

Climate Change Concepts, Climate Change Science and Impacts- Peer Reviewed Journal Articles

1. **Title: South Pacific hydrologic and cyclone variability during the last 3000 years. *Paleoceanography*, 31. Doi: 10.1002/2015PA002870.** Toomey, M. R., Donnelly, J. P., & Tierney, J. E. (2016).

Description: Major excursions in the position of the South Pacific Convergence Zone (SPCZ) and/or changes in its intensity are thought to drive tropical cyclone (TC) and precipitation variability across much of the central South Pacific. A lack of conventional sites typically used for multi millennial proxy reconstructions has limited efforts to extend observational rainfall/TC data sets and our ability to fully assess the risks posed to central Pacific islands by future changes in fresh water availability or the frequency of storm landfalls.

Retrieved from <http://onlinelibrary.wiley.com/wol1/doi/10.1002/2015PA002870/full>

2. **Title: Asian irrigation, African rain: Remote impacts of irrigation. *Geophysical Research Letter*, 43. Doi: 10.1002/2016GL068146.** De Vrese, P., Hagemann, S., & Claussen, M. (2016).

Description: Irrigation is not only vital for global food security but also constitutes an anthropogenic land use change, known to have strong effects on local hydrological and energy cycles. Using the Max Planck Institute for Meteorology's Earth System Model, we show that related impacts are not confined regionally but that possibly as much as 40% of the present-day precipitation in some of the arid regions in Eastern Africa are related to irrigation-based agriculture in Asia.

Retrieved from <http://onlinelibrary.wiley.com/wol1/doi/10.1002/2016GL068146/full>

3. **Title: Thermospheric Hydrogen Response to increases in Greenhouse Gases. *Journal of Geophysical Research - Space Physics*, 121. Doi: 10.1002/2015JA022008.** Nossal, S. M., Qian, L., Solomon, S. C., Burns, A. G., & Wang, W. (2016).

Description: This study investigated thermospheric hydrogen response to increase in greenhouse gases and the dependence of this response to solar activity, using a global mean version of the National Center for Atmospheric Research Thermosphere-Ionosphere-Mesosphere-Electrodynamics General Circulation Model. Carbon dioxide (CO₂) and methane (CH₄) were separately doubled to study the influence of temperature and changes to source species for hydrogen. Results indicated that both CO₂ cooling and CH₄ changes to the source species for hydrogen lead to predicted increases in the upper thermospheric hydrogen density.

Climate Change Concepts, Climate Change Science and Impacts- Peer Reviewed Journal Articles

Retrieved from <http://onlinelibrary.wiley.com/wol1/doi/10.1002/2015JA022008/full>

4. **Title: Terrestrial Contribution to the Heterogeneity in Hydrological changes under Global warming. *Water Resources Research*, 52. Doi:**

10.1002/2016WR018607. Kumar, S., F. Zwiers, P., Dirmeyer, A., Lawrence, D. M., Shrestha, R., & Werner, A. T. (2016).

Description: This study investigates a physical basis for heterogeneity in hydrological changes, which suggests a greater detectability in wet than dry regions. Wet regions are those where atmospheric demand is less than precipitation (energy limited), and dry regions are those where atmospheric demand is greater than precipitation (water limited). Long-term stream flow trends in western North America and an analysis of Coupled Model Inter-comparison Project Phase 5 (CMIP5) climate models at global scales show geographically heterogeneous detectability of hydrological changes. We apply the Budyko framework and state-of-the-art climate model data from CMIP5 to quantify the sensitivity and detectability of terrestrial hydrological changes.

Retrieved from <http://onlinelibrary.wiley.com/wol1/doi/10.1002/2016WR018607/full>

5. **Title: Review on Climate Change on the Tibetan Plateau during the last Half Century. *Journal of Geophysical Research - Atmospheres*, 121. Doi:**

10.1002/2015JD024728. Kuang, X., & Jiao, J. J. (2016).

Description: The Tibetan Plateau (TP) is undergoing significant warming since the 1950s. During the past two decades, extensive research has been conducted to investigate the climate change on the plateau. This review presents an overview of recent progress on climate change on the Tibetan Plateau with the aim of providing a comprehensive understanding of changes in climate variables.

Retrieved from <http://onlinelibrary.wiley.com/wol1/doi/10.1002/2015JD024728/full>

6. **Title: Impact of Aerosols on Regional Climate in Southern and Northern China during strong/weak East Asian Summer Monsoon Years. *Journal of Geophysical Research - Atmospheres*, 121. Doi: 10.1002/2015JD023892.**Li,

S., Wang, T., Solmon, F., Zhuang, B., Wu, H., Xie, Y. Han, M., & Wang, X. (2016).

Climate Change Concepts, Climate Change Science and Impacts- Peer Reviewed Journal Articles

Description: This study mainly simulates the effects of aerosols on regional climate in southern China (SC) and northern China (NC) and compares the differences of aerosol climatic effects in strong/weak summer monsoon years with a modified regional climate model RegCM4. The results show that the total climatic effects of aerosols cause the decline of averaged air temperature and precipitation of SC and NC in summer.

Retrieved from <http://onlinelibrary.wiley.com/wol1/doi/10.1002/2015JD023892/full>

7. **Title: Quantifying the Sources of Uncertainty in Upper Air Climate**

Variables. Journal of Geophysical Research - Atmospheres, 121. Doi:

10.1002/2015JD024341. Eghdamirad, S., Johnson, F., Woldemeskel, F., & Sharma, A. (2016).

Description: Future estimates of precipitation and stream flow are of utmost interest in hydrological climate change impact assessments. Just as important as the estimate itself is the variance around the ensemble mean of the projections, this variance being defined as uncertainty in the context of this study. This uncertainty in the hydrological variables of interest is affected by uncertainty in upper air climate variables which are used in statistical downscaling of precipitation or stream flow.

Retrieved from <http://onlinelibrary.wiley.com/wol1/doi/10.1002/2015JD024341/full>

8. **Title: Temperature-driven global sea-level variability in the Common Era.**

PNAS. Doi: 10.1073 Kopp, R. E., Kemp, A. C., Bittermann, K., Horton, B. P., Donnelly, J.P., Gehrels, W. R., Hay, C.C., Mitrovica, J.X., Morrow, E.D., & Rahmstorf, S. (2016).

Description: This paper assesses the relationship between temperature and global sea-level (GSL) variability over the Common Era through a statistical meta analysis of proxy relative sea-level reconstructions and tide-gauge data.

Retrieved from <http://www.pnas.org/content/113/11/E1434.full>

9. **Title: Future sea level rise constrained by observations and long-term**

commitment. PNAS, 2597-2602. Doi: 10.1073. Mengel, M., Levermann, A., Frieler, K., Robinson, A., Marzeion, B., and Winkelmann, R. (2016).

Description: Anthropogenic sea level rise poses challenges to coastal areas worldwide and robust projections are needed to assess mitigation options and guide adaptation measures. This paper presents an approach that combines information about the equilibrium sea level response to global

Climate Change Concepts, Climate Change Science and Impacts- Peer Reviewed Journal Articles

warming and last century's observed contribution from the individual components to constrain projections for this century.

Retrieved from <http://www.pnas.org/content/113/10/2597.full>

- 10. Title: Changing characteristics of extreme wet and dry spells of Indian monsoon rainfall. *Journal of Geophysical Research - Atmospheres*, 121, 2146-2160. Doi:10.1002/2015JD024310.** Vinnarasi, R., & Dhanya, C.T. (2016).

Description: This study aims to analyze the spatiotemporal variations and trends in the extreme (wet and dry) Indian monsoon precipitation, using $0.25^\circ \times 0.25^\circ$ high-resolution gridded data for a period of 113 years (1901-2013).

Retrieved from <http://onlinelibrary.wiley.com/doi/10.1002/2015JD024310/full>

- 11. Title: Effect of climate change on surface ozone over North America, Europe, and East Asia. *Geophysical Research Letter*, 43, 3509-3518. Doi: 10.1002/2016GL068060.** Schnell, J. L., Prather, M. J., Josse, B., Naik, V., Horowitz, L. W., Zeng, G., Shindell, D. T., & Faluvegi, G. (2016).

Description: The effect of future climate change on surface ozone over North America, Europe, and East Asia is evaluated using present-day (2000s) and future (2100s) hourly surface ozone simulated by four global models. Future climate follows RCP8.5, while methane and anthropogenic ozone precursors are fixed at year 2000 levels. Climate change shifts the seasonal surface ozone peak to earlier in the year and increases the amplitude of the annual cycle. Increases in mean summertime and high-percentile ozone are generally found in polluted environments, while decreases are found in clean environments.

Retrieved from <http://onlinelibrary.wiley.com/doi/10.1002/2016GL068060/epdf>

- 12. Title: The immediate and prolonged effects of climate extremes on soil respiration in a Mesic grassland. *Journal of Geophysical Research - Biogeosciences*, 121. Doi: 10.1002/2015JG003256.** Hoover, D. L., Knapp, A. K., & Smith, M. D. (2016). **Description:** The predicted increase in the frequency and intensity of climate extremes is expected to impact terrestrial carbon fluxes to the atmosphere, potentially changing ecosystems from carbon sinks to sources, with positive feedbacks to climate change. As the second largest terrestrial

Climate Change Concepts, Climate Change Science and Impacts- Peer Reviewed Journal Articles

carbon flux, soil CO₂ efflux or soil respiration (R_s) is strongly influenced by soil temperature and moisture. Thus, climate extremes such as heat waves and extreme drought should have substantial impacts on R_s . This study investigated the effects of such climate extremes on growing season R_s in a mesic grassland by experimentally imposing 2 years of extreme drought combined with midsummer heat waves.

Retrieved from <http://onlinelibrary.wiley.com/doi/10.1002/2015JG003256/epdf>

13. **Title:**Trend and uncertainty in spatial-temporal patterns of hydrological droughts in the Amazon basin. *Geophysical Research Letter*, **43**, 3307-3316.

Doi: 10.1002/2016GL067738. Lopes, A. V., Chiang, J. C. H., Thompson, S. A, & Dracup, J. A. (2016).

Description: Spatial-temporal patterns of hydrological droughts in the Amazon basin are derived from drought indices computed from existing stream flow data. Principal component analysis and Monte Carlo simulations are employed to account for the uncertainty and overcome the limitations of missing data in stream flow records.

Retrieved from <http://onlinelibrary.wiley.com/doi/10.1002/2016GL067738/pdf>

14. **Title:** Climatic effects of irrigation over the Huang-Huai-Hai Plain in China simulated by the weather research and forecasting model. *Journal of Geophysical Research – Atmospheres*, **121**, 2246–2264. **Doi:**

10.1002/2015JD023736.Yang, B., Zhang, Y., Qian, Y., Tang, J., & Liu, D. (2016).

Description: The climatic effects of irrigation over the Huang-Huai-Hai Plain (3HP) in China are investigated by using the weather research and forecasting model coupled with an operational-like irrigation scheme. Multiple numerical experiments with irrigation off/on during spring, summer, and both spring and summer are conducted. Results show that the warm bias in surface temperature and dry bias in soil moisture are reduced over the 3HP region during the growing seasons by considering the irrigation in the model. The air temperature during non-growing seasons is also affected by irrigation because of the persistent effects of soil moisture on land-air energy exchanges and ground heat storage. Irrigation can induce significant cooling in the planetary boundary layer (PBL) during the growing seasons and lead to a relatively wet PBL with increased low-level clouds during spring but a relatively dry condition in summer.

Climate Change Concepts, Climate Change Science and Impacts- Peer Reviewed Journal Articles

Retrieved from <http://onlinelibrary.wiley.com/doi/10.1002/2015JD023736/epdf>

15. Title: Variability and future decreases in winter wave heights in the Western North Pacific. *Geophysical Research Letter*, 43, 2716–2722. Doi:

10.1002/2016GL067924. Shimura, T., Mori, N., & Hemer, M. A. (2016).

Description: Ocean surface wave climate is a key consideration for a number of industrial and environmental systems, both offshore and at the coast. A dynamical spectral wave model forced with global climate models (GCMs) was used to produce an ensemble of simulations of both historical and projected future wave climate. To estimate the uncertainty of the projected wave climate, we combined a multimember ensemble experiment using MRI-AGCM3.2H with a multi-model ensemble using eight CMIP5 GCMs. Future changes in wintertime wave heights from the end of the 20th to the 21st century were analyzed. Projected decreases in wave heights over the Western North Pacific are highly consistent among the ensemble. The future decreases in wave heights are significantly related to changes in the West Pacific pattern. Both locally generated waves and remotely generated swells are important to estimate future changes in the wave climate on a regional scale.

Retrieved from <http://onlinelibrary.wiley.com/doi/10.1002/2016GL067924/pdf>

16. Title: Earth's Albedo variations 1998–2014 as measured from Ground-based Earthshine observations. *Geophysical Research Letter*. Doi:

10.1002/2016GL068025. Palle, E., Goode, P. R., Montañés-Rodríguez, P., Shumko, A., Gonzalez-Merino, B., Lombilla, C. M., Jimenez-Ibarra, F., Shumko, S., Sanroma, E., Hulist, A., Miles-Paez, P., Murgas, F., Nowak, G., & Koonin, S. E. (2016).

Description: The Earth's albedo is a fundamental climate parameter for understanding the radiation budget of the atmosphere. It has been traditionally measured not only from space platforms but also from the ground for 16 years from Big Bear Solar Observatory by observing the Moon. The photometric ratio of the dark (earthshine) to the bright (moonshine) sides of the Moon is used to determine nightly anomalies in the terrestrial albedo, with the aim of quantifying sustained monthly, annual, and/or decadal changes. We find two modest decadal scale cycles in the albedo, but with no significant net change over the 16 years of accumulated data. Within the evolution of the two cycles, we find periods of sustained annual increases, followed by comparable sustained decreases in albedo.

Climate Change Concepts, Climate Change Science and Impacts- Peer Reviewed Journal Articles

The evolution of the earthshine albedo is in remarkable agreement with that from the Clouds and the Earth's Radiant Energy System instruments, although each method measures different slices of the Earth's Bond albedo.

Retrieved from <http://onlinelibrary.wiley.com/wol1/doi/10.1002/2016GL068025/full>

17. Title: **The Response of runoff and Sediment loading in the Apalachicola River, Florida to Climate and Land use Land cover change. *Earth's Future.***

Doi: 10.1002/2015EF000348Hovenga, P. A., Wang, D., Medeiros, S. C., Hagen, S. C., & Alizad, K. (2016).

Description: The response of runoff and sediment loading in the Apalachicola River under projected climate change scenarios and land use land cover (LULC) change is evaluated. A hydrologic model using the Soil and Water Assessment Tool was developed for the Apalachicola region to simulate daily runoff and sediment load under present (circa 2000) and future conditions (2100) to understand how parameters respond over a seasonal time frame to changes in climate, LULC, and coupled climate/LULC.

Retrieved from <http://onlinelibrary.wiley.com/doi/10.1002/2015EF000348/full>

18. Title: **Nonlinear effects of anthropogenic Aerosol and Urban Land surface forcing on Spring Climate in Eastern China. *Journal of Geophysical Research - Atmospheres*, 121. Doi: 10.1002/2015JD024377.** Deng, J., Xu, H., & Zhang, L. (2016).

Description: Anthropogenic aerosols and urban land cover change induce opposite thermal effects on the atmosphere near surface as well as in the troposphere. One can think of these anthropogenic effects as composed of two parts: the individual effect due to an individual anthropogenic forcing and the nonlinear effects resulting from the coexistence of two forcing factors. In this study, we explored the role of such nonlinear effects in affecting East Asian climate, as well as individual forcing effects, using the Community Atmosphere Model version 5.1 coupled with the Community Land Model version 4.

Retrieved from <http://onlinelibrary.wiley.com/doi/10.1002/2015JD024377/epdf>

Climate Change Concepts, Climate Change Science and Impacts- Peer Reviewed Journal Articles

19. **Title: Changing black Carbon transport to the Arctic from present day to the end of 21st Century. *Journal of Geophysical Research - Atmospheres*, 121.**

Doi: 10.1002/2015JD023964.Jiao, C., & Flanner, M. G. (2016).

Description: This paper explores how climate warming under the Representative Concentration Pathway 8.5 (RCP8.5) impacts Arctic aerosol distributions via changes in atmospheric transport and removal processes.

Retrieved from <http://onlinelibrary.wiley.com/doi/10.1002/2015JD023964/pdf>

20. **Title: The Contribution of Ozone to future Stratospheric temperature**

trends. *Geophysical Research Letter*, 43. Doi: 10.1002/2016GL068511.Maycock, A.

C. (2016).

Description: The projected recovery of ozone from the effects of ozone depleting substances this century will modulate the stratospheric cooling due to CO₂, thereby affecting the detection and attribution of stratospheric temperature trends. Here the impact of future ozone changes on stratospheric temperatures is quantified for three representative concentration pathways (RCPs) using simulations from the Fifth Coupled Model Intercomparison Project (CMIP5).

Retrieved from <http://onlinelibrary.wiley.com/doi/10.1002/2016GL068511/epdf>

21. **Title: Extending “Deep Blue” Aerosol retrieval coverage to cases of absorbing Aerosols above Clouds: Sensitivity analysis and first case studies. *Journal of Geophysical Research - Atmospheres*, 121. Doi:**

10.1002/2015JD024729.Sayer A. M., Hsu, N. C., Bettenhausen, C., Lee, J., Redemann, J., Schmid, B., and Shinozuka, Y. (2016).

Description: This study presents a sensitivity analysis and preliminary algorithm to retrieve above-cloud AOD and liquid cloud optical depth (COD) for AAC cases from MODIS or similar sensors, for incorporation into a future version of the “Deep Blue” AOD data product. Detailed retrieval simulations suggest that these sensors should be able to determine AAC AOD with a typical level of uncertainty ~25–50% (with lower uncertainties for more strongly absorbing aerosol types) and COD with an uncertainty ~10–20%, if an appropriate aerosol optical model is known beforehand.

Retrieved from <http://onlinelibrary.wiley.com/doi/10.1002/2015JD024729/epdf>

Climate Change Concepts, Climate Change Science and Impacts- Peer Reviewed Journal Articles

22. Title: Coupling centennial-scale shoreline change to sea-level rise and coastal morphology in the Gulf of Mexico using a Bayesian network. *Earth's Future*.

Doi: 10.1002/2015EF000331 Plant, N. G., Robert Thieler, E., & Passeri, D. L. (2016).

Description: Predictions of coastal evolution driven by episodic and persistent processes associated with storms and relative sea-level rise (SLR) are required to test our understanding, evaluate our predictive capability, and to provide guidance for coastal management decisions. Previous work demonstrated that the spatial variability of long-term shoreline change can be predicted using observed SLR rates, tide range, wave height, coastal slope, and a characterization of the geomorphic setting. The shoreline is not sufficient to indicate which processes are important in causing shoreline change, such as over wash that depends on coastal dune elevations.

Retrieved from <http://onlinelibrary.wiley.com/doi/10.1002/2015EF000331/epdf>

23. Title: Sea ice production variability in Antarctic coastal Polynyas. *Journal of Geophysical Research - Oceans*, 121. Doi: 10.1002/2015JC011537.Tamura,

T., Ohshima, K. I., Fraser, A. D., & Williams, G. D. (2016)

Description: Enhanced sea ice production (SIP) in Antarctic coastal polynyas forms dense shelf water (DSW), leading to Antarctic Bottom Water (AABW) formation that ultimately drives the lower limb of the meridional overturning circulation. Some studies suggest that the variability of SIP in Antarctic coastal polynyas is driven by the influence of atmospheric forcing, i.e., surface winds and air temperature.

Retrieved from <http://onlinelibrary.wiley.com/doi/10.1002/2015JC011537/epdf>

24. Title: Sea level driven Marsh expansion in a coupled model of Marsh erosion and migration. *Geophysical Research Letter*, 43. Doi:

10.1002/2016GL068507.Kirwan, M. L., Walters, D. C., Reay, W. G., & Carr, J. A. (2016).

Description: Coastal wetlands are among the most valuable ecosystems on Earth, where ecosystem services such as flood protection depend nonlinearly on wetland size and are threatened by sea level rise and coastal development. Here we propose a simple model of marsh migration into adjacent uplands and couple it with existing models of seaward edge erosion and vertical soil accretion to

Climate Change Concepts, Climate Change Science and Impacts- Peer Reviewed Journal Articles

explore how ecosystem connectivity influences marsh size and response to sea level rise. We find that marsh loss is nearly inevitable where topographic and anthropogenic barriers limit migration.

Retrieved from <http://onlinelibrary.wiley.com/doi/10.1002/2016GL068507/pdf>

- 25. Title: The Impact of Land-cover change on Flood peaks in Peatland basins. *Water Resources Research*, 52. Doi: 10.1002/2015WR017667.**Gao, J., Holden, J., & Kirkby, M. (2016).

Description: In headwater peat lands, saturation-excess overland flow is a dominant source of river discharge. Human modifications to headwater peat lands result in vegetation cover change but there is a lack of understanding about how the spatial distribution of such change impacts flood peaks.

Retrieved from <http://onlinelibrary.wiley.com/doi/10.1002/2015WR017667/epdf>

- 26. Title: Nitrogen trace gas fluxes from a Semi-arid subtropical Savanna under Woody legume encroachment. *Global Biogeochemical Cycles*, 30. Doi: 10.1002/2015GB005298.** Soper, F. M., Boutton, T. W., Groffman, P. M., and Sparks, J. P. (2016).

Description: Savanna ecosystems are a major source of nitrogen (N) trace gases that influence air quality and climate. These systems are experiencing widespread encroachment by woody plants, frequently associated with large increases in soil N, with no consensus on implications for trace gas emissions. We investigated the impact of encroachment by N-fixing tree *Prosopis glandulosa* on total reactive N gas flux ($N_t = NO + N_2O + NO_y + NH_3$) from south Texas savanna soils over 2 years. Contrary to expectations, upland *Prosopis* groves did not have greater N_t fluxes than adjacent unencroached grasslands.

Retrieved from <http://onlinelibrary.wiley.com/doi/10.1002/2015GB005298/epdf>

- 27. Title: Spatiotemporal drought variability in the Mediterranean over the last 900 years. *Journal of Geophysical Research - Atmospheres*, 121, 2060–2074. doi: 10.1002/2015JD023929.**Cook, B. I., Anchukaitis, K. J., Touchan, R., Meko, D. M., & Cook, E. R. (2016).

Description: Recent Mediterranean droughts have highlighted concerns that climate change may be contributing to observed drying trends, but natural climate variability in the region is still poorly

Climate Change Concepts, Climate Change Science and Impacts- Peer Reviewed Journal Articles

understood. We analyze 900 years (1100–2012) of Mediterranean drought variability in the Old World Drought Atlas (OWDA), a spatiotemporal tree ring reconstruction of the June-July-August self-calibrating Palmer Drought Severity Index.

Retrieved from <http://onlinelibrary.wiley.com/doi/10.1002/2015JD023929/full>

28. Title: Stream flow Response to Increasing Precipitation extremes altered by Forest Management. *Geophysical Research Letter*, 43. Doi:

10.1002/2016GL068058. Kelly, C. N., McGuire, K. J., Miniati, C. F., & Vose, J. M. (2016).

Description: Increases in extreme precipitation events of floods and droughts are expected to occur worldwide. The increase in extreme events will result in changes in stream flow that are expected to affect water availability for human consumption and aquatic ecosystem function. This paper presents an analysis that may greatly improve current stream flow models by quantifying the impact of the interaction between forest management and precipitation. Results suggest that vegetation might be managed to compensate for hydrologic responses due to climate change to help mitigate effects of extreme changes in precipitation.

Retrieved from <http://onlinelibrary.wiley.com/wol1/doi/10.1002/2016GL068058/full>

29. Title: Attribution of Extreme Weather and Climate events overestimated by unreliable Climate Simulations. *Geophysical Research Letters*, 43, 2158–2164.

Doi: 10.1002/2015GL067189. Bellprat, O., & Doblas-Reyes, F. (2016).

Description: Event attribution aims to estimate the role of an external driver after the occurrence of an extreme weather and climate event by comparing the probability that the event occurs in two counterfactual worlds. These probabilities are typically computed using ensembles of climate simulations whose simulated probabilities are known to be imperfect. The implications of using imperfect models in this context are largely unknown, limited by the number of observed extreme events in the past to conduct a robust evaluation. Using an idealized framework, this model limitation is studied by generating large number of simulations with variable reliability in simulated probability. The framework illustrates that unreliable climate simulations are prone to overestimate the attributable risk to climate change.

Retrieved from <http://onlinelibrary.wiley.com/wol1/doi/10.1002/2015GL067189/full>

Climate Change Concepts, Climate Change Science and Impacts- Peer Reviewed Journal Articles

30. Title: Particulate organic carbon and nitrogen export from major Arctic

rivers. *Global Biogeochemical Cycles*, 30. Doi: 10.1002/2015GB005351. McClelland,

J. W., Holmes, R. M., Peterson, B. J., Raymond, P. A., Striegi, R. G., Zhulidov, A. V., Zimov, N., Tank, S. E., Spencer, R. G. M., Staples, R., Gurtovaya, T. Y., & Griffin, C. G. (2016).

Description: Northern rivers connect a land area of approximately 20.5 million km² to the Arctic Ocean and surrounding seas. These rivers account for ~10% of global river discharge and transport massive quantities of dissolved and particulate materials that reflect watershed sources and impact biogeochemical cycling in the ocean. In this paper, multiyear data sets from a coordinated sampling program are used to characterize particulate organic carbon (POC) and particulate nitrogen (PN) export from the six largest rivers within the pan-Arctic watershed (Yenisey, Lena, Ob', Mackenzie, Yukon, Kolyma). Together, these rivers export an average of 3055×10^9 g of POC and 368×10^9 g of PN each year. Scaled up to the pan-Arctic watershed as a whole, fluvial export estimates increase to 5767×10^9 g and 695×10^9 g of POC and PN per year, respectively. Retrieved from <http://onlinelibrary.wiley.com/doi/10.1002/2015GB005351/full>

31. Title: Tidal Hydrodynamics under Future Sea level rise and Coastal morphology in the Northern Gulf of Mexico. *Earth's Future*. Doi:

10.1002/2015EF000332 Passeri, D. L., Hagen, S. C., Plant, N. G., Bilskie, M. V., Medeiros, S. C. & Alizad, K. (2016).

Description: This study examines the integrated influence of sea level rise (SLR) and future morphology on tidal hydrodynamics along the Northern Gulf of Mexico (NGOM) coast including seven embayments and three ecologically and economically significant estuaries.

Retrieved from <http://onlinelibrary.wiley.com/doi/10.1002/2015EF000332/full>

32. Title: Dynamic Simulation and Numerical analysis of Hurricane storm surge under Sea level rise with Geomorphologic changes along the Northern Gulf of Mexico. *Earth's Future*. Doi: 10.1002/2015EF000347

Bilskie, M. V., Hagen, S. C., Alizad, K., Medeiros, S. C., Passeri, D. L., Needham, H. F. & Cox, A. (2016).

Description: This work outlines a dynamic modeling framework to examine the effects of global climate change, and sea level rise (SLR) in particular, on tropical cyclone-driven storm surge inundation.

Climate Change Concepts, Climate Change Science and Impacts- Peer Reviewed Journal Articles

The methodology, applied across the northern Gulf of Mexico, adapts a present day large-domain, high resolution, tide, wind-wave, and hurricane storm surge model to characterize the potential outlook of the coastal landscape under four SLR scenarios for the year 2100. The modifications include shoreline and barrier island morphology, marsh migration, and land use land cover change.

Retrieved from <http://onlinelibrary.wiley.com/doi/10.1002/2015EF000347/full>

33. Title: Why cirrus cloud seeding cannot substantially cool the Planet. *Journal of Geophysical Research - Atmospheres*, 121. Doi:

10.1002/2015JD024666. Gasparini, B., & Lohmann, U. (2016).

Description: The net warming effect of cirrus clouds has driven part of the geoengineering research toward the idea of decreasing their occurrence frequency by seeding them with efficient ice nucleating particles. We study responses of cirrus clouds to simplified global seeding strategies in terms of their radiative fluxes with the help of the ECHAM-HAM general circulation model.

Retrieved from <http://onlinelibrary.wiley.com/doi/10.1002/2015JD024666/full>

34. Title: Developing and Managing Trans-disciplinary and Transformative research on the Coastal Dynamics of Sea level rise: Experiences and lessons learned. *Earth's Future*. Doi: 10.1002/2015EF000346

DeLorme, D. E., Kidwell, D., Hagen, S. C. & Stephens, S. H. (2016). **Description:** This article describes and examines the collaborative process of the Ecological Effects of Sea Level Rise in the Northern Gulf of Mexico trans-disciplinary research project, including its development, implementation, and evaluation. Reflections, considerations, and lessons learned from firsthand experience are shared, supported with examples, and connected to relevant scholarly literature.

Retrieved from <http://onlinelibrary.wiley.com/doi/10.1002/2015EF000346/full>

35. Title: Assessing Climate Impacts and Risks of Ocean Albedo modification in the Arctic. *Journal of Geophysical Research - Oceans*, 121. Doi:

10.1002/2015JC011433. Mengis, N., Martin, T., Keller, D. P., & Oschlies, A. (2016).

Description: The ice albedo feedback is one of the key factors of accelerated temperature increase in the high northern latitudes under global warming. This study assesses climate impacts and risks of

Climate Change Concepts, Climate Change Science and Impacts- Peer Reviewed Journal Articles

idealized Arctic Ocean albedo modification (AOAM), a proposed climate engineering method, during transient climate change simulations with varying representative concentration pathway (RCP) scenarios.

Retrieved from <http://onlinelibrary.wiley.com/wol1/doi/10.1002/2015JC011433/full>

- 36. Title: Atmospheric drivers of Greenland surface melt revealed by self-organizing maps. *Journal of Geophysical Research - Atmospheres*, 121. Doi: 10.1002/2015JD024550.** Mioduszewski, J. R., Rennermalm, A. K., Hammann, A., Tedesco, M., Noble, E. U., Stroeve, J. C., & Mote, T. L. (2016).

Description: Recent acceleration in surface melt on the Greenland ice sheet (GrIS) has occurred concurrently with a rapidly warming Arctic and has been connected to persistent, anomalous atmospheric circulation patterns over Greenland. To identify synoptic setups favoring enhanced GrIS surface melt and their decadal changes, we develop a summer Arctic synoptic climatology by employing self-organizing maps.

Retrieved from <http://onlinelibrary.wiley.com/wol1/doi/10.1002/2015JD024550/full>

- 37. Title: Thermodynamic and Dynamic Controls on Changes in the zonally anomalous Hydrological cycle. *Geophysical Research Letters*, 43, doi: 10.1002/2016GL068418.** Wills, R. C., Byrne, M. P., & Schneider, T. (2016).

Description: The wet gets wetter, dry gets drier paradigm explains the expected moistening of the extra tropics and drying of the subtropics as the atmospheric moisture content increases with global warming. Here we show, using precipitation minus evaporation ($P - E$) data from climate models, that it cannot be extended to apply regionally to deviations from the zonal mean.

Retrieved from <http://onlinelibrary.wiley.com/wol1/doi/10.1002/2016GL068418/full>

- 38. Title: Dynamics of carbonate chemistry, production, and calcification of the Florida Reef Tract (2009–2010): Evidence for seasonal dissolution. *Global Biogeochemical Cycles*, 30. Doi: 10.1002/2015GB005327.** Muehllehner, N., Langdon, C., Venti, A., & Kadko, D. (2016).

Description: Ocean acidification is projected to lower the Ω_{ar} of reefal waters by 0.3–0.4 units by the end of century, making it more difficult for calcifying organisms to secrete calcium carbonate while

Climate Change Concepts, Climate Change Science and Impacts- Peer Reviewed Journal Articles

at the same time making the environment more favorable for abiotic and biotic dissolution of the reefal framework. This study represents the first broad-scale geochemical survey of the rates of net community production (NCP) and net community calcification (NCC) across the Florida Reef Tract (FRT). Surveys were performed at approximately quarterly intervals in 2009–2010 across seven onshore-offshore transects spanning the upper, middle, and lower Florida Keys.

Retrieved from <http://onlinelibrary.wiley.com/wol1/doi/10.1002/2015GB005327/full>

39. Title: Nature and Dynamics of Climate Variability in the Uganda cattle corridor. *African Journal of Environmental Science and Technology*, 7 (8), pp. 770-782.

Nimusiima, A., Basalirwa, C. P. K., Majaliwa, J.G.M., Otim-Nape, W., Okello-Onen, J., Rubaire-Akiiki, C., Konde-Lule, J., & Ogwal-Byenek, S. (2013).

Description: The study was conducted in the districts of Nakaseke and Nakasongola stratified into four farming systems of crop dominancy, pastoralists, mixed crop and livestock and fishing. The study was guided by two research questions: (1) how do community residents perceive climate change/variability? (2) What is the trend and nature of climate variability and how does it compare with people's perceptions?

Retrieved from <http://www.academicjournals.org/journal/AJEST/article-full-text-pdf/3E5838A18097>

40. Title: Climate change impact on the roles of temperature and precipitation in western U.S. snowpack variability. *Geophysical Research Letter*, 43. Doi: 10.1002/2016GL068798.

Scalzitti, J., Strong, C.,* & Kochanski, A. (2016).

Description: We employ dynamical downscaling and pseudo global warming methodologies to evaluate climate change impact on the roles of temperature and precipitation in spring snowpack (S) variability across the western United States (U.S.). The negative correlation between S and temperature weakens linearly with elevation, whereas the correlation between S and precipitation increases asymptotically with elevation. The curvilinear relationship in the latter case was not visible in prior studies because of the observation networks' limited range. In our historical validation, there is a range of threshold elevations (1580–2181 m) across six mountainous regions, above which precipitation is the main driver of snowpack variability and below which temperature is the main driver. Under a moderate end-of-century climate change scenario, these thresholds increase by 191 to 432 m. These rising

Climate Change Concepts, Climate Change Science and Impacts- Peer Reviewed Journal Articles

thresholds indicate increasing spatial and elevational vulnerability of western U.S. spring snowpack along with associated impacts to hydrologic and ecologic systems.

Retrieved from <http://onlinelibrary.wiley.com/wol1/doi/10.1002/2016GL068798/full>

41. **Title: Climate change reduces warming potential of nitrous oxide by an enhanced Brewer-Dobson circulation. *Geophysical Research Letter*, 43.**

Doi:10.1002/2016GL068390. Kracher, D., Reick, C. H., Manzini, E., Schultz, M. G., & Stein, O. (2016).

Description: The Brewer-Dobson circulation (BDC), which is an important driver of the stratosphere-troposphere exchange, is expected to accelerate with climate change. One particular consequence of this acceleration is the enhanced transport of nitrous oxide (N₂O) from its sources at the Earth's surface toward its main sink region in the stratosphere, thus inducing a reduction in its lifetime. N₂O is a potent greenhouse gas and the most relevant currently emitted ozone-depleting substance. Here we examine the implications of a reduced N₂O lifetime in the context of climate change. We find a decrease in its global warming potential (GWP) and, due to a decline in the atmospheric N₂O burden, also a reduction in its total radiative forcing. From the idealized transient global warming simulation we can identify linear regressions for N₂O sink, lifetime, and GWP with temperature rise. Our findings are thus not restricted to a particular scenario.

Retrieved from <http://onlinelibrary.wiley.com/wol1/doi/10.1002/2016GL068390/full>

42. **Title: Seasonal and Regional variations in extreme precipitation event frequency using CMIP5. *Geophysical Research Letter*, 43. Doi:**

10.1002/2016GL069151 Janssen, E., Sriver, R. L., Wuebbles, D. J., & Kunkel, K. E. (2016)..

Description: Understanding how the frequency and intensity of extreme precipitation events are changing is important for regional risk assessments and adaptation planning. Here we use observational data and an ensemble of climate change model experiments (from the Coupled Model Inter-comparison Project Phase 5 (CMIP5)) to examine past and potential future seasonal changes in extreme precipitation event frequency over the United States. Using the extreme precipitation index as a metric for extreme precipitation change, we find key differences between models and observations.

Retrieved from <http://onlinelibrary.wiley.com/wol1/doi/10.1002/2016GL069151/full>

Climate Change Concepts, Climate Change Science and Impacts- Peer Reviewed Journal Articles

43. Title: High-latitude dust in the Earth system. *Reviews of Geophysics*, 54. Doi:

10.1002/2016RG000518. Bullard, J. E., Baddock, M., Bradwell, T., Crusius, J., Darlington, E., Gaiero, D., Gasso, S., Gisladdottir, G., Hodgkins, R., McCulloch, R., McKenna-Neuman, C., Mockford, T., Stewart, H., & Thorsteinsson, T. (2016).

Description: Natural dust is often associated with hot, subtropical deserts, but significant dust events have been reported from cold, high latitudes. This review synthesizes current understanding of high-latitude ($\geq 50^\circ\text{N}$ and $\geq 40^\circ\text{S}$) dust source geography and dynamics and provides a prospectus for future research on the topic. Although the fundamental processes controlling aeolian dust emissions in high latitudes are essentially the same as in temperate regions, there are additional processes specific to or enhanced in cold regions.

Retrieved from <http://onlinelibrary.wiley.com/doi/10.1002/2016RG000518/full>

44. Title: Idealized Climate Change simulations with a high-resolution physical model: HadGEM3-GC2. *Journal of Advances in Modelling Earth Systems*, 8. Doi:

10.1002/2015MS000614. Senior, C. A., Andrews, T., Burton, C., Chadwick, R., Copesey, D., Graham, T., Hyder, P., Jackson, L., McDonald, R., Ridley, J., Ringer, M., & Tsushima, Y. (2016),

Description: Idealized climate change simulations with a new physical climate model, HadGEM3-GC2 from The Met Office Hadley Centre are presented and contrasted with the earlier MOHC model, HadGEM2-ES. The role of atmospheric resolution is also investigated. The Transient Climate Response (TCR) is 1.9 K/2.1 K at N216/N96 and Effective Climate Sensitivity (ECS) is 3.1 K/3.2 K at N216/N96. These are substantially lower than HadGEM2-ES (TCR: 2.5 K; ECS: 4.6 K) arising from a combination of changes in the size of climate feedbacks. While the change in the net cloud feedback between HadGEM3 and HadGEM2 is relatively small, there is a change in sign of its long wave and a strengthening of its shortwave components. At a global scale, there is little impact of the increase in atmospheric resolution on the future climate change signal and even at a broad regional scale, many features are robust including tropical rainfall changes, however, there are some significant exceptions.

Retrieved from <http://onlinelibrary.wiley.com/doi/10.1002/2015MS000614/full>

45. Title: Future changes in regional precipitation simulated by a half-degree coupled climate model: Sensitivity to horizontal resolution. *Journal of*

Climate Change Concepts, Climate Change Science and Impacts- Peer Reviewed Journal Articles

Advances in Modelling Earth Systems 8. Doi: 10.1002/2015MS000584. Shields, C. A., Kiehl, J. T., & Meehl, G. A. (2016).

Description: The global fully coupled half-degree Community Climate System Model Version 4 (CCSM4) was integrated for a suite of climate change ensemble simulations including five historical runs, five Representative Concentration Pathway 8.5 [RCP8.5] runs, and a long Pre-Industrial control run. This study focuses on precipitation at regional scales and its sensitivity to horizontal resolution. Retrieved from <http://onlinelibrary.wiley.com/doi/10.1002/2015MS000584/full>

46. Title: Evaluation of reanalysis, of spatially interpolated and satellite remotely sensed precipitation data sets in central Asia. *Journal of Geophysical Research: Atmospheres*, 121. Doi: 10.1002/2016JD024781. Hu, Z., Hu, Q., Zhang, C., Chen, X., and Li, Q. (2016).

Description: The accuracy of any gridded climatic data sets is as important as their availability for regional climate and ecological studies. In this study, the accuracy of estimated precipitation in central Asia from three recently developed reanalysis data sets, Modern-Era Retrospective Analysis for Research and Applications (MERRA), ECMWF Interim Re-Analysis (ERA-Interim), and Climate Forecast System Reanalysis (CFSR), is evaluated through comparisons with observations from 399 stations during 1979–2010. An interpolated precipitation data set from station observations and a satellite remotely sensed data set, Tropical Rainfall Measuring Mission (TRMM) 3B42, are included in the evaluation. Major results show that MERRA data have higher accuracy than ERA-Interim and CFSR, although they all overestimate the observed precipitation especially in late spring and early summer months, suggesting errors in their ways of representing convective precipitation in that region. Retrieved from <http://onlinelibrary.wiley.com/wol1/doi/10.1002/2016JD024781/full>

47. Title: Simulating the extreme 2013/2014 winter in a future climate. *Journal of Geophysical Research: Atmospheres*, 121. Doi: 10.1002/2015JD024492. Rasmijn, L. M., Van der Schrier, G., Barkmeijer, J., Sterl, A., & Hazeleger, W. (2016).

Description: How would the spell of extreme weather observed over North America and western Europe during the 2013/2014 winter manifest itself in a warmer climate? Here a forced sensitivity method is used to calculate optimal model tendency perturbations which result in a simulation which has its upper atmospheric circulation shifted in the direction of the January 2014 jet stream pattern.

Climate Change Concepts, Climate Change Science and Impacts- Peer Reviewed Journal Articles

When applied to a simulation run under present-day conditions the main features of the observations of this event are reproduced, such as the more zonal position and increased strength of the mid-latitude North Atlantic storm track, the anomalous temperature pattern over North America, and the excessive precipitation in parts of Europe. When this method is applied to a future warmer climate, the North Atlantic storm track changes to a more zonal orientation, but its strength does not see the significant increase that is obtained in the present-day simulations.

Retrieved from <http://onlinelibrary.wiley.com/doi/10.1002/2015JD024492/epdf>

48. Title: Historic drought puts the brakes on earthflows in Northern California. *Geophysical Research Letter*, 43. Doi:

10.1002/2016GL068378. Bennett, G. L., Roering, J. J., Mackey, B. H., Handwerger, A. L., Schmidt, D. A., & Guillod, B. P. (2016).

Description: California's ongoing, unprecedented drought is having profound impacts on the state's resources. Here we assess its impact on 98 deep-seated, slow-moving landslides in Northern California. We used aerial photograph analysis, satellite interferometry, and satellite pixel tracking to measure earthflow velocities spanning 1944–2015 and compared these trends with the Palmer Drought Severity Index, a proxy for soil moisture and pore pressure that governs landslide motion. We find that earthflow velocities reached a historical low in the 2012–2015 drought, but that their deceleration began at the turn of the century in response to a longer-term moisture deficit. Our analysis implies depth-dependent sensitivity of earthflows to climate forcing, with thicker earthflows reflecting longer-term climate trends and thinner earthflows exhibiting less systematic velocity variations. These findings have implications for mechanical-hydrologic interactions that link landslide movement with climate change as well as sediment delivery in the region.

Retrieved from <http://onlinelibrary.wiley.com/doi/10.1002/2016GL068378/epdf>

49. Title: Exploring Historical and Future urban climate in the Earth System Modeling framework: I. Model development and evaluation. *Journal of Advances in Modelling Earth Systems*, 8. Doi: 10.1002/2015MS000578. Li,

D., Malyshev, S., & Shevliakova, E. (2016).

Description: A number of recent studies investigated impacts of Land-Use and Land-Cover Changes (LULCC) on climate with global Earth System Models (ESMs). Yet many ESMs are still missing a

Climate Change Concepts, Climate Change Science and Impacts- Peer Reviewed Journal Articles

representation of the most extreme form of natural landscape modification – urban settlements. Moreover, long-term (i.e., decades to century) transitions between build-up and other land cover types due to urbanization and de-urbanization have not been examined in the literature. In this study we evaluate a new urban canopy model (UCM) that characterizes urban physical and biogeochemical processes within the sub-grid tiling framework of the Geophysical Fluid Dynamics Laboratory (GFDL) land model, LM3.

Retrieved from <http://onlinelibrary.wiley.com/doi/10.1002/2015MS000578/epdf>

50. Title: Evaluating biases in simulated land surface albedo from CMIP5 global climate models. *Journal of Geophysical Research: Atmospheres*, 121, Doi:

10.1002/2016JD024774. Li, Y., Wang, T., Zeng, Z., Peng, S., Lian, X., & Piao, S. (2016).

Description: Land surface albedo is a key parameter affecting energy balance and near-surface climate. In this study, we used satellite data to evaluate simulated surface albedo in 37 models participating in the Coupled Model Inter-comparison Project Phase 5 (CMIP5).

Retrieved from <http://onlinelibrary.wiley.com/wol1/doi/10.1002/2016JD024774/full>

51. Title: Identifying sensitive ranges in global warming precipitation change dependence on convective parameters. *Geophysical Research Letter*, 43.

Doi: 10.1002/2016GL069022. Bernstein, D. N., & Neelin, J. D. (2016).

Description: A branch-run perturbed-physics ensemble in the Community Earth System Model estimates impacts of parameters in the deep convection scheme on current hydroclimate and on end-of-century precipitation change projections under global warming. Regional precipitation change patterns prove highly sensitive to these parameters, especially in the tropics with local changes exceeding 3 mm/d, comparable to the magnitude of the predicted change and to differences in global warming predictions among the Coupled Model Intercomparison Project phase 5 models.

Retrieved from <http://onlinelibrary.wiley.com/doi/10.1002/2016GL069022/full>

52. Title: Regional influence of climate patterns on the wave climate of the southwestern Pacific: The New Zealand region. *Journal of Geophysical*

Climate Change Concepts, Climate Change Science and Impacts- Peer Reviewed Journal Articles

Research: Oceans, 121. Doi: 10.1002/2015JC011572. Godoi, V. A., Bryan, K. R., & Gorman, R. M. (2016).

Description: This work investigates how the wave climate around New Zealand and the southwest Pacific is modulated by the Pacific Decadal Oscillation (PDO), El Niño-Southern Oscillation (ENSO), Indian Ocean Dipole (IOD), Zonal Wave-number-3 Pattern (ZW3), and Southern Annular Mode (SAM) during the period 1958–2001. Their respective climate indices were correlated with modeled mean wave parameters extracted from a 45 year (1957–2002) wave hindcast carried out with the WAVEWATCH III model using the wind and ice fields from the ERA-40 reanalysis project. Retrieved from <http://onlinelibrary.wiley.com/doi/10.1002/2015JC011572/full>

53. Title: Future Arctic temperature change resulting from a range of aerosol emissions scenarios. Earth's Future. Doi: 10.1002/2016EF000361. Wobus, C., Flanner, M., Sarofim, M. C., Moura, M. C. P., & Smith, S. J. (2016).

Description: The Arctic temperature response to emissions of aerosols specifically black carbon (BC), organic carbon (OC), and sulfate depends on both the sector and the region where these emissions originate. Thus, the net Arctic temperature response to global aerosol emissions reductions will depend strongly on the blend of emissions sources being targeted. We use recently published equilibrium Arctic temperature response factors for BC, OC, and sulfate to estimate the range of present-day and future Arctic temperature changes from seven different aerosol emissions scenarios. Retrieved from <http://onlinelibrary.wiley.com/doi/10.1002/2016EF000361/full>

54. Title: Southern Ocean deep convection in global climate models: A driver for variability of subpolar gyres and Drake Passage transport on decadal timescales. Journal of Geophysical Research: Oceans, 121, Doi:

10.1002/2015JC011286. Behrens, E., Rickard, G., Morgenstern, O., Martin, T., Osprey, A., & Joshi, M. (2016).

Description: We investigate the individual and joint decadal variability of Southern Ocean state quantities, such as the strength of the Ross and Weddell Gyres, Drake Passage transport, and sea ice area, using the National Institute of Water and Atmospheric Research UK Chemistry and Aerosols (NIWA-UKCA) model and CMIP5 models.

Climate Change Concepts, Climate Change Science and Impacts- Peer Reviewed Journal Articles

Retrieved from <http://onlinelibrary.wiley.com/doi/10.1002/2015JC011286/full>

- 55. Title: Exploring historical and future urban climate in the Earth System Modeling framework: 2. Impact of urban land use over the Continental United States. *Journal of Advances in Modeling Earth Systems*, 8. Doi: 10.1002/2015MS000579.** Li, D., Malyshev, S., & Shevliakova, E. (2016).

Description: Using a newly developed urban canopy model (UCM) coupled to the Geophysical Fluid Dynamics Laboratory (GFDL) land model LM3 (LM3-UCM), this study examines the urban land use impacts over the Continental United States (CONUS) under the present-day climate and two future scenarios. Using natural (undisturbed) vegetation systems as references where no land use has occurred, the LM3-UCM simulations show that the spatial pattern of summer (June, July, and August) temperature differences between urban and natural vegetation systems is primarily controlled by the spatial pattern of differences in evapotranspiration, which further depends on the spatial distribution of precipitation.

Retrieved from <http://onlinelibrary.wiley.com/doi/10.1002/2015MS000579/full>

- 56. Title: Challenges of Climate Change: An Arctic Perspective. *Human Environment* 35 (4):148-152.** Corell, R. W. (2006).

Description: Climate change is being experienced particularly intensely in the Arctic. Arctic average temperature has risen at almost twice the rate as that of the rest of the world in the past few decades. Widespread melting of glaciers and sea ice and rising permafrost temperatures present additional evidence of strong Arctic warming. These changes in the Arctic provide an early indication of the environmental and societal significance of global consequences.

Retrieved from <http://www.bioone.org/doi/abs/10.1579/0044-7447%282006%2935%5B148%3ACOCCA%5D2.0.CO%3B2?journalCode=ambi>

- 57. Title: Assessing Risks of Climate variability and climate change for Indonesian rice agriculture. *PNAS*, 104 (19), 7752-7757. Doi: 10.1073.** Naylor, R. L., Battisti, D. S., Vimont, D. J., Falcon, W. P., & Burke, M. B. (2007).

Climate Change Concepts, Climate Change Science and Impacts- Peer Reviewed Journal Articles

Description: El Niño events typically lead to delayed rainfall and decreased rice planting in Indonesia's main rice-growing regions, thus prolonging the hungry season and increasing the risk of annual rice deficits. Here we use a risk assessment framework to examine the potential impact of El Niño events and natural variability on rice agriculture in 2050 under conditions of climate change, with a focus on two main rice-producing areas: Java and Bali.

Retrieved from <http://www.pnas.org/content/104/19/7752.full.pdf>

58. Title: Climate change impacts on global food security. *Science* 134, 508-13.

Doi: 10.1126/science.1239402. Wheeler, T., & Von Braun, J. (2013).

Description: Climate change could potentially interrupt progress toward a world without hunger. A robust and coherent global pattern is discernible of the impacts of climate change on crop productivity that could have consequences for food availability. The stability of whole food systems may be at risk under climate change because of short-term variability in supply. However, the potential impact is less clear at regional scales, but it is likely that climate variability and change will exacerbate food insecurity in areas currently vulnerable to hunger and under nutrition. Likewise, it can be anticipated that food access and utilization will be affected indirectly via collateral effects on household and individual incomes, and food utilization could be impaired by loss of access to drinking water and damage to health. The evidence supports the need for considerable investment in adaptation and mitigation actions toward a "climate-smart food system" that is more resilient to climate change influences on food security.

Retrieved from <http://www.ncbi.nlm.nih.gov/pubmed/23908229>

59. Title: Climate Change and the potential effects on maternal and pregnancy outcomes: An assessment of the most vulnerable – mother, fetus and newborn child. *Global Health in Action*. Rylander, C., Øyvind Odland, J., & Sandanger, T. M. (2013).

Description: This article demonstrates that climate change will increase the risk of infant and maternal mortality, birth complications, and poorer reproductive health, especially in tropical, developing countries. Thus, climate change will have a substantial impact on the health and survival of

Climate Change Concepts, Climate Change Science and Impacts- Peer Reviewed Journal Articles

the next generation among already challenged populations. There is limited knowledge regarding which regions will be most heavily affected.

Retrieved from <http://www.globalhealthaction.net/index.php/gha/article/view/19538>

60. Title: Regional influence of climate patterns on the wave climate of the southwestern Pacific: The New Zealand region. *Journal of Geophysical Research Oceans*, 121, Doi: 10.1002/2015JC011572. Godoi, V. A., Bryan, K. R., & Gorman, R. M. (2016).

Description: This work investigates how the wave climate around New Zealand and the southwest Pacific is modulated by the Pacific Decadal Oscillation (PDO), El Niño-Southern Oscillation (ENSO), Indian Ocean Dipole (IOD), Zonal Wave-number-3 Pattern (ZW3), and Southern Annular Mode (SAM) during the period 1958–2001.

Retrieved from <http://onlinelibrary.wiley.com/doi/10.1002/2015JC011572/full>

61. Title: Exploring historical and future urban climate in the Earth System Modeling framework: 1. Model development and evaluation. *Journal of Advances in Modeling Earth Systems*, 8, Doi: 10.1002/2015MS000578. Li, D., Malyshev, S., & Shevliakova, E. (2016).

Description: A number of recent studies investigated impacts of Land-Use and Land-Cover Changes (LULCC) on climate with global Earth System Models (ESMs). Yet many ESMs are still missing a representation of the most extreme form of natural landscape modification – urban settlements. Moreover, long-term (i.e., decades to century) transitions between build-up and other land cover types due to urbanization and de-urbanization have not been examined in the literature. In this study we evaluate a new urban canopy model (UCM) that characterizes urban physical and biogeochemical processes within the sub grid tiling framework of the Geophysical Fluid Dynamics Laboratory (GFDL) land model, LM3.

Retrieved from <http://onlinelibrary.wiley.com/doi/10.1002/2015MS000578/full>

62. Title: Exploring historical and future urban climate in the Earth System Modeling framework: 2. Impact of urban land use over the Continental

Climate Change Concepts, Climate Change Science and Impacts- Peer Reviewed Journal Articles

United States. *Journal of Advances in Modeling Earth Systems*, 8, Doi:

10.1002/2015MS000579. Li, D., Malyshev, S., & Shevliakova, E. (2016).

Description: Using a newly developed urban canopy model (UCM) coupled to the Geophysical Fluid Dynamics Laboratory (GFDL) land model LM3 (LM3-UCM), this study examines the urban land use impacts over the Continental United States (CONUS) under the present-day climate and two future scenarios.

Retrieved from <http://onlinelibrary.wiley.com/doi/10.1002/2015MS000579/full>

63. Title: Land surface and atmospheric conditions associated with heat waves over the Chickasaw Nation in the South Central United States. *Journal of Geophysical Research: Atmospheres*, 121, Doi: 10.1002/2015JD024659. Lee, E., Bieda, R., Shanmugasundaram, J., & Basara Richter, H. (2016).

Description: Exposure to extreme heat was reconstructed based on regional land-atmosphere processes from 1979 to 2010 in the South Central U.S. The study region surrounds the Chickasaw Nation (CN), a predominantly Native American population with a highly prevalent burden of climate-sensitive chronic diseases. Land surface and atmospheric conditions for summer heat waves were analyzed during spring (March-April-May, MAM) and summer (June-July-August, JJA) based on the Climate and Ocean: Variability, Predictability, and Change maximum temperature definition for heat wave frequency (HWF).

Retrieved from <http://onlinelibrary.wiley.com/wol1/doi/10.1002/2015JD024659/full>

64. Title: Effects of modified soil water-heat physics on RegCM4 simulations of climate over the Tibetan Plateau. *Journal of Geophysical Research: Atmospheres*, 121, Doi: 10.1002/2015JD024407. Wang, X., Pang, G., Yang, M., & Wan, G. (2016).

Description: To optimize the description of land surface processes and improve climate simulations over the Tibetan Plateau (TP), a modified soil water-heat parameterization scheme (SWHPS) is implemented into the Community Land Model 3.5 (CLM3.5), which is coupled to the regional climate model 4 (RegCM4). This scheme includes Johansen's soil thermal conductivity scheme together with Niu's groundwater module. Two groups of climate simulations are then performed using the original

Climate Change Concepts, Climate Change Science and Impacts- Peer Reviewed Journal Articles

RegCM4 and revised RegCM4 to analyze the effects of the revised SWHPS on regional climate simulations.

Retrieved from <http://onlinelibrary.wiley.com/wol1/doi/10.1002/2015JD024407/full>

- 65. Title: Detecting changes in future precipitation extremes over eight river basins in China using RegCM4 downscaling. *Journal of Geophysical Research: Atmospheres*, 121. Doi: 10.1002/2016JD024776.** Qin, P., & Xie, Z. (2016).

Description: To detect the frequency and intensity of precipitation extremes in China for the middle 21st century, simulations were conducted with the regional climate model RegCM4 forced by the global climate model GFDL_ESM2M under the middle emission scenario (RCP4.5). Compared with observed precipitation extremes for the reference period from 1982 to 2001, RegCM4 generally performed better in most river basins of China relative to GFDL. In the future period 2032–2051, more wet extremes will occur relative to the present period in most study areas, especially in southeast China while significantly less dry extremes will occur in arid and semiarid areas in northwest China.

Retrieved from <http://onlinelibrary.wiley.com/wol1/doi/10.1002/2016JD024776/full>

- 66. Title: Seasonality of global and Arctic black carbon processes in the Arctic Monitoring and Assessment Programme models. *Journal of Geophysical Research: Atmospheres*, 121. Doi: 10.1002/2016JD024849.** Mahmood, R., von Salzen, K., Flanner, M., Sand, M., Langner, J., Wang, H., & Huang, L. (2016).

Description: This study quantifies black carbon (BC) processes in three global climate models and one chemistry transport model, with focus on the seasonality of BC transport, emissions, wet and dry deposition in the Arctic. In the models, transport of BC to the Arctic from lower latitudes is the major BC source for this region. Arctic emissions are very small. All models simulated a similar annual cycle of BC transport from lower latitudes to the Arctic, with maximum transport occurring in July.

Retrieved from <http://onlinelibrary.wiley.com/wol1/doi/10.1002/2016JD024849/full>

- 67. Title: Interannual variation of global net radiation flux as measured from space. *Journal of Geophysical Research: Atmospheres*, 121. Doi:**

Climate Change Concepts, Climate Change Science and Impacts- Peer Reviewed Journal Articles

10.1002/2015JD024112. Zhu, P., Wild, van Ruymbeke, M., Thuillier, G., Meftah, M., & Karatekin, O (2016),

Description: The global net radiation flux (NRF) in and out of the climate system at the top of the atmosphere (TOA) varies at interannual time scales, reflecting the complexity of the processes responsible for attaining global energy equilibrium. These processes are investigated in this study using the previously unexplored data acquired by a bolometric type sensor installed in the PICARD microsatellite. The obtained anomalies in the NRF (PICARD-NRF) are compared to the global NRF changes at the TOA measured by the Clouds and Earth's Radiant Energy System mission (CERES-NRF). Retrieved from <http://onlinelibrary.wiley.com/doi/10.1002/2015JD024112/full>

68. Title: Fire and climate in Mongolia (1532–2010 Common Era). *Geophysical Research Letter*, 43. Doi: 10.1002/2016GL069059. Hessler, A. E., Brown, P., Byambasuren, O., Cockrell, S., Leland, C., Cook, E., Nachin, B., Pederson, N., Saladyga, T., & Suran, B. (2016).

Description: Recent increases in wild land fire, warming temperatures, and land use change have coincided in many forested regions, making it difficult to parse causes of elevated fire activity. Here we use 20 multi-century fire scar chronologies (464 fire scar samples) from Mongolia to evaluate the role of climate forcing of fire in the context of livestock grazing and minimal fire suppression. We observe no change in fire return intervals post-1900; however, since the 1500s, periods of drought are coincident with more fire and shorter fire return intervals. We observe same year and some antecedent year effects of drought on fire, a pattern typical of semiarid forests elsewhere. During the instrumental period, drought remains an important driver of fire; however, limited fire activity in recent decades may be due to the coincidence of drought and intensive grazing that have synergized to reduce fuel continuity and fire spread.

Retrieved from <http://onlinelibrary.wiley.com/doi/10.1002/2016GL069059/full>

69. Title: Impacts of artificial ocean alkalization on the carbon cycle and climate in Earth system simulations. *Geophysical Research Letter*, 43. Doi: 10.1002/2016GL068576. González, M. F., & Ilyina, T. (2016).

Description: Using the state-of-the-art emissions-driven Max Planck Institute Earth system model, we explore the impacts of artificial ocean alkalization (AOA) with a scenario based on the

Climate Change Concepts, Climate Change Science and Impacts- Peer Reviewed Journal Articles

Representative Concentration Pathway (RCP) framework. Addition of 114 Pmol of alkalinity to the surface ocean stabilizes atmospheric CO₂ concentration to RCP4.5 levels under RCP8.5 emissions. This scenario removes 940 GtC from the atmosphere and mitigates 1.5 K of global warming within this century. The climate adjusts to the lower CO₂ concentration preventing the loss of sea ice and high sea level rise. Seawater pH and the carbonate saturation state (Ω) rise substantially above levels of the current decade. Pronounced differences in regional sensitivities to AOA are projected, with the Arctic Ocean and tropical oceans emerging as hot spots for biogeochemical changes induced by AOA. Thus, the CO₂ mitigation potential of AOA comes at a price of an unprecedented ocean biogeochemistry perturbation with unknown ecological consequences.

Retrieved from <http://onlinelibrary.wiley.com/wol1/doi/10.1002/2016GL068576/full>

- 70. Title: Anthropogenic influence on the frequency of extreme temperatures in China. *Geophysical Research Letter*, 43. Doi: 10.1002/2016GL069296.** Lu, C., Sun, Y., Wan, H., Zhang, X., & Yin, H. (2016).

Description: Anthropogenic influence on the frequencies of warm days, cold days, warm nights, and cold nights are detected in the observations of Chinese temperature data covering 1958–2002. We used an optimal fingerprinting method to compare these temperature indices computed from a newly homogenized observational data set with those from simulations conducted with multiple climate models that participated in the Coupled Model Intercomparison Project Phase 5.

Retrieved from <http://onlinelibrary.wiley.com/wol1/doi/10.1002/2016GL069296/full>

- 71. Title: Using timing of ice retreat to predict timing of fall freeze-up in the Arctic. *Geophysical Research Letter*, 43. Doi: 10.1002/2016GL069314.** Stroeve, J. C., Crawford, A. D., & Stammerjohn, S., (2016).

Description: Reliable forecasts of the timing of sea ice advance are needed in order to reduce risks associated with operating in the Arctic as well as planning of human and environmental emergencies. This study investigates the use of a simple statistical model relating the timing of ice retreat to the timing of ice advance, taking advantage of the inherent predictive power supplied by the seasonal ice-albedo feedback and ocean heat uptake.

Retrieved from <http://onlinelibrary.wiley.com/doi/10.1002/2016GL069314/full>

Climate Change Concepts, Climate Change Science and Impacts- Peer Reviewed Journal Articles

72. Title: The impact of climate change on global tropical cyclone damage.

Nature Climate Change. Doi: 10.1038/NCLIMATE1357. Mendelsohn, R., Emanuel, K., Chonabayashi, S., & Bakkensen, L. (2012).

Description: One potential impact from greenhouse-gas emissions is increasing damage from extreme events. Here, we quantify how climate change may affect tropical cyclone damage. We find that future increases in income are likely to double tropical cyclone damage even without climate change. Climate change is predicted to increase the frequency of high-intensity storms in selected ocean basins depending on the climate model. Climate change doubles economic damage, but the result depends on the parameters of the damage function. Almost all of the tropical cyclone damage from climate change tends to be concentrated in North America, East Asia and the Caribbean–Central American region. This paper provides a framework to combine atmospheric science and economics, but some effects are not yet modelled, including sea-level rise and adaptation.

Retrieved from

http://www.adaptation-undp.org/sites/default/files/downloads/global_tropical_cyclones_0.pdf

73. Title: Perceptions of climate change risks and resilient island planning in the Maldives. *Mitigation and Adaptation for strategic global change.* Doi:

10.1007/s11027-011-9341-7. Sovacool, B. K. (2011).

Description: This article explores the drivers, benefits, and challenges facing climate change adaptation in the Maldives. It specifically investigates the “Integrating Climate Change Risks into Resilient Island Planning in the Maldives” Program, or ICCR, a four-year \$9.3 million adaptation project being funded by the Least Developed Countries Fund, Maldivian Government and the United Nations Development Program, and nationally executed by the Ministry of Housing, Transport and Environment of the Maldivian Government. The article asks: what is the perception of coastal adaptation in the Maldives, and what are the potential contributions from the ICCR project? To answer this question, the article summarizes eight primary sectors vulnerable to climate change in the Maldives: human settlements, critical infrastructure, tourism, fisheries, health systems, water, food security, and coral reef biodiversity.

Retrieved from <http://www.adaptation-undp.org/sites/default/files/downloads/sovacool-masgc-maldives.pdf>

Climate Change Concepts, Climate Change Science and Impacts- Peer Reviewed Journal Articles

74. Title: Role of ocean evaporation in California droughts and

floods. *Geophysical Research Letter*, 43. Doi: 10.1002/2016GL069386. Wei, J., Jin, Q., Yang, Z.-L., & Dirmeyer, P. A. (2016).

Description: Since winter 2011, a record-breaking drought has occurred in California. Studies found that the drought is mainly caused by a persistent high-pressure system off the U.S. West Coast, which is linked to Pacific sea surface temperature anomalies. The water cycles associated with the droughts and floods are still not clearly understood. Here we show that the atmospheric circulation off the West Coast not only controls the atmospheric convergence and formation of precipitation but also largely determines surface wind speed, which further affects the evaporation over the eastern North Pacific, the major evaporative moisture source for California precipitation.

Retrieved from <http://onlinelibrary.wiley.com/doi/10.1002/2016GL069386/full>

75. Title: Deep time evidence for climate sensitivity increase with

warming. *Geophysical Research Letter*, 43. Doi: 10.1002/2016GL069243. Shaffer, G., Huber, M., Rondanelli, R., & Pepke Pedersen, J. O. (2016).

Description: Future global warming from anthropogenic greenhouse gas emissions will depend on climate feedbacks, the effect of which is expressed by climate sensitivity, the warming for a doubling of atmospheric CO₂ content. It is not clear how feedbacks, sensitivity, and temperature will evolve in our warming world, but past warming events may provide insight. Here we employ paleoreconstructions and new climate-carbon model simulations in a novel framework to explore a wide scenario range for the Paleocene-Eocene Thermal Maximum (PETM) carbon release and global warming event 55.8 Ma ago, a possible future warming analogue.

Retrieved from <http://onlinelibrary.wiley.com/doi/10.1002/2016GL069243/full>

76. Title: Spatial and temporal patterns of drought in the Continental U.S. during the past century. *Geophysical Research Letter*, 43. Doi:

10.1002/2016GL069660 Ge, Y., Apurv, T., & Cai, X. (2016).

Description: This study investigates the spatial and temporal patterns of multiple drought characteristics (duration, severity, and intensity) under different return periods during 1900–2012 in the Continental U.S. (CONUS). We find two significant patterns: Pattern I shows persistent droughts in western and eastern U.S. and the Great Plains, which experienced large variations in the drought

Climate Change Concepts, Climate Change Science and Impacts- Peer Reviewed Journal Articles

characteristics over long time; Pattern II shows transient droughts in the interior of CONUS, which experienced short-term variations in drought characteristics.

Retrieved from <http://onlinelibrary.wiley.com/wol1/doi/10.1002/2016GL069660/full>

77. Title: From urban to national heat island: The effect of anthropogenic heat output on climate change in high population industrial countries. *Earth's*

***Future*. Doi: 10.1002/2016EF000352.** Murray, J. & Heggie, D. (2016).

Description: The project presented here sought to determine whether changes in anthropogenic thermal emission can have a measurable effect on temperature at the national level, taking Japan and Great Britain as type examples. Using energy consumption as a proxy for thermal emission, strong correlations (mean $r^2 = 0.90$ and 0.89 , respectively) are found between national equivalent heat output (HO) and temperature above background levels Δt averaged over 5- to 8-yr periods between 1965 and 2013, as opposed to weaker correlations for CMIP5 model temperatures above background levels Δmt (mean $r^2 = 0.52$ and 0.10).

Retrieved from <http://onlinelibrary.wiley.com/doi/10.1002/2016EF000352/full>

78. Title: Amazon forest response to repeated droughts. *Global Biogeochemical Cycles*, 30. Doi: 10.1002/2015GB005133. Feldpausch, T. R., et al. (2016).

Description: The Amazon Basin has experienced more variable climate over the last decade, with a severe and widespread drought in 2005 causing large basin-wide losses of biomass. A drought of similar climatological magnitude occurred again in 2010; however, there has been no basin-wide ground-based evaluation of effects on vegetation. We examine to what extent the 2010 drought affected forest dynamics using ground-based observations of mortality and growth from an extensive forest plot network.

Retrieved from <http://onlinelibrary.wiley.com/doi/10.1002/2015GB005133/full>

79. Title: Sensitivity of Arctic warming to sea ice concentration. *Journal of Geophysical Research: Atmospheres*, 121. Doi: 10.1002/2015JD023953. Yim, B.

Y., Min, H. S., Kim, B.-S., Jeong, J.-H., & Kug, J.-S. (2016).

Climate Change Concepts, Climate Change Science and Impacts- Peer Reviewed Journal Articles

Description: We examine the sensitivity of Arctic amplification (AA) to background sea ice concentration (SIC) under greenhouse warming by analyzing the data sets of the historical and Representative Concentration Pathway 8.5 runs of the Coupled Model Intercomparison Project Phase 5. To determine whether the sensitivity of AA for a given radiative forcing depends on background SIC state, we examine the relationship between the AA trend and mean SIC on moving 30 year windows from 1960 to 2100.

Retrieved from <http://onlinelibrary.wiley.com/doi/10.1002/2015JD023953/full>

80. Title: Variability of tornado occurrence over the continental United States since 1950. *Journal of Geophysical Research: Atmospheres*, 121. Doi:

10.1002/2015JD024465. Guo, L., Wang, K., & Bluestein, H. B. (2016).

Description: The United States experiences the most tornadoes of any country in the world. Given the catastrophic impact of tornadoes, concern has arisen regarding the variation in climatology of U.S. tornadoes under the changing climate. A recent study claimed that the temporal variability of tornado occurrence over the continental U.S. has increased since the 1970s. However, that study ignored the highly regionalized climatology of U.S. tornadoes. To address this issue, we examined the long-term trend of tornado temporal variability in each continental U.S. state. Based on the 64 year tornado records (1950–2013), we found that the trends in tornado temporal variability varied across the U.S., with only one third of the continental area or three out of 10 contiguous states (mostly from the Great Plains and Southeast, but where the frequency of occurrence of tornadoes is greater) displaying a significantly increasing trend.

Retrieved from <http://onlinelibrary.wiley.com/doi/10.1002/2015JD024465/full>

81. Title: Patterns and Perceptions of Climate Change in a Biodiversity Conservation Hotspot. *PLoS ONE* 7(2): e32408.

doi:10.1371/journal.pone.0032408 Hartter, J., Stampone, M. D., Ryan, S. J., Kirner, K., Chapman, C. A., & Goldman, A. (2012).

Description: Quantifying local people's perceptions to climate change, and their assessments of which changes matter, is fundamental to addressing the dual challenge of land conservation and poverty alleviation in densely populated tropical regions. To develop appropriate policies and responses, it will be important not only to anticipate the nature of expected changes, but also how they

Climate Change Concepts, Climate Change Science and Impacts- Peer Reviewed Journal Articles

are perceived, interpreted and adapted to by local residents. The Albertine Rift region in East Africa is one of the world's most threatened biodiversity hotspots due to dense smallholder agriculture, high levels of land and resource pressures, and habitat loss and conversion. Results of three separate household surveys conducted in the vicinity of Kibale National Park during the late 2000s indicate that farmers are concerned with variable precipitation. Many survey respondents reported that conditions are drier and rainfall timing is becoming less predictable. Analysis of daily rainfall data for the climate normal period 1981 to 2010 indicates that total rainfall both within and across seasons has not changed significantly, although the timing and transitions of seasons has been highly variable. Results of rainfall data analysis also indicate significant changes in the intra-seasonal rainfall distribution, including longer dry periods within rainy seasons, which may contribute to the perceived decrease in rainfall and can compromise food security. Our results highlight the need for fine-scale climate information to assist agro-ecological communities in developing effective adaptive management.

Retrieved from http://scholars.unh.edu/cgi/viewcontent.cgi?article=1000&context=geog_facpub

82. Title: Indigenous Health and Climate Change. *Am J Public Health*, 102(7): 1260-1266. Doi: 10.2105/AJPH.2012.300752 Ford, J. D. (2012).

Description: Indigenous populations have been identified as vulnerable to climate change. This framing, however, is detached from the diverse geographies of how people experience, understand, and respond to climate-related health outcomes, and overlooks non-climatic determinants. Research on indigenous health and climate change was reviewed to capture place-based dimensions of vulnerability and broader determining factors. Studies focused primarily on Australia and the Arctic, and indicated significant adaptive capacity, with active responses to climate-related health risks. However, non-climatic stresses including poverty, land dispossession, globalization, and associated sociocultural transitions challenge this adaptability.

Retrieved from <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3477984/>

83. Title: Vulnerability of indigenous health to climate change: a case study of Uganda's Batwa Pygmies. *Journal of social science and medicine*, 75(6):1067-77. doi: 10.1016/j.socscimed.2012.04.016 Berrang-Ford, L., Dingle, K., Ford, J. D., Lee, C., Lwasa, S., Namanya, D. B., Henderson, J., Llanos, A., Carcamo, C., Edge, V. (2012).

Climate Change Concepts, Climate Change Science and Impacts- Peer Reviewed Journal Articles

Description: The potential impacts of climate change on human health in sub-Saharan Africa are wide-ranging, complex, and largely adverse. The region's Indigenous peoples are considered to be at heightened risk given their relatively poor health outcomes, marginal social status, and resource-based livelihoods; however, little attention has been given to these most vulnerable of the vulnerable. This paper contributes to addressing this gap by taking a bottom-up approach to assessing health vulnerabilities to climate change in two Batwa Pygmy communities in rural Uganda.

Retrieved from <http://www.sciencedirect.com/science/article/pii/S027795361200370X>

- 84. Title: Farmers perception and awareness of climate change: a case study from Kachandzonga Biosphere Reserve, India. *Environment Development and Sustainability*, Doi: 10.1007/s10668-015-9694-2.** Shukla, G., Kumar, A., Pala, N. A., & Chakravarty, S. (2015).

Description: This study was an attempt to document the indigenous Lepcha people's perception on climate change-related issues in five villages of Dzongu Valley located in Kanchandzonga Biosphere Reserve, India.

Retrieved from

<http://fcb991b696f563270c39464d67d2c3bd.proxysheep.com/article/10.1007%2Fs10668-015-9694-2>

- 85. Title: Assessing climate change impacts and adaptation strategies for smallholder agricultural systems in Uganda. *African Crop Science Journal* (20) 303-316.** Bagamba, F., Bashaasha, B., Claessens, L., & Antle, J. (2012).

Description: The debate on whether climate change will impact on peoples' livelihoods and, hence, the need to act is essentially over and has instead shifted to the development of strategies needed by different regions and countries to adapt to climate change effects. However, there is still scanty information necessary to ably address climate change related issues. There is a considerable knowledge gap with respect to climate change impact, vulnerability and adaptation to increased climate variability and change. In this paper, using the tradeoff analysis model, the impact of climate change on peoples' livelihoods and possible adaptation strategies to increase the resilience and sustainability of agricultural systems in three regions of Uganda (central, Masaka and southwest) are analyzed.

Retrieved from <http://www.bioline.org.br/request?cs12047>

Climate Change Concepts, Climate Change Science and Impacts- Peer Reviewed Journal Articles

86. Title: Impacts of climate change, variability and adaptation strategies on agriculture in semi-arid areas of Tanzania: The case of Manyoni District in Singida Region, Tanzania. *African Journal of Environmental Science and Technology* Vol. 3 (8), pp. 206-218. Mary, A. L., & Majule, A. E. (2009).

Description: A study was carried in two villages of Kamenyanga and Kintinku of Manyoni District, central Tanzania. The overall objective of this study was to understand local communities' perceptions on climate and variability issues and establish its impacts and adaptation strategies within agricultural sector.

Retrieved from <http://r4d.dfid.gov.uk/PDF/Outputs/ClimateChange/Majule-and-Mary.pdf>

87. Title: Climate change impacts on rain-fed cropping production systems in the tropics and the case of smallholder farms in North-west Cambodia.

***Environment, Development and Sustainability*, pp. 1 – 17.** Touch, V., Martin, R. J., Scott, F., Cowie, A., & Liu Liu, D. (2016).

Description: The consequences of climate change on smallholder farms are locally specific and difficult to quantify because of variations in farming systems, complexity of agricultural and non-agricultural livelihood activities and climate-related vulnerability. One way to better understand the issues is to learn from the experiences of farmers themselves. Thus, this study aimed to better understand rain-fed upland cropping systems in NW Cambodia and to identify practical, social and economic constraints to adoption of known climate adaptation options applicable to local agro-ecosystems. The study also sought to document the climate change perceptions and adaptation options employed by farmers to mitigate the climate risks.

Retrieved from <http://link.springer.com/article/10.1007%2Fs10668-016-9818-3>