AGENDA

Commission for the Environment
June 8, 2015
7:30 p.m.

Orange County Solid Waste Administration Building
1207 Eubanks Road, Chapel Hill

Time	Item	Title
7:30	**I.**	**Call to Order**
7:32	**II.**	**Additions or Changes to Agenda**
7:35	**III.**	**Approval of Minutes – May 11** (Attachment 1)
7:40	**IV.**	**OWASA's Energy Management Plan** Orange Water and Sewer Authority (OWASA) is developing an energy management plan for its water, wastewater, and reclaimed water utility operations and facilities. Terri Buckner (OWASA Board of Directors) will introduce the OWASA energy management plan and discuss the possibility of the CFE collaborating with OWASA, the schools, and the towns on a panel discussion of energy conservation and management (Attachment 2)
8:15	**V.**	**2016 Orange County Bond Package** The CFE will consider asking the BOCC to reopen the process for determining the contents of the proposed 2016 bond referendum (Attachment 3)
8:30	**VI.**	**Green Building Incentives** The CFE will continue its discussion of potential incentives for energy-efficient construction, following-up on the April presentation of Chapel Hill's pilot program. (Attachments 4-5)
8:45	**VII.**	**Updates and Information Items** Staff and/or CFE members will provide updates on the following items: ➢ CFE comments on draft changes to impervious surface rules (Attachment 6) ➢ Herbicide being used to control hydrilla in Eno River (Attachment 7) ➢ Electric Vehicle fast charger station installed in Hillsborough (Attachment 8) ➢ Electric Vehicle Workshop – June 18 Hillsborough (Attachment 9) ➢ CFE news article – Why Plant Natives (Attachment 10) ➢ What we can do to protect bees (Attachments 11 - 13) ➢ Fracking having difficult start in NC (Attachment 14) ➢ 2nd solar array at White Cross planned for Orange County (Attachment 15) ➢ NC Forest Service in Orange County – 2014 Annual Report (Attachment 16) ➢ Court denies challenges to EPA's ozone designations (Attachment 17) ➢ Duke Forest stewardship and sustainability tour – June 27 (Attachment 18)
9:00	**VII.**	**Adjournment**

Next meeting: July (No Meeting)
August 13 (Hillsborough)

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 2015:

- Continue to update the Orange County State of the Environment 2014 report
- Convene an Energy Task Force (or equivalent work group) to improve the County's ability to foster local sustainable energy production and energy efficiency strategies
- Recommend ways to reduce the County's "carbon footprint" and implement the County's Environmental Responsibility Goal
- Help with public outreach and management efforts related to hydrilla in Eno River
- Help initiate the development of a comprehensive conservation plan for Orange Co
- Collaborate with NC Botanical Garden and others to identify significant roadside habitat for native plants; ask NCDOT and other utilities to protect those roadside habitats [authorized by BOCC June 2012]
- Co-sponsor the annual DEAPR photography contest (*The Nature of Orange*)
- Help plan for and participate in DEAPR's annual Earth Day event

Concerns or emerging issues the CFE has identified for 2015:

- 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 [January 2012 memo to Planning Board]
- The CFE will strive to learn more about environmental justice matters and incorporate relevant information and considerations in the State of the Environment 2014 report
- The CFE will follow closely 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 will continue 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

Attachment 1

Orange County
Commission for the Environment

DRAFT Meeting Summary

May 11, 2015
Richard Whitted Meeting Facility, Hillsborough

PRESENT: Lydia Wegman (Vice Chair), Jan Sassaman (Chair), May Becker, Peter Cada, Lynne Gronback, Loren Hintz, Bill Newby, Jeanette O'Connor, Sheila Thomas-Ambat, David Welch

ABSENT: Tom Eisenhart, Donna Lee Jones, David Neal, Rebecca Ray, Gary Saunders

STAFF: Tom Davis, Rich Shaw, Brennan Bouma

GUESTS: Chip Hughes (National Institute for Environmental Health Sciences)

I. **Call to Order** – Wegman (Acting Chair) called the meeting to order at 7:35 pm.

II. **Additions or Changes to Agenda** – None.

III. **Minutes** – Sassaman noted there was an incorrect statement on page 1 of the April 13 meeting summary where it said Gronback was still a candidate for appointment to the CFE. Sassaman pointed out Gronback had already been appointed. Hintz motioned to approve the summary as amended; seconded by Sassaman. Approved unanimously.

IV. **Proposed Amendment to Impervious Surface Rules** – Shaw reviewed the April CFE meeting's discussion of proposed amendments to the County's rules that limit the amount of impervious surfaces on developed properties in certain water supply watershed protection areas. He said the rules would allow an increase in the allowable impervious surfaces provided the property owners install an approved infiltration best management practice (BMP) and abide certain other conditions.

Shaw referred CFE members to OWASA's comments that were generally favorable with the amendments as long as the County would ensure that the required annual maintenance inspections occur and that the program include a process for what would occur if a BMP no longer functioned properly and the owner decided not to repair or replace the BMP. Shaw also noted OWASA recommended that a licensed engineer be required to design the BMP.

CFE members responded to the proposal and discussed possible comments.

- Newby expressed his doubts that such a program would work properly.
- Hintz agreed with Newby, noting however that he does not anticipate there would be a large amount of requests to install infiltration BMPs. He asked how property owners would know whether they would need to abide by these rules. He noted the Chapel Hill board of adjustment has forgiven mistakes by homeowners; if the County adopts this amendment the requirements need to be explicit.
- O'Connor noted that building permits are needed prior to most construction, so it would be highly unusual for property owners to be uninformed of what is allowed.
- Sassaman agreed. He said the County has a unified permitting process.
- Davis said the County's permitting system is called "Permits Plus."

- Bouma pulled up the County building permit webpage and described some of the information needed for a building permit, such as the amount of existing impervious surfaces and how much additional impervious area is proposed.

- Thomas-Ambat noted the City of Raleigh Stormwater is considering a text change to its impervious area exemptions for active stormwater control requirements. She said this change will limit these exemptions to a maximum impervious area based on residential zoning. Based on the recommended revisions, properties that exceed these limitations will be required to provide either a flood study or volume control for the 90% storm.

- Hintz made a motion that the CFE go on record of supporting the proposed rule change as long as procedures are established and implemented for monitoring and enforcement , and as long as property owners are made aware of the rules.

- Becker said she does not believe this rule change would benefit the environment, and the role of the CFE is not to allow for more development. She recommended the CFE not support the rule change, but perhaps not object to it either.

- Shaw reminded members that Planning Director Craig Benedict said the intent of the amendment was to allow for no net increase in runoff from developed properties to receiving water bodies.

- O'Connor said an increase in impervious surface could result in a greater loss of habitat and carbon sequestration even with no net increase in water runoff.
- Cada agreed, noting also that although the volume of runoff may not increase, the water quality of the runoff could be worse.
- Sassaman agreed; more development will result in greater nutrient loading. He said the problem is the cumulative effects of these incremental changes.
- O'Connor said BMPs can be expected to fail in the future. The environment is already not doing well; the CFE should not support being less restrictive.
- Cada said the County ought to require a letter of credit or a process for the removal of excess impervious surfaces. There should be strict enforcement.

Wegman summarized the comments/discussion. She said Becker had suggested that the CFE not support or endorse the proposed rule change. Sassaman proposed sending a memo to the BOCC that states the CFE is neutral or does not object to the proposed rule change, but the CFE wants the County to establish an enforcement process with yearly inspections that sets a certain amount of time for the landowner to remedy the site when the BMP fails to work properly. Hintz added that the CFE is uncomfortable with the proposed rule change because the measures will be difficult to design and enforce without resulting in an incremental loss of habitat. He suggested while the CFE cannot endorse wholeheartedly because of the loss of habitat quantity and quality, loss of carbon sequestration, and reduced water quality despite no expected increase in water quantity. Cada suggested the CFE recommend there be some sort of permit renewal process.

The CFE agreed to have staff prepare a draft memo based on the discussion and to circulate the draft memo to CFE members for review and approval via email. The final memo will be submitted to the Planning Board and BOCC for consideration.

V. **Environmental Justice** – Sassaman reminded CFE members of Commissioner Mark Dorosin's interest in the CFE including some information on environmental justice issues in the State of the Environment report. Sassaman said he had reported back the BOCC that the CFE would begin to educate itself about the issues in Orange County and see what data could be gathered and presented in future editions of the report.

Sassaman introduced Chip Hughes (National Institute of Environmental Health Sciences). Hughes apologized that his colleague, Sharon Beard, could not attend the meeting. He provided some background on environmental justice issues, beginning with the illegal dumping of PCBs in Warren County, NC in the 1970-80 time period.

Hughes described the fight for environmental justice as making sure that in situations where there adverse environmental impacts that the impacts are not placed on minority populations disproportionately from the neighboring communities. He gave the example of the solid waste landfill on Eubanks Road sited next to the Rogers Road community, and the positive changes that have resulted for that community in the past few years.

Hughes said there may be some metrics available for incorporating environmental justice issues in the SOE report, such as some kinds of environmental inequities. Hintz noted that the 2014 SOE report included data on the amount of protected land in Orange County. He suggested the CFE evaluate whether minority communities have fairly equal access to public parks and open spaces. Do they live in close proximity to the parks?

Newby said there is community data available from the US EPA that may be useful for these determinations. He said the Environmental Benefits Mapping and Analysis Program (BenMAP) is an open-source computer program that calculates the number and economic value of air pollution-related deaths and illnesses. The database includes many of the concentration-response relationships, population files, and health and economic data needed to quantify these impacts. Bouma said he agrees that this could be a useful source of data for evaluating some potential environmental justice issues.

O'Connor said the CFE Land Resources Committee monitors the protection of significant natural resource lands in Orange County, but is not aware of anyone determining whether the publicly-assessable lands are benefiting underprivileged communities. Gronback said as a public school teacher she is a witness to significant problems associated with income gaps among the families that attend her high school. Hintz said he observed disproportional numbers of minority school children taking part in certain outdoor activities during his tenure as high school science teacher in Chapel Hill.

Sassaman said he has discussed environmental and social justice issues with Reverend Campbell and David Caldwell. Sassaman agrees the CFE is in a position to address some portion of the issues in future SOE reports, including some recommendations on what the County and individual residents can do to make improvements.

Bouma observed that many of the County's advisory boards have a role in addressing environmental justice and/or social justice issues. He suggested the CFE also consider what are the environmental benefits of establishing equity among the different segments of the community. O'Connor suggested lower-income residents of the community could benefit in many ways if they had access to solar energy. Wegman suggested that it might be a good idea to convene a broader meeting of advisory boards to discuss the overall and to identify measures that could be implemented across the boards.

The CFE thanked Hughes for joining the advisory board in this discussion.

VI. **Updates and Information Items** – Information on the following subjects was provided in the meeting package; selected items were highlighted for discussion: a) Earth Evening, b) a CFE news article about hydrilla in the Eno River, c) hydrilla management in the Eno River, d) the County's solid waste recycling program funding plan, e) the County's solar development initiatives, f) the 2016 County bond referendum, g) Chapel Hill-Carrboro City Schools awarded a Green Ribbon, h) Regulatory Reform Act of 2015 (HB 760), i) The Nature of Orange photo contest, and j) Norm Christensen's keynote presentation from the Orange County Environmental Summit held in October 2014.

Wegman reported that the BOCC had tentatively decided to pursue a $125 million bond referendum in fall 2016, and the scope of the funds would go entirely for the schools. She suggested the CFE ask the BOCC to reconsider including other kinds of projects in the bond package, including funding for parks and open space. Hintz and other CFE members agreed with this proposal. Wegman offered to prepare draft a memo to the BOCC for CFE members to review and comments. CFE members agreed to have Wegman circulate a draft memo for CFE review and approval.

VII. **Adjournment** – Wegman adjourned at approximately 9:30 pm.

Summary by Rich Shaw, DEAPR Staff

AGENDA ITEM

- COMMUNITY ENGAGEMENT CONCEPT FOR ENERGY MANAGEMENT PLAN

PURPOSE

- To obtain the Board of Directors' feedback and guidance regarding the possibility of establishing an "Energy Council" as a key strategy for engaging local governments, partners agencies, and stakeholders in energy management planning.

BACKGROUND

- At its March 17 and April 28, 2015 meetings, the Natural Resources and Technical Systems (NRTS) Committee received and discussed a 10-year assessment of energy use at OWASA, a summary of our energy management efforts to date, and potential goals and objectives for our energy management plan. The Committee also discussed potential next steps for engaging the community in our energy management planning efforts, and agreed that early on in our work, we should begin to "tell our story" and engage the community through multiple channels.

- NRTS Committee Chair Terri Buckner volunteered to write a guest newspaper article about our energy management planning efforts and the opportunity for customers and other stakeholders to stay informed and participate throughout the process.

- Another engagement strategy the Committee discussed is the possibility to establish an "Energy Council" or other forum to engage local governments, the schools system, University, and other stakeholders in discussions about energy management. The Committee did not develop specific details regarding this concept, but agreed that an inclusive approach early on in our work would demonstrate that we: (a) welcome and proactively seek the community's feedback and assistance; (b) want to work in partnership with the community; and (c) are committed to sustainable energy management.

- NRTS Chair Terri Bucker will verbally present this concept to the Board.

- As background information, attached is the *Proposed Community Engagement Plan for Energy Management Plan Project* (CEP), which was included as an attachment to the *Energy Management Plan Project Charter* approved by the Board on January 22, 2015.

ACTION NEEDED

- Board of Directors discussion of this concept, and guidance to staff.

May 28, 2015

Proposed Community Engagement Plan for Energy Management Plan Project

Purpose

The Orange Water and Sewer Authority (OWASA) is developing an Energy Management Plan (EMP) to provide strategic direction for OWASA's energy management, energy efficiency, and renewable energy decisions, actions, and investments. The EMP will document our goals and objectives (including targets), and ongoing strategies for: managing and conserving energy and related costs; increasing energy security and reliability; using renewable energy; and reducing our greenhouse gas emissions (GHGs).

Our customers and the community we serve will be affected by and interested in our energy management efforts, decisions, and investments. Therefore, it is important that we provide stakeholders (a) timely information about the project, our efforts, and the strategies and investments we are considering, and (b) meaningful opportunities for them to have input in and provide feedback regarding this effort. The intent of this Community Engagement Plan is to describe our planned approach to achieve that.

The format and content of this plan follow the Community Engagement Guidelines approved by the OWASA Board of Directors in November 2014.

Outcomes/Objectives

1. ***Provide timely and clear information to stakeholders*** about our energy use and energy management efforts; what is proposed; how they might be affected; costs and benefits of strategies we are considering; how they might be affected; how they can participate in and provide comments on this effort; etc.
2. ***Seek stakeholder feedback and questions*** so that we can better understand their interest in, perspectives, and expectations regarding our energy management efforts.
3. ***Engage stakeholders in a dialogue*** by receiving and responding to their comments and questions, and providing additional information as needed.
4. ***Encourage action by our customers and other stakeholders*** where applicable, by empowering them with information about topics such as how their water conserving actions can help us reduce the amount of energy we use to meet their water demands.
5. ***Raise the awareness level of employees and gain their support for the plan***, as well-informed and supportive employees will be key to the success of the program. Involving employees will show that their opinions count, that they have a say in how things work, and that they are valued members of our team.
6. ***Gain support and buy-in for our efforts***, and gain the trust of stakeholders, including public officials.
7. ***Evaluate the effectiveness of our engagement efforts for this project*** through informal surveys of stakeholders, and through Board and staff reviews.

Stakeholders

Stakeholder groups that we want to inform and engage include the following. Additional stakeholders may be identified and included once the project is underway.

- Interested OWASA customers
- System users that may not be OWASA accountholders
- Community organizations
    - Local government elected officials and staff
    - UNC and UNC Healthcare
    - Chamber of Commerce, including the Foundation for a Sustainable Community
    - Conservation/environmental organizations
    - Civic groups
- Energy-related companies serving our community, including our energy utilities and fuel suppliers (Duke Energy; PSNC/Scana Energy; Piedmont Electric Membership Cooperative)
- Energy and sustainability program staff from Carrboro, Chapel Hill, Orange County, Chapel Hill – Carrboro City Schools, and UNC/UNC Healthcare
- Other organizations with expertise in/support for sustainable energy management (NC Energy Office; Advanced Energy; Alternative Energy Corporation; Piedmont Biofuels; Strata Solar; YES Solar; etc.)
- Our employees, who will be key to the success of our energy management efforts

Core Messages

The engagement effort shall clearly convey the following messages to stakeholders:

- OWASA desires to increase the sustainability of its energy use through cost-effective investments, operational changes, policies, etc.
- OWASA believes that enhancing energy use sustainability and reducing our GHG emissions is beneficial to our community, State and nation, and an important priority in our community.
- Water conservation is a key means of reducing GHGs, because saving water means less fossil-fuel derived energy will be needed to pump and treat water and wastewater to meet the needs of our customers. Conversely, because a substantial amount of water is used for energy production, saving energy also enables better management of water resources.
- OWASA seeks to proactively inform and engage stakeholders as we develop of the Energy Management Plan, and we welcome and appreciate questions, comments, and suggestions regarding our energy management planning efforts, and our community engagement efforts.
- OWASA desires to inform the community on an ongoing basis in the future about its energy management initiatives and their results.

Key Information

The following information will be provided to stakeholders as part of this engagement effort:

a. ***What is proposed?*** Development of an Energy Management Plan to increase the sustainability of our facilities and operations and reduce GHGs.
b. ***Who would be affected?*** OWASA customers may be affected depending on the cost to implement the future recommendations and the associated savings OWASA may achieve. There would be broad societal benefits associated with long-term reductions in GHGs.
c. ***What are the expected advantages and disadvantages (non-financial and financial) of alternative courses of action?*** This will be developed as the technical work proceeds.
d. ***What is the timetable for the project and stakeholder participation?*** The draft Plan is scheduled to be completed in Fiscal Year 2016.
e. ***What opportunities will stakeholders have to participate and let us know what they are thinking?*** They will be able to offer comments, questions, and suggestions throughout all phases of the project.
f. ***How can stakeholders get more information and be placed on the list to receive project updates, information and draft reports, meeting notices, etc.?*** Interested stakeholders can contact us by phone or e-mail to be placed on our distribution list. They can also visit our project webpage (to be developed)

Approach

Our communications approach includes multiple activities to inform and engage stakeholders throughout the project, and to evaluate the success of our engagement effort. We believe the proposed activities described below will be cost-effective and appropriate considering the level of staff effort required to support this engagement effort and the scope and importance of the Energy Management Plan project.

Four core strategies that will be common to our information, engagement, and evaluation efforts are:

1. Establish and publicize ***an energy management plan project webpage*** to convey information about the project; enable interested stakeholders to submit their questions, comments, and suggestions on-line.
2. Establish ***an e-mail distribution list*** that helps us convey project information and public participation opportunities to stakeholders in a timely and efficient way (through our Constant Contacts service).
3. Include ***informal surveys and feedback opportunities*** as a feature of our project website, public meetings on the project, presentations to stakeholder groups; etc.
4. Establish ***an informal technical advisory committee*** (TAC) to provide high-level technical input throughout the project. This will enable other professionals to share best practices in energy management as well as resources and successful methods they have used. The committee will include, but not be limited to, energy and sustainability managers from local public agencies (several local staff have agreed to participate on the proposed TAC).

The ***information process*** will include a variety of methods for conveying project information to stakeholders, such as:

- a dedicated project webpage;
- e-mails to stakeholders on our distribution list;
- paper mailing(s) to stakeholders (such as newsletters);
- news releases, guest articles in local papers; etc.;
- outreach presentations to interested community groups, including elected officials;
- social media (Twitter; any other social media that OWASA may decide to use in the future); and
- announcements and presentations during televised Board meetings and other community meeting(s).

The ***engagement/dialogue process*** will include opportunities to ask questions, seek information, and provide comments and feedback via a variety of methods, such as:

- participation at meeting(s) of the Board of Directors or its Committee(s);
- e-mail, letter, or fax at any time to the staff and/or Board;
- participation at project-related community outreach meetings;
- face-to-face meetings (either one-on-one or small groups) upon request; and
- feedback forms on the project webpage.

We will strive to provide at least two to four weeks for distribution and review of applicable information before engagement/feedback opportunities at Board and Committee meetings when the project is discussed.

The ***evaluation process*** will include:

- informal surveys of stakeholders (offered on the webpage, at outreach meetings, etc.) to seek their feedback on the information and engagement opportunities we have provided;
- After Action Review by staff; and
- Board of Directors evaluation of the value of the engagement process for the project.

A summary table showing community engagement activities, target audiences, communication methods, etc. is provided on the following page.

SUMMARY TABLE OF COMMUNITY ENGAGEMENT ACTIVITIES, TARGET AUDIENCES, AND METHODS FOR ENERGY PLAN PROJECT

ID	Description	Activity Type	Responsibility	Schedule	Target Audience	Communication Methods/Channels	Resources
1A	Project webpage established to support engagement process	Support	Staff	Feb 2015	Stakeholders	Project webpage on OWASA's website; includes automated features for accessing and downloading project information, submitting comments, questions and suggestions, and providing feedback regarding the engagement process	TBD
1B	Project stakeholder e-mail list established to support engagement process	Support	Staff	Feb 2015	Stakeholders	E-mail distribution through Constant Contacts *(this is proposed to be our primary method for notifying interested stakeholders of the availability of information about the project and opportunities for public input)*	TBD
1C	Technical Advisory Committee established to provide support	Engagement	Staff	Feb 2015	Local Agency Energy and Sustainability Managers	Staff-to-staff invitations to participate; TAC provides initial peer review of project information, technical analysis and recommendations, etc. prior to public release, where practical	TBD
1D	Outreach and engagement through at least two general project meetings with public; meetings with civic groups and other organizations, and presentations to local governing boards	Engagement	Board and Staff	TBD	Stakeholders Including Local Governing Boards	Letter requests to make presentations to local governing boards; presentations by the Board and staff (with consultant support if needed), followed by Q&A; feedback; evaluation	TBD
2	Project introduction - purpose, timetable, opportunities and methods for participation and feedback, etc.	Information	Staff	Mar 2015	Stakeholders	Project webpage; project e-mail distribution; letters to local governments; announcements and invitations at Board meetings, community meetings, and via local media outlets; Twitter messages; local media outlets	TBD
3	Baseline assessment of energy use; information about our energy management accomplishments; consideration of potential goals and objectives	Information	Staff	Mar 2015	Board and Stakeholders	Project webpage; project e-mail distribution; letters to local governments; announcements and invitations at Board meetings, community meetings, and via local media outlets; Twitter messages; local media outlets	TBD
		Engagement	Board and Staff	Mar - May 2015	Stakeholders	NRTS Committee and Board Work Session presentations and discussions; project webpage; project e-mail distribution; social media; electronic and paper mailings; Blue Thumb newsletter; local media outlets; opportunity for public to comment prior to Committee/Board giving direction to staff	TBD
4	Evaluation of alternative management strategies	Information	Staff	Summer 2015	Board and Stakeholders	Project webpage; project e-mail distribution; letters to local governments; announcements and invitations at Board meetings and community meetings, and via Blue Thumb and local media outlets; Twitter messages	TBD
		Engagement	Board and Staff	Summer 2015	Stakeholders	NRTS Committee and Board Work Session presentations and discussions; project webpage; project e-mail distribution; social media; electronic and paper mailings; Blue Thumb newsletter; local media outlets	TBD

SUMMARY TABLE OF COMMUNITY ENGAGEMENT ACTIVITIES, TARGET AUDIENCES, AND METHODS FOR ENERGY PLAN PROJECT

ID	Description	Activity Type	Responsibility	Schedule	Target Audience	Communication Methods/Channels	Resources
5	Draft Plan	Information	Staff	TBD	Board and Stakeholders	Project webpage; project e-mail distribution; letters to local governments; announcements and invitations at Board meetings and community meetings, and via Blue Thumb and local media outlets; Twitter messages	TBD
		Engagement	Board and Staff	TBD	Stakeholders	NRTS Committee and Board Work Session presentations and discussions; project webpage; project e-mail distribution; social media; electronic and paper mailings; Blue Thumb newsletter; local media outlets; opportunity for public to comment prior to Committee/Board giving direction to staff	TBD
6	Release of Final Plan	Information	Staff	TBD	Board and Stakeholders	Project webpage; project e-mail distribution; letters to local governments; announcements and invitations at Board meetings and community meetings, and via Blue Thumb and local media outlets; Twitter messages	TBD
		Engagement	Board and Staff	TBD	Stakeholders	NRTS Committee and Board Work Session presentations and discussions; project webpage; project e-mail distribution; social media; electronic and paper mailings; Blue Thumb newsletter; local media outlets; opportunity for public to comment prior to Committee/Board giving direction to staff	TBD
7	Seek and evaluate feedback regarding the effectiveness of the community engagement process	Measure Effectiveness	Staff	Through-out Project and at Completion	Stakeholders	Informal survey of stakeholders - survey instruments available through the project webpage, distributed through the project e-mail list, or distributed in paper form at public meetings or in-person meetings with staff; publication of the results on project webpage, with distribution through project e-mail list, and report to the Board	TBD
		Measure Effectiveness	Staff and Board	End of Project	Board	Informal survey of Board via e-mail (using Survey Monkey, or paper copy)	TBD
		Measure Effectiveness	Staff	End of Project	Staff and Board	Document findings from staff's After Action Review; communication of results to Board via e-mail; discussion of results with Board if requested	TBD

Orange County
COMMISSION FOR THE ENVIRONMENT

DRAFT Memorandum

To: Orange County Board of Commissioners

From: Orange County Commission for the Environment

Date: June 4, 2015

Subject: 2016 Bond Referendum

The Commission for the Environment (CFE) is concerned about the preliminary decision by the Board of County Commissioners (BOCC) to restrict the planned 2016 bond referendum to funding for school improvements and expansion. In particular, the CFE believes the BOCC should have proceeded with the process discussed at the November 19, 2014 Assembly of Governments meeting, which would have provided an opportunity for the BOCC to hear from the public, relevant County-appointed citizen advisory boards, including the CFE, and representatives of key County departments, such as the Department of Environment, Agriculture, Parks and Recreation, on their areas of expertise and/or concern.

The BOCC's decision-making process would benefit greatly by hearing comments from County residents, advisory boards, and departments on the funding needs facing programs and activities that are essential to the quality of life in the County. No doubt education is important, but equally important are parks and recreation, affordable housing for low-income residents, and services for the county's growing population of seniors, among other needs. For example, if the County could provide $5 to $10 million for park development, it would be possible to develop and open the long-planned Blackwood Park as well as additional recreational facilities in the northern part of the county. By developing Twin Creeks Park located next to Morris Grove Elementary School, the County would provide recreational opportunities for both school children and adults, helping to improve the quality of life for all residents as well as making the county a more attractive area for new businesses that seek well-rounded communities in which to locate their operations.

The CFE urges the Board of County Commissioners to reopen the bond referendum process and provide a full opportunity for public and County staff comment. The CFE would very much appreciate an opportunity to present its views on funding priorities related to parks and open space land conservation to the BOCC.

Thank you for considering our views.

Copies: Bonnie Hammersley, *County Manager*
David Stancil, *Environment, Agriculture, Parks and Recreation Director*

Orange County
Department of Environment, Agriculture, Parks and recreation

Memorandum

To: Commission for the Environment
From: Rich Shaw
Date: June 3, 2015
Subject: Summary of the presentation on Chapel Hill's green building incentives

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At your April 13 meeting the CFE received a presentation on the Town of Chapel Hill's pilot program of providing financial incentives for sustainable design (or "green building") within the Ephesus Church / Fordham Renewal District.

The following is a summary of the presentation and CFE discussion:

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Chapel Hill's Green Building Incentives – John Richardson (Planning Manager for Sustainability) and Jesse Freedman (Energy Management Specialist) presented an overview of the Town of Chapel Hill's pilot program of providing financial incentives for sustainable (or "green building") design. Richardson noted that this pilot program applies only for development within the Ephesus Church / Fordham Renewal District.

Freedman said the Town's objective is to incentivize developers to build high-performance buildings with better energy and water conservation performance than the 75th percentile of similar buildings. He noted that prior to this program the incentive was to build the worst energy and water efficient buildings allowed by law.

Freedman described the Town's process of choosing a green building standard for energy use from among many options, including LEED certification, Energy Star, 2030 Challenge, and others. The Town chose the Energy Star program, which the staff considers a neutral standard. The Town chose the State water performance standard. Freedman said the intent was to create standard that are rigorous and achievable.

Freedman said in this pilot phase the financial incentive for builders is up to a 35% reduction in their development permit fees. He reviewed the benefits of green building versus conventional building in terms of energy use and water consumption. He noted the tendencies for higher rental rates (+ 2% – 17%), greater resale value (+ 5.8% - 35%), higher market value (+ 13.5%), and lower operating expenses (- 30%) for green buildings on average.

Richardson said the rebate could result in a potential total maximum reduction in revenue from permit fees of about $600,000; however that level of activity is highly unlikely. He said there have been only two applicants to date. Richardson said Town staff will try to verify performance measures, likely through periodic field inspections.

Freedman and Richardson responded to questions from CFE members:

O'Connor asked if there were incentives for sustainable design of the outside portions of the buildings, such as green roofs, xeriscaping, and onsite water retention. Richardson said yes, there are standards for the outside as well.

Neal asked if Chapel Hill had looked at examples of like programs in other jurisdictions, such as Catawba County. Richardson said they consulted NC State's DESIRE database for suitable examples and found that Charlotte's program was most effective. The others reported low levels of effectiveness.

Sassaman asked if the Town used other incentives in addition to the permit fee rebate. Richardson said the State has authorized the rebate incentive. For buildings and development outside of the Ephesus Church / Fordham district the Town uses other standards and requirements for approving special use permits.

Sassaman asked if the Town applies these standards to its public buildings. Richardson said the Town has, by ordinance, a LEED Silver minimum for all buildings. For example, the Chapel Hill Library was built to LEED Silver standard.

Neal asked if these standards applied to single-family residential development, and might the Town consider expanding the incentives to other parts of the town. Richardson said it is only intended for commercial and multifamily residential, and said the council has not discussed imposing these standards elsewhere.

Hintz asked how much less the cost of utilities might be for buildings in the Ephesus Church / Fordham district than in other parts of the town. Richardson said it would depend on the building type; the staff has run some calculations.

Richardson said the Town of Chapel Hill will reassess the pilot program at the end of the first year and the staff will work with the town council on making adjustments if needed.

Neal noted the CFE has recommended to the BOCC and the Planning Board that Orange County consider adopting similar incentives for sustainable development, but thus far nothing has resulted from those discussions.

The CFE thanked Richardson and Freedman for their presentation.

ORANGE COUNTY
COMMISSION FOR THE ENVIRONMENT

MEMORANDUM

To: Orange County Planning Board

From: Orange County Commission for the Environment
Renee Price, Chair RP
David Neal, Energy Committee

Date: January 26, 2012

Re: Incentives for Energy Efficient Construction and Renovation in Orange County

The Orange County Commission for the Environment ("CFE") invites the Orange County Planning Board to consider a Low Energy Construction Permitting Incentive ordinance in 2012. N. C. Gen. Stat.§ 153A-340 allows counties to charge "reduced building permit fees or provide partial rebates of building permit fees for buildings" that meet or exceed recognized energy efficient design and construction principals. Members of CFE are available to work with the Planning Board and county staff to review similar ordinances enacted pursuant to this statute (for example, from Catawba County) and from around the country, then to draft an ordinance for consideration by the Orange County Board of Commissioners.

Neither the current level of carbon in the atmosphere nor projected increases in greenhouse gas emissions are sustainable. Costly and potentially irreversible adverse climate effects are likely unless mitigation measures – such as increased energy efficiency investments and decreased fossil fuel consumption – are taken in the near future. In Orange County, we cannot wait for policy changes at the state and federal level to encourage increased energy efficiency. Steps taken now to improve efficiency and decrease or eliminate our reliance on fossil fuels for energy production will help lock-in reduced energy use for years to come.

Since 2003, Orange County has been a member of Local Governments for Sustainability, an international membership association committed to a sustainable future. Creating incentives for energy efficiency in construction is consistent with Orange County's commitment to a sustainable future. The 2005 Greenhouse Gas Inventory revealed that nearly fifty percent of greenhouse gas emissions in Orange County come from residential and commercial buildings (consistent with national data[1]). Orange County, Chapel Hill, and Carrboro, in conjunction with Hillsborough, are currently working on a revised inventory of greenhouse gas emissions and attempting to identify reduction measures.

Making use of the authority granted by the General Assembly to incentivize energy efficient construction is a straightforward way to reduce greenhouse gas emissions at the county level for the long term. CFE would like to explore crafting an incentive program that would be attractive to lower-income residents, for whom savings on utility bills would provide a particularly important benefit.

[1] From Architecture 2030, buildings account for 48.7% of total energy consumption in the United States (available at http://architecture2030.org/the_problem/buildings_problem_why).

To give an example of how such an energy efficient construction incentive might function, below is a summary of the Catawba County incentives enacted pursuant to N. C. Gen. Stat.§ 153A-340:

> Catawba County is providing incentives to encourage the construction of sustainably built homes and commercial buildings. Rebates on permit fees and plan reviews are available for certain qualifying structures and renewable energy projects. Buildings designed and constructed in accordance with the US Green Building Council's Leadership in Energy and Environmental Design (LEED), NC HealthyBuilt Homes, Energy Star, or the National Association of Home Builders' Model Green Home Building Guidelines can receive a 25% blanket permit fee rebate, not to exceed $500. Catawba County will also rebate 50% of fees related to plan review or express plan review for commercial buildings seeking LEED certification.
>
> Additionally, existing one and two family homes and commercial buildings can receive a 50% rebate on the permitting fees associated with the installation of geothermal heat pumps, photovoltaic (PV) systems, solar water heating systems, and gray/rain water collection for flushing fixtures. Regular fees must be paid in full at time of plan review or permit issuance. Fee rebates will be refunded upon project completion and certification by third party inspection agency.[2]

Rebates or reduced fees for efficient construction could be structured on a sliding scale, with zero energy construction receiving the most robust incentives. Given the current level of permitting fees, rebates or reductions in Orange County could be designed here that could provide a substantial incentive for efficient construction.

The CFE looks forward to working with the Planning Board on crafting an efficiency incentive program for consideration by the Orange County Board of Commissioners. We would appreciate the opportunity to have this item included on an upcoming agenda and to work with you on completing a draft proposal in the next few months.

cc: David Stancil
Craig Benedict

[2] From the Database of State Incentives for Renewable Energy & Efficiency (available at <http://www.dsireusa.org/incentives/incentive.cfm?Incentive_Code=NC87F&re=1&ee=1>)

Orange County
COMMISSION FOR THE ENVIRONMENT

Memorandum

To: Orange County Board of County Commissioners
Orange County Planning Board

From: Orange County Commission for the Environment

Date: June 5, 2015

Subject: Proposed amendments to Orange County's impervious surface rules

The Commission for the Environment (CFE) has considered the draft amendments to Orange County's impervious surface limitations for development in water supply watersheds. Michael Harvey and Craig Benedict provided an excellent overview of the proposed revisions to the Unified Development Ordinance at the CFE's May 11 meeting, and we thank you for the opportunity to provide comments.

Although the amendment is not intended or expected to increase runoff from developed properties, whether it be pervious or impervious, it is the finding of the CFE that the cumulative effects from a larger developed portion of the watershed could have adverse environmental impacts. If only a handful of landowners chose to pursue this option then the effects would be minimal. However, with widespread use there could be an incremental loss of wildlife habitat and a decrease in carbon sequestration as a result of the loss of wooded areas. And although the volume or quantity of storm water runoff may not increase as a result of the proposed changes, the quality of water leaving a site could worsen.

The CFE does not object to the proposed amendment, but the CFE cannot endorse a rule change that lessens protection of the natural environment. If the County adopts the proposed amendment and allows for the installation of infiltration BMPs to offset additional impervious area, then the CFE would agree with the proposed requirements for engineered designs, recorded maintenance agreements, annual inspections, and a viable enforcement mechanism. The County should also consider requiring a performance bond and the renewal of the permit after some reasonable period of time.

Again, the CFE appreciates the opportunity to comment on this proposed change to the Unified Development Ordinance.

Copies: Bonnie Hammersley, *County Manager*
David Stancil, *Environment, Agriculture, Parks and Recreation Director*

The Herald-Sun

Herbicide applied in Eno River basin

May 29, 2015

RALEIGH —
To combat a rapidly spreading hydrilla infestation in the Eno River, the Eno River Hydrilla Management Task Force has begun applying an EPA-approved herbicide in the river from Lawrence Road to Roxboro Road in Orange and Durham counties.

The application began Friday and runs through the end of September.

SePRO Corp. is handling the application of fluridone, in a 16-mile target zone of the river. SePRO Corporation will apply the herbicide in a concentration well within the limits approved by the EPA — a concentration that is both safe for swimmers and boaters and non-toxic to fish and wildlife.

The herbicide treatment project is part of a two-year pilot program to reduce the presence of hydrilla in the Eno River.

Hydrilla is a highly destructive, nonnative aquatic plant from Asia that creates nearly impenetrable mats of stems and leaves of the surface of lakes, rivers and other waterways. It crowds out native vegetation, reduces recreational opportunities, and ultimately can harm fish and other aquatic organisms, as well as bird species. The plant also can clog intakes in rivers and reservoirs that are used for drinking water supplies and irrigation.

While task force members don't expect any significant injury to non-target plants within or adjacent to the treatment areas, they recommend that homeowners with properties adjacent to the river not use treated water for irrigation without consulting a task force member first.

The application of fluridone in the Eno River will be the first time the herbicide has been used in a river in North Carolina to combat hydrilla, although it has been used successfully in Lake Gaston, Lake Tillery, Tar River Reservoir and Lake Waccamaw to control hydrilla.

Hydrilla was first discovered in the Eno River basin in the early 1990s in Lake Orange, which is located upstream of Hillsborough. In 2009, biologists confirmed hydrilla in another upstream reservoir, West Fork Eno Reservoir. The N.C. Division of Water Resources is actively managing hydrilla in both upstream reservoirs.

Members of the task force conducted a survey in fall 2013 and detected hydrilla at different densities in 25 miles of the river. The most infested area was about 15 miles of river from the N.C. Highway 70 Bridge in Hillsborough to Guess Road in Durham.

"Hydrilla has significantly affected recreational opportunities in the Eno River," said Mark Fowlkes, the Piedmont aquatic habitat coordinator with the N.C. Wildlife Resources Commission. "Specifically, when hydrilla has reached its full growth for the year, it is almost impossible to fish, kayak or wade in the river."

Biologists say because hydrilla grows so quickly and can form new plants from tiny fragments, it could get established in Falls Lake and become a serious nuisance in terms of recreation and water supply.

For more information, email rob.emens@ncdenr.gov or call 919-707-9012.

EV fast charger installed in Hillsborough

By Amanda VanDerBroek, News of Orange staff writer, a.vanderbroek@newsoforange.com | Posted: Sunday, May 17, 2015 7:00 am

There's a new electric vehicle station in town.

On Friday, April 25, county officials along with representatives from the N.C. Clean Energy Technology Center gathered to dedicate a new fast charger for electric vehicles, the 12th of its kind in the state.

"There are more than 200 Level II [charging] stations; you may be familiar with those already," Brennan Bouma, Orange County sustainability coordinator, said. "But what sets this station apart is its convenience. This is really more like the standard experience of filling up your car. A Level II station might take four to six hours to give you the same charge that this will deliver in 30 minutes. This is a drastic step forward, and it really helps to fill a hole in the infrastructure as these are deployed."

The charger, located in the Justice Facility parking area next to the Farmers Market Pavillion at 106 E. Margaret Lane, is the result of a public-private partnership involving the county, N.C. Clean Energy Technology Center and BrightField Transportation Solutions.

Fast charger

Commissioner Penny Rich, center, and, from left, Anne Tazewell, Brennan Bouma, Alan Dorman, County Manager Bonnie Hammersley and Jeff Thompson cut the ribbon on a fast charger Friday, April 25.

"This is one of 10 going in across the state in this wave of deployment, and this wave is going to be organized by BrightField Transportation Solutions," Bouma said. "A partnership between BrightField and the N.C. Clean Energy Technology Center, they are deploying these across the state.

"… The county was able to receive these stations at no cost through a licensing agreement. We're actually leasing this space to BrightField to operate this station over the next nine years."

In 2012, the county installed 16 of the Level II charging stations, which charge much slower than the new fast charger and are

provided free of cost to residents.

However, the fast charger will have a $12 per hour fee attached to it.

“As we’ve mentioned before, you can get a lot of charging with a charger this large within an hour’s time,” Bouma said. “You could probably charge two vehicles for that. I think it’s probably equivalent to about $2 per gallon if you compare it on a mile per mile basis for gasoline.”

Commissioner Penny Rich said she was excited about the new fast charger, one of two being installed in the county, and will help connect people with stations.

“That’s what most people were concerned about was that most people didn’t know where the stations were and how they were going to get from point A to point B without knowing where those stations are,” she said. “So it’s really great that we’re getting more and more stations in.”

Bouma said the infrastructure currently on the site is only phase I of the project.

“Eventually it’s going to be covered by a solar canopy, which will deliver about 19 kilowatts of solar power that will eventually completely offset the electrons that are being taking out of the grid by the charger station and by the vehicles and be put back into the grid for clean, renewable energy,” he said. “There will also be two Level II charging stations on either side.”

Stan Cross, co-founder of BrightField Transportation Solutions, said in a statement that the company is currently building a network of charging stations and deploying the solar capacity needed to enable North Carolinians to drive an EV from the mountains to the sea on sunshine.

“We believe that the electric vehicle gives America the opportunity to move beyond petroleum and to turn to renewable energy to power the nation’s light duty fleet,” he said in a statement. “[It’s] a transformation that will increase national security, create quality jobs, reduce the cost of transportation and enable communities to retain their fuel dollars that are siphoned away, often overseas.”

Anne Tazewell, transportation program manager at the N.C. Clean Energy Technology Center, said she is enthused about the project and the other clean energy efforts going on in the county.

“This is my first ribbon cutting, and I’m pretty excited because we’ve distributed over the past two and half years more than $4.4 million on clean energy technology projects,” she said. “… This is one of close to 50 projects that we’re supporting, actually we’re

supporting.

Tazewell said there are two other projects the agency is working on with Orange County, including one with technology provider Stealth Power.

“There are going to be seven auxiliary power units that are going to really reduce the diesel use for your EMS ambulances,” she said. “So they all don’t need to idle so much. It’s estimated, if all goes according to plan, as much as 900 to 1,400 gallons of diesel will be saved annually per vehicle. So there’s a lot of potential air quality benefits using the auxiliary power units.”

Tazewell also announced that Orange County was just approved for funding to convert 19 sheriffs’ cars emergency and Orange Public Transit vehicles from gasoline to propane.

“Those vehicles were selected because they were the highest mileage, most fuel using,” she said. “In addition to reducing emissions, Orange County is going to save some money doing this. We’re pretty excited. We hope this is the first of many more propane conversions.”

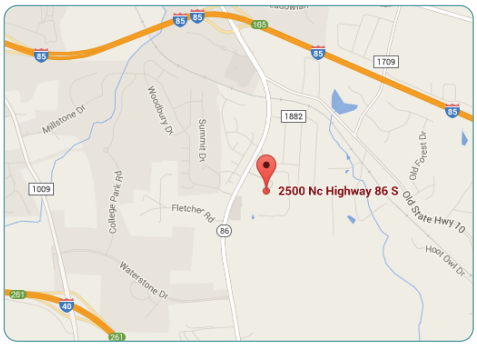
Electric Vehicle WORKSHOP

Since plug-in electric vehicles were introduced in 2011, over 300,000 have been purchased across the United States. These vehicles have the ability to greatly impact local communities, businesses and utilities. On June 18, 2015, Piedmont EMC and Advanced Energy will host an electric vehicle workshop and test drive event for attendees to learn how electric vehicles work, the benefits that come from driving one, and the impacts of having electric vehicles in your community.

LOCATION & DATE

June 18, 2015
9:00am - 11:30am

Piedmont EMC
2500 NC Highway 86 South
Hillsborough, NC 27278



AGENDA

9:00 - 9:30 am	Breakfast & Networking
9:30 - 11:00 am	Driving Electric Presentation & Panel Discussion
11:00 - 11:30 am	Electric Vehicle Showcase & Test Drive

Piedmont Electric Membership Corporation
Your Local Touchstone Energy® Cooperative

advanced energy

For more information contact Kristi Brodd
kbrodd@advancedenergy.org or 919-857-9019

CLICK HERE TO RSVP

This is the second in a series of articles by the Orange County Commission for the Environment (CFE). Each article highlights an environmental issue of interest to the residents of Orange County. The CFE is a volunteer advisory board to the Board of County Commissioners. Additional information can be found in the Orange County State of the Environment 2014 report at http://www.orangecountync.gov/departments/deapr/commission_for_the_environment.php

* * * * * * * * * * *

The native butterfly weed attracts bees, butterflies and birds (Photo: Orange County DEAPR)

DRAFT Why Native Plants?

Orange County Commission for the Environment

For most people, plants in our landscapes serve one purpose: beauty. But in reality, plants are critically important for food webs and life cycles. Author Doug Tallamy explains, “almost all North American birds other than seabirds — 96% — feed their young with insects.” These insects require host plants on which to lay their eggs, plants with which they have evolved over millennia. When we trade native plants (those species that have evolved with surrounding plants and animals, each influencing the evolution of the other) for species from other places, we hinder the ability of these insects to reproduce. A clear example can be seen in a comparison of the flowering dogwood (*Cornus florida*), which is native to Orange County, and the kousa dogwood (*Cornus kousa*), which is native to Korea, China, and Japan. The flowering dogwood supports 117 species of moth and butterfly larvae; the kousa dogwood supports *zero*.

Some argue that they frequently observe insects on their non-native plants. For instance, butterflies can often be seen drinking nectar from the flowers of the non-native butterfly bush (*Buddleia davidii*), leading people to assume they have chosen a helpful species for their yard. But no native species of butterfly will use the butterfly bush as a host plant on which to lay its eggs.

Native plants are also important to our economy. Insects pollinate many of the foods we enjoy eating. As of 2009, pollination of U.S. crops by native insects was valued at more than nine billion dollars. Some individual species, such as the monarch butterfly, have an estimated economic value in the billions of dollars. These insects will cease to exist without the correct host plants on which to lay their eggs. In fact, researchers estimate that the monarch butterfly population has declined by 80% over the past 21 years. The decline is attributed in large part to the disappearance of the milkweed plants on which the species relies, resulting in the U.S. Fish and Wildlife Service considering the monarch butterfly for protection under the Endangered Species Act (ESA).

In contrast to the high economic value of natives, non-native species can be economically and environmentally devastating; such species are categorized as invasive by the federal government. Nearly half of the species listed for protection under the ESA are in trouble due at least in part to invasive species. Far from the economic good of natives, invasive species are estimated to cost the U.S. more than 120 billion dollars in damages annually. It can take decades to determine that a species is invasive, and such a finding does not automatically lead states to ban the sale of the species.

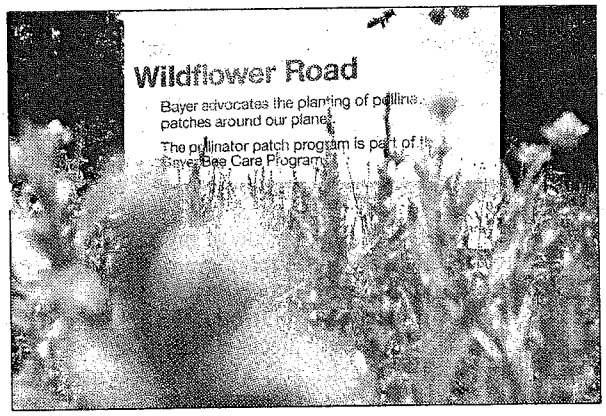
While switching to native species from non-native or invasive ones may seem difficult, a number of resources exist to help residents figure out which native plants will thrive in your yard or garden. The North Carolina Botanical Garden (http://ncbg.unc.edu/) offers plant lists, classes, tours, family and youth programs, and knowledgeable people to help you in your hunt (not to mention a beautiful garden to stroll through to see spectacular natives year-round).

Plant lists and local nurseries that specialize in species native to our region can also be found through the North Carolina Native Plant Society (http://www.ncwildflower.org/). You can also learn more about pollinators and native plants at Carrboro's first annual Pollinator Day at the farmer's market on June 13 (http://www.townofcarrboro.org/988/Pollinator-Celebration).

May 23, 2015
News + Observer

WHAT YOU CAN DO TO protect BEES

YOU CAN HELP SAVE THESE VALUABLE POLLINATORS



Backyard Wildlife
Renee Elder

As an experienced wildlife gardener, I was skeptical when my eyes first landed on a Bayer CropScience media alert announcing the one-year anniversary of its North American Bee Care Center in Research Triangle Park.

What little I knew about Bayer – the company that I once associated with children's aspirin – included the fact that its CropScience division manufactures pesticides, some containing neonicotinoid, a substance that has been suspected of harming bees and recently was banned from Lowe's home improvement stores.

Langer

So I called Rebecca Langer, a microbiologist who serves as bee manager for the $12 million Bayer Bee Center that opened at RTP in spring 2014. Bayer scientists have been studying bee health and husbandry practices since the early 1990s. Its original bee research facility is in Monheim, Germany.

Inside
5 ways to help bees thrive, **8C**

"Bayer has a longstanding interest in bees, because it's part of our business," said Langer, who cares for 13 hives containing approximately 60,000 bees each at the RTP site.

Although the company's Crop Protection/Seeds division manufactures pesticides, herbicides and other agricultural chemicals, it also develops seed strains aimed at improving yields of crops such as cotton, canola and wheat.

"We, as much as everyone else, have a need for bees," Langer explains. "We test all of our products for their effect on bees."

SEE **BEES,** PAGE 8C

070005

BEES

CONTINUED FROM PAGE 1C

Bees provide a crucial link in the natural world. Bees pollinate 75 percent of our vegetables, fruits and nuts. Without pollination by bees, many crops could become extinct.

According to "Bee Basics," a publication of the U.S. Department of Agriculture Forest Service and the Pollinator Partnership, about 4,000 species of bees live in the United States, but no honeybees existed here until European settlers brought them over in hives.

Bees with names like the blueberry bee and squash bee pollinate native plants, with a single hardworking blueberry bee capable of visiting 50,000 blueberry flowers and generating 6,000 blueberries during its six weeks of life.

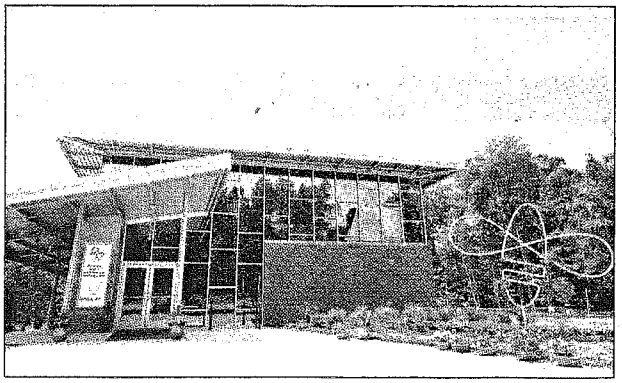
Both honey bees and native bee populations have been shrinking in recent years, and President Barack Obama is seeking $82 million in his 2016 budget to study the reasons for the losses, particularly the possibility that neonicotinoid or other pesticides are major culprits.

Langer said similar research has been conducted at Bayer's Bee Centers for quite some time. She said bee scientists have not been able to link pesticide, when used exactly as intended, to major drops in bee populations.

One of the most serious threats identified so far is the varroa mite, which carries viruses and bacteria that are deadly to honeybees. Once the mite attaches to a bee like a tick and enters a hive, every bee in that community will likely become infected and die.

Originating in Asia, where bees developed a natural resistance to the pathogens, varroa mites made their way to Europe in the 1970s and to North America in the 1980s. They wipe out millions of Western honeybees annually.

Another deadly phenomenon affecting honeybees is colony collapse disorder, in which entire colonies of worker bees disappear from the hive, leaving behind a queen and immature bees that cannot sustain themselves.



COREY LOWENSTEIN - NEWS & OBSERVER FILE PHOTO

Bayer scientists study bee health at the Bayer North American Bee Care Center in Research Triangle Park.

Do your part

There are plenty of ways wildlife gardeners can give bee health a boost:

- Invest in native flowering plants that provide food for bees. On a single foraging trip, a bee will stop at 20 to 40 different flowers.
- Include plants with flowers of different sizes in order to accommodate big bumblebees, as well as more petite models. Even pots of flowers on the porch will help provide valuable habitat.
- Include flowers with a variety of colors, scents and shapes.
- Clump flowers together to make it easier for bees to jump from plant to plant.
- Don't apply pesticides and other chemicals between about 9 a.m. and 4 p.m., since that's when bees are most likely to be outside the hive foraging for food.

For more natural pest-control and gardening tips ,check out the Greenhouse Catalog website at greenhousecatalog.com/natural-gardening.

For a fun way to learn more about bees and the plants that sustain them, try the Pollinator Partnership's Bee Smart application for Android and iPhone. It's available at pollinator.org. After downloading the app, just type in your ZIP code for a list of suggested plants to grow in your area.

The cause of the collapse disorder is still unknown, although factors suspected include various viruses and fungi, genetic abnormalities, and loss of natural habitat that disrupts the bees' life cycle.

Water shortages, unusual weather patterns and chemical pest control exposure are also of concern, according to the U.S. Environmental Agency's pollinator protection site (http://1.usa.gov/1ei7zxF).

Another possible factor is the stress that honeybees are under from being transported to multiple locations for pollination purposes, Langer said.

Honeybees, she explained, are the most heavily traveled livestock in the United States. For example, California's almond crop requires 1.7 million colonies of bees during pollination season in mid-February – that's about half of all the bee colonies in the U.S.

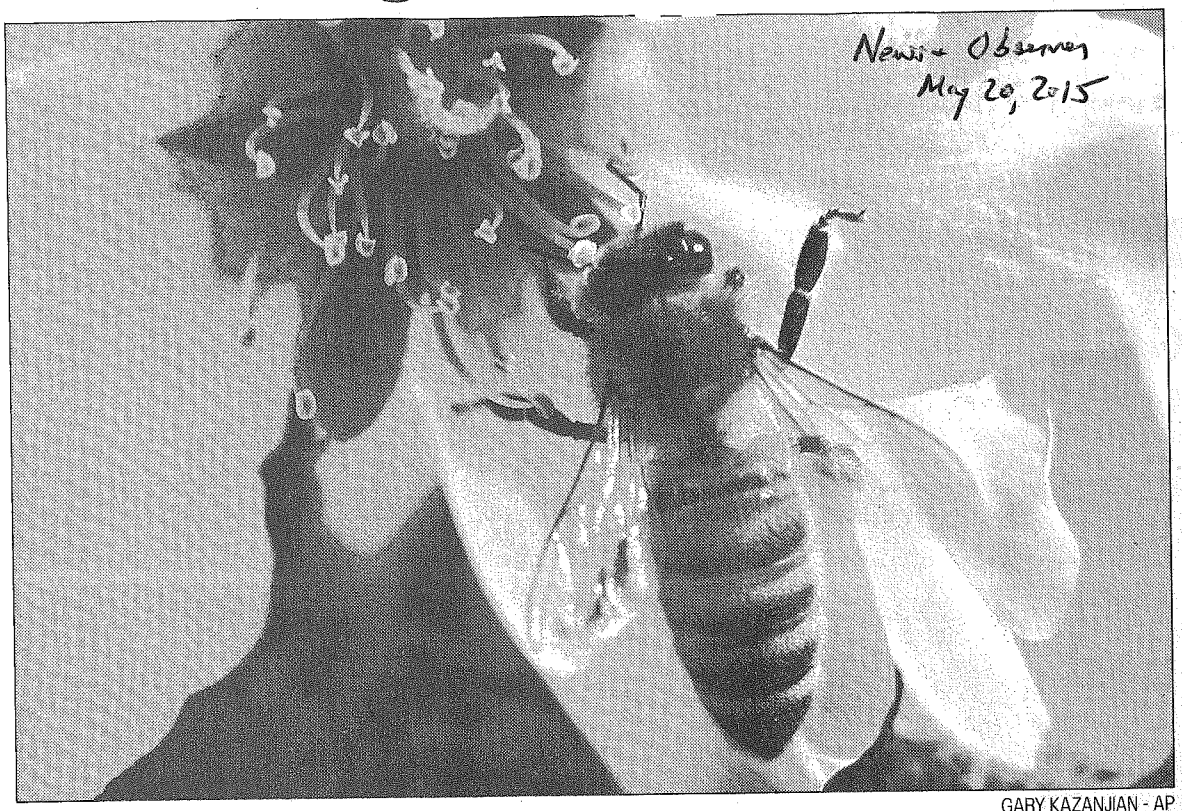
Native bees are rarely affected by the verroa mite, but have suffered from a significant loss of local plant species. Pesticide misuse, climate change and proliferation of nonnative invasive species are also considered harmful to native bees.

Langer agrees that pesticides may harm bees and other insects if used incorrectly.

"It's critical to read the label – not only for the proper way to use pest control products but also how often to apply them," she said. "And it's important not to apply when bees are around or the flowers are in bloom that attract bees."

Although the jury may be out on whether safe application of pesticides damages bees and bee colonies, I avoid using chemicals on my plants and lawn whenever possible. I believe that a gardener who is trying to attract wildlife has an extra obligation to protect creatures coming to the yard.

Saving America's bees



News + Observer
May 20, 2015

GARY KAZANJIAN - AP

Towns that participate in the "Bee City USA" program are asked to designate public spaces as pollinator gardens with signs to educate the public.

Scientists praise the Obama administration's broad strategy to rescue important pollinators

By Seth Borenstein
Associated Press

WASHINGTON The Obama administration hopes to save the bees by feeding them better.

A new federal plan is intended to reverse America's declining honeybee and monarch butterfly populations by making millions of acres of federal land more bee-friendly, spending millions of dollars more on research and considering the use of fewer pesticides.

While putting different type of landscapes along highways, federal housing projects and elsewhere may not sound like much in terms of action, several bee scientists said that this a huge move. They say it may help pollinators that are starving because so much of the American landscape has been converted to lawns and corn that don't provide foraging areas for bees.

"This is the first time I've seen addressed the issue that there's nothing for pollinators to eat," said University of Illinois entomologist May Berenbaum, who buttonholed President Barack Obama about bees when she received her National Medal of Science award last November. "I think it's brilliant."

Environmental activists who wanted a ban on a much-criticized class of pesticide said the Obama administration's bee strategy falls way short of what's needed to save the hives.

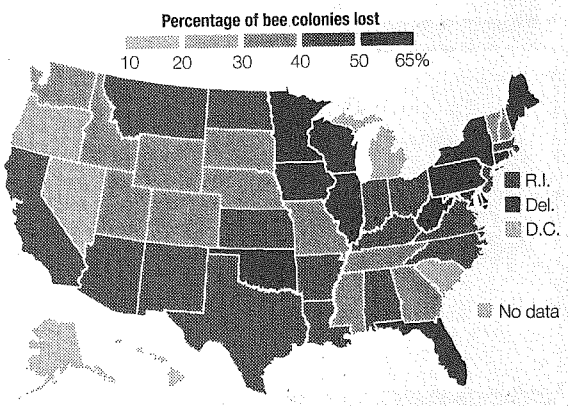
Scientists say bees – crucial to pollinate many crops – have been hurt by a combination of declining nutrition, mites, disease and pesticides. The federal plan is an "all hands on deck" strategy that calls on everyone from federal bureaucrats to citizens to do what they can to save bees, which provide more than $15 billion in value to the U.S. economy, according to White House science adviser John Holdren.

"Pollinators are struggling," Holdren said in a blog post, citing a new federal survey that found beekeepers lost more than 40 percent of their colonies last year, although they later recovered by dividing surviving hives. He also said the number of monarch butterflies that spend the winter in Mexico's forests is down by 90 percent or more over the past two decades, so the U.S. government is working with Mexico to expand monarch habitat in the southern part of that country.

The plan calls for restoring 7 million acres of bee habitat in the next five years. Numerous federal agencies will have to find ways to grow plants on federal lands that are more varied and better for bees to eat. Scientists worry that large land tracts that grow only one crop have hurt bee nutrition.

Big losses for beekeepers

A federal survey finds that beekeepers in the U.S. have lost more than 40 percent of honeybee colonies since April 2014.



SOURCES: Apiary Inspectors of America; Bee Informed Partnership AP

What's Killing Our Birds and Bees?

By Richard J. Dolesh

An emerging conservation threat is having a profoundly negative effect on the nation's most important pollinators, and by extension, the birds, amphibians and other wildlife that live in their habitat areas. This threat comes from the expanding use of the most widely used insecticides, the neonicotinoids.

Despite the growing body of evidence confirming their toxicity to beneficial bees and birds that are found in agricultural habitat areas, this group of pesticides has rocketed to the top of the list for sales not just in the United States, but globally as well. The neonicotinoid insecticides now account for more than one quarter of the entire global market, and the prevalence of their use is growing.

"Neo-nics," as they are sometimes called, have been around a relatively short time — only since the 1990s. However, they were the first new major class of insecticides developed in the past 50 years, and they replaced classes of insecticides such as the organophosphates and carbamates that were known to have serious human and environmental health impacts and which were implicated in the killing of songbirds, the decline of eagles, osprey and hawks, and the prevalence of several neurological disorders in humans.

Nicotine has long been known as a substance possessing insecticidal properties, and it has also been shown to have less toxicity to mammals than it does to insects. However, early formulations of insecticides containing nicotine compounds, or nicotinoids, were unsuccessful for a variety of reasons. It was not until breakthroughs in the 1980s that new formulations known as the neonicotinoids were developed and then widely produced and marketed. They now account for fully 80 percent of all seed treatments as well as more than 25 percent of all other insecticides.

A Cause for Concern

Despite the popularity and effectiveness of neonicotinoid insecticides, there are serious questions regarding their impacts, particularly their long-term persistence in the environment, their impact on aquatic systems in which effects are magnified by surface runoff, and "their cumulative and largely irreversible mode of action in invertebrates," as noted in a 2013 report by the American Bird

Conservancy. All of these factors, and the growing belief that the neonicotinoids are implicated in Colony Collapse Disorder (CCD) in honeybees, have led to urgent calls for action by national environmental and conservation organizations such the Center for Food Safety, the Center for Environmental Health, the American Bird Conservancy and beekeeper groups nationwide.

A coalition of groups filed an emergency petition with the Environmental Protection Agency (EPA) to suspend the use of one of the neonics, clothianidin, which is believed to kill birds as well as beneficial bees, but it was denied by the EPA. Lawsuits have been filed, and in 2013, Reps. John Conyers and Earl Blumenauer introduced the "Saving America's Pollinators Act," H.R. 2692, but it failed to make it out of committee in the House of Representatives. This bill would require the EPA to suspend the registration of neonicotinoids, conduct a review and do field studies, and for the EPA and the Department of the Interior to monitor the adverse impacts on birds, bats, bees and other beneficial insects. The European Union, by contrast, recently adopted a two-year suspension of the use of neonicotinoids while studies to determine impacts on native bees and other wildlife species are completed.

The Impacts to Natural Resources and Wildlife

The effects of neonicotinoids on bees are becoming more well-documented. What is known is that the neonics are systemically absorbed into plant tissue and can be present as residues in leaves, flowers and pollen. Furthermore, neo-nics can be found in plant tissues and soils up to six months after application, and residue concentrations can reach lethal levels in some plants for some species. They are particularly deadly to honeybees and bumblebees as well as a number of butterfly species. Most troubling is that some manufacturers' recommended application rates may cause consumers to apply concentrations at up to 100 times those used in agricultural applications without realizing the impact the product will have on bees or other pollinating insects.

Neo-nics' persistence in the environment is causing researchers to take a closer look at the effects on aquatic ecosystems particularly, and on birds generally. It is known that one kernel of corn treated with one type of neonicotinoid is enough to kill a songbird if ingested. Amphibians appear to be hard-hit as well, as they take the brunt of concentrated residues contained in surface runoff into ponds, wetlands and streams. In addition, emerging evidence shows that the registration of the neonicotinoids did not seem to take into full consideration the impacts on the reproductive cycles of birds and other sublethal impacts. Studies have shown birds that consume one-tenth of an affected seed per day during egg-laying season may suffer negative impacts to reproduction. Seed treatments seem to have the largest effect on birds because there is inevitably some percentage of spilled seed or some portion of the crop that is not fully covered by soil.

A Course of Action for Parks

Pollinators are important for parks, and parks are vital to pollinators. Park and recreation agencies should make every effort to learn more about this class of insecticides and to assess the potential benefits and hazards of applying neonicotinoid insecticides in parks — on golf courses, in horticultural displays, to agricultural areas and in any other areas where pest management is practiced, with particular care to the potential effects on bees, songbirds and aquatic organisms.

At a minimum, certified applicators and managers who have responsibility for directing other staff in application of insecticides should become aware of the potential short-term and long-term dangers of neonicotinoid insecticides. Further, even if agencies are practicing Integrated Pest Management (IPM) strategies, it is important to take into consideration that new pre-emptive application strategies that call for applying insecticides to turf or as seed treatments are taking precedence over IPM methods. Such strategies call for applying pesticides in advance of any specific evidence of insect damage, rather than selectively and in response to damage. With neonicotinoids, this practice can cause long-term unintended harm to bees and other pollinators as well as damage to aquatic ecosystems. Parks need to be protectors of our pollinators, and better knowledge about the insecticides we use will help accomplish that goal.

Richard J. Dolesh is NRPA's Vice President of Conservation and Parks (rdolesh@nrpa.org).

Resources

For more information about the potential conservation impacts of neonicotinoids in parks, and to assess hazards and risks, visit the Xerces Society at www.xerces.org/neonicotinoids-and-bees and the American Bird Conservancy at www.abcbirds.org/abcprograms/policy/toxins/Neonic_FINAL.pdf.

Fracking stalled by false starts

Sunday
May 24, 2015
News + Observer

Wildcatters interested in N.C., but prices fell

By John Murawski
jmurawski@newsobserver.com

Wildcatters are having a hard time making a go of energy exploration in North Carolina.

Since the state began accepting permit applications for fracking in mid-March, none have been filed, and there is little visible sign of any hydraulic fracturing activity in the state. A judge's decision this month to temporarily halt all drilling permits for fracking in North Carolina adds another setback for energy exploration.

Legislators pushed through an energy bill last year expecting the state to see its first shale gas wells in 2015 and join Pennsylvania and Ohio in attracting the jobs that come with fracking. Instead, depressed energy prices worldwide and uncertainty over the amount of shale gas here have made the state unappealing to all but small, independent operators.

So far, of the two groups that have expressed interest in drilling here, one ceased operations last year before conducting any testing. And the second unraveled this year, leaving unpaid fees and estranged business associates, according to draft business plans and private emails provided by one of those involved in the effort, Mark Rabin, a Fayetteville energy broker and the son of state Sen. Ronald Rabin. The Republican senator represents part of Johnston and all of Harnett and Lee counties; Lee is considered to be the epicenter of future fracking activity.

The documents provided by Mark Rabin offer a glimpse at the activities of wildcatters, the moniker used in the oil-and-gas industry for prospectors who operate on thin margins. The emails chronicle an initial wave of giddy excitement, ending in mutual recriminations. They also highlight the problems in raising funding for such risky ventures and underscore the concern of fracking opponents who worry about the lack of technical proficiency and safety records of smaller operators.

SEE **FRACKING,** PAGE 8A

The story so far...

2008: N.C. Geological Survey publishes evidence of natural gas trapped in the state's Triassic-era shale rock formations.

2012: Energy legislation passes over Gov. Bev Perdue's veto. It calls for creating fracking regulations and sets a moratorium until the rules are adopted. Mining and Energy Commission starts meeting to develop the safety rules.

2014: New law eases the moratorium and lets the state's future fracking rules go into effect without a legislative vote.

March 17: The fracking moratorium ends, and safety rules go into effect.

May 6: The moratorium is reinstated when a Wake County judge halts the approval of fracking permits until the N.C. Supreme Court rules on a related legal matter.

FRACKING

CONTINUED FROM PAGE 1A

"The wildcatter typically has less resources to do a good job, and an under-resourced operator is at a greater risk for failure," said Dustin Chicurel-Bayard, spokesman for the Sierra Club's North Carolina chapter. "It turns into a matter of accountability – of making sure that any environmental damage can be fixed and the people responsible can be held accountable."

Investors hard to find

The group Rabin was working with had planned to incorporate as Energy Security but never reached that stage, failing to attract investors.

Last year, another company also ran aground. Triassic Energy Resources, a local subsidiary of Dallas-based Industry Petroleum, was registered in the state and had advanced farther along than Energy Security. Triassic was on the verge of beginning seismic testing of the state's geology in 2013, according to testimony to state legislators by James Womack, then chairman of the N.C. Mining and Energy Commission.

The company had hired two lobbyists in North Carolina: McGuire Woods lawyer D. Bowen Heath, whose long roster of clients included Halliburton, Honeywell International and Koch Companies; and Chris Emanuel, a former political director and campaign operative for Gov. Pat McCrory.

Triassic's CEO, Phil Barnett, did not return phone calls and emails.

By contrast, there is no public record of Energy Security here, and the venture likely would remain unknown if not for Rabin. He said he dedicated five months to network and broker deals here, and then "everyone ran the other way."

Rabin, who proudly calls himself a wildcatter, is the founder of Apostle Energy, a one-man company that has a mailing address in Fayetteville and was incorporated last year in El Paso, Texas.

Rabin, 56, is fond of evoking the romance of the derrick, drill pad and "Christmas tree," a term used to describe the drilling equipment on the surface.

"There's nothing more beautiful than driving out to a rig in the middle of the night in South Texas, a hundred miles from the Mexican border, and seeing the Christmas tree lit up," said Rabin, who lives in Fayetteville. "And you bring some beers out there and relax with the guys, and you see people working and making great money."

Early enthusiasm

Rabin took an interest in developing North Carolina last fall, and contacted Womack for references. Womack pointed him to Dan Fisher, a Salisbury real estate developer who is a corridor and property manager in the Rail Division of the N.C. Department of Transportation. Fisher already had energy contacts: He's been conferring for several years with Washington, D.C., lawyer Bill Brack, who had his own firm, Energy Security. Brack's firm was envisioned as the parent company of the North Carolina subsidiary bearing the same name.

Fisher was also working informally with J. Daniel Butler, a Southern Pines lumberman and real estate investor who owns more than 3,200 acres of drilling rights in Lee County. As the county's single largest owner of "mineral rights," which he acquired decades ago, Butler has the legal right to drill for natural gas deep under the surface of properties that are owned by others.

By January, Rabin completed this loose association and began participating in an electronic exchange of business plans and emails.

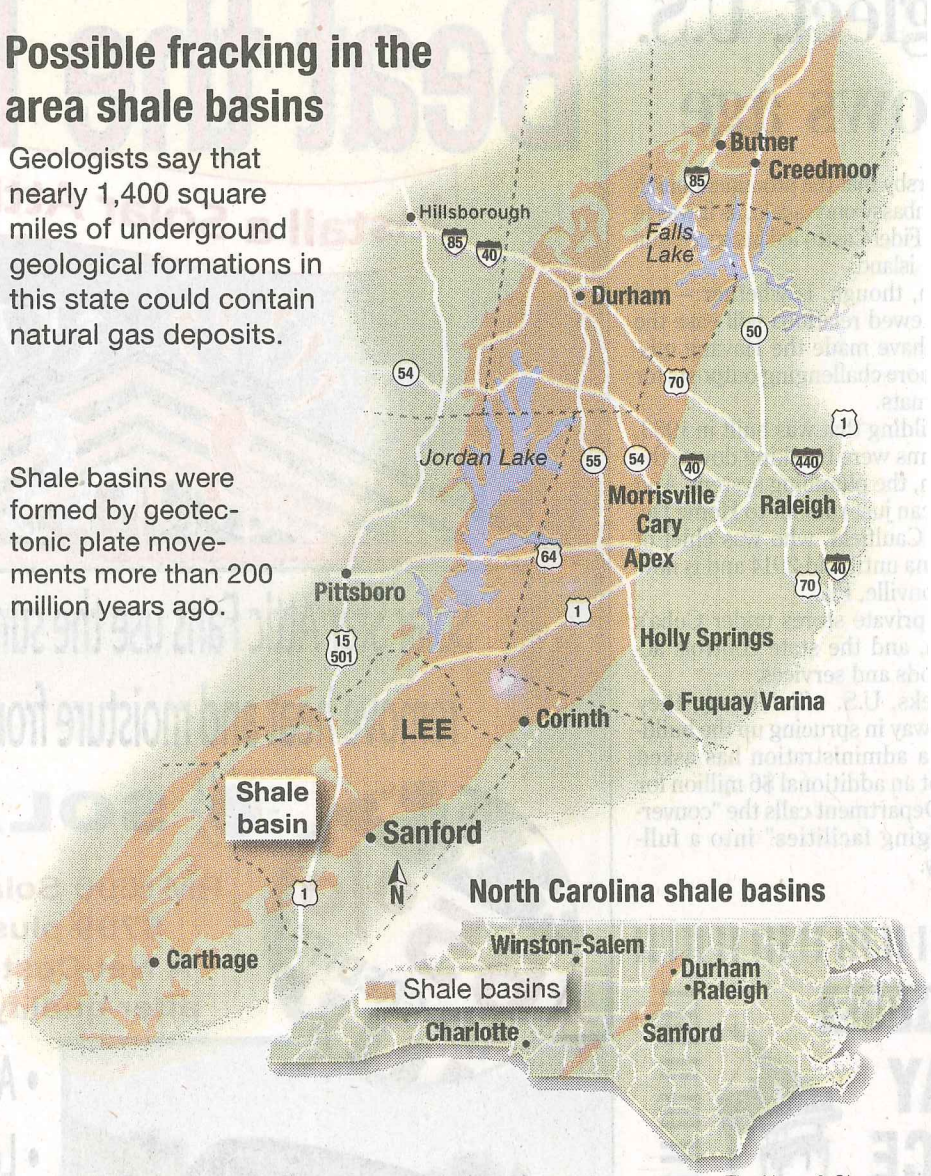
"I thought Rabin was going to be the answer," Fisher said last week in a phone interview. "He had a company. He was Sen. Rabin's son. He came in saying, 'I can put this together, I've done all these deals.' "

Mark Rabin said he's brokered between 100 and 200 deals, typically ranging between $1 million and $3 million, the biggest at $8 million.

Possible fracking in the area shale basins

Geologists say that nearly 1,400 square miles of underground geological formations in this state could contain natural gas deposits.

Shale basins were formed by geotectonic plate movements more than 200 million years ago.



Source: Geology.com

The News & Observer

much as $125 million.

Their email exchanges show that Fisher, Butler and Rabin met with the N.C. Geological Survey in January, at the height of the trio's energy euphoria, to conduct due diligence.

After that meeting, Butler emailed Fisher and Rabin as well as senior state geologist Jeffrey Reid and state geologist Kenneth Taylor.

"Our time together yesterday was outstanding!" Butler wrote in an email obtained from Rabin. "I think it can be done for a lot less and will get additional information to be pertinent to our project in Sanford."

Reid promptly advised Butler to curb his enthusiasm.

"Being the first holes, and the depth involved, you will be surprised at the cost – do not underestimate what can, and will, go wrong!" Reid wrote back. "I have had several personal catastrophes drilling that were by bad luck despite our careful planning and contingency plans."

Rabin had been working his contacts and retained the services of geophysicist Jeff Sporl, in Durango, Colo., to work up data, mapping and other technical estimates. According to emails and invoices provided by Rabin, Sporl logged about 64 hours of work in January, February and March, and billed $9,893.

Sporl said earlier this month that he is still waiting to get paid before he releases the engineering study. Rabin acknowledged that it's ultimately going to be his responsibility to pay the bill.

In a phone interview, Sporl dismissed North Carolina's shale gas resource as "small potatoes" and its energy explorers as "naive characters."

For his part, Butler disavowed any association with Fisher and dismissed Rabin as "totally unreliable."

"I resent very highly the insinuation that I have any involvement with these people," Butler said in a phone interview. "I'm not involved with anybody."

Rabin said Butler second-guessed him and had unrealistic expectations.

Rabin and Brack broke off contact in April, but Brack said he is still pushing ahead with his energy plans, noting that his interests here extend beyond fracking and include alternative energy vehicles fueled by natural gas.

"This industry has a lot of different people – they're not all on the up-and-up," Brack said. "It's simply a matter of putting something together that landowners trust."

Yet according to one of the business plans the group was considering, the North Carolina operation would cost as

Following the richest vein

Around Lee County, it's widely understood that if fracking ever gets underway, Southern Pines resident J. Daniel Butler stands to reap the financial windfall from much of the natural gas produced. Butler is the county's single largest owner of "mineral rights" below properties owned by Lee County residents.

Lee County residents who own their mineral rights would also profit if they negotiate high royalties and other favorable terms.

According to research conducted this year by Butler and others, the most promising area to drill three to six test wells would be a 12-mile straightaway mapped in 1986 and known as Seismic Line 113. Seven vertical test wells were drilled along the line between 1974 and 1998, and all showed indications of the presence of natural gas or oil.

The energy-rich vein courses under such Lee County landmarks as the Ole Gilliam Mill and Jackson Brothers BBQ, as well as Tramway Elementary School and the Cricket Hearth subdivision in Sanford. Seismic Line 113 crosses the properties of 91 different owners.

Butler's access is governed by 1975 land deeds that transferred the mineral rights to his possession. Those deeds give Butler "the right to enter upon said lands for the purposes of drilling" and also "to occupy and make use of so much of the surface of said land as may be reasonably necessary."

The deeds also require Butler, who lives in adjoining Moore County, to pay Lee County landowners for any damage to their land or crops from his drilling operations. According to Lee County property records, 37 landowners are bound by the terms of these deeds.

Staff writer John Murawski

Murawski: 919-829-8932

Test drilling for shale gas reserves to start

May 27, 2015

North Carolina officials will begin exploratory drilling Wednesday to gauge shale gas potential in the southeastern part of the state, an area that remains unassessed for energy capacity.

All three planned drilling sites are on state government property and are intended to measure the energy potential of the Cumberland-Marlboro basin, which runs diagonally through seven North Carolina counties, including an eastern sliver of Johnston County.

The drilling will involve extracting core samples for laboratory analysis, as opposed to drilling for direct evidence of gas or oil.

The core samples will be taken from a depth of about 240 feet to 400 feet; the cores will measure 4 inches across and about 30 feet in length.

The first drilling site will be the N.C. Department of Transportation Maintenance Yard in Raeford.

The drilling will get underway at 7 a.m. and could last two to five days, said the contractor, Russ Patterson, founder of Sanford-based Patterson Exploration Services.

The state awarded Patterson Exploration a $145,000 contract to take three core samples. The drilling, and subsequent laboratory analysis, will be overseen by the N.C. Geological Survey.

The second drill location, at the N.C. Wildlife Commission's Fayetteville Fish Hatchery in Cumberland County, could be drilled this week or next week. The third site is on Laurinburg Highway Patrol property in Scotland County.

Patterson said the contract includes an option to drill a fourth site in Scotland County at the N.C. DOT Maintenance yard in Wagram.

STAFF WRITER JOHN MURAWSKI

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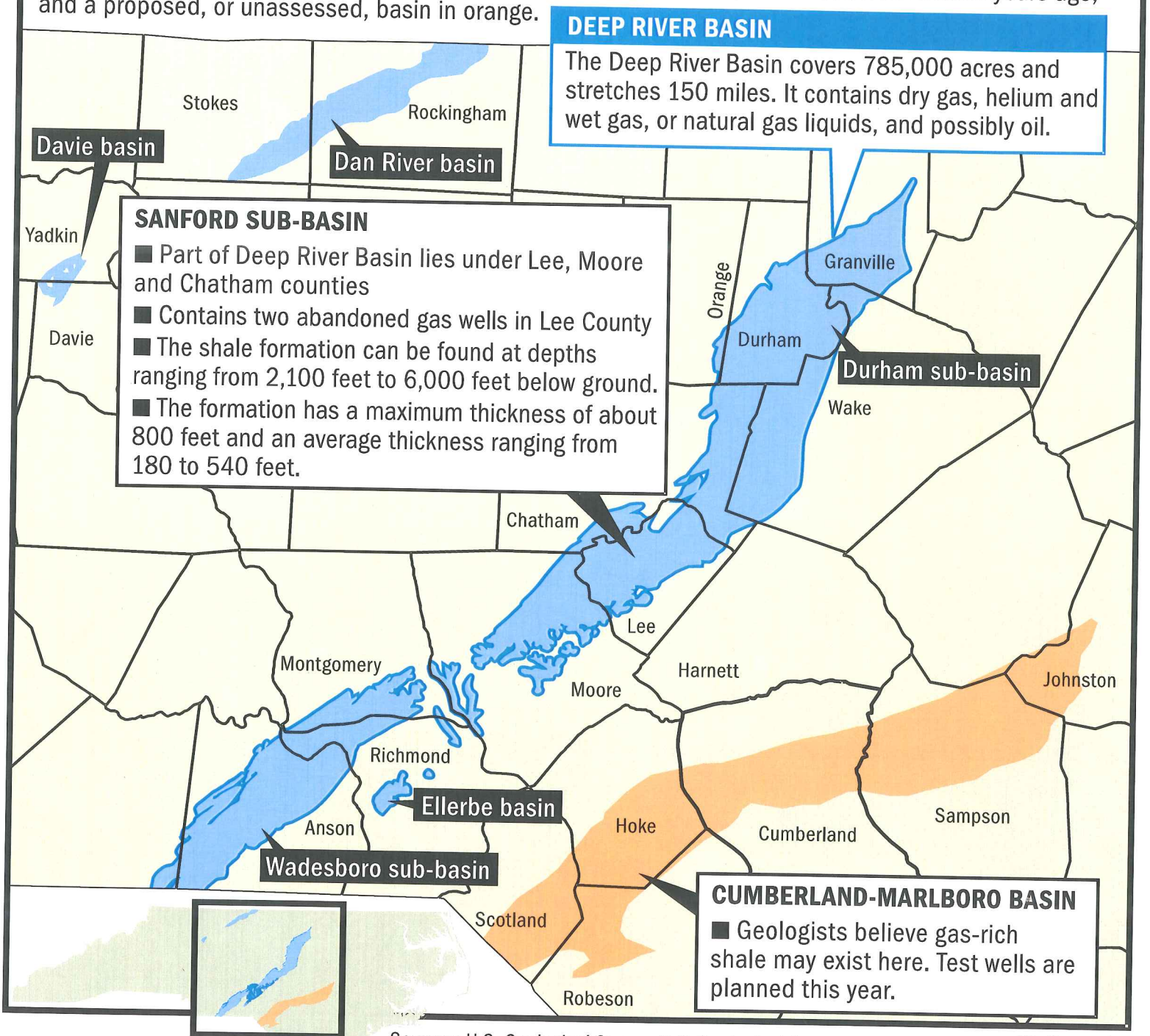
N&O 5/27/15

TRIASSIC RIFT BASINS

Shown in blue are the North Carolina shale basins from the Triassic period about 220 million years ago, and a proposed, or unassessed, basin in orange.



Sources: U.S. Geological Survey, N.C. Geological Survey, N.C. Department of Environment and Natural Resources

Staff graphic

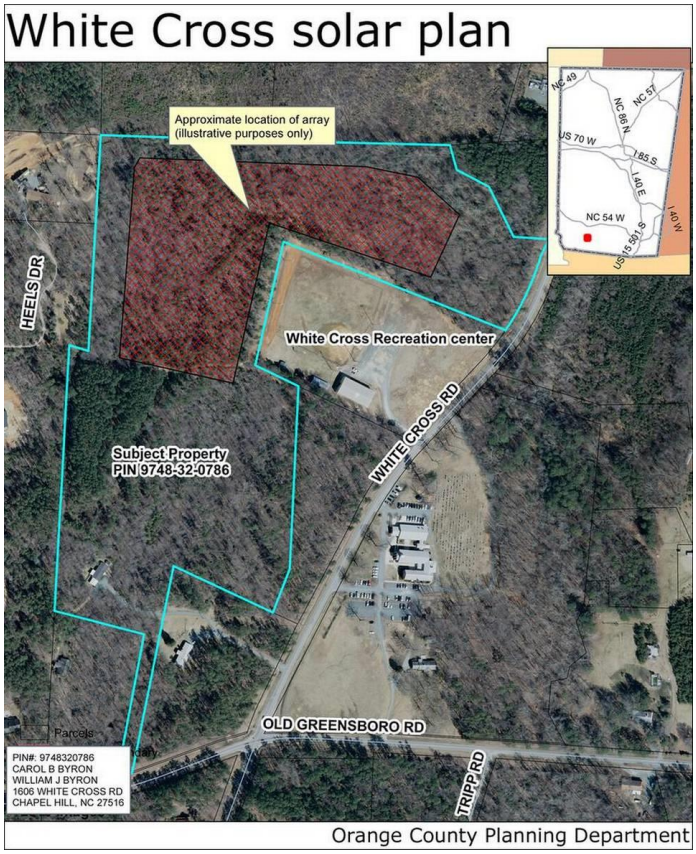
Chapel Hill News

May 26, 2015

Orange County commissioners review White Cross solar farm plans

By Tammy Grubb
tgrubb@newsobserver.com

HILLSBOROUGH —



The Orange County Commissioners heard Tuesday from a California company that wants to build a solar farm in the White Cross community, six miles west of Carrboro.

White Cross Solar LLC is seeking a permit to build a 5-megawatt solar power facility near the northwestern corner of White Cross Road and Old Greensboro Highway. The company is owned by Cypress Creek Renewables, a solar energy developer and owner established in May 2014.

William and Carol Byron, who own the 35.8-acre parcel, would sell roughly 20 acres to the developers. They plan to continue living in their home, south of the proposed solar farm.

The site is less than a mile from the 6-megawatt White Cross Solar Farm that Strata Solar built in 2013. It would be to the rear and north of the White Cross Recreation Center.

The solar permit hearing is “quasi-judicial,” meaning the commissioners can consider only sworn testimony and factual evidence.

The Planning Board could review the project at its July 1 meeting and make a recommendation to the commissioners by Sept. 1. The solar facility, if approved, could be generating electricity for Duke Energy Progress by the end of 2016, company officials said.

County staff and White Cross Solar officials held two neighborhood meetings about the project this spring.

The solar array would cover nearly 12 acres of the site and be surrounded by a minimum 50-foot buffer of trees and shrubs. A typical array is mounted on 2- to 3-foot poles, is 7 to 9 feet tall and about 63 feet long, county planner Patrick Mallett said. The site would be enclosed with an 8-foot-tall, chain-link fence, accessible via a gated driveway off White Cross Road.

Crews could drop by at least once a week to maintain the solar facility and cut the grass, officials said.

Negotiations with a neighbor have produced a revised plan showing a wider, 65-foot landscaping buffer on the site's northern border, said project engineer George Retschle, of Ballentine Associates. Roughly 30 feet of that buffer would be existing plants, he said.

Neighbors at Tuesday's meeting signed up but did not speak about the company's plan.

"Our belief is that our neighbors are comfortable with what we're proposing," White Cross Solar attorney Beth Trahos said.

Real estate appraiser Tom Hester testified that his review of about 30 similarly situated solar farms built since 2011 had not affected nearby property values or sale prices.

MORE INFORMATION

The Planning Board will take public comments about the White Cross solar farm plan through July 1 and pass them on to the Orange County Board of Commissioners in September. The commissioners will not accept additional comments this fall.
Review the solar plan, starting on page 510, at nando.com/1bd. Send comments to county Planning Supervisor Michael Harvey at mharvey@orangecountync.gov or by mail to: 131 W. Margaret Lane, Hillsborough, NC 27278.

NCFS 2014 Summary of Accomplishments in Orange County

Prepared by: Christian Hirni, Orange County Forest Ranger

County Overview for 2014

The following report and attachment detail the staff and accomplishments of the North Carolina Forest Service for Orange County and its citizens. As you can see from the attached data and statistics, the practice and proper management of forestry is still very important to the economy and environment in Orange County.

County N.C.F.S. Resources

Personnel

Position	Name	Years With NCFS
County Ranger	Christian Hirni	5
Assistant County Ranger	Justin Bennett	9
Forest Fire Equipment Operator	Michael Cheek	5

County personnel are supported by 11 District Office employees based in Hillsborough, which are 100% state funded. In addition to this, 450+ employees are available from across the state to assist with incidents and technical advice in Orange County.

N.C.F.S. Vehicles and Heavy Equipment

Year	Model	Miles
2013	Ford F-350 4x4 Initial Attack Engine	23,000
2014	Ford F-350 4x4 Initial Attack Engine	10,000
2006	Ford F-150 Pickup	171,000
2008	Sterling Truck/Tractor & lowboy trailer	28,000
1996	John Deere 650G Crawler Tractor with Fire Plow	1,470 Tach Hours

Forest Resources in Orange County

Land Area in Orange County (total)	**254,720 Acres**
Total Forest Land (protected by NCFS from fire, insects and disease)	150,400 Acres
Privately Owned Forest Land (eligible for management and cost share assistance)	136,700 Acres

*Here in Orange County the N.C. Forest Service has a unique opportunity to act in a dual role involving traditional forestry and the up and coming field of urban forestry. Included in the statistics below is the number of urban assists and plans conducted by our staff.

Traditional Forest Management

Traditional forestry involves assisting landowners in the management of forest health, timber growth, timber stand improvement, harvesting and reforestation of timber land. Recommendations are made taking into account both the goals of the landowner and sound forest management practices that protect and enhance wildlife and water quality.

Management Plans prepared	69
Management Plans Acres	2,952
Site Preparation Acres	43
Reforestation Acres	258
Total Harvest Acres (including thinning)	1,073
Timber Stand Improvement Acres	161
Acres under Forestry Best Management Practices	4,385
Active Logging Inspections	110

Forest Stewardship

The Forest Stewardship Program is a cooperative effort involving several agencies and forestry professionals. It is designed to encourage landowners to manage their natural resources to enhance timber, fish and wildlife, water, soils, and aesthetics. Below is a list of Orange County Forest Stewardship Committee members and the agencies with which they are associated. This year **5** comprehensive Forest Stewardship Plans covering **314** acres were written for landowners detailing the total resources on their property and making recommendations on how to best manage them.

Laura Hendrick, Water Quality Forester, N.C. Forest Service
Kelley Douglass, Wildlife Biologist, N.C. Wildlife Resources Commission

*County Ranger Christian Hirni points out a rather large root ball during a field examination for a new Stewardship Plan in northern Orange County

Cost Share Assistance

The N.C. Forest Service offers assistance in forest management through managing cost share assistance in forest practices. The most common practice is of course reforestation by way of planting trees in cutover areas or reforesting old fields. In 2014, The N.C.F.S. main program, the Forest Development Program (F.D.P.) reimbursed landowners in Orange County with a total of **$6,738** of cost share assistance. The average cost of $75.00 per acre of reforestation is offset by the cost share of $30.00 per acre or 40% of the total cost, allowing an additional **180** acres to be planted in Orange County that otherwise may not have been planted as well as an additional **41** acres of release. In 2015, an additional **697+** acres have been approved for cost share assistance.

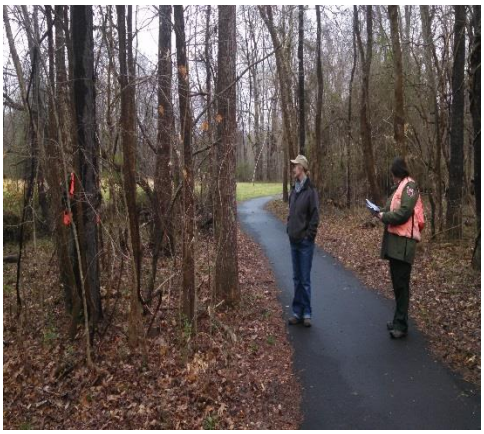
Tree Improvement and Nursery Program

The N.C. Forest Service owns and operates two nurseries that are involved in growing and selling, at a minimum cost, genetically improved and area specific seedlings to be planted by private and public landowners in North Carolina. In 2013, the Orange County office delivered and provided planting advice on an additional **4,534** assorted conifers and **1,520** assorted hardwoods for a total of **6,054** individual trees planted from N.C.F.S. nurseries. This is *in addition to* the **499 acres** of pine reforestation done under traditional forestry practices in 2014. Through the combined efforts of the N.C. Forest Service and our cooperative agencies, a grand total of over **225,000** trees were planted in Orange County in 2014!

Urban Forest Management

Urban Forestry involves assisting landowners in the management of the health and quality of their urban forest. This can range from individual shade trees to neighborhood and/or community urban plans. Both the County Ranger and Assistant County Ranger in Orange County are Certified Arborists to better assess urban trees and forests

Shade Tree Assists	51
Urban Plans	10



*Forester Jennifer Roach takes notes for a tree of concern along the Town of Hillsborough Riverwalk Trail

Tree City USA

The Tree City USA program is a national program that provides the framework for community forestry management for cities and towns across America. The N.C. Forest Service helps administer the program with the Arbor Day Foundation here in North Carolina. There are currently **3 Tree City USA** towns in Orange County.

City	Years in Program
Town of Carrboro	29
Town of Chapel Hill	15
Town of Hillsborough	12

TREE CITY USA

Insect and Disease Control

The North Carolina Forest Service is responsible for monitoring and responding to any report of pest and disease in the forests of our state. This can range from native Southern Pine Beetle outbreaks to monitoring for the nearby Emerald Ash Borer.

Insect and Disease Activity	6
Insect and Disease Activity Acres	164

*Black Turpentine Beetle found in a drought stressed loblolly pine

*Emerald Ash Borer discovered in Person, Granville and Vance Counties in 2013

Fire Control

In 2014, considered another wet year by comparison, the N.C.F.S. in Orange County still responded to **23** wildfires burning a total of **26** acres. A total of **11** warning tickets were issued to burning offenders as part of our Fire Prevention Program.

*A wildfire in the Caldwell fire district burns an unoccupied structure

Information and Education

The N.C. Forest Service conducts Fire and Forest Management educational programs for groups of all ages and demographics. These can range from Smokey Bear fire prevention programs at a local elementary school or parade, local Envirothon and FFA club training, to landowner workshops to better assist property owners in knowing their available resources.

School Programs	13
Town Parades	3
Other Outreach Programs	8
Safety and Wildfire Programs	10

*Smokey Bear comes to the Carrboro Arbor Day Celebration

*Ranger Chris at 1st Orange County Farm to Table

Fire Department Assistance Program

The N.C. Forest Service offers assistance to all fire departments across the state and in Orange County. Through our F.D.A.P. we are able to provide special assistance in relation to Wildland Fire Suppression courses, a 50/50 matched grant for purchasing wildland fire gear, managing GSA purchasing for discounted fire gear, discounted Class A foam purchasing for fire departments and the DoD/FEPP federal loan and donation programs for the more expensive items such as trucks and high output generators.

Recently, the Chapel Hill Fire Department acquired a 5 ton 6X6 transport vehicle to be retrofitted into a wildland fire engine. It was acquired in 2014 for the fire department and we are excited to say that after a new coat of Tar Heel blue, a truck valued at around **$80,000** was handed over to the Town of Chapel Hill last fall.

*Smokey the Bear rides atop the new Chapel Hill Fire Department Fire Vehicle in the Chapel Hill Holiday Parade

The above report is just a brief overview of all the North Carolina Forest Service has been involved with in the past year in Orange County. As you can see forest management in all of its aspects and wildfire control is very active and important in Orange County. The Forest Service is only able to accomplish the above with the assistance of Orange County government and the 40% funding of the cooperative budget.

We would gladly present this report at a regularly scheduled County Commissioners Meeting or discuss it and any of our programs.

Seeing county landowners accomplish their goals of forest management and helping the local agencies manage their programs allows us the chance to succeed not only in our mission but also in our sense of place and appreciation here in Orange County. We appreciate the support of Orange County in funding the North Carolina Forest Service mission and our continued accomplishments here in Orange County, North Carolina.

Sincerely,

Christian Hirni
Orange County Ranger
North Carolina Forest Service

AIR POLLUTION:
In big EPA win, court denies challenges to ozone designations

Jeremy P. Jacobs, E&E reporter

June 2, 2015

A federal appeals court today rejected a series of challenges from states, environmental groups and energy companies to U.S. EPA's determinations of which parts of the country meet its standard for ozone, a main component of smog.

In May 2012, EPA finalized its attainment and nonattainment designations for its 2008 ozone air standard of 75 parts per billion. If the agency finds a county or area does not meet the standard, that area must undertake significant and often expensive steps to reduce ozone emissions.

Mississippi, Texas, Indiana, Delaware and Connecticut all challenged EPA's nonattainment findings for some of their counties. Environmental groups argued that 15 other counties that were found in attainment shouldn't have been. And, in another claim, the groups argued that Utah's Uinta Basin -- home to oil and gas development and some of the country's worst ozone pollution -- should not have been dubbed "unclassifiable."

In a nearly 90-page opinion, the U.S. Court of Appeals for the District of Columbia Circuit rejected all of those claims, handing EPA a significant victory.

"Because EPA complied with the Constitution, reasonably interpreted the [Clean Air Act's] critical terms and wholly satisfied -- indeed, in most instances, surpassed -- its obligation to engage in reasoned decision-making, we deny the consolidated petitions for review in their entirety," the court wrote.

The consolidated cases featured all types of arguments, and the court refuted each one. Some of the most high-profile challenges involved the Uinta Basin, as well as Wise County, Texas, which lies near Dallas and is home to significant natural gas and oil development. Like the Uinta Basin, Wise County has historically had the country's worst ozone pollution.

EPA separated Wise County from the Greater Dallas-Fort Worth Metroplex and classified it as in attainment with the previous ozone standard in 1997. In assessing the newer limit, however, EPA found it failed to meet the 2008 standard.

Various companies, including Devon Energy Corp. and Targa Resources Corp., contended that EPA misapplied a multi-factor test to label the county in nonattainment. Specifically, they criticized the agency for relying on meteorological factors, including wind.

But the court deferred to EPA's expertise in the area.

"Barring an unreasonable or irrational application of the 'scientific data within [the EPA's] technical expertise,'" the court wrote, quoting precedent, "we cannot say that the EPA acted arbitrarily or capriciously."

In the Uinta Basin, WildEarth Guardians contended that the area should have been characterized as in nonattainment, not "unclassifiable."

The problem in the area is that, until recently, there were no ozone monitoring stations in the basin. In a 2007 settlement with Kerr-McGee Corp., EPA required the Oklahoma-based company to install monitors in northeast Utah. EPA argued that it could not rely on data from those monitors to determine whether the area was in attainment for the 2008 standard, saying the data did not meet EPA's "quality assured and quality certified" standard for the years necessary for the attainment determinations (***Greenwire***, Oct. 21, 2014).

Again, the court sided with the agency's expertise.

"EPA reasonably declined to rely on data that it considered of insufficient quality for designation purposes," it wrote.

Other challenges were similarly rejected, including Connecticut and Delaware's attempt to draw a nonattainment area spanning more than 15 upwind states because of ozone pollution that drifts into their borders.

A Sierra Club attempt to force EPA to reclassify 15 counties as nonattainment instead of attainment was also dismissed.

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From: Beverly Burgess [mailto:beverly.burgess@duke.edu]
Sent: Tuesday, May 26, 2015 8:34 AM
To: forest-events@duke.edu
Subject: 2015 Duke Forest Stewardship and Sustainability in a Piedmont Forest Tour

Hello Forest Friends:

Registration is open for the Duke Forest Stewardship and Sustainability in a Piedmont Forest Tour

2015 Duke Forest Stewardship and Sustainability in a Piedmont Forest Tour

Saturday, June 27th, 2015 **9 am – 12 noon (meet at 8:50AM)**

WHERE: Meet at the Duke Forest Maintenance Shop

Please join us to learn more about how we manage the Duke Forest with a focus on stewardship and sustainability. You'll hear about different timber management techniques and procedures that are in place to ensure protection of natural and cultural resources. We'll also talk about forest health and our efforts to control invasive species and manage the negative impacts of overabundant deer populations. **Sign-up below** if you're interested; participation will be capped at 24.

We will meet at the Duke Forest Maintenance Shop at 8:50 AM to maximize our time in the woods. June 27th Tour

Thanks, as always, for your continued interest in the Duke Forest!!! We hope to see you in the woods soon!!!

~ Beverly

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