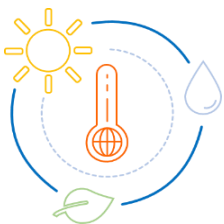




Photo credit: Agreement #154268

## ENVIRONMENTAL RESEARCH

Q3



### Climate Change

- During this quarter, the technical working groups (TWGs) for the Climate Impacts Assessment were selected. Although the process took much longer than anticipated, we are excited by the broad composition of the TWGs. Nearly 80 individuals from more than 60 different organizations are represented on the TWGs and will be developing the technical, foundational chapters of the assessment. The diverse backgrounds of the TWG members will help ensure that multiple perspectives are considered and that the resulting information will be useful to decisionmakers. The TWGs kicked off their work at the end of September.



## Off-Shore Wind

- A new “Offshore Wind Cable Routes Assessment” kicked-off in September in cooperation with many other State agencies and supported by WSP Global, Inc. This Assessment is designed to increase the understanding of environmental, technical and stakeholder constraints, as well as opportunities and risks of undersea and overland cables and associated landings necessary to achieve Climate Act goals. The objective is to promote alignment of state agencies and inform potential NYS policy actions to maximize the benefits of offshore wind (OSW) and minimize conflicts and impacts. It will also lay the groundwork for proactively addressing challenges at the OSW portfolio level to help facilitate successful and efficient permitting of OSW cables by project, while minimizing stakeholder impacts and fatigue.
- The Environmental and Fisheries Technical Working Groups (TWGs) met with the Sunrise Wind project team to review the [Environmental](#) and [Fisheries](#) Mitigation Plans. Follow up meetings with the TWGs are scheduled for Fall 2021.
- NYSERDA’s Recreational Fishing Liaison, Captain Anthony DiLernia, has been continuing outreach efforts within the recreational fishing community, making presentations to fishing organizations in Nassau and Suffolk Counties. He has also been delivering information about offshore wind topics to bait and tackle shops in coastal NY and NJ. Captain Tony even took some personal time at the Block Island Wind Farm to experience fishing around the turbines to better understand the possible benefits that offshore wind development could create for the recreational fishing community. Below is a photo of Captain Tony from his trip.



Photo credit: Tom Schlichter

*(Offshore Wind, continued...)*

- The Environmental Technical Working Group (E-TWG) published their [Annual Bulletin](#), highlighting key achievements from 2021. E-TWG engagement with the offshore wind and wildlife community continues to grow with over 800 people directly involved with E-TWG activities in the past year. Other updates from the E-TWG, including meeting summaries, can be found [here](#).
- The E-TWG launched an [Offshore Wind Webinar Library](#) resource page of publicly available webinars related to offshore wind and the environmental.
- The NYERDA Offshore Wind [Learning from the Experts](#) webinar series continues to deliver informative presentations from experts on important topics in offshore wind energy, including technology, development practices, regulatory processes, and research initiatives.
- A Project Advisory Committee (PAC) meeting was held for the Ecosystem Dynamics project managed by Dr. Sarah Courbis at Advisian. The project team provided initial results and discussed model validation.
- On August 17, 2021, the Sunrise Wind Team presented their updated environmental and fisheries mitigation plans to a joint session of the E-TWG and F-TWG. The meeting covered an overview of project status and schedule, recent changes to the environmental and fisheries mitigation plans, presentation of the draft fisheries and benthic survey plans, and other funding initiatives being sponsored by Orsted. A copy of the meeting summary and mitigation plans can be found [here](#). Another meeting to discuss the mitigation plans with the E-TWG and F-TWG is being scheduled for Q4 of 2021. Further details about the F-TWG can be found [here](#).



Photo credit: Jonathan Fiely

(Offshore Wind, continued...)

- In an ongoing effort for regional coordination, Environmental Research staff participated in a workshop called “Partners in Science” sponsored by Rutgers University Center for Ocean Observing Leadership (RUCOOL) and Rutgers Cooperative Extension (RCE). The workshop was hosted virtually on January 28, 2021, and sought to identify ecological metrics and sampling strategies for baseline monitoring during OSW development. Details can be found in the [final report](#).

The survey and workshop aimed to gather community input to define the parameters required to quantify baseline ecological variability that will enable the evaluation of potential impacts from offshore wind development on ecological and fisheries resources. The [report](#) details results from the pre-workshop survey, presentations from several workshop participants, and the multiple breakout sessions held during this half-day workshop.

- The New Jersey Department of Environmental Protection sought resource experts to take part in their [offshore wind research priorities survey](#). New Jersey’s 2020 solicitation for offshore wind follows NYSERDA’s nation-leading requirement for developers to commit \$10K/MW to fund environmental and fisheries research and monitoring. Responses to their survey were to be submitted no later than 9/17/21 for consideration.



## Air Quality & Public Health

- For several years NYSERDA has supported research with K. Max Zhang of Cornell University to assess if currently used downwash parameters are sufficient to assess impacts from more localized, smaller sources. Professor Zhang and his team at Cornell and staff at NESCAUM are working with EPA to incorporate new code for consideration into EPA’s regulatory dispersion model for stationary sources. The initial code has been provided to EPA and researchers will continue working to ensure its publication in the 2022 AERMOD review.
- Congratulations to Wei-Ting Hung of SUNY Albany on successfully defending her Ph.D. dissertation “The impact of transported wildfire smoke aerosols on surface air quality in New York State.”



Photo credit: Shutterstock



## Biomass

- The U.S. Court of Appeals denied the Hearth Patio and Barbeque Association’s petition against the audit provision in 2015 New Source Performance Standard for Residential Wood Heaters. The industry group had asserted that EPA should not allow audit testing at EPA accredited test labs other than the one that had performed the original certification test on a device because the rule didn’t account for interlaboratory variability. NYSERDA-supported work at BNL was cited in the decision and work by NESCAUM was included in the NYS Attorney General amicus brief.
- U.S. EPA approved Alaska’s State Implementation Plan submissions to address the severe non-attainment of PM<sub>2.5</sub> from wood smoke in Fairbanks, AK. This is an important decision because it confirms AK’s authority to do this and to:
  - allow AK to review certification test reports for wood stoves already reviewed and approved by EPA (AK and NESCAUM have found many inconsistencies with approved certification tests and EPA is now improving their process.);
  - use the Integrated-Duty-Cycle protocol for Wood Stoves previously approved by EPA as a Broadly Applicable Alternative Test Method and dis-allow others. This test protocol was developed by NESCAUM with NYSERDA support and is more representative of how the appliance is used in the field. This also allows AK to reject reports from tests conducted with the test developed by industry that is not representative of how units are operated in the field;
  - use the Tapered Element Oscillating Microbalance (TEOM) to measure PM<sub>2.5</sub>. The TEOM is a real-time instrument and provides real-time measurement of PM, a distinct advantage over filters;
  - allows AK to set a lower average emission rate; and
  - allows AK to set a 1-hour emissions maximum emissions rate. This is important because start-up and re-loading are periods of very high emissions and current test method calculations can average this out.

This is a result of many years of research by numerous partners, many supported by NYSERDA. However, the non-financial partnerships have proved powerful in leveraging that research into better policies and regulations.



## Ecosystem Response

- NYSERDA hosted a planning workshop at the end of July in Saratoga that was led by Dr. Kevin Rose (Rensselaer Polytechnic Institute; “RPI”) and Dr. Peter McIntyre (Cornell University). Nearly 20 stakeholders from federal and State agencies (e.g., USEPA, USGS, NYSERDA, NYSDEC, NYSAGO), universities (e.g., Paul Smith’s College, Syracuse University, City University of New York, SUNY ESF), and non-governmental organizations (e.g., The Nature Conservancy, Ausable River Association, Adirondack Council) were in attendance.

The goal of the workshop was to begin the development of a plan called “SCALE”: A Survey of Climate Change and Adirondack Lake Ecosystems. There was great discussion on what has been measured and collected through other lake monitoring programs in the Adirondacks, how these programs could be adapted or updated to address new stressors, what resources may be needed to implement SCALE, and what parameters should be measured and monitored to record any chemical and/or biological changes in our lakes due to climate. See future newsletters for progress made on developing the blueprint for SCALE.



Photo Credit: Charlie Blanchard

- In collaboration with the NYSDEC Division of Air Resources, work on setting up a new wet deposition sampling location for per- and polyfluorinated alkyl substances (PFAS) at the National Atmospheric Deposition Program (NADP) National Trends Network (NTN) site in the Bronx (NY06) began. This NTN site will be added in 2021 to the four NTN sites that the NADP and the State Laboratory of Hygiene, School of Medicine & Public Health, University of Wisconsin-Madison have been studying since 2020 as part of a two-year wet deposition study for PFAS.

PFAS is an emerging contaminant that, over the last decade, has been measured at elevated levels in drinking water in communities across the State. This has posed a potential danger to public health and the environment. The measurement of PFAS concentrations in wet deposition samples at these two sites, one remote and one more urban, will help characterize concentrations in precipitation and assess if there are notable differences between the locations.



## Land Based-Renewables

- The Agricultural Technical Working Group (A-TWG) convened in September. A presentation was made by American Farmland Trust (AFT) discussing some of the initial results of their survey of farmers, local government officials, and land trusts and environmental organizations as part of their Smart Solar Siting Traffic Light Project. Pace Law Center also presented some of the initial results from Smart Solar Siting Scorecards (“Scorecards”) that were required to be filled out for each solar bid facility proposed through Step 2 of RESRFP21-1. As a result of these discussions, a Specialist Committee tasked with developing the next phase of the Scorecard has been developed. Keep up to date with what the A-TWG is up to by visiting the [A-TWG website](#).
- This year’s [Scorecard](#) was developed by Pace Law Center, which contained input and feedback from members of the A-TWG and other stakeholders from State agencies. The main goal of this initial Scorecard was to gain information about where large-scale renewable solar projects are being sited and what types of design strategies are being included to protect NYS’s agricultural and environmental resources. The Scorecard asked developers to (1) provide information on where their project was located to identify its impact on sensitive or protected lands and (2) identify design and management practices considered and/or to be implemented that may minimize impacts to natural and agricultural resources during all phases of the project.
- The first year of field surveys to identify and document avian species and communities breeding at nine operational solar facilities and nine paired reference sites in New York State and western Massachusetts were completed this summer. The goal of the project is to inform future PV siting decisions and spatial planning, and to identify effective management practices that will improve benefits to birds while reducing potential negative impacts from PV solar energy development in the northeastern U.S. The DNV team, led by Dr. Kimberly Peters and Amanda Klehr, recorded species at the solar facilities, including nesting on structures and on the ground within the solar facilities (see photos). If you are interested in hearing more, Amanda Klehr will be providing an on-demand presentation entitled ‘Avian use of operation photovoltaic (PV) solar energy facilities in New York state and western Massachusetts – preliminary results and next steps’ at the [AWWI Solar Power & Wildlife/Natural Resources Symposium](#) being held on December 1-3.



Photo Credits: NYSERDA Agreement. 154268, Amanda Klehr

## Program Reports & Papers posted recently include:

### ***Air Quality and Related Health Research: Particulate Matter (PM), Ozone, and Co-Pollutants***

[Characterization of intra-continental smoke transport and impact on New York State air quality using aerosol reanalysis and multi-platform observations](#)

### ***Alternative Energy Impacts***

[21-07 Digital Aerial Baseline Survey of Marine Wildlife in Support of Offshore Wind Energy \[PDF\]](#)

[21-03 Roosevelt Island Tidal Energy Environmental Assessment Project \[PDF\]](#)

[Stakeholder Workshop: Scientific Research Framework to Understand the Effects of Offshore Wind Energy Development on Birds and Bats in the Eastern United States \[PDF\]](#)

### ***Climate Change***

[20-33 Open-Source Tropical Cyclone Risk Modeling for New York State \[PDF\]](#)

[20-31 Climate Needs Assessment for New York State \[PDF\]](#)

### ***Ecosystem Response to Atmospheric Deposition of Sulfur, Nitrogen and Mercury***

[Have Sustained Acidic Deposition Decreases Led to Increased Calcium Availability in Recovering Watersheds of the Adirondack Region of New York, USA? Journal: Soil Systems](#)

[Net Geochemical Release of Base Cations From 25 Forested Watersheds in the Catskill Region of New York. Journal: Frontiers in Forests and Global Change](#)