

**AGENDA**  
**Commission for the Environment**  
**April 11, 2016**  
**7:30 p.m.**

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Richard Whitted Meeting Facility (Room 250)  
300 West Tryon Street, Hillsborough

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- | <u>Time</u> | <u>Item</u> | <u>Title</u>  |
|-------------|-------------|---|
| 7:30        | I.          | <b>Call to Order</b>  |
| 7:32        | II.         | <b>Additions or Changes to Agenda</b>   |
| 7:35        | III.        | <b>Approval of Minutes – February 8 and March 14, 2016</b><br>The CFE will consider approval of minutes from the last two meetings. (Attachments 1-2)   |
| 7:45        | IV.         | <b>CFE Outreach Opportunities / News Articles</b><br>The CFE will review a revised schedule of proposed news articles intended to educate/inform the public about issues highlighted in the Orange County State of the Environment. The CFE will also resume discussion of participation in upcoming outreach events. (Attachments 3-4)   |
| 8:15        | V.          | <b>Clean Power Plan</b><br>Staff will brief the CFE on efforts around the country to persuade state legislatures to follow through on the Clean Power Plan put forward by the USEPA. The Town of Chapel Hill is among 50 or so cities and counties taking a stance on this issue. (Attachment 5)  |
| 8:35        | VI.         | <b>Committee Meetings</b><br>The standing committees will review their revised list of priorities, and decide on next steps. (Attachment 6)   |
| 9:00        | VII.        | <b>Updates and Information Items</b><br>Staff and/or CFE members will provide updates on the following items: <ul style="list-style-type: none"><li>➤ CFE membership roster (Attachment 7)</li><li>➤ Eno River hydrilla management project update (Attachment 8)</li><li>➤ Jordan Lake water allocation (Attachment 9)</li><li>➤ Tour of forestry mgmt at OWASA Mitigation Tract – April 20 (Attachment 10)</li><li>➤ Wind farmer testimonial (Attachment 11)</li><li>➤ The need to modernize water data (Attachment 12)</li><li>➤ February’s record heat astounds scientists (Attachment 13)</li><li>➤ Record low Arctic Sea ice (Attachment 14)</li><li>➤ Photo Contest 2016 - “The Nature of Orange” (Attachment 15)</li></ul> |
| 9:15        | VIII.       | <b>Adjournment</b>  |

***Next meeting:*** May 9 (Chapel Hill)

CFE Meeting Ground Rules (*Adopted 9/12/11*)

1. Keep to agenda topic under discussion
2. Share relevant information
3. One person speaks at a time after recognition by the Chair
4. Everyone is invited to participate in discussions / no one person should dominate discussions
5. Strive to reach consensus first before voting

**Activities the CFE expects to carry out in 2016:**

- Continue to update the Orange County State of the Environment 2014 report
- Continue to explore ways to improve the County's ability to foster local sustainable energy production and energy efficiency strategies, including developing incentives for increasing energy efficiency in new construction
- Recommend ways to reduce the County's "carbon footprint" and implement the County's Environmental Responsibility Goal (BOCC Priority #10)
- Continue to help with public outreach and management efforts related to hydrilla in the Eno River
- Help initiate the development of a comprehensive conservation plan for Orange Co
- Co-sponsor the annual DEAPR photography contest (*The Nature of Orange*)
- Help plan for and participate in County's annual Earth Evening event

**Concerns or emerging issues the CFE has identified for 2016:**

- The CFE will continue to advocate for an expansion of the County's commercial food waste pickup and composting services to reduce food waste in the solid waste stream
- The CFE remains interested in developing incentives for increasing energy efficiency in new construction
- The CFE will continue to learn more about environmental justice matters and incorporate relevant information and considerations in the State of the Environment report and its other activities
- The CFE will continue to follow the Solid Waste Advisory Group's discussions of how to improve the handling and disposal of Orange County's solid waste, and will advocate for better long-term solutions
- The CFE will continue to advocate for increased efforts to gather information related to water resources in Orange County and to increase public awareness and understanding of water supply sources, related concerns, and what steps can be undertaken to maintain or improve the quantity and quality of Orange County water supply resources
- The CFE will continue to address, as appropriate, the critical environmental issues for Orange County as enumerated on page 3 of the 2014 State of the Environment report, which include potential adverse effects from a) invasive, non-native, plant and animal species; b) reductions in State-led collection of water resources data; c) potential drilling for natural gas in the Deep River basin; d) urban sprawl; and CFE support for e) the responsible deployment of clean and appropriately-sited renewable energy and reductions in energy use to help fight climate change

**Orange County  
Commission for the Environment**

**DRAFT Meeting Summary**

**February 8, 2015**

**Richard Whitted Meeting Facility, Hillsborough**

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PRESENT: Lydia Wegman (Chair), May Becker, Peter Cada, Tom Eisenhart, Loren Hintz, Bill Newby, Rebecca Ray, Sheila Thomas-Ambat

ABSENT: Lynne Gronback, Jeanette O'Connor, David Welch

STAFF: Rich Shaw, Brennan Bouma

GUEST: Kathleen Smith

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- I. **Call to Order** – Wegman called the meeting to order at 7:35 pm.
- II. **Additions or Changes to Agenda** – There were none
- III. **Minutes** – Wegman asked for comments on the December 14 meeting summary. Eisenhart motioned approval as written; seconded by Cada. Approved unanimously.
- IV. **Welcome / Resolutions of Appreciation** – Wegman welcomed Bill Kaiser back to the CFE on which he had served previously including two years as chair. Wegman also welcomed Kathleen Smith who has applied for CFE appointment and wanted to observe the meeting. CFE members and staff introduced themselves to Kaiser and Smith.

Shaw presented draft resolutions of appreciation for three outgoing CFE members: Jan Sassaman, David Neal, and Gary Saunders. CFE members offered no changes to the resolutions; they were approved by acclimation. Shaw will prepare final versions of the resolutions for Wegman's signature, and then send or deliver to each recipient.

- V. **\$2 Billion Statewide Bond Campaign** – Shaw provided an overview of the \$2 billion bond campaign for North Carolina (Connect NC), scheduled for a vote as part of the March 15 primary elections. He presented PowerPoint slides about the bond and the kinds of projects to be funded in the categories of education, water and sewer infrastructure, National Guard and public safety, agriculture, parks and zoos.

Shaw said that according to the bond campaign there is bipartisan support for the bond, and that no tax increase is expected to pay for the bond over the next 20 years. He said the bond package includes \$75 million for state parks, with \$4 million of that for the NC Mountains-to-Sea Trail. Shaw noted that \$2.8 million of the parks allotment would go to improvements at Eno River State Park, and Orange County would also be in line for funding to acquire land and trail easements for the Mountains-to-Sea Trail (MST).

CFE members discussed the contents of the bond package and identified elements germane to the CFE's purview that could benefit Orange County. CFE members noted Eno River State Park and the MST in particular, and also Jordan Lake since many Orange County residents visit that site. Thomas-Ambat said the county and its municipalities might also benefit from funding to upgrade and retrofit water and sewer infrastructure, thus improving water quality for residents and aquatic organisms.

Hintz motioned that the CFE write a letter to newspapers in support of the State Bond. Eisenhart seconded the motion; it carried unanimously.

Hintz motioned that the CFE letter identify Eno River State Park, Mountains-to-Sea Trail, Jordan Lake, and public water and sewer infrastructure as potential areas of interest to Orange County residents that could receive direct benefits from the bond. Thomas-Ambat seconded the motion; it carried unanimously.

Wegman and Cada offered to prepare a draft letter and then to Shaw for circulation to all CFE members for approval by email. Wegman thanked Shaw for this information.

- VI. **Lands Legacy Program Update** – Shaw provided an update on plans to open two new Orange County nature preserves: Hollow Rock Nature Park and the Seven Mile Creek Preserve. He displayed a master plan map of the 75-acre Hollow Rock park site, which will include new parking area, nature trails, and bridges. Phase 2 will add a restroom facility, interpretive signage, environmental education area, and platform overlooks. The park is expected to open in May 2016.

Shaw showed a map of the Seven Mile Creek Preserve. This site will also feature nature trails and a group camping area on land adjacent to the Moorefields historic site. Construction of a small parking area will occur this summer, and the site is expected to open sometime in late summer or early fall 2016.

Wegman thanked Shaw for the information. No action required.

- VII. **Committee Meetings** – CFE members broke into three standing committees (Air and Energy Resources, Water Resources, and Land Resources) to review a list of priority issues/projects identified by each committee in 2014-15. The committees met for about 30 minutes and then reported back to the full CFE.

**Air and Energy Committee**

Bouma reported that the Air and Energy Committee discussed five issues

1. GHG Emissions Inventory – The committee agreed to continue discussing whether it would be worthwhile to update the County 2005 greenhouse gas emissions inventory. They suggest looking into updating projections from last report based on what we know has changed, and if estimates show large increase this may suggest compiling a more complete update. Look for easy sources of energy usage that are authoritative and updated regularly.
2. Green Building – The CFE submitted its resolution to BOCC in support of developing a rebate on permit fees for green construction. The committee will await any response from BOCC and continue to monitor the Chapel Hill pilot program.
3. Climate Change – The committee will write news article(s) about climate change, alternative energy sources and efficiency, and ways to reduce our carbon footprint.
4. Energy Efficiency – The committee will research the possibility of working with Piedmont Electric Membership Corp. or Duke Energy and a USDA program for low-interest loans for energy efficient upgrades for its members/owners.
5. Food waste reduction issue – The committee recommends coordinating with the SWAG and others to lend more focus on increased composting in the county.

Water Resources Committee

Cada reported that the Water Resources Committee intends to conduct a literature review of the science in support of maintaining vegetative buffers to protect water quality. Hintz reminded the committee that buffers also protect habitat and biodiversity, and they serve as wildlife corridors. Becker asked the committee to continue monitoring the chemical treatment of hydrilla in the Eno River.

Land Resources Committee

Hintz reported the Land Resources Committee will collaborate with a group that intends to develop a comprehensive conservation plan for Orange County—and perhaps a more regional plan for Orange, Durham, and Chatham counties. The focus will be identifying the most significant natural area corridors that are essential for native plants and wildlife.

Hintz also reported the committee wants to work with County staff to determine whether conservation land is distributed equitably throughout the county so that everyone has reasonable access to enjoy these areas.

Hintz said the committee wants to continue exploring ways to protect important native plant habitat, including a project with the NC Botanical Garden and educating residents on reasons to landscape with a diversity of regionally native plant species.

- VIII. **Updates and Information Items** – Information on the following subjects was provided in the meeting package; selected items were discussed: a) 2016 CFE meeting calendar, b) CFE news articles re water availability and Solarize Orange, c) airport/airstrip rule amendments canceled, d) Eno River hydrilla management, e) State guidance for local stream buffer rules, f) COP21 agreement summarized, g) 2015 hottest year on record, h) Solarize the Triangle, i) effects of solar panels on farm fields, j) conservative case for solar subsidies, and k) Brumley Forest Nature Preserve.
- IX. **Adjournment** – Wegman adjourned the meeting at 9:40 pm.

Summary by Rich Shaw, DEAPR Staff

**Orange County  
Commission for the Environment**

**DRAFT Meeting Summary**

**March 14, 2015**

**Orange County Solid Waste Administration Building, Chapel Hill**

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PRESENT: Lydia Wegman (Chair), May Becker, Lynne Gronback, Loren Hintz, Bill Newby

ABSENT: Peter Cada, Thomas Eisenhart, Jeanette O'Connor, Rebecca Ray, Sheila Thomas-Ambat, David Welch

STAFF: Tom Davis, Brennan Bouma

GUEST: Muriel Williman

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- I. **Call to Order** – Wegman called the meeting to order at 7:35 pm, and noted there was not a quorum of members present
- II. **Additions or Changes to Agenda** – There were none.
- III. **Minutes** – Wegman asked for comments on the February 8 meeting summary. There were none, but no action was taken due to the lack of a quorum of members present.
- IV. **Energy and Water Usage - County Buildings & Facilities** – Bouma provided an update on Orange County sustainability projects, including 2015 energy and water usage figures for County-owned buildings and facilities.

Bouma reported that each year Asset Management Services (AMS) and other departments update the BOCC on the County's progress toward meeting its goal of environmental responsibility, which was adopted in 2005. He said representatives from many departments formed the Environmental Stewardship Advisory Committee and together they developed specific objectives for environmental responsibility. The committee's name will be changed to the Environment and Sustainability Advisory Committee to reflect the role of the new Sustainability Coordinator in reconvening it.

Bouma reported that in FY14 the County's energy usage reduction (measured as MMbtu/sqft) was at 17% below the baseline year of FY 2010, which was ahead of its goal for that year. He and his colleagues will be calculating FY15 progress in the next few weeks. Bouma noted that these analyses only includes County buildings and only those funded through tax revenues, not fee-supported facilities like the SportsPlex or those of the Solid Waste Management Department.

Bouma said the County's water usage reduction goals are being met, but the fuel use reduction goals are actually trending upwards. He said part of that trend is due to the Sherriff's Office and Emergency Services vehicles having to drive more miles. Bouma said has been working with both of those fleet users since last year's numbers were reported, and is hopeful that these efforts will show up as an mpg improvement. With Emergency Services he has been using a grant to pilot the use of idle reduction technologies, and with the Sherriff's Office he has been using a grant to pilot the use of bi-fuel propane-powered vehicles. Bouma explained that propane vehicles could provide a carbon emissions reduction and operations cost reduction benefit, while using a domestically produced energy source.

Bouma reported that another sustainability project the County is involved in is trying to figure out a way to get solar panels on the roof of the Rogers Road Community Center. He said it has been a learning process and one that had built good relationships.

Bouma then introduced Muriel Williman with the Orange County Solid Waste Management Department. Bouma and Williman discussed their collaboration in support of waste reduction at County events that serve food through their Waste Wise Events initiative. This will be a voluntary program to educate and facilitate low or zero waste. Williman said she is also available to work with residents for events outside the county.

CFE members provided feedback on draft Waste Wise materials:

- If these materials will be available to county residents, providing them in paper form is an important outreach tool. Robo-calls are also in schools beyond email.
- The schools have someone police the waste stream
- Checklist
  - Encourage volunteers to bring reusable containers (e.g., Tupperware) to take home leftovers; have containers for participants to take food home.
  - Remind people several times throughout the meeting about the opportunity to reduce waste and compost
    - Add Waste Wise talking points for during the event as a separate tool or add to one of the other tools
- On the caterer list, put the “Serves in Bulk” in green as an essential item
  - Add an intro statement at top of the caterer list to let people know how those caterers were chosen
  - Also move the statement about “If you’d like to be added...”, to the top.
- On the purchasing guide, add an “Item numbers updated as of \_\_\_\_ [date]”

Wegman thanked Bouma and Williman for their information.

Davis asked to reorder the next two items on the agenda, and to discuss the CFE outreach items and opportunities first. Wegman agreed to making that change.

- VI. **CFE Outreach Opportunities / News Articles** – Davis reviewed a list of recent and proposed CFE news articles intended to educate and inform the public about issues highlighted in the Orange County State of the Environment. He noted that there is a need for identifying new topics for 2016.

Kaiser suggested the CFE produce an article about climate change and the evidence of human-caused influences on climate change. Wegman noted it will need to be limited to 600 words. Davis noted the CFE could prepare a series of articles on this topic. Bouma said the CFE could summarize information from other articles rather than writing its own.

Gronback said as a school teacher she often wonders about the effects of poverty on the environment. She said she has noticed increased littering along certain roadsides and perhaps the disparity of income among different parts of the community influences how certain neighborhoods care about the protection of natural resources. Gronback said she does not know yet what kind of article might be suitable but she wants the CFE to be mindful of this going on in our community.

CFE members agreed it would be good to change the frequency of news articles to quarterly, but will wait for a quorum to vote on this matter.

Bouma suggested other outreach opportunities, such as the Last Friday events in Hillsborough and the upcoming Earth Evening event on April 29 in Hillsborough. Hintz suggested that CFE members volunteer at these events. Wegman and Hintz said better signage is needed to direct people to the Earth Evening venue because last year it was not easy to find due to the other things going on in downtown Hillsborough. Bouma said he would reiterate that request to Marabeth Carr and other Earth Evening organizers.

Davis said this year's Earth Evening will include tables with information from DEAPR, Eno River Association, Solid Waste Management, 4H, and several other entities. He said there will be a display about the new Hollow Rock Nature Park that will open in May. Davis also noted a Movie in the Park will occur immediately following the Earth Evening. CFE members discussed the possibility of showing worthwhile environmental documentaries in the future, which might help draw people to the event.

Davis asked for volunteers to help at Last Fridays and Earth Evening. Kaiser said he would like to help out and suggested this be on the April meeting agenda.

Wegman thanked Davis and Bouma for the information and asked that this matter be discussed further at the April meeting.

- V. **Impaired Streams in Orange County** – Davis presented a draft list of “impaired” rivers and streams in Orange County that was released recently by the State of North Carolina. He first showed a map of the impaired surface waters across the entire state, noting how these rivers and streams tend to be concentrated around urban areas.

Davis explained that the NC Division of Water Resources assigns a designated use to surface water bodies (such as drinkable, swimmable, or fishable), and then assesses each water body using a variety of standards to determine if they are meeting that use. If a river or stream is not meeting the designated use they are included on the “303d list” of impaired waters. Davis said after the State releases its list and receives public comment, the list and methodology goes to the US EPA for approval. The US EPA will usually focus on reviewing methodology, and will rarely challenge specific State findings.

Davis reported that all the waters in the state are considered “impaired” for fish consumption due to mercury from coal fired power plants, however that is not a reason to include them on the 303d list.

Davis said over 1,200 waterways in the state were identified as impaired under Category 5 assessments, which require a determination of the TMDL (Total Max Daily Load, or how much of a particular chemical a water can body assimilate and still function). He explained that a TMDL caps pollution allowed in that watershed. This total is then split among the known sources of that pollution and fines can be levied if those sources exceed their allotment. Davis said short of a TMDL, under Category 4 a waterway might be covered by a nutrient load restriction like Jordan Lake Rules. Category 4 waters are impaired, but (by definition) are not included on the 303d list. They do not need the development of a TMDL because they are “covered” by an alternative to a TMDL, such as the Jordan Lake Nutrient Management Strategy.

Davis said a lack of healthy populations of benthic macroinvertebrates is often the reason why a stream is designated as impaired. Assessments occur no more than once every five years in selected waterways. Monitoring does not always occur in the same season, which can lead to varying results. Droughts also impact the results significantly.

Also there are usually only one or two samples for long stretches of a waterway, which doesn't account for varying conditions along the length of the waterway.

Davis reported on the Orange County waterways on the 2016 draft 303d list of impaired waters. A segment of the East Fork Eno River from Halls Mill Road to Dry Run was added to the 303d list due to benthos, but a segment of the main stem of the Eno River above Corporation Lake was removed. A small segment of Morgan Creek below confluence with Meeting of the Waters Creek was added to the list due to the degraded quality of the fish community present.

Davis was asked whether OWASA gets involved in protecting drinking water source quality. He said OWASA likely gets involved with managing the algae that grow in its reservoirs as they can impact the taste of drinking water.

Wegman thanked Davis for his presentation.

- VII. **Updates and Information Items** – Information on the following subjects was provided in the meeting package; selected items were discussed: a) CFE membership roster, b) CFE Committee priorities (revised draft), c) Eno River hydrilla management update, d) coal ash dump in Chapel Hill, e) “The Nature of Orange” photo contest 2016, f) Solarize the Triangle campaign, g) green schools cost assessment, and h) widespread problems caused by a natural gas leak in California.
- VIII. **Adjournment** – Wegman adjourned the meeting at 9:30 pm.

Summary by Rich Shaw, DEAPR Staff

**ORANGE COUNTY  
COMMISSION FOR THE ENVIRONMENT**

Since February CFE members have worked with staff to develop monthly articles for the *Chapel Hill News* and *The News of Orange County*. Thus far there have been articles on hydrilla in the Eno River, electronic vehicle charging stations, the benefits of native plants, problems caused by the emerald ash borer and other invasive species, and the effects of fracking on Orange County.

*Revised Calendar for Preparing/Publishing News Articles*

*March 2016*

Topic	SOE	Committee (Lead)	Completion	Publication
Hydrilla in the Eno	pp. 69-70	Water (Cada/Davis)	April, 2015	April 29, 2015
New electric vehicle charging stations	pp. 21-22	Air & Energy (Bouma)	April 15, 2015	May 17, 2015
Pollinator Issues	pp. 43-44	Land (O'Connor/Shaw)	June 15, 2015	Pending
Terrestrial invasives / choosing native spp.	pp. 43-44	Land Resources (Hintz/Shaw)	Aug 15, 2015	Aug 19, 2015
Potential effects of fracking in Orange Co.	pp. 71-72	Water (Davis/Sassaman)	Nov 15, 2015	Nov 25, 2015
Solarize Orange / Barriers to solar development	N/A	Air & Energy (Neal/Bouma)	Jan 15, 2016	Feb 24, 2016
Water conservation	pp. 47- 54	Water (Cada/Davis)	Dec 15, 2016	Pending
Support for State Bond	pp. 37-42	Wegman/Cada	Feb 15, 2016	March 2, 2016
State funding for aquatic weed control in rivers?	pp. 69-70	Water (_____/Davis)		
Land conservation (Hollow Rock park?)	pp. 37-42	Land (_____/Shaw)		
		Air & Energy (_____/Bouma)		
<i>Reconsider schedule for 2016 (change to quarterly?)</i>				

# 2016 CFE Outreach Opportunities

March 2016

## 1. Events

- **Earth Evening**      April 29<sup>th</sup>, 6 - 8 pm, River Park, Hillsborough
- **Last Fridays**      Downtown Hillsborough, approx. 6:30 – 9 pm  
<http://www.hillsboroughartscouncil.org/#!/last-fridays/c22tz>
  - May 27
  - June 24
  - July 29
  - August 26
  - September 23

## 2. Potential Topics?

- CFE Newspaper Articles
- Hollow Rock Nature Park Opening
- Recruitment of New Members
- Other??

### **Air and Energy Resources Committee**      (May, Tom, Bill N.)

1. Climate Change – Climate change, alternative energy sources and efficiency, and steps to reduce their (and County government's) carbon footprint.

### **Water Resources Committee**      (Peter, Rebecca, Sheila, Bill K.)

1. Eno Hydrilla Management Task Force Pilot Study:
  - a. Educate the public about second year of project in the Eno
  - b. Provide info concerning communicating with NCGA about enabling legislation
2. Water Supply – Local water supplies and what steps can be taken to improve/maintain quality and quantity of water supplies into the future.

### **Land Resources Committee**      (Loren, Jeanette, Lydia, David, Lynne)

1. Native Landscaping - Reasons to choose a diversity of regionally native species for landscaping and other ways to promote biodiversity.

## **Chapel Hill joins defense of EPA's Clean Power Plan**

CHAPEL HILL

Mayor Pam Hemminger announced Friday that the Chapel Hill Town Council has joined in support of an amicus brief filed in a case in the U.S. Court of Appeals for the D.C. Circuit in defense of the EPA's Clean Power Plan.

In doing so, Chapel Hill joins more than 50 other cities and counties that believe that the Clean Power Plan is a necessary legal step toward addressing the extraordinary threat posed by climate change.

"As one of the first municipalities to participate in the 2006 Carbon Reduction Program, Chapel Hill, working with our UNC-Chapel Hill and Orange County partners, has been a leader in making steady progress toward reducing emissions. Signing onto this brief demonstrates our town's continued commitment to environmental sustainability," Hemminger said in a statement.

"The Clean Power Plan provides cities across the United States with a path forward towards real carbon reductions. Additionally, emphasis on increased use of renewable energy and energy conservation will drive innovation and advance new energy solutions – both of which play a critical role in creating a sustainable future for our town and our country.

"As we continue to better our town by improving air quality and accelerating cleaner solutions, we hope the federal government will be able to do the same for our generation and those to come."

## CFE Committee Priorities

(DRAFT Revision - February 2016)

### **Air and Energy Resources Committee**

(May Becker, Tom Eisenhart, Bill Newby)

1. GHG Emissions Inventory – Consider whether it is feasible and worthwhile to conduct a comprehensive update of the County 2005 greenhouse gas emissions inventory.
2. Green Building – Help the County develop an incentive program for green construction.
3. Climate Change – Educate county residents about climate change, alternative energy sources and efficiency, and steps to reduce their (and County government's) carbon footprint.
4. Energy Efficiency – Partner with Piedmont Electric Membership Corp and/or Duke Energy to take advantage of USDA program for low-interest loans for energy efficient upgrades for its members/owners.

### **Water Resources Committee**

(Peter Cada, Rebecca Ray, Sheila Thomas-Ambat, Bill Kaiser)

1. Stream Buffers – Conduct a literature review of the science in support of maintaining vegetative buffers to protect water quality, aquatic habitat, and biodiversity.
2. Hydrilla Treatments – Continue to educate the public about hydrilla and other invasive species of concern; continue to monitor chemical treatments to assure they are not harmful to rivers.
3. Surface and Ground Water Quality – Increase the collection of data for surface and ground water quality; increase public education so it might lead to more funding for data collection.
4. Water Supply – Continue to educate county residents about our water supply and what steps can be taken to improve/maintain quality and quantity of future water supplies into the future.

### **Land Resources Committee**

(Loren Hintz, Jeanette O'Connor, Lydia Wegman, David Welch, Lynne Gronback)

1. Comprehensive Conservation Plan – Collaborate on the development of a comprehensive conservation plan for Orange County for Legacy program and others to protect natural areas and wildlife habitat. Consider ways to ensure conservation land is distributed equitably throughout the county so that everyone has reasonable access to enjoy these areas.
2. Native Plant Habitats - Renew collaboration with NC Botanical Garden and others to identify significant roadside habitat for native plants; then ask NCDOT and other utilities to eliminate the use of herbicides to manage vegetation in those special roadside habitats.
3. Native Landscaping - Educate homeowners and businesses on reasons to choose a diversity of regionally native species for landscaping and other ways to promote biodiversity.
4. 2016 State Bond – Educate county residents on reasons to vote in favor of the \$2 billion State Bond (March 15, 2016 primary elections)

# Orange County COMMISSION FOR THE ENVIRONMENT

(updated January 2016)

NAME HOME ADDRESS	POS #	DATE OF APPOINTMENT COMMITTEE (Representation)	TERM ENDS	TELEPHONE E-MAIL	TOWNSHIP OF RESIDENCE
May Becker 511 Cotton Street Chapel Hill, NC 27516	#1	9/21/10 & 11/6/14 Air & Energy Resources (At Large)	12/31/17	919-969-7439 tomatocutter@yahoo.com	Chapel Hill
Peter Cada 420 Coach House Lane Hillsborough, NC 27278	#10	9/21/10 & 11/6/14 Water Resources (At Large)	12/31/17	919-485-2071 peter.cada@tetrattech.com	Eno
Thomas Eisenhart 605 Jones Ferry Road, Apt TT15 Carrboro, NC 27510	#6	1/22/15 Air & Energy Resources (At Large)	12/31/16	919-360-7468 tomeisenhart@gmail.com	Chapel Hill
Lynne Gronback (Vice Chair) 2420 Sunnyfield Court Hillsborough, NC 27278	#14	3/17/15 & 12/15/15 Land Resources (At Large)	12/31/18	919-219-3219 Lgronback@gmail.com	Bingham
Loren Hintz 804 Kings Mill Rd. Chapel Hill, NC 27517	#4	1/27/09 Land Resources (Biological Resources)	12/31/16	919-933-8987 ldhintz@bellsouth.net	Chapel Hill
Bill Kaiser 2112 Markham Dr. Chapel Hill, NC 27514	#5	12/15/15 Water Resources (Water Resources)	12/31/18	919-933-9794 w_mckaiser@hotmail.com	Chapel Hill
William Newby 2821 Becketts Ridge Road Hillsborough, NC 27278	#2	5/20/14 Air & Energy Resources (Air Quality)	12/31/16	919-541-5296 newby.william@epa.gov	Hillsborough
Jeanette O'Connor 117 S Peak Dr. Carrboro, NC 27510	#9	5/21/13 & 11/6/14 Land Resources (At Large)	12/31/17	703-678-6893 jeanette.oconnor@gmail.com	Chapel Hill
Rebecca Ray 5617 Jomali Drive Durham, NC 27705	#15	11/19/13 & 12/15/15 Water Resources (At Large)	12/31/18	919-383-0685 rebecca.ray@nc.rr.com	Eno
Sheila Thomas-Ambat 103 Hunter Hill Place Chapel Hill, NC 27517	#8	11/6/14 Water Resources (At Large)	12/31/16	919-225-4744 staemail@yahoo.com	Chapel Hill
Lydia Wegman (Chair) 5704 Cascade Drive Chapel Hill, NC 27514	#3	11/19/13 & 11/6/14 Land Resources (At Large)	12/31/17	919-886-8775 lnwegman@gmail.com	Chapel Hill
David Welch 20 East Drive Chapel Hill, NC 27516	#11	9/21/10 & 11/6/14 Land Resources (At Large)	12/31/17	919-406-2101 davwelch@hotmail.com	Chapel Hill
VACANT	#7	/ /16 _____ Resources (At Large)	12/31/16		
VACANT	#12	/ /16 _____ Resources (Engineer)	12/31/18		
VACANT	#13	/ /16 _____ Resources (At Large)	12/31/18		
David Stancil Rich Shaw Tom Davis Brennan Bouma	245-2522 245-2514 245-2513 245-2626	Director, Dept. of Environment, Agriculture, Parks & Rec. Land Conservation Manager Water Resources Coordinator Sustainability Coordinator		dstancil@orangecountync.gov rshaw@orangecountync.gov tdavis@orangecountync.gov bbouma@orangecountync.gov	

Representative Graig R. Meyer (representing NC House District 50)

N.C. House of Representatives  
16 W. Jones Street, Room 1111  
Raleigh, NC 27601-1096  
[Graig.Meyer@ncleg.net](mailto:Graig.Meyer@ncleg.net)

Representative Verla Insko (representing NC House District 56)

N.C. House of Representatives  
300 N. Salisbury Street, Room 502  
Raleigh, NC 27603-5925  
[Verla.Insko@ncleg.net](mailto:Verla.Insko@ncleg.net)

Senator Valerie P. Foushee (representing NC Senate district 23)

N.C. Senate  
300 N. Salisbury Street, Room 517  
Raleigh, NC 27603-5925  
[Valerie.Foushee@ncleg.net](mailto:Valerie.Foushee@ncleg.net)

Honorable \_\_\_\_\_:

I am writing to express my great concern over a recent change in legislation that has a direct impact on Orange County residents.

Due to recent changes in G.S.143-215.73F (Shallow Draft Navigation Channel Dredging and Lake Maintenance Fund), cost share funds granted by the state's Aquatic Weed Control Program within the NC Department of Environmental Quality, Division of Water Resources are now available only for weed control projects within lakes. They are no longer available for controlling aquatic weeds in rivers and streams.

Unfortunately, this change in the legislation has resulted in an immediate negative impact on the on-going project to manage the spread of the aquatic invasive plant Hydrilla verticillata in the Eno River. Simply because the Eno River is not a lake, but instead is a flowing water body, this important project to stop the spread of hydrilla within this scenic and much loved river, and State Park, can no longer access state cost-share funds.

As you may know, aquatic weeds are a growing problem in the southeastern United States, including North Carolina. I urge you to consider ways to address this situation and make cost-share funds available for aquatic weed infestations in flowing water settings also. Given the rapid spread and potential magnitude of the aquatic weed problem in North Carolina, limiting the use of these funds does not seem to be a reasonable approach to dealing with an issue with serious negative ramifications. Combatting aquatic weeds is a very important activity, with real impacts on the citizens and ecosystems of North Carolina.

Thank you for your attention to this matter.

Sincerely,

cc:

Donald R. van der Vaart, DEQ Secretary  
[donald.vandervaat@ncdenr.gov](mailto:donald.vandervaat@ncdenr.gov)

Caroline Daly, DEQ Deputy Director of Legislative Affairs  
[caroline.daly@ncdenr.gov](mailto:caroline.daly@ncdenr.gov)

Tom Reeder, DEQ Assistant Secretary for Environment  
[tom.reeder@ncdenr.gov](mailto:tom.reeder@ncdenr.gov)

## Use of Jordan water discussed

BY HENRY GARGAN  
[hgargan@newsobserver.com](mailto:hgargan@newsobserver.com)

### RALEIGH

The state's Division of Water Resources is holding two forums to discuss Jordan Lake water supply recommendations and how they'll affect water availability in the Cape Fear River basin through 2045.

The first forum, on Tuesday will begin at 4:30 p.m. at the Chatham Community Library, 197 N.C. 87 North in Pittsboro. The second will be at 4 p.m. Wednesday, March 30, in the New Hanover County Government Center in Wilmington.

The recommendations from the N.C. Environmental Management Commission allow Triangle communities 96 percent of the lake's supply, according to a news release. Jordan Lake is the largest source of water for Triangle municipalities.

Proposed recommendations for allocating the water, according to the release, are: Cary, Apex, Morrisville and Wake County, 46.2 percent; Chatham County, 13 percent; Durham, 16.5 percent; Holly Springs, 2 percent; Hillsborough, 1 percent; Orange Water and Sewer Authority, 5 percent; Orange County, 1.5 percent; Pittsboro, 6 percent; and Raleigh, 4.7 percent.

Sarah Young, spokeswoman for the Department of Environmental Quality, said in an email that residents can offer input and concerns about the allocations and how they were developed. Community input, she said, "may suggest the need for additional analysis and better explanations in the (recommendations') final documents."

The use of Jordan Lake water has been an ongoing issue for the Triangle and communities downstream.

Communities and farmers in the southeastern part of the state have said they're worried about where that water will go once it's discharged. Apex and Cary were granted a permit in March 2015 by the Environmental Management Commission allowing them to draw 33 million gallons per day from Jordan Lake through 2045 and return only 2 million gallons of that into the Cape Fear River Basin, where Jordan Lake lies. The rest is allowed to be discharged east into the Neuse River Basin.

Gargan: 919-460-2604;  
[@hgargan](mailto:@hgargan)

**From:** Orange Water and Sewer Authority [mailto:aorbich@owasa.org]  
**Sent:** Tuesday, April 05, 2016

## **ORANGE WATER AND SEWER AUTHORITY**

*A public, non-profit agency providing water, sewer and reclaimed water services  
to the Carrboro-Chapel Hill community.*

### **PUBLIC NOTICE**

**ON WEDNESDAY, APRIL 20, 2016, AT 3:30 P.M.,  
AT 400 JONES FERRY ROAD, CARRBORO,  
MEMBERS OF THE OWASA BOARD WILL MEET AND  
THEN TRAVEL TO OWASA'S CANE CREEK RESERVOIR  
MITIGATION TRACT TO TOUR RECENT  
FORESTRY MANAGEMENT ACTIVITIES**



Andrea Orbich, CMC NCCMC  
Executive Assistant  
Orange Water and Sewer Authority  
400 Jones Ferry Road, Carrboro, NC 27510-2001  
direct: 919|537-4217  
[aorbich@owasa.org](mailto:aorbich@owasa.org)

# Reaping the wind: A wind-farmer's tale

BY HORACE PRITCHARD

**W**hile wind energy in North Carolina is a new concept, I've realized firsthand how North Carolina's agriculture industry can benefit from partnering with the wind industry.

When the project developers contacted me seven years ago about leasing my farmland for the project, I had questions about the role wind energy could play on our farm.

My family has farmed corn, soybeans and wheat in Pasquotank County for four generations, back to my great-great grandfather.

But, as commodity prices continued to fall over the years, we knew we had to diversify in some way to protect the farm. And, the few manufacturing companies that have considered moving here have never worked out.

To our surprise, wind energy on our farmland

has provided the financial certainty and diversity that we needed.

To be honest, when Iberdrola Renewables first called us, I couldn't even pronounce the name. The offer to build a wind project on our farmland seemed like a good idea up front, but could it be enough to allow us to keep farming?

To find out, I spoke with another farmer in Texas who had partnered with Iberdrola. He only had four turbines but wished he could have added four more.

For our land, Iberdrola has leased it for 25 years with the option to renew for 25 more. Of my 1,300 acres, less than one acre per turbine will be used for a total of nine turbines when the project is finished.

And, the people at Iberdrola are doing what they said they would do. They were receptive to our input when plotting the turbines and have not disrupted our farmland or the neighboring community of Whiteston. In fact, Iberdrola rocked five

miles of dirt farm roads on our farm, which we never could have afforded, at no cost to us or our county.

These roads will help our family get our crops out next season.

In total, Iberdrola will have improved over 60 miles of farm roads on the whole project.

As a property owner and

farmer, wind makes sense for our family farm, and it makes sense from an economic standpoint for other Tier 1 counties like Pasquotank and Perquimans. North Carolina could not ask for a better deal that includes increased tax revenues and needed infrastructure at no cost to us.

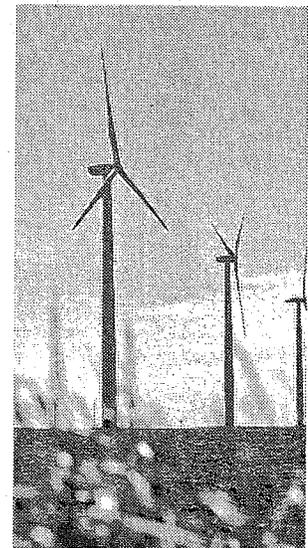
The tax revenues from this wind project will amount to more than \$250,000 per year for each of the two counties for the duration of the 25-year lease.

For counties like us,

3 April 2016  
News + Observer

that's a tremendous amount of money. And, the project will pay over \$600,000 per year to the more than 60 landowners in the two counties. Wind energy has provided financial certainty to our family farm and rural counties in eastern North Carolina.

*Horace Pritchard is a landowner and past chairman of the Pasquotank County Economic Development Commission and longtime member of the County Board of Commissioners*



## Water Is Broken. Data Can Fix It.

By CHARLES FISHMAN March 17, 2016



Sprinklers in an agricultural field in California. Max Whittaker for The New York Times

As a nation, we have become disciples of data. We interview 60,000 families a month to determine the unemployment rate, we monitor how much energy we use every seven days, Amazon ranks sales of every book it sells every hour. Then there is water.

Water may be the most important item in our lives, our economy and our landscape about which we know the least. We not only don't tabulate our water use every hour or every day, we don't do it every month, or even every year.

The official analysis of water use in the United States is done every five years. It takes a tiny team of people four years to collect, tabulate and release the data. In November 2014, the United States Geological Survey issued its most current comprehensive analysis of United States water use — for the year 2010.

The 2010 report runs 64 pages of small type, reporting water use in each state by quality and quantity, by source, and by whether it's used on farms, in factories or in homes. It doesn't take four years to get five years of data. All we get every five years is one year of data. The data system is ridiculously primitive. It was an embarrassment even two decades ago. The vast gaps — we start out missing 80 percent of the picture — mean that from one side of the continent to the other, we're making decisions blindly. In just the past 27 months, there have been a string of high profile water crises — poisoned water in Flint, Mich.; polluted water in Toledo, Ohio, and Charleston, W. Va.; the continued drying of the Colorado River basin — that have undermined confidence in our ability to manage water.

In the time it took to compile the 2010 report, Texas endured a four year drought. California settled into what has become a five year drought. The most authoritative water use data from across the West couldn't be less helpful: It's from the year before the droughts began. In the last year of the Obama presidency, the administration has decided to grab hold of this country's water problems, water policy and water innovation. Next Tuesday, the White House is hosting a Water Summit, where it promises to unveil new ideas to galvanize the sleepy world of water.

The question White House officials are asking is simple: What could the federal government do that wouldn't cost much but that would change how we think about water?

The best and simplest answer: Fix water data.

More than any other single step, modernizing water data would unleash an era of water innovation unlike anything in a century. We have a brilliant model for what water data could be: the Energy Information Administration, which has every imaginable data point about energy use — solar, wind, biodiesel, the state of the heating oil market during the winter we're living through right now — all available, free, to anyone. It's not just authoritative, it's indispensable. Congress created the agency in the wake of the 1970s energy crisis, when it became clear we didn't have the information about energy use necessary to make good public policy.

That's exactly the state of water — we've got crises percolating all over, but lack the data necessary to make smart policy decisions. Congress and President Obama should pass updated legislation creating inside the United States Geological Survey a vigorous water data agency with the explicit charge to gather and quickly release water data of every kind — what utilities provide, what fracking companies and strawberry growers use, what comes from rivers and reservoirs, the state of aquifers.

Good information does three things. First, it creates the demand for more good information. Once you know what you can know, you want to know more. Second, good data changes behavior. The real time miles per gallon gauges in our cars are a great example. Who doesn't want to edge the M.P.G. number a little higher? Any company, community or family that starts measuring how much water it uses immediately sees ways to use less. Finally, data ignites innovation. Who imagined that when most everyone started carrying a smartphone, we'd have instant, nationwide traffic data? The phones make the traffic data possible, and they also deliver it to us.

The truth is, we don't have any idea what detailed water use data for the United States will reveal. But we can be certain it will create an era of water transformation. If we had monthly data on three big water users — power plants, farmers and water utilities — we'd instantly see which communities use water well, and which ones don't.

We'd see whether tomato farmers in California or Florida do a better job. We'd have the information to make smart decisions about conservation, about innovation and about investing in new kinds of water systems. Water's biggest problem, in this country and around the world, is its invisibility. You don't tackle problems that are out of sight. We need a new relationship with water, and that has to start with understanding it.

Charles Fishman is the author of [“The Big Thirst: The Secret Life and Turbulent Future of Water.”](#)

By **Tim Profeta**, Duke University's Nicholas Institute for Environmental Policy Solutions

## February's Record Heat Astounds Scientists

Data released last week by the National Oceanic and Atmospheric Administration (NOAA) shows that the string of monthly global heat records [extended through February](#), when the average worldwide temperature was [2.18 degrees Fahrenheit above the 20th century average](#). The tenth straight record breaking month, February was the most above-normal month since meteorologists began tracking temperatures in 1880.

The [nearly six-tenths of a degree margin](#) by which it beat the old February record, set last year, had federal scientists describing temperatures as “staggering.” That margin was confirmed by the National Aeronautical and Space Administration, which uses statistical techniques different than NOAA's, as well as a University of Alabama Huntsville team and the private Remote Sensing System team, which relies on measurements from satellites.

“Yes, of course El Niño has a hand in the February and other monthly temperatures records we've been observing, but not the only hand, not even the winning hand,” Jessica Blunden of NOAA's National Center for Environmental Information [told Mashable](#). “During the last big El Niño event of 97/98, temperatures departures from average were much lower compared with what we're seeing now with this comparable event, which shows us that general warming is occurring over time.”

Many scientists say climate change is contributing to the recent high temperatures.

“We know that atmospheric CO<sub>2</sub> (carbon dioxide) and other greenhouse gases are continuing to increase, so that's contributing to climate change and rising temperatures overall,” [said Heather Graven](#), a climate scientist at the Imperial College of London.

Another clue that rising greenhouse gases are contributing to the recent high temperatures is the location of the warmest-compared-to-average temperatures—the far northern latitudes, which are relatively unaffected by El Niño and where Arctic sea ice set a new lowest-extent record for a February. In those latitudes, including Alaska, recorded temperatures were [at least 9 degrees Fahrenheit higher than average](#)—“above the upper bounds” of NOAA's February Global Land and Ocean Temperature Anomalies map.

## Study: Carbon Dioxide Release Occurring Faster Than At Any Other Time

A [new study](#) in the journal *Nature Geoscience*, which comes on the heels of NOAA's record temperature announcement, finds that humans are releasing climate-change-causing carbon dioxide 10 times faster than at any other time in the last [66 million years](#).

“I think to me it's completely clear we have entered a completely new era in terms of what humans can do on this planet,” said [Richard Zeebe](#), study co-author with the University of Hawaii at Manoa. “... If you look at the past and if you study the geologic record, every time when there was massive carbon release there were major changes on the planet and there were significant, large changes in the climate.”

To determine how carbon dioxide levels have influenced temperatures, [researchers examined](#) warming millions of years ago in the Paleocene-Eocene Thermal Maximum (PETM) by comparing carbon and oxygen tracers, called isotopes, deep in the New Jersey sea floor. PETM is thought to be a [possible stand in](#) for the potential impacts of carbon pollutions, as it refers to a period in history when the concentration of atmospheric carbon dioxide spiked. [They found](#) that 40.8 billion tons of carbon dioxide was released into the atmosphere in 2014 but that no more than 4.4 billion tons was released in the peak year during PETM.

“Because our carbon release rate is unprecedented over such a long time period in Earth’s history, it also means that we have effectively entered a ‘[no-analogue’ state](#),” said Zeebe. “This represents a big challenge for projecting future climate changes because we have no good comparison from the past. [Our results suggest](#) that future ocean acidification and possible effects on marine calcifying organisms will be more severe than during PETM.”

### **Climate Change Could Be Abrupt, Trigger Dire Consequences**

Burning fossil fuels at the current pace will trigger an abrupt climate shift, according to a [study published](#) in the journal *Atmospheric Chemistry and Physics*. Authored by retired NASA climate scientist James Hansen and 18 others, the study uses global climate modeling, paleoclimate data and modern observation of interactions between the ocean and ice sheets (specifically the Greenland and Antarctic ice shelves) to determine impacts associated with melt.

“We conclude that light freshwater added to upper layers of the ocean is already beginning to shut down North Atlantic Deep Water formation and Antarctic Bottom Water formation,” [said Hansen](#). “This will have enormous consequences in future decades, if full shutdown is allowed to occur.”

The study, [which stirred debate](#) when it came out in [draft form this summer](#), suggests that the impacts of global warming will not only happen [more quickly than thought](#), but be more dire than envisioned. Holding temperatures to the 2 degrees Celsius of warming above pre-industrial levels would not be enough to save the planet from experiencing collapsing ice sheets and megastorms.

The [paper concludes](#) that “if the ocean continues to accumulate heat and increase melting of marine-terminating ice shelves of Antarctica and Greenland, a point will be reached at which it is impossible to avoid large-scale ice sheet disintegration with sea level rise of at least several meters. The economic and social cost of losing functionality of all coastal cities is practically incalculable.”

*The Climate Post offers a rundown of the week in climate and energy news. It is produced each Thursday by Duke University's Nicholas Institute for Environmental Policy Solutions and cross-posted on the Huffington Post and National Geographic NewsWatch. Like us on Facebook, follow us on Twitter, or subscribe to our YouTube channel for more updates.*

March 31, 2016

## **THE CLIMATE POST**

By Tim Profeta (Duke University's Nicholas Institute for Environmental Policy Solutions)

### **Record Low Arctic Sea Ice Extent Points to Irreversible Changes**

Scientists at the National Snow and Ice Data Center (NSIDC) said on Monday that Arctic sea ice cover of 5.607 million square miles on March 24 represented the lowest winter maximum since records began in 1979. That's 5,000 square miles less than last year's record low. Contributing to the ice extent loss were record high air temperatures and relatively warm seawater.

"It is likely that we're going to keep seeing smaller wintertime maximums in the future because in addition to a warmer atmosphere, the ocean has also warmed up," said Walt Meier, a sea ice scientist at NASA's Goddard Space Flight Center. "That warmer ocean will not let the ice edge expand as far south as it used to. Although the maximum reach of the sea ice can vary a lot each year depending on winter weather conditions, we're seeing a significant downward trend, and that's ultimately related to the warming atmosphere and oceans."

After this winter's record ice lows, scientists expect the Arctic could be ice-free in the summer months in the next few decades.

"Sometime in the 2030s or 2040s time frame, at least for a few days, you won't have ice out there in the dead of summer," said John Walsh, chief scientist of the International Arctic Research Centre. "The balance is shifting to the point where we are not going back to the old regime of the 1980s and 1990s. Every year has had less ice cover than any summer since 2007. That is nine years in a row that you would call unprecedented. When that happens you have to start thinking that something is going on that is not letting the system go back to where it used to be."

The effects of diminishing sea ice may not be limited to just the Arctic.

"The Arctic is in crisis," said Ted Scambos, NSIDC lead scientist. "Year by year, it's slipping into a new state, and it's hard to see how that won't have an effect on weather throughout the Northern Hemisphere."

A new paper in the *Journal of Climate* linked the vanishing Arctic sea ice, along with other sea ice melting and global sea-level rise, to climate change. The authors, who used computer models and field measurements to explore whether Arctic sea ice loss has contributed to melting of the Greenland ice sheet, say that melting Arctic sea ice can block cold, dry Canadian air, increasing the flow of warm, moist air over Greenland and contributing to extreme heat events and surface ice melting. If the Greenland ice sheet completely melted, the paper says, the global sea level would rise about 20 to 23 feet.

### **U.S. Environmental Protection Agency Files Brief Defending Clean Power Plan**

The D.C. Circuit is set to begin hearing oral arguments challenging the Clean Power Plan—the Obama administration's rule to limit greenhouse gas emissions from the existing fleet of fossil fuel-fired power plants—in June. On Monday, the U.S. Environmental Protection Agency filed its defense of the Clean Power Plan, telling the court that the rule is well within the bounds of its authority. Dozens of states and industry groups last month called the rule a "breathtaking expansion" of the power Congress gave the EPA—with the Clean Air Act—to regulate greenhouse gas emissions.

“The rule reflects the eminently reasonable exercise of EPA’s recognized statutory authority,” the EPA brief says. “It will achieve cost-effective [carbon dioxide] reductions from an industry that has already demonstrated its ability to comply with robust pollution-control standards through the same measures and flexible approaches. The rule fulfills both the letter and spirit of Congress’s direction.”

It is expected that whichever side loses in June will appeal to the Supreme Court, which in February issued a stay—sending the rule back to the D.C. Circuit Court.

### **Renewable Energy Investment Outpaced Other Technologies: Study**

Investment in renewable energy generation last year was higher than in new coal- and gas-fired power plants, according to a new report from the Frankfurt School-United Nations Environment Programme collaborating Centre for Climate & Sustainable Energy Finance and Bloomberg New Energy Finance (BNEF). In fact, renewables added more to global energy generation capacity than all other technologies combined—though they still only account for 10 percent of global electricity production.

“Global investment in renewables capacity hit a new record in 2015, far outpacing that in fossil fuel generating capacity despite falling oil, gas, and coal prices,” said Michael Liebreich, chair of the BNEF advisory board. “It has broadened out to a wider and wider array of developing countries, helped by sharply reduced costs and by the benefits of local power production over reliance on imported commodities.”

All investment in renewables—which includes new renewable energy capacity as well as early-stage technology, research and development—totaled \$286 billion in 2015. That’s roughly 3 percent higher than the previous record set back in 2011.

Countries contributing some of the most to these numbers included China, which in 2015 invested \$102.9 billion (a 17 percent increase from 2014), representing 36 percent of the global investment total; Chile (\$3.4 billion, a 151 percent increase), India (\$10.2 billion, a 22 percent increase), Mexico (\$4 billion, a 105 percent increase) and South Africa (\$4.5 billion, a 329 percent increase).

*The Climate Post offers a rundown of the week in climate and energy news. It is produced each Thursday by Duke University's Nicholas Institute for Environmental Policy Solutions and cross-posted on the Huffington Post and National Geographic NewsWatch. Like us on Facebook, follow us on Twitter, or subscribe to our YouTube channel for more updates.*



2015 3rd Place Adult, Pat French

## Contest Rules:

- 1) Photographs should feature Orange County wildlife, natural resources, landscapes, or people enjoying the parks and other outdoor environments.
- 2) All photos must be taken in a natural setting (no staged photos).
- 3) Photos must be taken in Orange County.
- 4) Orange County employees are eligible with the exception of DEAPR staff. Contest judges are ineligible.
- 5) Entries per person: Maximum of five (5) total photos.
- 6) Complete and submit a Contest Entry Form for each photo entered, form found under "Breaking News" at: <http://orangecountync.gov/deapr/>. Complete the Orange County Photo Release form for any third party appearing in your photos.
- 7) Photos must be high resolution .gif or .jpg files. Photos may also be submitted on a DVD or CD, in the proper format, and mailed or emailed to: Orange County DEAPR, 306-A Revere Rd., PO Box 8181, Hillsborough, NC 27278; email: [lthecht@orangecountync.gov](mailto:lthecht@orangecountync.gov)
- 8) **DEADLINE TO ENTER: May 13, 2016.**  
**Orange County DEAPR, 306-A Revere Rd., PO Box 8181, Hillsborough, NC 27278.**

### The Department of Environment, Agriculture, Parks & Recreation

(DEAPR) works to conserve and manage the natural and cultural resources of Orange County.

Included within this "green infrastructure" are natural areas and nature preserves, open spaces, parks and recreation facilities, water resources, and agricultural and cultural resource lands.

Consistent with the strong environmental ethic of the community, DEAPR also strives to bring environmental education, recreation, athletics and other programs to residents of the County — with a goal of promoting cultural, physical and natural stewardship and well being.

ORANGE COUNTY



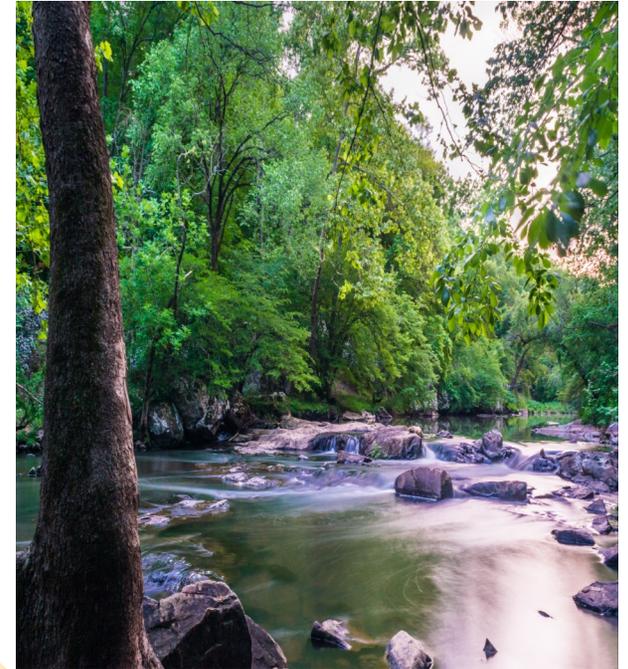
### Department of Environment, Agriculture, Parks & Recreation

Orange County DEAPR  
306-A Revere Rd.  
PO Box 8181  
Hillsborough, NC 27278

Phone: 919-245-2510  
Fax: 919-644-3351  
<http://orangecountync.gov/deapr>  
E-mail: [lthecht@orangecountync.gov](mailto:lthecht@orangecountync.gov)

DEPARTMENT OF  
ENVIRONMENT,  
AGRICULTURE, PARKS &  
RECREATION

## "The Nature of Orange" Photography Contest



2015 Adult Winner, Richie Sheppard

919-245-2510  
<http://orangecountync.gov/deapr/>

## "The Nature of Orange" Photography Contest

The Department of Environment, Agriculture, Parks and Recreation (DEAPR) is proud to present its 5th annual photography contest. The goal is to inspire exploration, celebration and appreciation of Orange County's diverse landscapes and outdoor experiences. Through photography we want to document the beauty of our wildlife, waterways, natural resources, and people connecting with their environment.

**Deadline: All entries must be received by May 13, 2016**

### Age Divisions:

- Youth (age 18 and younger)
- Adult



2015 2nd Place Youth, Kirby Lau

### Photographs should feature:

Orange County wildlife, natural resources, landscapes, or people enjoying the parks and outdoor environments.

### How to Submit Your Photo:

See the Contest Rules on the back panel.

**Prizes:** \$100 First, \$75 Second, and \$50 Third Place cash prizes will be awarded for photos in both divisions. Divisions will be judged separately. In addition, participants will receive a certificate and winning photographs will be displayed in prominent, public locations.

**For more information** about parks and natural settings in Orange County visit: <http://orangecountync.gov/deapr/>

2015 2nd Place Adult,  
Barbara Driscoll



### Owner/Use Rights:

Contestants retain the copyright to their photographs, and all rights thereto, except as follows. Orange County and DEAPR shall have the right to use the likeness, name, and/or images photographed by contestants in any and all publications, including web site entries, without compensation in perpetuity. Photos will be credited to the contestant named in the entry form. Descriptions or titles, if any, used with the photos are in DEAPR's sole discretion (see Photo Release and Agreement on the required Entry Form under "Breaking News") at <http://orangecountync.gov/deapr/>

### Judging Criteria:

*Relevancy to Featured Topics* - Is the photo an obvious illustration of the focus of the contest?

*Composition / Arrangement* - Are the objects in the photo arranged in a meaningful, pleasing manner or are they "haphazard"? Did the photographer use the best angle or otherwise interesting perspective?

*Focus / Sharpness* - Is the object of the photo in focus? If not in sharp focus, does it appear to be an intentional effect to enhance the image in some "artistic" way?

*Lighting* - Did the photographer use proper lighting of the subject matter? Do any extremes of darkness or brightness lend to or detract from the image content?

*Creativity* - Does the photographer show some creative thought or original idea in the making of this image?

## Sponsors

- Orange County Department of Environment, Agriculture, Parks and Recreation
- Orange County Commission for the Environment
- Orange County Parks and Recreation Council



2015 1st Place Youth, Joesph Mohler

### DEPARTMENT OF ENVIRONMENT, AGRICULTURE, PARKS & RECREATION

Orange County DEAPR  
306-A Revere Rd.

Phone: 919-245-2510

Fax: 919-644-3351

<http://orangecountync.gov/deapr>

E-mail: [lthecht@orangecountync.gov](mailto:lthecht@orangecountync.gov)