**Memorandum**

To: Mayor Lydia Lavelle and Carrboro Board of Aldermen

From: Doug Frederick, Professor of Forestry

Date: July 23, 2018

Re: PH Craig Forest

Over the past months, I have visited and explored PH Craig’s property in Bolin

Forest, studying the health of the forest ecosystem and the potential value

of the property for both timber harvest and for conservation. I have reviewed the

December 2017 forest management plan submitted to Mr. Craig by the NC

Forest Service and I have also, on several occasions, spoken directly with Mr.

Craig’s consulting forester, Mr. Bill Dryman, to better understand their rational

and details of their proposed harvest.

The following is my objective assessment of the property based on 40+ years as

a working forester and university educator in the field of forestry. My bio is

attached at the bottom of this document for your reference.

I would be happy to answer any follow-up questions or discuss these important

issues further by phone, email, or in-person meeting at your convenience.

Thanks in advance for your consideration.

Sincerely,

Douglas Frederick, PhD

**Present Status**

This 77-acre tract of forested land is located along the eastern edge of Bolin Creek, wedged between the 325-acre Carolina North Forest and the 27-acre Adams Tract. The tract contains both upland and floodplain forests. There are significant areas of steep slopes with fragile soils. The adjacent tracts are conserved in some fashion. Carolina North contains conservation areas – some dedicated for 50 years and some in perpetuity by the University of North Carolina and the Town of Chapel Hill – as memorialized in the 2009 Carolina Development Agreement. Orange County and the Town of Carrboro purchased the Adams Tract in 2003 for conservation purposes.

**Previous Studies**

This tract has been identified as a Natural Heritage Site which means it has special ecological significance and is recognized by the State of North Carolina. A 2004 baseline study established that this tract, together with the adjacent tracts, forms an area of special significance worthy of preservation.

**Forest Health**

There are very few privately owned forest stands in the Triangle area that are as well developed as the Craig stand. The forest on this tract is a diverse mixture of mature upland hardwoods in very good health and growing well. It has significant ecological values (including water quality protection, wildlife habitat, biodiversity, etc) as well as long-term scientific value for teaching and research. Its location also makes it an ideal site for educational and outreach use by the Carrboro and Chapel Hill public schools and the University of North Carolina and NC State University. The forest is a prime example of a forest entering "old-growth" conditions, which makes it an invaluable "reference forest" for management and ecological studies. In addition, its location in a rapidly urbanizing landscape makes it exceptionally valuable for recreation as a mature forest ‘green-space’. It also has high value for carbon sequestration due to the annual growth and large quantities of accumulated biomass. Unlike a young regenerating forest, this forest has maximum ecological diversity. It is far more valuable in its current state than it would be as a loblolly pine plantation, which is Mr. Craig’s stated plan for the property after clear-cutting.

**Forest Management Plan**

I do not dispute that Mr. Craig has every right to clear-cut his property. As I have said before, goals and objectives are the right of the landowner and he has sought advice from professionals, so it is not solely his decision.I respect the NCFS foresters and Bill Dryman for their recommendations and advice, as well as the woods experience of PH. However, in this particular situation, I don't agree with their assessments of fire danger and liability to adjacent landowners and, the risk of insect attack in the mature pines. I suspect that the primary motivation is a desire to maximize timber profits (both short and long term) at the expense of preserving and cultivating the overall value of the land.

**To me, the most compelling reason to protect and preserve this property is the ECOLOGICAL QUALITY and LOCATION of this forest.**

The Craig forest sits in the middle of an urbanized landscape, and that location makes it far more valuable in its present, undisturbed, ‘old growth’ condition than if it were located in rural Orange County. The community is and will be able to use and enjoy this mature forest much more easily and have an opportunity to see and experience a mature Piedmont forest unlike the vast majority of forest tracts.

From my firsthand assessment, I don't believe Mr. Craig’s timberland is in immediate danger of loss by insects, disease, fire or other factors and, as such, there is no critical need to clear cut harvest this stand at present.

I do acknowledge that 80-to-90-year-old pine timber poses some risks by not cutting. There is some future risk from beetles, heart and root rot etc. but minimal danger of liability from fire. Young pine stands are much more vulnerable to crown fires that could spread to adjacent communities. Mature stands of pine and hardwoods like the Craig stand will have occasional mortality but this is natural and doesn't mean the entire stand should be clear-cut out of fear of losing the entire forest.

There are several healthy stands of mature, 90+year-old pine and hardwoods within 50 miles of the Craig tract, which stand as prime examples of stands that are preserved in their natural state with no cutting. NC State University has stands at Hill Forest, north of Durham, and Schenck Forest outside of Raleigh. Duke Forest also has stands preserved with no cutting because of their ecological, teaching and research significance. Neither Duke nor NC State have any plans to cut these forests since their value lies in their natural development, old age structure and the rich biodiversity they support. These forests are best used for research, teaching, and public enjoyment. Forests like these are notably rare, but that is all the more reason to protect them as we also strive to allow younger forests to reach a similar late successional stage. We can better manage young forests if we understand the growth patterns, structure and dynamics of mature and older growth forests such as the Craig Forest.

Umstead State Park is another excellent example of a large, protected forest (5000+ acres) with stands aged 90 to over 150 years old and still in very good condition. Individual trees die every year at Umstead as part of a natural cycle, but the forest continues to evolve with some large pines and hardwoods dying and being replaced with younger trees in openings. Species composition changes but this is the natural succession in Piedmont mixed pine / hardwood forests.  There are scattered outbreaks of pine beetle attacks in Umstead Park but that does not threaten the entire forest. The same would be true on the Craig property.

I agree with Mr. Craig that "select cutting" of his tract is not a good idea at this stage of development and I am not recommending that option. I believe the choice is clear-cutting the stand or preservation.

**Risks of Clearcutting**

Clearcutting this property would yield significant monetary value from the pines and the white oaks, yellow poplar and other hardwoods, but there will be a high price to pay in terms of the negative ecological impacts of road building, harvesting machinery, soil erosion and degraded water quality. Further, the starkness of a stump-field in the middle of a now-contiguous forested corridor along and adjacent to Bolin Creek will be a visual scar on Bolin Forest for decades and generations to come. This corridor needs to be protected and preserved intact for the community and for future generations of students, hikers, bikers, researchers and wildlife.

In his Herald Sun editorial published on June 27,2018, Mr. Craig wrote, *"I hope I have adequately explained why I have to clear cut portions of the most beautiful tract of land in Orange County".* The community meeting held on June 21st, 2018 at Smith Middle School showed clearly that several hundred of Mr. Craig’s friends, neighbors and community leaders think there are other factors to consider in deciding the fate of these 34 acres.

**Considerations for a Proposal**

If an agreement can be reached with Mr. Craig to protect this property and not clear cut the 34 acres, I feel strongly that Mr. Craig and his forestry consultant should be fully compensated for current expenses, Mr. Craig’s land and the timber on his tract. That is only fair.

Any viable proposal from the City(s) or County should agree to compensate Mr. Craig fully for both the value of his timber and the value of his land. Mr. Craig should also be publicly recognized for his past, present and future stewardship of the property, which could be accomplished via naming rights (The Craig Preserve), a plaque or statue, and other formal recognition.

It is unequivocally the overwhelming desire of the community, neighbors and elected officials from Carrboro and Chapel Hill for this property not to be clear cut but to be left in a natural state. The risks to the mature timber are recognized but the true value of this tract in an undisturbed condition outweighs all natural risks.

I believe the property is best protected under a long-term conservation easement, where the land can become part of the publicly protected land in the County to be enjoyed by the public and used for teaching, research and the long-term benefit of the community.

One constituency voice that might help would be a letter from the HOAs of adjoining neighborhoods stating that they respect Mr. Craig’s right to cut his trees but urging him not to use a questionable threat to their neighborhoods as justification for the clearcutting. If Mr. Craig just came out and said, "I want to make money and its my land, so I am going to cut”, we would have to accept his right to make that decision. However, his fire and beetle risk justifications he has stated publicly to date, in my opinion, are either overstated or, in some cases, false.

Your objective would be to ask Mr. Craig to consider not cutting his 34-acre planned harvest area before he fully weighs the consequences and the tremendous long-term value this tract will have for the communities and citizens nearby. I think this tract together with adjacent protected lands could become a jewel in the center of an urbanizing landscape where we are loosing more mature forestland each year.

The only real option we have at this point is to approach Mr. Craig with a proposal that we would like to finance the purchase of his land so that we can preserve it. That offer should be made by Mayor Lydia Lavelle and another independent party as part of the discussion.

The last example of a late successional forest that may be a useful comparison is as follows: The North Carolina Botanical Gardens in Chapel Hill has large forested areas that have been preserved and no cutting is allowed. That tract is similar to Craig's tract and has large pines and hardwoods. It is a very old and healthy forest and not in imminent danger of degrading. Trees occasionally blow over and some get beetles. There is little risk of fire either on the tract or danger to adjacent landowners. The tract has (and will) have many, large trees with new ones filling openings after wind throws. There is no immediate desire or need to do cutting in that stand. The objectives of ownership can be preservation, aesthetics and maintaining a late-successional ecosystem with all the biodiversity and carbon sequestration that goes with that objective. I recommend asking the Director of the Botanical Gardens for help in making the case that there is no "imminent danger" of preserving an old stand of trees.

**My Background**

I have been teaching forestry at NC State University for 41 years, where I currently hold the position of Professor of Forestry. I teach 5 undergraduate and graduate courses and work in private forestry consulting in the summer as well as during the academic year.  As faculty members, we are encouraged to maintain our consulting practice since it brings practical experience directly to our students.

I have maintained my active consulting business in forestry for many years. I have worked with large and small private landowners plus I have worked for large corporations through our NC State Research Cooperatives program as well as through attorneys who represent large companies like Weyerhaeuser and International Paper Company. Work with these companies involved management stratigies with natural hardwoods, natural pine and pine plantations.

I have served as Chairman of our College Forests Advisory Committee in the Department of Forestry and Natural Resources for over 25 years and in that role I have had direct impact in the management of our College Forests, which includes several thousand acres in the Piedmont and the Coastal Plain. That role is in advising our College Forests Manager on management, timber sales, reforestation and all aspects of silviculture of natural stands and plantations. My responsibilities include advising on decisions re: harvesting, replanting, burning, herbicide use and designating stands as protected natural areas for no harvesting. We have dedicated significant areas across our College Forest as ‘natural areas’ with no cutting planned. The Society of American Foresters has recognized our work preserving these areas for research, teaching, and use as long-term reference sites.

I also manage my own private timberland tracts. I have managed a large tract in Pennsylvania for over 50 years and have conducted 3 partial cuts in which I personally marked every tree for harvest and marketed the timber. I have gifted this tract to my two sons and they plan to continue to sustainably manage the property. We have considered managing this tract for old-growth conditions since, after three improvement cuttings, all the trees are large and in very good health.

I own and manage a mixed hardwood and pine tract in Chatham County on the Deep River. I salvage-logged this tract after Hurricane Fran with the objective of creating a mixed stand of large trees. I marked the timber and arranged for marketing it.

Lastly, I am a co-owner partner of a 936-acre forested tract in Tyrrell County that is heavily forested, has a natural lake, and has over 1 mile of frontage on Albemarle Sound. This tract has significant acreage of very large 100-150 year old pine, hardwood and cypress timber areas and we have decided to put a permanent conservation easement on that property because of its high ecological and research value. One of our long-term scenarios is to gift or sell this property to the State or a conservation entity such as the Conservation Fund or the Nature Conservancy.