



Eastern Turtle Island Climate Change Newsletter

January 2018

Wuneekeesuq (Good day) – Shinnecock and Wampanoag languages

Welcome to the Eastern Turtle Island Climate Change Newsletter, a publication from the United South and Eastern Tribes (USET), College of the Menominee Nation Sustainable Development Institute (CMN-SDI) and the Northeast and Southeast Climate Science Centers (NE CSC/SE CSC). This monthly newsletter provides information on *climate news, funding opportunities, student opportunities, upcoming events (conferences, workshops, webinars)* and *current climate conditions and outlooks* for eastern Turtle Island (North America).

The Latest News

Introducing our two Tribal Climate Liaisons

Casey Thornbrugh is the Northeast and Southeast Tribal Climate Science Liaison hired by USET and is a citizen of the Mashpee Wampanoag Tribe. Based at the NE CSC at UMass-Amherst, Casey will provide current climate science information to Tribal Nations in the NE CSC and SE CSC regions. Casey will work with Tribal Nations to identify climate research needs and priorities, and provide climate adaptation planning support for the Tribal Nations on the East Coast and Gulf Coast states.

Sara Smith is the Midwest Tribal Climate Science Liaison hired by the College of Menominee Nation as part of the Sustainable Development Institute. She is a direct descendent of the Oneida Nation of Wisconsin. Sara will be stationed at the US Forest Service's Northern Forest Research Station on the University of Minnesota campus in St. Paul, Minnesota. Sara will serve as a direct liaison between Tribes in the Midwest and the NE CSC to identify and address research gaps in climate, natural, and cultural resources as well as improve outreach and capacity building.

https://www.bia.gov/sites/bia_prod.opengov.ibmcloud.com/files/assets/bia/ots/tcrp/biatrpliaisonposter.pdf



Casey Thornbrugh, Tribal Climate Liaison – Northeast & Southeast, United South and Eastern Tribes Inc. and the Northeast and Southeast Climate Science Centers
<https://necsc.umass.edu/people/casey-c-thornbrugh>



Sara Smith, Tribal Climate Liaison – Midwest & Great Lakes, College of the Menominee Nation and the Northeast Climate Science Center
<https://necsc.umass.edu/people/sara-smith>

Other News

Public Review Process on the 4th National Climate Assessment (NCA4)

What is the National Climate Assessment (NCA)? Approximately every 4-5 years the U.S. Federal Government assesses the state of the climate in the United States and the impacts of the climate on the environment and public sectors. The NCA is a public document intended to provide Congress and the President the most current science on the climate. NCA1 was released in 2000, the NCA2 in 2009, and the NCA3 in 2014. The public draft of Volume II of NCA4, *Climate Change Impacts, Risks, and Adaptation in the United States*, is now available for public review and comment. **The deadline for comment is January 31, 2018.** Members from Tribal Nations are encouraged to pay special attention to and make comments on the Tribal and Indigenous Communities chapter (Ch 15), but also the sectoral chapters (Water, Energy, etc.) and chapter for their respective region (Northeast, Southeast, and Midwest) to ensure issues affecting Tribal Nations are adequately addressed. USGCRP's Review and Comment system for the Third Order Draft of NCA4 Vol. II can be accessed [HERE](#). You will first need to create an account to view and comment on the NCA4.

Introducing the Northeast Indigenous Climate Resilience Network (NICRN) website

The Northeast Indigenous Climate Resilience Network (NICRN) has been organized by the [Sustainable Development Institute](#) at the [College of Menominee Nation](#) to convene Indigenous peoples and to identify threats to Indigenous self-determination and ways of life from climate change. In addition, the NICRN is a venue to formulate adaptation and mitigation strategies, dialogues and educational programs that build Indigenous capacities to address climate-related issues. On the NICRN website you will find information on how the climate is changing in the Great Lakes and Northeast Region and how Tribal Nations are impacted, yet are also developing strategies to adapt to these changes. The NICRN website can be found at <http://www.nicrn.org/>.

Winters have been warming significantly in the U.S. Great Lakes and Northeast since the 1970s

Although cold snaps and arctic air blasts continue as typical winter occurrences over the Great Lakes and Northeast, the overall trend in the average winter (December-February) temperature has been one of pronounced warming with increases between 5-7°F for the northern tier states of Minnesota, Wisconsin, New York, Vermont, New Hampshire, and Maine since the 1970s. To place this in context, Burlington, Vermont, still has fairly cold winters today with an average winter nighttime average low of about 17°F and daytime high of about 33°F. This translates to an average winter temperature of 25°F. However, in the early 1970s the average winter nighttime average low was about 10°F and daytime high was about 26°F (for an overall average winter temperature of 18°F or "7°F cooler than today"). The punchline is that arctic blasts with sub-zero temperatures will still occur, but scientists have identified a significant warming trend in Northeastern winters since the 1970s. See the full story at:

<http://www.climatecentral.org/gallery/maps/heres-where-winters-are-warming-the-most>

A Recap on "Can We Manage the Impacts of Climate Change on Sugar Maple and Maple Sugaring"

On December 15, 2017 a special session, "Can We Manage the Impacts of Climate Change on Sugar Maple and Maple Sugaring" was organized by NE CSC Research Ecologist Dr. Toni Lyn Morelli and colleagues at the 2017 Forest Ecosystem Monitoring Cooperative Conference held at the University of Vermont. This session brought together researchers from the U.S. Forest Service, state agencies, and sugar maple producers including producers from Tribal communities such as the Saginaw Chippewa Tribe, the Bad River Band of Lake Superior Chippewa Tribe, and the Intertribal Maple Syrup Producers Cooperative (www.tribalsyrup.org). Sugar maple trees and producers do face threats due to climate change; however, adaptation strategies can be implemented such as tapping earlier, avoiding monoculture production and managing for pests. Abstracts can be found at:

<https://www.uvm.edu/femc/cooperative/conference/2017/agenda> and presentations will be posted soon at

<https://www.uvm.edu/femc/cooperative/conference/2017/content>.

Isle de Jean Charles Band of Biloxi-Chitimacha-Choctaw in Louisiana: First Place in the Category of Environmental Justice/Cultural Diversity for the U.S. EPA Gulf Guardian Award.

The Isle de Jean Charles Band of Biloxi-Chitimacha-Choctaw (<http://www.isledejeancharles.com/>), a Tribal community located on coastal Louisiana, has been losing ground due to coastal erosion and sea level rise in the 1960s. Today, only a narrow strip of habitable land exists support one road, several homes and less than 100 residents. The Tribe with funding from HUD as developed a resettlement plan further inland to restore their community and to establish a place where Tribal citizens can return to leave and where the culture can persist for generations. Please see this 5-minute video showing exceptional community resilience in the face of climate change https://www.youtube.com/watch?v=OKJlyE_uIAU&feature=youtu.be.

Funding Opportunities and Resources

NRCS in Partnership with the BIA has an opportunity for Tribes to obtain a Soil-Climate Analysis Network (SCAN) weather station

The NRCS and BIA are initiating a pilot project to distribute 30 SCAN stations across Indian Country (nationally) for this year. Federally Recognized Tribes with “lands in trust” or “restricted fee lands” are eligible to apply to receive a SCAN station. The number of SCAN stations is limited to 30 so **please inquire by January 31, 2018** if you would be interested in applying to receive a SCAN weather station.

What is SCAN and what are SCAN stations? SCAN is a network of automated soil and climate monitoring stations distributed across the U.S. to provide soil and climate information to:

- A. Support natural resources and conservation activities locally
- B. Monitor climate trends and changes
- C. Provide real-time data for science technology engineering and math (STEM) educational activities for youth and adults https://www.wcc.nrcs.usda.gov/scan/scan_brochure.pdf

For more information please contact your NRCS State Conservationist

<https://www.nrcs.usda.gov/wps/portal/nrcs/main/national/contact/states/> and/or contact [Suzanne Baker](#), Acting NRCS Tribal Liaison-New York

NOAA Fisheries 2018 ByCatch Reduction Engineering Program (BREP): Funding Opportunity #: NOAA-NMFS-FHQ-2018-2005482 **Preproposals due January 31, 2018; Full proposals due March 30, 2018.** The NOAA Fisheries BREP is providing a funding opportunity to support the development of technological solutions and changes in fishing practices designed to minimize bycatch. Individuals, non-profits, for-profit organizations, American Indian Tribal governments and other entities involved in fisheries are encouraged to apply. The purpose is to develop creative approaches and strategies to reduce bycatch, seabird interactions, and post-release mortality in federally managed fisheries. For more information please refer to the Grants.gov announcement of this [federal funding opportunity](#) and/or contact [Erin Wilkinson](#), Office of Sustainable Fisheries, at [301-427-8561](tel:301-427-8561).

National Conservation Innovation Grants (CIG): Funding Opportunity #: USDA-NRCS-NHQ-CIG-001

Applications due February 26, 2018. The USDA-NRCS uses CIG to work with partners to accelerate transfer and adoption of promising technologies and approaches that address some of the nation’s most pressing natural resource concerns. This year, NRCS is focusing funding in these areas:

1. **Grazing Lands:** Helping livestock producers make grazing management decisions, encouraging prescribed burning as a grazing management practice, and improving access to conservation planning tools used for developing grazing management plans.
2. **Organic Agriculture Systems:** Helping organic producers develop innovative cropping and tillage systems, edge-of-field monitoring, crop rotations and intercropping systems.
3. **Soil Health:** Supporting both cropping and grazing systems, in a variety of climatic zones, that incorporate soil health management systems for addressing specific resource concerns like nutrients and availability. Evaluating multiple soil health assessment methods to assist in the development of new soil health indicators and thresholds.

<https://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/newsroom/releases/?cid=NRCSEPRD1370829>

Recovery Implementation Plan: Funding Opportunity #: 15.657

Applications accepted continuously (Discretionary funding). The Department of the Interior - US Fish and Wildlife Service (DOI-FWS) provides funds to accomplish high priority recovery tasks for high priority, FWS-managed, endangered and threatened species in the US such that known threats to the species may be reduced or eliminated. It is limited to projects carrying out actions described in a species’ approved recovery plan, in the implementation schedule of a species’ approved recovery plan, actions recommended in a completed 5-year status review of the species or in a spotlight species action plan, or projects documenting species’ response to climate change.

<https://www.cfda.gov/index?s=program&mode=form&tab=core&id=8a50555f1adb614bfd6b6f50404af0>

NOTE: More Funding Opportunities can be found at the Institute for Tribal and Environmental Professionals (ITEP) Tribes & Climate Change website: <http://www7.nau.edu/itep/main/tcc/Resources/funding>. Also, see the Tribal Climate Change Guide maintained by the Pacific Northwest Tribal Climate Change Project at the University of Oregon: <http://tribalclimateguide.uoregon.edu/>

Student Opportunities

NOAA Undergraduate Scholarships

Applications due January 31, 2018. NOAA is accepting applications for the Ernest F. Hollings Scholarship and the EPP Undergraduate Scholarship. Students who are current sophomores majoring in STEM fields that directly support NOAA's mission may apply. The scholarships provide \$19,000 in academic support and participants conduct research at a NOAA facility during two summer internships. Eligible students may apply to both programs with one online application due January 31. Community college students who are transferring to four year institutions are also eligible to apply. <http://www.noaa.gov/office-education/scholarships>

Significant Opportunities in Atmospheric Research and Science (SOARS)

Applications Due February 1, 2018. SOARS is an undergraduate to graduate research internship program for students interested in the atmospheric and related sciences, based at the National Center for Atmospheric Research (Boulder, Colorado). It is dedicated to broadening participation in the atmospheric and related sciences and is built around genuine research experiences, mentoring by top scientists and engineers, and a supportive learning community. In addition to the summer internship, SOARS includes year-round support, funding to attend conferences and last-dollar tuition scholarships. Successful protégés are eligible to participate in the program for up to four years. Benefits in the summer include a competitive wage, housing, and travel to / from Boulder; as well as funding for conferences, undergraduate and graduate education throughout the year. For more information and to apply, please see www.soars.ucar.edu.

USDA Tribal Scholars Program Accepting Applications

Applications Due February 9, 2018. The U.S. Department of Agriculture (USDA) 1994 Tribal Scholars Program is an employment program that offers a combination of work experience and academic study at a Tribal College leading to career positions within USDA. Students enrolling in or pursuing a bachelor's degree at Tribal College or Tribal University are eligible for this program. For more information and to apply, please see <https://www.outreach.usda.gov/education/1994tlgcu/scholarship.htm>.

France: Research Training in Paleoclimate

Applications Due March 1, 2018. Study and conduct research alongside geology professors from OU and the University of Nantes (France), in both Oklahoma and France. The IRES program specifically targets U.S. science and engineering students from underrepresented populations, and **this research program seeks to foster increased representation of students of Native American heritage in geoscience.** We also strongly encourage first-generation college students to apply. The program will involve a series of meetings in preparation for summer field and lab work, followed by travel to France for the field program, and approximately one week of follow-up work at OU for preparation of results. For students who may be interested in this program, but cannot apply for the 2018 season, note that we expect to issue a call for applicants for a 2019 and a 2020 run of the program, please see <http://franceires.isoreghan.oucreate.com/Research/>.

Contribute a story to the Early Career Climate Forum

The Early Career Climate Forum (ECCF: <http://eccforum.org/>) is a web-based platform to facilitate and increase information sharing, networking and effective science communication for early career scholars, managers and scientists across the Department of Interior's Climate Science Centers (CSCs), affiliates, and stakeholders. The ECCF is interested in blog posts about climate adaptation written by students and early career professionals from East Coast and Midwestern Tribal Nations. To sign up for the ECCF listserv and receive daily updates on jobs, fellowships, new research, and other professional development resources, send an email to info@eccforum.org; to read our latest blog go to <http://eccforum.org/>. For more information please contact Michelle Staudinger (mstaudinger@usgs.gov) Follow us on [Facebook](#) and [twitter@ECCForum](#).

Upcoming Events, Webinars, and Trainings

2018 United South & Eastern Tribes (USET) Sovereignty Protection Fund (USET SPF) Impact Week.

February 5-8, Arlington, VA. This meeting will bring together Tribal government leaders, Tribal department directors/key staff, and representatives from U.S. Federal Agencies to discuss and present ways to protect Tribal

Sovereignty and to ensure South and Eastern Tribal Nations benefit from the Trust Responsibility of the U.S. Federal Government toward American Indians. The NE CSC/SE CSC Tribal Climate Science Liaison, Casey Thornbrugh, will provide updates on Tribal Climate Resiliency at the USET Natural Resources Committee during Impact Week. There is an early-bird registration deadline of **January 19, 2018**. Registration will be available after but with a higher fee. Please see the website for more information: <http://www.cvent.com/events/2018-uset-uset-spf-impact-week-meeting/event-summary-c769657ec04e4ce1b1044d923ecf0295.aspx>.

1st Annual Seminole Tribe of Florida Renewable Energy and Sustainability Conference

February 7-8, Hollywood, FL. This conference provides a venue for the presentation of how to identify potential projects in your community, conduct feasibility studies and having the capacity to establish renewable energy projects in your community. This conference is limited to 80 seats, but seeks Tribal Government officials and Tribal Housing Department/Utilities/Construction/Building Code staff for participation. Please see the website for more information: <http://nativelearningcenter.com/course/1st-annual-seminole-tribe-florida-renewable-energy-sustainability-conference/>

2018 Wetland Science Conference “Wetland resilience for a changing world”

February 20-22, Lake Geneva, WI. This conference will focus on how managers can help promote wetland resilience now and in the future and how communities can include wetlands and watersheds in their planning for resilience. Note: There is an early-bird registration deadline of **January 26, 2018**. Registration will be available after but with a higher fee. Please see the website for more information: <http://conference.wisconsinwetlands.org/>.

6th Annual Workshop Rising Voices “Collaborative Science with Indigenous Knowledge for Climate Solutions. Rising Together: Mobilizing and Learning from Local Actions”

April 11-13, Duluth, MN. Website: Application information will be announced in January 2018. The theme of the workshop is “Rising Together: Mobilizing Learning from Local to Global.” For more information, please visit <https://risingvoices.ucar.edu/> or contact: [Heather Lazrus](#), [Julie Maldonado](#), or [Heather Stirratt](#).

14th Annual Southeast Indian Studies Conference

April 12-13, Pembroke, NC at the Museum of the Southeast American Indian. This conference will provide a forum for discussion of the culture, history, art, health and contemporary issues of Native Americans in the Southeast. The 2018 conference will also host keynote speaker Dr. Ryan Emanuel, enrolled citizen of the Lumbee Nation and Associate Professor with the Department of Forestry and Environmental Resources at North Carolina State University. Dr. Emanuel will speak on the environmental challenges ranging from proposed gas pipelines to climate change that impact Southeastern Tribal Nations and how these Tribal Nations, are demonstrating creativity and resilience in dealing with these challenges. Please see the website for more information: <http://www.uncp.edu/academics/colleges-schools-departments/departments/american-indian-studies/news-events/southeast-indian-studies-conference>

2018 Local Solutions: Eastern Climate Preparedness Conference

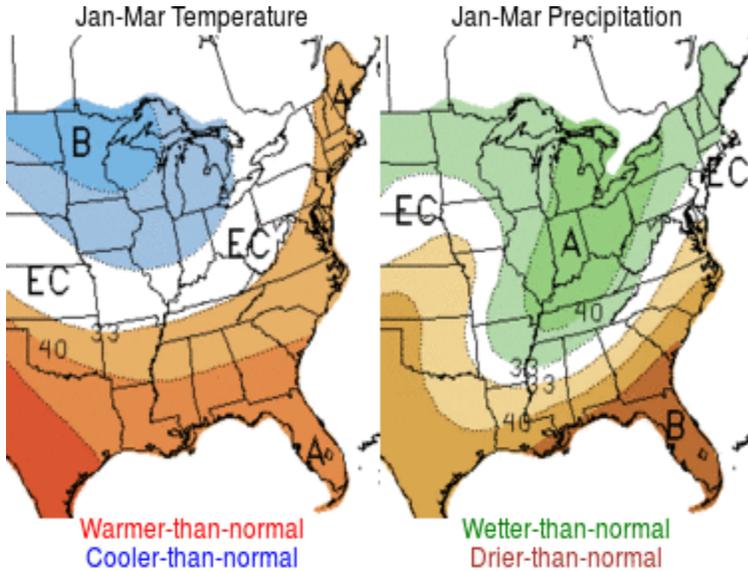
April 30 – May 2, Manchester, NH. This conference will cover a range of climate preparedness and resiliency issues such as: sea level rise, urban heat, and both coastal and inland flooding issues. Please see the website for more information: <http://www.communityresilience-center.org/conferences/local-solutions-conference-2018/>

2018 National Tribal Forum on Air Quality (NTF)

May 14-17, Duluth, MN. This forum provides a venue for Tribal environmental professionals, EPA representatives, and other agencies/organizations meet and discuss current policies, regulatory initiatives, technical topics in air quality. Please see the website for more information: http://www7.nau.edu/itep/main/conferences/confr_ntf

Climate Analysis & Forecast

Temperature & Precipitation Outlooks



A cold early January will transition to warmer-than-average conditions in late January for the SE and NE CSC regions. The Midwest region of the NE CSC has higher chances of cooler-than-normal temperatures through winter's end.

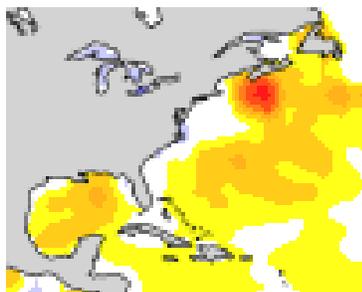
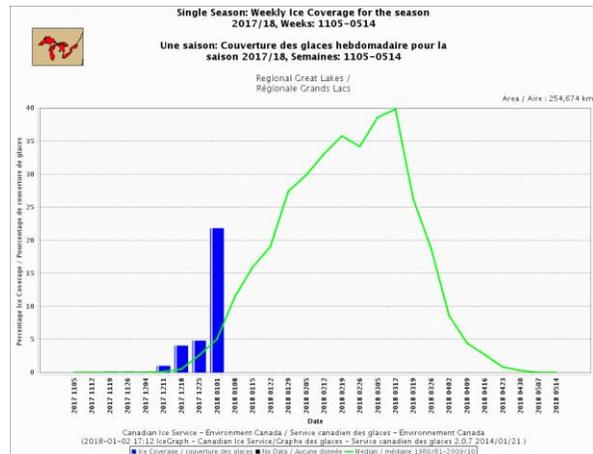
The remaining winter has higher chances of wetter-than-normal conditions across the Ohio River Valley and Northern tier with a stronger chance for drier-than-normal conditions in the Southeast. This is a classic La Niña forecast.

Map description: A = chances skewed toward "above average," B = chances skewed toward "below average," and EC = equal chances for above, average, or below average. Detailed maps, descriptions, and discussion can be found at cpc.noaa.gov.

Great Lakes Ice Cover

Total 5-lake ice coverage accelerated from 5% coverage to 22% over the course of a week in the final week of December, 2017 (right, [click to enlarge](#)), well ahead of normal. However, the recent extreme cold should end by mid-January, so ice formation should continue as normal, with the most recent forecasts suggesting total ice coverage topping out at 60% (normal = 55%, [NOAA GLERL](#)).

Detailed [1-month forecast issued on Jan 3, 2018](#) and [Seasonal Outlook issued on Dec 1, 2017](#) by the [U.S. National Ice Center](#). [Current conditions](#) by NOAA GLERL.



Atlantic Ocean Surface Temperatures

December sea surface temperatures (left, [click for full map and legend](#)) were warmer than average, with a particular hotspot over 3°C (5.4°F) above normal near the Gulf of Maine.

7-day SST anomalies showing the most recent conditions are available from [NOAA National Hurricane Center](#). For short-range (1-4-day forecasts) see the [NOAA Ocean Prediction Center](#).

The Pacific Ocean and La Niña

La Niña (i.e. the pattern of below-average sea surface temperatures (SSTs) across the central and eastern equatorial Pacific Ocean) has continued through the 2017-2018 winter, but is expected to subside in the spring with SSTs in the equatorial Pacific returning closer to normal. La Niña episodes are important because they affect the placement of the jet stream over North America. Whereas the opposite of La Niña (i.e. El Niño) is known for winters of increased

rainfall and snowfall in California and the U.S. Southwest, La Niña favors drier winters in the Southwest. However, for the Eastern U.S., La Niña tends to favor wetter conditions over the Great Lakes region (with cooler temperatures over the northern Great Plains) and warmer and drier conditions in the Southeast. For more information on this winter's La Niña please see this outlook from the Southern Regional Climate Center: https://www.drought.gov/drought/sites/drought.gov.drought/files/media/reports/regional_outlooks/LaNina-Southern-2017.pdf

For more information, or if you would like to see other analyses and forecasts included in this newsletter, contact Alex Bryan, Climate Assessments and Scenario Planning Postdoctoral Fellow, at abryan@usgs.gov.

**We are looking for more stories each month of climate change and climate adaptation from the Tribal Nations of the Great Lakes, Eastern, and Southern regions. Please contact Casey Thornbrugh, Sara Smith, or any of the contributors listed below with stories from your Tribal Nation that we may share!*

Eastern Turtle Island Climate Change Newsletter Contributors

Casey Thornbrugh

Tribal Climate Science Liaison for the Northeast and Southeast Climate Science Centers
United South and Eastern Tribes Inc.
cthornbrugh@usetinc.org

Sara Smith

Tribal Climate Science Liaison for the Northeast Climate Science Center-Great Lakes & Midwest
College of the Menominee Nation – Sustainable Development Institute
ssmith@menominee.edu

Alex Bryan

Climate Assessments and Scenario Planning Postdoctoral Fellow for the Northeast Climate Science Center
abryan@usgs.gov

Cari S. Furiness

Program Manager for the Southeast Climate Science Center
cari_furiness@ncsu.edu

Jeanne Brown

Communications and Outreach Manager for the Northeast Climate Science Center
jeannebrown@umass.edu

Brandy Venuti

Special Projects Coordinator for the United South and Eastern Tribes Inc.
bvenuti@usetinc.org

**A special “thank you” to all those in addition to the individuals mentioned above who provided comments and reviewed the content of the Newsletter.*