azimuths from $t = 0$ to $t = 60$ are similar between the analogues, starting latitude and longitude results show that, on average, Warm analogue storms form further to the north and east than La Nina analogue Clippers."

For more information on this research see: The use of atmospheric analogues to predict Alberta Clipper storm trajectories in a changing global climate. *Applied Geography*, 2015;60():274-279. *Applied Geography* can be contacted at: Elsevier Sci Ltd, The Boulevard, Langford Lane, Kidlington, Oxford OX5 1GB, Oxon, England. (Elsevier - www.elsevier.com; Applied Geography - www.elsevier.com/wps/product/cws_home/30390)

Our news correspondents report that additional information may be obtained by contacting J. Ward, University of Michigan, Atmospher Ocean & Space Sci, Ann Arbor, MI 48109, United States.

Keywords for this news article include: Michigan, Ann Arbor, United States, Climate Change, Global Climate, Global Warming, Climate Research, North and Central America

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Climate Change

Researchers from University of Queensland Describe Findings in Climate Change (Climate security and economic security: The limits to climate change action in Australia?)

2015 JUL 13 (VerticalNews) -- By a News Reporter-Staff News Editor at The Business of Global Warming -- Investigators publish new report on Climate Change. According to news reporting originating in Brisbane, Australia, by VerticalNews editors, the research stated, "In 2007, Kevin Rudd was elected Prime Minister of Australia with the promise of pursuing strong action on global climate change. Less than 3 years later, he was deposed as leader of his party after walking away from proposed climate legislation."

The news reporters obtained a quote from the research from the University of Queensland, "One important part of this puzzle concerns the nature of political debate in Australia about climate action, with this debate orienting around the economic costs of climate action. This can be read as a competition between discourses of security: one focused on securing Australia and vulnerable others from the long-term threat posed by climate change, the other on securing Australia and Australians from the short-term threat climate change action posed to continued economic growth. Over time, the latter came to dominate contestation over climate change."

According to the news reporters, the research concluded: "This article maps these competing discourses, reflecting on what this case tells us about the politics of climate change in Australia and beyond."

For more information on this research see: Climate security and economic security: The limits to climate change action in Australia? *International Politics*, 2015;52(4):484-501. *International Politics* can be contacted at: Palgrave Macmillan Ltd, Brunel Rd Bldg, Houndmills, Basingstoke RG21 6XS, Hants, England.

Our news correspondents report that additional information may be obtained by contacting M. McDonald, University of Queensland, Sch Polit Sci & Int Studies, Brisbane, Qld 4072, Australia.

Keywords for this news article include: Brisbane, Climate Change, Global Warming, Australia and New Zealand

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Greenhouse Gases

Researchers from Woods Hole Research Center Report Details of New Studies and Findings in the Area of Greenhouse Gases (Daily burned area and carbon emissions from boreal fires in Alaska)

2015 JUL 13 (VerticalNews) -- By a News Reporter-Staff News Editor at The Business of Global Warming -- Investigators publish new report on Greenhouse Gases. According to news reporting from Falmouth, Massachusetts, by VerticalNews journalists, research stated, "Boreal fires burn into carbon-rich organic soils, thereby releasing large quantities of trace gases and aerosols that influence atmospheric composition and climate. To better understand the factors regulating boreal fire emissions, we developed a statistical model of carbon consumption by fire for Alaska with a spatial resolution of 450m and a temporal resolution of 1 day."

The news correspondents obtained a quote from the research from Woods Hole Research Center, "We used the model to estimate variability in carbon emissions between 2001 and 2012. Daily burned area was mapped using imagery from the Moderate Resolution Imaging Spectroradiometer combined with perimeters from the Alaska Large Fire Database. Carbon consumption was calibrated using available field measurements from black spruce forests in Alaska. We built two nonlinear multiplicative models to separately predict above- and belowground carbon consumption by fire in response to environmental variables including elevation, day of burning within the fire season, pre-fire tree cover and the differenced normalized burn ratio (dNBR). Higher belowground carbon consumption occurred later in the season and for mid-elevation forests. Topographic slope and aspect did not improve performance of the belowground carbon consumption model. Aboveground and belowground carbon consumption also increased as a function of tree cover and the dNBR, suggesting a causal link between the processes regulating these two components of carbon consumption. Between 2001 and 2012, the median carbon consumption was 2.54 kgCm⁻². Burning in landcover types other than black spruce was considerable and was associated with lower levels of carbon consumption than for pure black spruce stands. Carbon consumption originated primarily from the belowground fraction (median D 2.32 kgCm⁻² for all cover types and 2.67 kgCm⁻² for pure black spruce stands). Total carbon emissions varied considerably from year to year, with the highest emissions occurring during 2004 (69 TgC), 2005 (46 TgC), 2009 (26 TgC), and 2002 (17 TgC) and a mean of 15 TgCyear⁻¹ between 2001 and 2012. Mean uncertainty of carbon consumption for the domain, expressed as 1 standard deviation (SD), was 0.50 kgCm⁻². Uncertainties in the multiplicative regression model used to estimate belowground consumption in black spruce stands and the land-cover classification were primary contributors to uncertainty estimates. Our analysis highlights the importance of accounting for the spatial heterogeneity of fuels and combustion when extrapolating emissions in space and time, and the need for additional field campaigns to increase the density of observations as a function of tree cover and other environmental variables influencing consumption."

According to the news reporters, the research concluded: "The daily emissions time series from the Alaskan Fire Emissions Database (AKFED) presented here creates new opportunities to study environmental controls on daily fire dynamics, optimize boreal fire emissions in biogeochemical models, and quantify potential feedbacks from changing fire regimes."

For more information on this research see: Daily burned area and carbon emissions from boreal fires in Alaska. *Biogeosciences*, 2015;12(11):3579-3601. *Biogeosciences* can be contacted at: Copernicus Gesellschaft Mbh, Bahnhofsallee 1E, Gottingen, 37081, Germany. (Copernicus Publications - www.copernicus.org; Biogeosciences - publications.copernicus.org)

Our news journalists report that additional information may be obtained by contacting S. Veraverbeke, Woods Hole Res Center, Falmouth, MA, United States. Additional authors for this research include B.M. Rogers and J.T. Randerson.

Keywords for this news article include: Falmouth, Massachusetts, United States, Climate Change, Global Warming, Greenhouse Gases, North and Central America

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Climate Research

Studies from Chinese Academy of Sciences Add New Findings in the Area of Climate Research (Influence of the tropical Pacific east-west thermal contrast on the autumn precipitation in South China)

2015 JUL 13 (VerticalNews) -- By a News Reporter-Staff News Editor at The Business of Global Warming -- Fresh data on Climate Research are presented in a new report. According to news reporting out of Beijing, People's Republic of China, by VerticalNews editors, research stated, "Analysis of observational and reanalysis data shows that the autumn precipitation in South China is closely related to the east-west sea surface temperature (SST) contrast in the tropical Pacific. An east-west contrast (EWC) index, defined as the difference of the normalized area-averaged SST between the tropical eastern Pacific (150 degrees W-90 degrees W, 5 degrees S-5 degrees N) and the tropical western Pacific (WP; 110 degrees E-180 degrees E, 5 degrees S-5 degrees N), is proposed to delineate this feature."

Our news journalists obtained a quote from the research from the Chinese Academy of Sciences, "When the EWC index is positive, the tropical eastern (western) Pacific is warmer (colder) than normal. It would cause significant southerly wind anomalies from the Indochina Peninsula to eastern China, leading to enhanced water vapour convergence and anomalous ascending motion over South China. Therefore, enhanced autumn precipitation is observed in South China. Further analysis suggests that the SST of the tropical WP dominates the lower-tropospheric meridional wind and the resultant water vapour transport and convergence over subtropical East Asia, and that the SST of both the tropical eastern and the tropical WP contributes to the anomalous ascending motions over South China. These results highlight the combined effects of tropical eastern and WP on the autumn precipitation in South China and specifically emphasize the role of tropical WP SST."

According to the news editors, the research concluded: "Given the performance of the EWC index in describing the autumn precipitation as well as the leading time and the persistence of the EWC index, it could be used as a good indicator in the monitoring and prediction of the autumn precipitation in South China, which is demonstrated by a simple statistical prediction model."

For more information on this research see: Influence of the tropical Pacific east-west thermal contrast on the autumn precipitation in South China. *International Journal of Climatology*, 2015;35(7):1543-1555. *International Journal of Climatology* can be contacted at: Wiley-Blackwell, 111 River St, Hoboken 07030-5774, NJ, USA. (Wiley-Blackwell - www.wiley.com/; *International Journal of Climatology* - [onlinelibrary.wiley.com/journal/10.1002/\(ISSN\)1097-0088](http://onlinelibrary.wiley.com/journal/10.1002/(ISSN)1097-0088))

Our news journalists report that additional information may be obtained by contacting W. Gu, Chinese Academy Sci, Inst Atmospher Phys, Center Monsoon Syst Res, Beijing 100190, People's Republic of China. Additional authors for this research include L. Wang, W.J. Li, L.J. Chen and C.H. Sun.

Keywords for this news article include: Beijing, Climate Research, People's Republic of China

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Climate Modeling

Studies from K. Arnbjerg-Nielsen and Co-Researchers Update Current Data on Climate Modeling (Evaluating adaptation options for urban flooding based on new high-end emission scenario regional climate model simulations)

2015 JUL 13 (VerticalNews) -- By a News Reporter-Staff News Editor at The Business of Global Warming -- A new study on Climate Modeling is now available. According to news reporting out of Horsholm, Denmark, by VerticalNews editors, research stated, "Climate change adaptation studies on urban flooding are often based on a model chain approach from climate forcing scenarios to analysis of adaptation measures. Previous analyses of climate change impacts in Copenhagen, Denmark, were supplemented by 2 high-end scenario simulations."

Our news journalists obtained a quote from the research, "These include a regional climate model projection forced to a global temperature increase of 6 degrees C in 2100 as well as a projection based on a high radiative forcing scenario (RCP8.5). With these scenarios, projected impacts of extreme precipitation increase significantly. For extreme sea surges, the impacts do not seem to change substantially compared to currently applied projections. The flood risk (in terms of expected annual damage, EAD) from sea surge is likely to increase by more than 2 orders of magnitude in 2100 compared to the present cost. The risk from pluvial flooding in 2000 is likely to increase by almost 4 and 8 times the current EAD for the RCP8.5 and 6 degrees C scenario, respectively. For both hazards, business-as-usual is not a possible scenario, since even in the absence of policy-driven changes, significant autonomous adaptation is likely to occur. Copenhagen has developed an adaptation plan to pluvial flooding that makes the urban areas more robust and reduces the risk of flooding under the current climate to a very low level."

According to the news editors, the research concluded: "The reduction in flood risk for the A1B scenario is substantial (corresponding to 0.2-0.3 times the current EAD in 2100), and even in the high-end scenarios, the risk is significantly reduced (corresponding to 0.6-1.0 and 1.2-2.1 times the current EAD for the RCP8.5 and 6 degrees C scenario, respectively)."

For more information on this research see: Evaluating adaptation options for urban flooding based on new high-end emission scenario regional climate model simulations. *Climate Research*, 2015;64(1):73-84. *Climate Research* can be contacted at: Inter-Research, Nordbunte 23, D-21385 Oldendorf Luhe, Germany. (Inter-Research Science Center - www.int-res.com; Climate Research - www.int-res.com/journals/cr/cr-home/)

Our news journalists report that additional information may be obtained by contacting K. Arnbjerg-Nielsen, DHI, DK-2970 Horsholm, Denmark. Additional authors for this research include L. Leonardsen and H. Madsen.

Keywords for this news article include: Europe, Denmark, Horsholm, Climate Change, Global Warming, Climate Modeling

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Climate Modeling

Studies from State University in the Area of Climate Modeling Described (Predicting priority areas for conservation from historical climate modelling: stingless bees from Atlantic Forest hotspot as a case study)

2015 JUL 13 (VerticalNews) -- By a News Reporter-Staff News Editor at The Business of Global Warming -- New research on Climate Modeling is the subject of a report. According to news reporting originating from Ilheus, Brazil, by VerticalNews correspondents, research stated, "Assuming that genetically diverse populations of bees are less likely to suffer the harmful effects of inbreeding and better able to avoid an extinction vortex related to the sex determination mechanism, the identification of putative areas in which diversity is concentrated should be focus of a discussion. Models of historical climate stability constitute an elegant manner of inferring such areas."

Our news editors obtained a quote from the research from State University, "The aim of the present study was to model the potential distribution of stingless bees in different periods of climate extremes of the Late Quaternary and the current day. A spatially-explicit model was designed to predict areas in which genetic diversity is putatively concentrated in an assemblage of nineteen species in the southern Atlantic Forest, Brazil. These climatically-stable areas (i.e., refuges) were mainly recorded in three portions of coastal forests in southeastern Brazil, regions that concentrate areas of high to extreme importance to the conservation of biological diversity. Such regions have differences regarding size and suitability scores and are distributed within the southern Atlantic Forest Central Corridor (SCC), as well as the northern (NSM) and southern Serra do Mar Corridor (SSM)."

According to the news editors, the research concluded: "Considering that refuges historically harbor high degrees of genetic diversity, these three regions are indicated as those of high importance to the conservation of stingless bees in the Atlantic Forest."

For more information on this research see: Predicting priority areas for conservation from historical climate modelling: stingless bees from Atlantic Forest hotspot as a case study. *Journal of Insect Conservation*, 2015;19(3):581-587. *Journal of Insect Conservation* can be contacted at: Springer, Van Godewijkstraat 30, 3311 Gz Dordrecht, Netherlands. (Springer - www.springer.com; *Journal of Insect Conservation* - www.springerlink.com/content/1366-638x/)

The news editors report that additional information may be obtained by contacting A.F. Carvalho, Univ Estadual Santa Cruz, Ilheus, BA, Brazil.

Keywords for this news article include: Ilheus, Brazil, South America, Climate Change, Global Warming, Climate Modeling

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Climate Change

Studies from University of California Have Provided New Data on Climate Change (Water urbanism in Bogota. Exploring the potentials of an interplay between settlement patterns and water management)

2015 JUL 13 (VerticalNews) -- By a News Reporter-Staff News Editor at The Business of Global Warming -- Researchers detail new data in Climate Change. According to news reporting out of Los Angeles, California, by VerticalNews editors, research stated, "A paradigm shift in water management is recognized as a necessary and fundamental step for adaptation to climate change and crucial for furthering sustainability. In contexts of rapid urbanization, this paradigm shift is particularly challenged since social and environmental needs often come into conflict."

Our news journalists obtained a quote from the research from the University of California, "In Bogota, as other Latin-American cities, demands for new housing are increasing daily, while the overall housing deficit remains an unresolved problem. Currently, the city faces the challenges to deal with the pressure to continue to urbanize flood prone areas with low-cost housing projects and simultaneously protect these areas in view of flooding, which promise to increase with the predictions of climate change. In order to contribute to context-responsive solutions to the water and housing issues, this paper investigates the shifting relations between settlement patterns, water infrastructure and landscape in Bogota's El Tintal watershed. This sub-watershed of the Bogota River has a rich history of formal and informal low-cost housing. The critical reading of the landscape transformation of the El Tintal has shown how the water system interventions were and can be instrumental in different stages of development. This reading was the base to elaborate design investigations that could translate to spatial adaptation measures."

According to the news editors, the research concluded: "This paper argues that 'soft' water management tools can be part of a twofold strategy to create spatial quality and provide resilience for more qualitative future urban development."

For more information on this research see: Water urbanism in Bogota. Exploring the potentials of an interplay between settlement patterns and water management. *Habitat International*, 2015;48():177-187. *Habitat International* can be contacted at: Pergamon-Elsevier Science Ltd, The Boulevard, Langford Lane, Kidlington, Oxford OX5 1GB, England.

Our news journalists report that additional information may be obtained by contacting C. Rojas, University of California, Sch Architecture, Los Angeles, CA 90089, United States. Additional authors for this research include B. De Meulder and K. Shannon.

Keywords for this news article include: California, Los Angeles, United States, Climate Change, Global Warming, North and Central America

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Co2 Emissions

Studies from University of Copenhagen in the Area of Co2 Emissions Reported (Effect of a high-end CO2-emission scenario on hydrology)

2015 JUL 13 (VerticalNews) -- By a News Reporter-Staff News Editor at The Business of Global Warming -- Research findings on Co2 Emissions are discussed in a new report. According to news reporting originating in Copenhagen, Denmark, by VerticalNews journalists, research stated, "In the latest IPCC report, worst case scenarios of climate change describe average global surface warming of up to 6 degrees C from pre-industrial times by the year 2100. This study highlights the influence of a high-end 6 degree climate change on the hydrology of a catchment in central Denmark."

The news reporters obtained a quote from the research from the University of Copenhagen, "A simulation from the global climate model, EC-Earth, is downscaled using the regional climate model HIRHAM5. A simple bias correction is applied for daily reference evapotranspiration and temperature, while distribution-based scaling is used for daily precipitation data. Both the 6 degree emission scenario and the less extreme RCP4.5 emission scenario are evaluated for the future period 2071-2099. The downscaled climate variables are applied to a fully distributed, physically based, coupled surface-subsurface hydrological model based on the MIKE SHE model code. The impacts on soil moisture dynamics and evapotranspiration show increasing drying-out tendencies for the future, most pronounced in the 6 degree scenario. Stream discharge and groundwater levels also show increased drying due to higher evapotranspiration."

According to the news reporters, the research concluded: "By comparing the 6 degree scenario with other emission scenarios, it is found that the most prominent changes in the water balance are caused by drying out of soils rather than precipitation effects."

For more information on this research see: Effect of a high-end CO2-emission scenario on hydrology. *Climate Research*, 2015;64(1):39-54. *Climate Research* can be contacted at: Inter-Research, Nordbunte 23, D-21385 Oldendorf Luhe, Germany. (Inter-Research Science Center - www.int-res.com; Climate Research - www.int-res.com/journals/cr/cr-home/)

Our news correspondents report that additional information may be obtained by contacting I.B. Karlsson, University of Copenhagen, Dept. of Geosci & Nat Resource Management, DK-1958 Copenhagen C, Denmark. Additional authors for this research include T.O. Sonnenborg, L.P. Seaby, K.H. Jensen and J.C. Refsgaard.

Keywords for this news article include: Europe, Denmark, Copenhagen, Climate Change, Global Warming, Climate Modeling

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Atmospheric Pollution

Studies from University of London Imperial College in the Area of Atmospheric Pollution Reported (Influence of weather and atmospheric pollution on physical activity in patients with COPD)

2015 JUL 13 (VerticalNews) -- By a News Reporter-Staff News Editor at The Business of Global Warming -- Researchers detail new data in Atmospheric Pollution. According to news reporting from London, United Kingdom, by VerticalNews journalists, research stated, "Information concerning how climate and atmospheric pollutants affects physical activity in COPD patients is lacking and might be valuable in determining when physical activity should be encouraged. Seventy-three stable COPD patients recorded on daily diary cards worsening of respiratory symptoms, peak expiratory flow rate, hours spent outside the home and the number of steps taken per day."

The news correspondents obtained a quote from the research from the University of London Imperial College, "Pedometry data was recorded on 16,478 days, an average of 267 days per patient (range 29-658). Daily data for atmospheric PM10 and ozone (O₃) were obtained for Bloomsbury Square, Central London from the Air Quality Information Archive databases. Daily weather data were obtained for London Heathrow from the British Atmospheric Data Archive. Colder weather below 22.5 degrees C, reduced daily step count by 43.3 steps day per degrees C (95 % CI 2.14 to 84.4; p = 0.039) and activity was lower on rainy than dry days (p = 0.002) and on overcast compared to sunny days (p < 0.001). Daily step count was 434 steps per day lower on Sunday than Saturday (p < 0.001) and 353 steps per day lower on Saturday than Friday (p < 0.001). After allowance for these effects, higher O₃ levels decreased activity during the whole week (-8 steps/ug/m³; p = 0.005) and at weekends (-7.8 steps/ug/m³; p = 0.032). Whilst, during the week PM10 reduced activity (p = 0.018) but not during the weekend. Inactivity of COPD patients is greatest on cold, wet and overcast days and at the weekends."

According to the news reporters, the research concluded: "This study also provides evidence of an independent effect of atmospheric pollution at high levels."

For more information on this research see: Influence of weather and atmospheric pollution on physical activity in patients with COPD. *Respiratory Research*, 2015;16():1-9. *Respiratory Research* can be contacted at: Biomed Central Ltd, 236 Grays Inn Rd, Floor 6, London WC1X 8HL, England. (BioMed Central - www.biomedcentral.com/; Respiratory Research - respiratory-research.com)

Our news journalists report that additional information may be obtained by contacting A.D. Alahmari, University of London Imperial College, Natl Heart & Lung Inst, UK Airways Dis Sect, London, United Kingdom. Additional authors for this research include A.J. Mackay, A.R.C. Patel, B.S. Kowlessar, R. Singh, S.E. Brill, J.P. Allinson, J.A. Wedzicha and G.C. Donaldson.

Keywords for this news article include: London, Europe, United Kingdom, Climate Change, Global Warming, Atmospheric Pollution

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Climate Change

Studies from University of Putra Malaysia Have Provided New Information about Climate Change (Analysis of monthly and seasonal rainfall trends using the Holt's test)

2015 JUL 13 (VerticalNews) -- By a News Reporter-Staff News Editor at The Business of Global Warming -- Current study results on Climate Change have been published. According to news reporting from Selangor, Malaysia, by VerticalNews journalists, research stated, "Climate change is a global issue that has impact on every living being in the world. One of the most noticeable consequences of these global phenomena is the inevitable water cycle modification, with precipitation being a major component in these processes."

The news correspondents obtained a quote from the research from the University of Putra Malaysia, "Consequently, research into the occurrence and distribution of precipitation has increased over the past few decades. As Malaysia is located in the tropical area where there is no distinct four seasons, analysing rainfall has therefore become one of the common assessment tools for climate change. In this study, rainfall trends of Langat River Basin were examined on a monthly and seasonal basis (monsoon and non-monsoon) for the period of 1970-2012. Only rainfall time series with duration more than 25 years and missing data less than 10% have been considered for this study. The Holt's test has been employed to model the rainfall trends for the 10 selected time series; while Kendall's Tau test and Spearman's Rho test were used to test, compare and support for the significance of the trends. For monthly rainfall trends analysis, it was found that March, July and November are among the months those have most of the stations with increasing rainfall trends; while May and September are the months with the highest number of stations showing decreasing rainfall trends. Specifically, station 2815001 shows the highest number of months with changing rainfall trends throughout the year; while station 44255 has the least number of months with changing rainfall trends."

According to the news reporters, the research concluded: "Based on the seasonal rainfall trend analysis, there are seven stations during the Northeast Monsoon that revealed upward trends and the result is found to be consistent with the monthly rainfall trend analysis."

For more information on this research see: Analysis of monthly and seasonal rainfall trends using the Holt's test. *International Journal of Climatology*, 2015;35(7):1500-1509. *International Journal of Climatology* can be contacted at: Wiley-Blackwell, 111 River St, Hoboken 07030-5774, NJ, USA. (Wiley-Blackwell - www.wiley.com/; *International Journal of Climatology* - [onlinelibrary.wiley.com/journal/10.1002/\(ISSN\)1097-0088](http://onlinelibrary.wiley.com/journal/10.1002/(ISSN)1097-0088))

Our news journalists report that additional information may be obtained by contacting Y.F. Huang, University of Putra Malaysia, Fac Engn, Dept. of Biol & Agr Engn, Serdang 43400, Selangor, Malaysia. Additional authors for this research include Y.J. Puah, K.C. Chua and T.S. Lee.

Keywords for this news article include: Asia, Selangor, Malaysia, Climate Change, Global Warming

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Climate Change

Study Findings on Climate Change Are Outlined in Reports from University of Bordeaux [Climate change conditions (elevated CO₂ and temperature) and UV-B radiation affect grapevine (*Vitis vinifera* cv. Tempranillo) leaf carbon assimilation, ...]

2015 JUL 13 (VerticalNews) -- By a News Reporter-Staff News Editor at The Business of Global Warming -- Researchers detail new data in Climate Change. According to news originating from Villenave Dornon, France, by VerticalNews correspondents, research stated, "The increase in grape berry ripening rates associated to climate change is a growing concern for wine makers as it rises the alcohol content of the wine. The present work studied the combined effects of elevated CO₂, temperature and UV-B radiation on leaf physiology and berry ripening rates."

Our news journalists obtained a quote from the research from the University of Bordeaux, "Three doses of UV-B: 0, 5.98, 9.66 kJ m⁻² d⁻¹, and two CO₂-temperature regimes: ambient CO₂-24/14 degrees C (day/night) (current situation) and 700 ppm CO₂-28/18 degrees C (climate change) were imposed to grapevine fruit-bearing cuttings from fruit set to maturity under greenhouse-controlled conditions. Photosynthetic performance was always higher under climate change conditions. High levels of UV-B radiation down regulated carbon fixation rates. A transient recovery took place at veraison, through the accumulation of flavonols and the increase of antioxidant enzyme activities. Interacting effects between UV-B and CO₂-temperature regimes were observed for the lipid peroxidation, which suggests that UV-B may contribute to palliate the signs of oxidative damage induced under elevated CO₂-temperature. Photosynthetic and ripening rates were correlated."

According to the news editors, the research concluded: "Thereby, the hastening effect of climate change conditions on ripening, associated to higher rates of carbon fixation, was attenuated by UV-B radiation."

For more information on this research see: Climate change conditions (elevated CO₂ and temperature) and UV-B radiation affect grapevine (*Vitis vinifera* cv. Tempranillo) leaf carbon assimilation, altering fruit ripening rates. *Plant Science*, 2015;236():168-176. *Plant Science* can be contacted at: Elsevier Ireland Ltd, Elsevier House, Brookvale Plaza, East Park Shannon, Co, Clare, 00000, Ireland. (Elsevier - www.elsevier.com; *Plant Science* - www.elsevier.com/wps/product/cws_home/506030)

The news correspondents report that additional information may be obtained from J. Martinez-Luscher, Univ Bordeaux, Inst Sci Vigne & Vin, EGFV UMR1287, F-33883 Villenave Dornon, France. Additional authors for this research include F. Morales, M. Sanchez-Diaz, S. Delrot, J. Aguirreolea, E. Gomes and I. Pascual.

Keywords for this news article include: France, Europe, Climate Change, Global Warming, Villenave Dornon

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Climate Research

Study Findings on Climate Research Are Outlined in Reports from Academy of Sciences (Trends in extreme daily rainfall and temperature indices over South Asia)

2015 JUL 13 (VerticalNews) -- By a News Reporter-Staff News Editor at The Business of Global Warming -- Investigators discuss new findings in Climate Research. According to news originating from Kathmandu, Nepal, by VerticalNews correspondents, research stated, "Over the last few decades, weather and climate extremes have become a major focus of researchers, the media and general public due to their damaging effects on human society and infrastructure. Trends in indices of climate extremes are studied for the South Asian region using high-quality records of daily temperature and precipitation observations."

Our news journalists obtained a quote from the research from the Academy of Sciences, "Data records from 210 (265) temperature (precipitation) observation stations are analysed over the period 1971-2000 (1961-2000). Spatial maps of station trends, time series of regional averages and frequency distribution analysis form the basis of this study. Due to the highly diverse geography of the South Asian region, the results are also described for some specific regions, such as the island of Sri Lanka; the tropical region (excluding Sri Lanka); the Greater Himalayas above 35 degrees N, the Eastern Himalayas (Nepal) and the Thar Desert. Generally, changes in the frequency of temperature extremes over South Asia are what one would expect in a warming world; warm extremes have become more common and cold extremes less common. The warming influence is greater in the Eastern Himalayas compared with that in the Greater Himalayas. The Thar Desert also shows enhanced warming, but increases are mostly less than in the Eastern Himalayas. Changes in the indices of extreme precipitation are more mixed than those of temperature, with spatially coherent changes evident only at relatively small scales. Nevertheless, most extreme precipitation indices show increases in the South Asia average, consistent with globally averaged results. The indices trends are further studied in the context of Atmospheric Brown Clouds (ABCs) over the region. Countries falling within the ABC hotspot namely Indo-Gangetic Plain (IGP) have shown a different behaviour on the trends of extreme indices compared with the parts outside this hotspot."

According to the news editors, the research concluded: "IGP has increased temperature and decreased rainfall and tally closely with the actual trends."

For more information on this research see: Trends in extreme daily rainfall and temperature indices over South Asia. *International Journal of Climatology*, 2015;35(7):1625-1637. *International Journal of Climatology* can be contacted at: Wiley-Blackwell, 111 River St, Hoboken 07030-5774, NJ, USA. (Wiley-Blackwell - www.wiley.com/; *International Journal of Climatology* - [onlinelibrary.wiley.com/journal/10.1002/\(ISSN\)1097-0088](http://onlinelibrary.wiley.com/journal/10.1002/(ISSN)1097-0088))

The news correspondents report that additional information may be obtained from M.M. Sheikh, Nepal Academy Sci & Technol, Kathmandu, Nepal. Additional authors for this research include N. Manzoor, J. Ashraf, M. Adnan, D. Collins, S. Hameed, M.J. Manton, A.U. Ahmed, S.K. Baidya, H.P. Borgaonkar, N. Islam, D. Jayasinghearachchi, D.R. Kothawale, K. Premalal, J.V. Revadekar and M.L. Shrestha.

Keywords for this news article include: Nepal, China, Kathmandu, Climate Research

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Climate Research

Study Results from B. Timbal and Colleagues in the Area of Climate Research Reported (Rainfall and streamflows in the Greater Melbourne catchment area: variability and recent anomalies)

2015 JUL 13 (VerticalNews) -- By a News Reporter-Staff News Editor at The Business of Global Warming -- Investigators publish new report on Climate Research. According to news reporting originating in Docklands, Australia, by VerticalNews journalists, research stated, "Observed rainfall and water availability is investigated across several catchments northeast of Melbourne using gridded rainfall data over the last 113 yr and reconstructed streamflow observations for the last 100 yr, focusing on the 1997-2009 record-breaking rainfall deficits, associated record-low streamflows and subsequent recovery from 2010 to 2012. These catchments provide drinking water for about 90% of the state of Victoria's population and hence are critical."

The news reporters obtained a quote from the research, "The influence of large-scale tropical modes of climate variability affecting rainfall, and subsequently reservoir streamflows, are shown to be modulated by the orographic features marking this region. These remote large-scale tropical climate forcings have contributed strongly to recovery since 2010. However, across these catchments, the large-scale modes of natural variability do not explain the long-term deficit in streamflows in the last 15 yr. Annual streamflow in these wet catchments can skilfully be reconstructed month by month using catchment-wide observed rainfall. The year-to-year variability, decline during the last 30 yr and magnitude of the deficiency during the Millennium Drought are reasonably well captured but not fully accounted for by the linear combination of rainfall in the current month, the previous month and the previous 12 mo."

According to the news reporters, the research concluded: "Maximum temperature does not have a sizeable additional impact when added to the reconstruction, while the previous 12 mo of rainfall contribute to about 25% of the reconstruction's ability to capture many of these statistics."

For more information on this research see: Rainfall and streamflows in the Greater Melbourne catchment area: variability and recent anomalies. *Climate Research*, 2015;63(3):215-232. *Climate Research* can be contacted at: Inter-Research, Nordbunte 23, D-21385 Oldendorf Luhe, Germany. (Inter-Research Science Center - www.int-res.com; Climate Research - www.int-res.com/journals/cr/cr-home/)

Our news correspondents report that additional information may be obtained by contacting B. Timbal, Melbourne Water, Docklands, Vic 3008, Australia. Additional authors for this research include M. Griffiths and K.S. Tan.

Keywords for this news article include: Docklands, Climate Research, Australia and New Zealand

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Climate Research

Study Results from Bureau of Meteorology Update Understanding of Climate Research (Shifting time: recent changes to the phenology of Australian species)

2015 JUL 13 (VerticalNews) -- By a News Reporter-Staff News Editor at The Business of Global Warming -- Investigators publish new report on Climate Research. According to news reporting out of Melbourne, Australia, by VerticalNews editors, research stated, "Phenology is the study of the timing of recurrent biological events and their biotic and abiotic drivers. There is considerable evidence, mostly from temperate regions of the Northern Hemisphere, of recent changes to phenological trends, likely to be in response to anthropogenic climate disruption."

Our news journalists obtained a quote from the research from the Bureau of Meteorology, "Here, we assess recent evidence of climate-related phenological shifts among Australian species, across environments ranging from alpine to semi-arid. While detailed knowledge of the phenology of many Australian species has a rich history among indigenous cultures, long-term recording of phenology has focused mostly on birds and plants, particularly agricultural crops, with few records for other taxa. Combined, datasets demonstrate that over recent decades there has been a strong trend towards advanced spring phenology associated with increases in temperature. However, precipitation also plays a key role in driving trends among numerous species, particularly where the onset of the phenophase is now occurring later in the season. In general, our understanding of changes to phenology is superficial: more complicated issues, such as identifying constraints to species responses, thermal sensitivity across life-cycle stages, nonclimatic drivers of phenological trends, and disruptions to interacting species, remain poorly explored."

According to the news editors, the research concluded: "Carefully designed studies, along with renewed interest in establishing observation networks supplemented with citizen science programs, can address some of these knowledge gaps."

For more information on this research see: Shifting time: recent changes to the phenology of Australian species. *Climate Research*, 2015;63(3):203-214. *Climate Research* can be contacted at: Inter-Research, Nordbunte 23, D-21385 Oldendorf Luhe, Germany. (Inter-Research Science Center - www.int-res.com; Climate Research - www.int-res.com/journals/cr/cr-home/)

Our news journalists report that additional information may be obtained by contacting L.J. Beaumont, Bur Meteorol, Melbourne, Vic 3001, Australia. Additional authors for this research include T. Hartenthaler, M.R. Keatley and L.E. Chambers.

Keywords for this news article include: Melbourne, Climate Research, Australia and New Zealand

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Climate Change

Study Results from James Cook University Update Understanding of Climate Change (Do wildfire experiences influence views on climate change?)

2015 JUL 13 (VerticalNews) -- By a News Reporter-Staff News Editor at The Business of Global Warming -- Researchers detail new data in Climate Change. According to news reporting from Townsville, Australia, by VerticalNews journalists, research stated, "This paper aims to explore the influence of wildfire events on community perceptions of climate change and the risk of future wildfire disasters in southern Australia. Design/methodology/approach - The study was located around Beechworth in northeast Victoria, where wildfires occurred in 2003 and 2009."

The news correspondents obtained a quote from the research from James Cook University, "Semi-structured qualitative interviews and focus group interviews were conducted in 2010, involving 40 people from local businesses, government and property owners. The authors conclude that people's experiences of recent consecutive wildfire events did not necessarily influence their views on climate change in general or as a causal agent of wildfire events. However, there was general agreement that weather conditions had been extreme in recent times. Some attributed the increase in wildfires to factors other than climate change that were more easily observed. Research limitations/implications - Further research is needed into the relationship between wildfire experiences, climate change views and adaptive behaviours across a wider range of social contexts. Research needs to determine if views and behaviours change over time or with frequency or severity of fires. Practical implications - Understanding the nature of potential wildfires, and being able to prepare and respond to such events, is more important than believing in climate change, as views may not change in response to fire events. Strategies need to focus on supporting people to prepare, respond and recover from wildfires, regardless of their climate change perceptions. Social implications - Paying attention to people's local social context and how it influences their beliefs about climate change will allow sensitive and adaptive strategies to evolve over time."

According to the news reporters, the research concluded: "Originality/value - There is limited research into relationships between disaster experiences and perceptions of climate change, particularly the influence of wildfire experiences."

For more information on this research see: Do wildfire experiences influence views on climate change? *International Journal of Climate Change Strategies and Management*, 2015;7(2):124-139. *International Journal of Climate Change Strategies and Management* can be contacted at: Emerald Group Publishing Limited, Howard House, Wagon Lane, Bingley BD16 1WA, W Yorkshire, England. (Emerald Group Publishing - www.emeraldinsight.com; *International Journal of Climate Change Strategies and Management* - www.emeraldinsight.com/journals.htm?issn=1756-8692)

Our news journalists report that additional information may be obtained by contacting J.E. Millar, James Cook Univ, Center Disaster Studies, Townsville, Qld 4811, Australia. Additional authors for this research include H. Boon and D. King.

Keywords for this news article include: Townsville, Climate Change, Global Warming, Australia and New Zealand

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Climate Research

Study Results from Purdue University Provide New Insights into Climate Research (Historical differences in temperature between urban and non-urban areas in Puerto Rico)

2015 JUL 13 (VerticalNews) -- By a News Reporter-Staff News Editor at The Business of Global Warming -- Current study results on Climate Research have been published. According to news reporting out of West Lafayette, Indiana, by VerticalNews editors, research stated, "Previous studies of the influences of land use/land cover changes (LULCC) on the climate of continental areas have provided a basis for our current understanding of LULCC impacts. However, continental climates may not provide complete explanations or answer specific scientific questions for other regions, such as small tropical-maritime dominated islands."

Our news journalists obtained a quote from the research from Purdue University, "Here we present a detailed analysis of temperature change over the past century for the tropical island of Puerto Rico, using an approach that accounts for internal climate variability and spatial resolution issues and assesses the degree to which some of this change might be related to urban development. Long-term weather data, digital maps, geographic information systems (GIS) and statistical analysis were used to detect and assess differences between urban and non-urban temperature records. Strong evidence of a relationship linking temperature magnitudes to local urban development was detected, and the analysis suggests that urbanization has increased minimum, maximum and average temperatures by 0.5 degrees C in the warmest regions to 2 degrees C in the coolest regions. The results also show that the magnitude of temperature impacts depends on the contextual ecology or environment where the development has occurred. Temperature differences between urban and non-urban areas are higher in colder and wetter microclimates than in dryer warmer ones, and were less pronounced for minimum temperature than for maximum temperature."

According to the news editors, the research concluded: "However, because the levels of impacts are based on data that had some prior adjustment intended to control for urban signals, they represent minimum estimates of the impacts of land use on temperature in Puerto Rico."

For more information on this research see: Historical differences in temperature between urban and non-urban areas in Puerto Rico. *International Journal of Climatology*, 2015;35(7):1648-1661. *International Journal of Climatology* can be contacted at: Wiley-Blackwell, 111 River St, Hoboken 07030-5774, NJ, USA. (Wiley-Blackwell - www.wiley.com/; *International Journal of Climatology* - [onlinelibrary.wiley.com/journal/10.1002/\(ISSN\)1097-0088](http://onlinelibrary.wiley.com/journal/10.1002/(ISSN)1097-0088))

Our news journalists report that additional information may be obtained by contacting A.R. Torres-Valcarcel, Purdue University, Dept. of Earth Atmospher & Planetary Sci, West Lafayette, IN 47907, United States. Additional authors for this research include J. Harbor, A.L. Torres-Valcarcel and C.J. Gonzalez-Aviles.

Keywords for this news article include: Indiana, United States, West Lafayette, Climate Research, North and Central America

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Climate Research**Study Results from Pusan National University Update Understanding of Climate Research (Dynamical seasonal predictability of the Arctic Oscillation using a CGCM)**

2015 JUL 13 (VerticalNews) -- By a News Reporter-Staff News Editor at The Business of Global Warming -- Current study results on Climate Research have been published. According to news reporting originating in Pusan, South Korea, by VerticalNews journalists, research stated, "The potential dynamical predictability of the winter Arctic Oscillation (AO) is investigated using the ensemble hindcast from the Pusan National University coupled general circulation model (PNU-CGCM) over the 30-year period of 1981-2010."

The news reporters obtained a quote from the research from Pusan National University, "The analysis indicates that PNU-CGCM can not only reproduce the spatial distribution of the AO but also significantly simulate the AO's temporal variability. In addition, the coupled model performs well in terms of predicting the AO's impact on the Northern Hemisphere winter climate."

According to the news reporters, the research concluded: "These results reveal the coupled model's potential for dynamical forecasting of the climate over the mid-latitude to high latitude."

For more information on this research see: Dynamical seasonal predictability of the Arctic Oscillation using a CGCM. *International Journal of Climatology*, 2015;35(7):1342-1353. *International Journal of Climatology* can be contacted at: Wiley-Blackwell, 111 River St, Hoboken 07030-5774, NJ, USA. (Wiley-Blackwell - www.wiley.com/; *International Journal of Climatology* - [onlinelibrary.wiley.com/journal/10.1002/\(ISSN\)1097-0088](http://onlinelibrary.wiley.com/journal/10.1002/(ISSN)1097-0088))

Our news correspondents report that additional information may be obtained by contacting J. Sun, Pusan National University, Div Earth Environm Syst, Pusan 609735, South Korea.

Keywords for this news article include: Asia, Pusan, South Korea, Climate Research

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Climate Research**Study Results from Y. Liu and Colleagues Update Understanding of Climate Research (A tree-ring-based June-September mean relative humidity reconstruction since 1837 from the Yiwulu Mountain region, China)**

2015 JUL 13 (VerticalNews) -- By a News Reporter-Staff News Editor at The Business of Global Warming -- A new study on Climate Research is now available. According to news reporting originating from Anshan, People's Republic of China, by VerticalNews correspondents, research stated, "The study of humidity is important for better understanding the past climatic variations. However, there have been few long-term humidity reconstructions using tree-ring widths worldwide."

Our news editors obtained a quote from the research, "Here, we present a June-September mean relative humidity (MRH69) reconstruction from AD 1837 to 2011 using Chinese pine trees (*Pinus tabulaeformis* Carr.) from the Yiwulu Mountain region in northeastern China. The reconstruction explained 39.8% of the instrumental variance during the calibration period. We found that precipitation only influenced the MRH69 on an annual scale (high frequency), but the mean maximum temperature (MMT) impacted the MRH69 both on an annual scale (high frequency) and decadal time scale (low frequency). The MRH69 reconstruction showed a consistently increasing trend from AD 1881 to 1990, after which it diminished sharply. More high humidity years occurred after the 1960s and more low humidity years occurred before the 1960s. In the study area, MRH69 decreased along with global warming after the 1980s. On the decadal scale, there were five high-value MRH69 intervals: 1842-1850, 1865-1871, 1898-1902, 1823-1927 and 1932-1997; there were five low-value intervals: 1851-1864, 1872-1897, 1903-1922, 1928-1931 and 1998-2006. In addition, the MRH69 reconstruction showed the large-scale representativeness of sea-land coupling. On the decadal scale, our MRH69 reconstruction varied synchronously with the Arctic Oscillation index (AOI), suggesting that the AOI might be linked with MRH69 in the Yiwulu Mountain region."

According to the news editors, the research concluded: "Historical documents and meteorological data indicate that flooding (or drought) often occurred in the years with higher (or lower) humidity compared with the moving average values of the mean relative humidity (MRH)."

For more information on this research see: A tree-ring-based June-September mean relative humidity reconstruction since 1837 from the Yiwulu Mountain region, China. *International Journal of Climatology*, 2015;35(7):1301-1308. *International Journal of Climatology* can be contacted at: Wiley-Blackwell, 111 River St, Hoboken 07030-5774, NJ, USA. (Wiley-Blackwell - www.wiley.com/; *International Journal of Climatology* - [onlinelibrary.wiley.com/journal/10.1002/\(ISSN\)1097-0088](http://onlinelibrary.wiley.com/journal/10.1002/(ISSN)1097-0088))

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Keywords for this news article include: Anshan, Climate Research, People's Republic of China

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Global Warming and Climate Change

University of Liege Reports Findings in Global Warming and Climate Change (Do global warming-induced circulation pattern changes affect temperature and precipitation over Europe during summer?)

2015 JUL 13 (VerticalNews) -- By a News Reporter-Staff News Editor at The Business of Global Warming -- Investigators discuss new findings in Global Warming and Climate Change. According to news reporting originating in Liege, Belgium, by VerticalNews journalists, research stated, "Future climate change projections are not limited to a simple warming, but changes in precipitation and sea level pressure (SLP) are also projected. The SLP changes and the associated atmospheric circulation changes could directly mitigate or enhance potential projected changes in temperature and precipitation associated with rising temperatures."

The news reporters obtained a quote from the research from the University of Liege, "With the aim of analysing the projected circulation changes and their possible impacts on temperature and precipitation over Europe in summer [June-July-August (JJA)], we apply an automatic circulation type classification method, based on daily SLP, on general circulation model (GCM) outputs from the Coupled Model Intercomparison Project phase 5 (CMIP5) database over the historical period (1951-2005) and for climate under two future scenarios (2006-2100). We focus on summer as it is the season when changes in temperature and precipitation have the highest impact on human health and agriculture. Over the historical observed reference period (1960-1999), our results show that most of the GCMs have significant biases over Europe when compared to reanalysis data sets, both for simulating the observed circulation types and their frequencies, as well as for reproducing the intraclass means of the studied variables. The future projections suggest a decrease of circulation types favouring a low centred over the British Isles for the benefit of more anticyclonic conditions. These circulation changes mitigate the projected precipitation increase over north-western Europe in summer, but they do not significantly affect the projected temperature increase and the precipitation decrease over the Mediterranean region and eastern Europe."

According to the news reporters, the research concluded: "However, the circulation changes and the associated precipitation changes are tarnished by a high uncertainty among the GCM projections."

For more information on this research see: Do global warming-induced circulation pattern changes affect temperature and precipitation over Europe during summer? *International Journal of Climatology*, 2015;35(7):1484-1499. *International Journal of Climatology* can be contacted at: Wiley-Blackwell, 111 River St, Hoboken 07030-5774, NJ, USA. (Wiley-Blackwell - www.wiley.com/; *International Journal of Climatology* - [onlinelibrary.wiley.com/journal/10.1002/\(ISSN\)1097-0088](http://onlinelibrary.wiley.com/journal/10.1002/(ISSN)1097-0088))

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Keywords for this news article include: Liege, Europe, Belgium, Global Warming and Climate Change

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