

**CECIL COUNTY COMPREHENSIVE PLAN OVERSIGHT COMMITTEE
 AGRICULTURE, PRESERVATION and MINERALS (APM) SUBCOMMITTEE
 MEETING MINUTES
 October 9, 2008**

Member	Present
Diana Broomell	X
Shawn Day	X
Sandra Edwards	
Phyllis Kilby	X
Daniel Polite	X
Vic Priapi (Vice Chair)	
Owen Thorne (Chair)	X
John Bennett	X
Donna Deckard	
Robert Hodge	X
Rupert Rossetti	X
Other Attendees	Affiliation
Dr. Christine Conn, Ph.D.	Director, Strategic Land Planning, DNR
Dr. Anne Hairston-Strang	State Forest Hydrologist DNR
Dan Rider	Forest Stewardship & Utilization Program Manager DNR
Other Attendees: Jim Gawthrop	Stewart Associates
Dan Derr	CPOC Member

Call to Order – Thursday, October 9, 2008 at 6:37 p.m., Black Hill Ranger Station, 130 McKinneytown Road, North East, MD 21901.

New Business: Meeting topics include: Benefits of a Sustainable Forest, Economic benefits of a Forest Industry, and Economic and Ecologic Benefits of Preserving and Promoting Green Infrastructure (GI).

Chairman Thorne: I wanted to thank John Bennett for organizing this meeting. {Chair also thanks Shawn Day for arranging for the facility and hosting the subcommittee and guests tonight} Also, we will have to organize another meeting so I will send out dates by email to

choose from.

Guest Speaker:

Dr. Anne Hairston - Strang
State Forest Hydrologist, DNR

Dr. Hairston-Strang: (Power Point Presentation - Benefits of Sustainable Forests) I grew up in Easton, MD and my background includes a degree in Forestry from Virginia Tech, a Bachelor in Forest Soils from the University of Minnesota and a Ph.D in Forest Hydrology from Oregon State University. I've been working with the MD Forest Service in Riparian Reforestation, Stream Bank Stabilization and the Watershed Forestry Program. I think what you are wanting to hear from me is why I think these forests are so important and where they need to go in your planning efforts.

I'm going to start with the benefits of sustainable forestry. Part of it is being able to harvest products from land over time. But according to the Montreal Process and some international standards that we're trying to follow now, it's a lot more than that. We're also looking at biological diversity, maintaining productive capacity of forest ecosystems, maintain ecosystem health, conserve and maintain soil and water, maintain forest contribution to global carbon, maintain and enhance long-term multiple socio-economic benefits, and support legal, institutional, and economic frameworks for sustainable management.

We are also trying to address sustainable forestry through GI which is based on principles of conservation biology and 1. identifies priority areas for habitat, particularly the large blocks that are shrinking and can't be quickly created and 2. locates hubs of effective wildlife habitat and corridors that allow migration among the hubs.

I want to start off with the concepts on how the forests and GI relate. It's all about how can we sustain habitats on the landscapes where the larger hubs that are going to be reservoirs for some of these species and how can you make connections between the hubs so you're not isolating populations. The GI at its heart is a habitat protection methodology. My main message here is to think about forests not just in the GI concept, but also about the benefits of forests throughout where we experience trees all the way from rural to very urban. In my role of watershed forestry, we're dealing with everything from the most intact forests to the still functional forest downtown.

So why does it really matter if we have trees on our landscape? It affects our streams and whether they are going to be dry in the summer or not, what kind of water quality we are going to have, whether we are recharging ground water for future generations, and it affects the wildlife habitats on water and land. It may not fall within our planning horizon, but the water that we're using came from upstairs awhile ago in addition to the habitat things we've already mentioned.

The forestry watershed has the lowest runoff of any land use, greatest recharge and the least nutrient output. Streams are a product of the patterns of water and sediment, and adjust in response to changes in land use. When you change land use, how do you compensate to address water quality? When you go from a forest cover to a more developed area there is less recharge and less evapotranspiration in atmospheric cycles. So as you get more runoff, streams are going to respond. When you have more impervious surfaces, you get more flooding more frequently.

We're in the piedmont and coastal plain area so we don't have real constrained streams. They tend to respond to increases in discharge so you get more stream widening, stream incisions, and a lot more bed localization. This makes it very hard for the little critters in those streams after its been stirred up. When you go from forest to surface, you tend to increase stream flow but it's nothing compared to what happens when you pave.

What is it biologically about forests that promotes the infiltration? Deep rooting develops macropores for rapid infiltration over time. Forest floors is another protective layer that has all the insects needed to help maintain that porosity and also acts as a sponge. The canopy intercepts water which aids in evapotranspiration. That's why they worry about tree loss in Africa. If you take away the moisture from the evapotranspiration, they get the desertification effect. It's something they are starting to worry about in the West where we let forests get really dense and the Mountain Pine Beetle has wiped out millions of acres of forest and they are going to start to see changes in the rainfall because of that.

This slide charts the change in forest cover over 350 years for the whole Chesapeake Bay Watershed. (Slide #10). Maryland is at about 41% forest. Our neighbors to the north and south have a little more forest - about 60% statewide. But a lot of trees that are out there now were cleared land before and we are not at our lowest point of deforestation in history. (Slide #11) But you can see where the trend is going in the last few decades. Statewide you have pretty significant forest resources in your county but if you look at this mix of land use, it gives you a whole lot of opportunity.

This slide (Slide #12) is the growth projection for the Bay Watershed. I think Cecil County is going to be growing a lot faster than this. Not only do we see the population growth but we see more land being used for that increase in population. Between 1990 - 2000, development (25%) outpaced population growth (8.2%) by more than 3 times.

This slide (Slide #14) looks at water quality in the Bay. The overall Chesapeake Bay Report Card for 2007 was a C- with a score of 42. The major cause was that the current nitrogen load flowing into the Bay was 262 Million PPY. The goal is 184 Million PPY. Look at where we are and we're essentially one of the bright spots in the Bay because we're doing better than most places. Down south the quality is not so good because of the estuary action and how that fresh water and salt water mixes as well as the nutrient load. It's also where we are having trouble locating the only endemic fish in Maryland - "The Maryland Darter." We haven't been able to find one in the last 20 years. If it was only one fish we couldn't find we wouldn't be so worried, but it's pretty much every fishery stock in the Bay including crabs.

Why is there so much nitrogen flow? Rain is absorbed and slowed by trees and the forest floor before it reaches local streams, flows to rivers and ultimately the Bay. Forests and Stream Health are interrelated. Stream Health is given an excellent rating when 51% to 45% of its watershed is covered with forest and tree cover and the areas adjacent to streams have close to 75% forest buffers and pavement and other hard surfaces are a small proportion (4 - 5%) of the watershed.

Chairman Thorne: Can you explain why the Upper Western Shore Area is healthier that the rest of the Bay?

Dr. Hairston-Strang: There's a lot of rural area up north which has been downzoned, significant forests are located in meaningful areas, federal lands which are not densely populated, and this

location doesn't have a high level of impervious surface development. Another factor are buffers but they don't solve the whole problem. I wanted to point out that all of the slides with really good graphics came from Chesapeake NEMO (Network for Education of Municipal Officials).

Getting back to the cycle, why does the cycle matter coming from the land through the whole stream system? There is a new task force that was authorized in this year's legislature, The No Net Loss Forest Task Force. Why are we looking at no net loss of forest in the State. We're looking because we're at 41% forest in the State. When you try and correlate stream cover, they're looking specifically at the insects on the stream bottoms to see if they are healthy. There's a space on the Maryland Biological Stream Survey Data that reflected on a very fine scale in Montgomery County that they could only find a really good stream when they had about half of the water shed in forest cover. In the same area you had about 70% in buffers. Where you find more than 10% impervious surface, it's very hard to find healthy streams. This fact has been confirmed in a wide body of literature now. When you get over that 10% or 12% impervious surface, it's really hard to find a healthy stream.

Rupert Rossetti: Have you wrestled with the implications of the new storm water management act and the disconnect of impervious surface to roof top runoff and that it's close to mimicking preexisting hydrologic conditions?

Dr. Hairston-Strang: We are going to be struggling with storm water until we really figure out how to infiltrate stuff. And the only way to infiltrate is to 50/50 centralize instead of building a big storm water pond for a large area because your soil will limit this. I've got a rain guard.

Rupert Rossetti: In the critical area they used to have an impervious surface measure. Now they are going for how much lot clearance or cover is allowed on a lot area because people were putting impervious pavers in and clearing land and they were being allowed to do that. I'm wondering when we implement the new storm water management regulations whether we are going to find that impervious surface was a surrogate for not much land fill.

Dr. Hairston-Strang: There is some research out there on low impact development or environmentally sensitive development. There does seem to be a significant difference for improvement on stream conditions when you put those kinds of practices into place. It's one thing to keep in mind about GI - you can not expect those practices to replace some of those functions you get from GI. The interior forest and wetland resource is on one end of the spectrum and you've got the managed developed landscape in the middle of the spectrum and then the urban sector at the end of the spectrum where trees are playing a different role. Trees are going to be better for air quality improvement in those urban settings than they're ever going to be in the rural settings. So you're getting a different set of values by using trees in these different landscapes. Trees are never going to do it alone but they make a big difference because they are big water users, big water evaporators and can make a big difference on runoff quality. A lot of the information in the slide presentation was taken out of the State of the Chesapeake Bay Forest Report completed by the Conservation Fund and there are citations in that Report.

When you're planting a tree you're not just doing the water quality job, you're also getting the air quality benefits. Maryland just traded \$16 million worth of carbon credits through the Greenfield Greenhouse Gas Initiatives about a week and a half ago. So if we were to offset our credits only through trees, every household in Maryland would have to plant 103 trees. So it's just one of the tools in the tool box and you can make significant improvements just in working

with landscape design. However, when we talk about sustainable forestry and sustainable development, this is not an alternative for species that are dependent on certain forest interior conditions. While the forests might have been cleared decades ago, it does take some time to recreate those conditions so we can replace but it's not fast.

Other benefits of forest cover include: 100 large trees intercept over a half million gallons of rainfall annually, reducing the need for storm water controls and providing cleaner water. A 10% increase in forest cover can reduce the amount of nitrogen runoff by 40%. Also, 100 trees remove 430 pounds of pollutants (like ozone and particulates) per year. Forests also offer shade which helps reduce temperatures. Through their abilities to remove carbon dioxide from the atmosphere, forests help mitigate potential impacts of climate change. It takes just over 100 trees, on average, to offset carbon dioxide emissions each year from a single household in Maryland. Forests also support vital habitats for many lives as well.

The benefits trees provide are not solely environmental; there are many economic benefits to preserving trees and conserving forests. Residential subdivisions where trees are preserved cost less to develop, have a higher sales price and sell more quickly than conventional developments. One study found that as neighborhood tree canopy cover increases, so too does the percentage of residents committed to remaining in that neighborhood. Well placed trees on a residential property can also reduce energy costs. Shade from two large trees on the east side of a house and one on the west side save 56% of a typical residence's annual air conditioning costs. Trees properly placed around buildings as windbreaks can save up to 25% on winter heating costs. Management of forests in rural areas also contributes to the forest products industry. Bay watershed-wide forest products generate \$22 billion for the regional economy each year. In residential areas, services actually cost more than the tax revenue generated.

So conserving forests and trees does pay us back, but there are other benefits to the community that are more social than economic or environmental. Conserving forests and trees provides opportunities for recreation, fishing and hunting - experiences which not only bolster the quality of life for local residents but also draw tourists to the region for birding, biking, hiking and the like. In the United States, ecotourism is among the fastest growing travel trends, and is estimated to be a \$77 billion market. This represents 5% of the overall U.S. travel and tourism market.

Chairman Thorne: We have heard from our development community that they just want to know what is expected of them. This committee is a part of coming up with the plan and we could include in our recommendations that the landscaping policies you mentioned would be included. We could also mention the fact that you can realize savings and higher profits if the policies are followed. So then why wouldn't anyone want to do this?

Dr. Hairston-Strang: The problem is that does take more time than clear cutting and there are developers that could find a way to make it more expensive by working around existing trees. You have to put more thought into it.

The Ecosystem Services are difficult to value because we don't have markets for them. That's why I always take these numbers with a grain of salt when I'm putting them together but it is pretty clear that we don't value our ecosystem in our current markets and we are paying the price. If you're developing 37% of your GI you would probably be capturing 81% of a lot of these services particularly your flood control because it's concentrated in your streams.

The Cecil County Ecosystem Services Benefits Table:

Estimates of ecosystem service values from forests and wetlands in Cecil County (in acres).

AREA	Upland Forests	Riparian forests & wetlands	Non-riparian wetlands	Tidal Marsh	Estimated Value (2006%/yr)
Cecil County	60,050	25,370	633	1,857	\$2.1 billion
Cecil GI	45,446	19,620	563	1,724	\$1.7 billion
% Services from GI network	76%	77%	89%	93%	81%

There are five key steps to managing forest resources:

1. Assess your forest resources
2. Conserve valuable forest lands
3. Minimize development impact
4. Plant trees
5. Manage trees and forests

1. Assess - Areas along waterways might function as forest buffers. (See Slide #34 for an example of an assessment map). Slide # 35 shows the Cecil County GI Plan from the Conservation Fund (12/2007) Slide #36 are the forest areas of Cecil County. The assessment helps you answer: Where to conserve? Where to grow? Where to plant?
2. Conserve - Some of the primary tools at your disposal for conserving forests and helping you create growth consistent with your community's desired future include: zoning and other development ordinances, land conservation, financial incentives, supporting sustainable forestry. Conserving forests also means keeping working forests. Supporting a sustainable forest products industry helps maintain forests since landowners often rely on income from their property to maintain it. If that income disappears then landowners may feel the pressure to seek other uses for the land - including putting new houses on it.
3. Minimize - Some of the primary tools for minimizing the impacts to forests and trees when land is developed include: site design and best management practices.
4. Manage - Conservation requires active management of forest tracts and urban trees to enhance and maintain health and function. Optimal benefits of forest and tree cover cannot be realized if trees are unhealthy. Real risks to forest sustainability exist in the form of invasive plant species that take over. Over the next 15 years, 17% of Chesapeake forests will be at high risk from known pests and pathogens like kudzu, the gypsy moth and beech bark disease and from emerging threats such as sudden oak death, the Asian Long Horned Beetle and the Emerald Ash Borer.

One of the most frustrating things is to be in an area where you know you need to clear the forest to improve the overall health. We have taken landscape 5 out of our landscape, increased the deer herds to historic highs and we have a whole fleet of invasive species. From a forestry perspective these are significant challenges. We were in an oak hickory region and the question is how do we regenerate our native species now that we've taken it out of there. So we have this setting in which we want to do certain things to keep the forest healthy, keep it from being too dense but we can't find a contractor. If you don't sustain a forest industry, you have lost your tool to manage. Cecil County has invested in one of the most detailed GI plans I have seen and makes those links between land use and stream quality. The area to keep an eye on within in

your GI Plan is where there are significant forests. It's important to keep a forest economy even though it's not a big part of the economy, in order to manage the resources.

The Forest Conservation Goals in Maryland by 2020:

1. Retain 41% forest cover in MD, including working forest (2.6 million acres)
2. Protect Sensitive Areas - Protect an additional 250,000 acres of forested sensitive areas by 2020. 700,000 acres are already protected towards the 1.25 million acre goal
3. Protect/restore 70% streams with forest buffers - restore an additional 25,000 acres (2,063 miles) by 2020, outside prime ag land
4. Guidelines for 65-70% rural land use by 2008 for use in revised comprehensive plan elements
5. Set urban tree canopy goals - Have canopy goals for 74+ communities focusing on areas developed before storm water regulations

We have committed into the Chesapeake Bay initiative number 2, 3 and 5. The others which were included were the state recommendations. We are going to target sensitive areas through a variety of programs, continue with buffer restoration and try and realize the air and water quality benefits that come with an urban forest canopy. Virginia and Pennsylvania are at about 50 to 60% forest cover. While they were not politically willing to sign on to a "no net loss" goal, they are at a point with their forest levels in their state where they actually have a lot more comfort zone in terms of loss of environmental function. Maryland is at 41% forest cover.

Rupert Rossetti: Can you speak on # 4.

Dr. Hairston-Strang: I work with the Forest Conservation Service and we have forest conservation goals. When you look at the lands, we are not managing forests of the single landscape category. It's managed in the context of rural land use. We don't just need to preserve our forests, we also need to preserve our agriculture. Both of these are going to be core to sustaining a living in our county, state and country. We have global markets and we are realizing a savings from those international trades but it is a high risk endeavor to have to import all of our food supply. It's better for our water and better for our economy to keep some of that sustainable capacity pretty near to where the people live. The goal is 65 -70% of the total land area be set aside for rural land use. When you look at some of the ecological literature and you ask where is that those stream functions start to change, sometimes it's linked to how much of the land is in rural land use. Impervious surface only looks at impervious cover. At this point we haven't been given the official go ahead on this but the concept is that while the counties are all different with different factors, limitations, slopes, etc. and so it will affect the total number of what would be recommended for rural land use. I don't think it's realistic to say that Howard County will be going back to agriculture but it is a good guideline. Looking at Cecil County, you still have room to grow and it all depends on where you put it to determine the ultimate effect. While resource production has a lower economic return, it also has a lot less risk and demand for future services and a lot more return to deliver environmental protection which you will have to deliver because of the new regulations coming down the pike.

Rupert Rossetti: The process we are going through in November (Choosing by Advantages) is going to compare the scenarios by a whole series of factors. Some will come out of the growth simulation model, water resources model, traffic analysis, and the one I spoke to Dr. Conn about was interior forest and species. I'd like to know what degree we keep a certain percentage of rural landscape.

Dr. Hairston-Strang: One thing that may be of interest to you is the Conservation Thresh Hold

for Land Use that MML put out several years ago. It's something you have to go through and interpret because it's what people have found in certain situations. You find things you want to support and it gives you associated acreages and percentages. There's no bright lines in that report but it does give you a good synopsis to help you make decisions.

Slide #45 shows the estimated potential value of forest to water quality in Cecil County. Slide #46 ranks the GI hubs. The Elk Neck Peninsula is at highest priority. It's important that the hubs are reasonably large with corridors from a habitat sustainability perspective.

In conclusion this presentation covered the role of forests in:

- Diversified local economy
- Ag and Woodland Priority Preservation Areas
- Protecting water supplies
- Clean water (TMDL and MS4)
- Ozone mitigation strategies
- Recreation
- Livable communities

Regarding water, there is surface water that you use and there is groundwater. Some of the surface water used is out of the Susquehanna so how you manage the Susquehanna will have a big impact on water quality. You need to manage around a lot of the groundwater wells. Since Cecil County is in a geologic formation, you are going to have a lot less capacity yields so you will be needing surface water. Maintaining the GI is a big part of the strategy in developing water resources particularly in the northern part of the county.

Natural pollution, elimination systems and storm water permits don't get at a lot of our non point source land uses. Again, it's not just about water quality, we have air quality strategies in there as well. The Baltimore and D.C. air quality implementation plan of the ozone limits have included trees as the voluntary innovative measure. We should also consider, are we building livable communities? Trees are long lived providing benefits over generations. They take a long time to grow back and it all starts from knowing what you have and setting out a vision of what trees and forests mean for your community.

Guest Speaker:

Daniel Rider

**Associate Director, Forest Products & Utilization, DNR - Forest Service
With Slide Presentation**

Dan Rider: I work for the forest service and my role there is forest products as well as forest stewardship. When forest conservation is being promoted, the focus is usually on the ecological benefits. Yes, we already know that there is a direct relationship between forests and water quality, water quantity and wild life habitat. What I'm suggesting is that equally important is the economic development potential of our forests. In preserving and promoting our forests, there is both ecological and economical benefits to be realized. While there are economical savings tied to a healthy ecology, there is potential for future revenue in promoting and preserving your forests. The logger is supported by the free market for a product. He is a practitioner that keeps your forest healthy. He does the heavy lifting of stewardship. However, the more populace the landscape, the less likely they are to tolerate loggers showing up and cutting down the trees in the neighbor's back yard. It's a social thing. I have worked for the state for five years and prior to that I was in the logging industry and made a pretty good living. But when I was out there

buying timber, I was the first one to admit that I didn't want to look out my kitchen window as see a clear cut because it is an ugly mess. The less people around, the more likely you can effectively manage a forest. When there are more people around, the parcels become much smaller which is another reason why you are more likely to run into conflict.

This slide presentation contains some very good data. If you haven't seen it already, I would encourage you to go to our website (www.dnr.state.md.us/Forests/) and look up the Strategic Water Plan Assessment. Dr. Christine Conn contributed a lot to the Plan.

The rural areas are typically where the commercial logging operations would take place. On the first slide the areas in red indicate where the more dense populations are located but there are still some logging operations located in these areas. In Maryland, 2/3 take place in the hub of Baltimore. Why? Because the forest industry isn't just about planting a tree and watching it grow. When you plant the tree you're going to manage it which involves intermediate treatment. If someone is doing that work they are being paid for it and that's only because there is a market somewhere and a product is being generated. The property owner is buying into the promise of future profits. His investment pays off when the trees are harvested. The person buying the trees is willing to pay the price for the cost of planting and managing the trees for 50+ years. Without the end markets in mind, the whole industry collapses. First you plant, then you manage and when you cut it down, you have to haul it to a saw mill and then it goes to different businesses for varying products.

Cecil County has the prettiest poplar I have ever seen and there isn't a thing you can do with it. Why? You don't have any practitioners because the markets are so distant. It's interesting to note where the timber industry is located in that you don't need a lot of forest to have an industry. The forest industry, globally, is going into the tank today as are lots of industries. Last week I was looking at some data that is compiled by the bankers' association. When businesses submit their financials when applying for credit, the bankers' association shares that information. They know that sawmills are typically making about 2% profit each year and are even starting to lose money. The saw mill industry is either feast or famine. Right now they have been losing money for about 7 years straight. So mills all over the country have been dropping out. We lost the largest saw mill in the state about 2 years ago and within 6 months we lost 8 loggers. One of the problems with getting a buyer for that saw mill is they ask where are the loggers that would service this mill and they are told they all went out of business. It's difficult to start up a mill once it's been closed down. When loggers are doing well, they're good for about 3 to 4% profit per year. The insurance tag to get into the logging business is \$1 million. Banks are not usually willing to risk \$1 million to finance for a business with such a small return. Putting the primary industry back into the landscape is very difficult and the secondary industry is not possible without it. The secondary industries are the businesses which finish the lumber (or partially finish lumber) and turn it into the final product. Flooring doesn't come out of the saw mill. So every step of the way it's an economic engine. Also, we are growing a resource and we don't have to purchase it from another country. We're making it and creating our own industry.

What's the forest industry look like in Maryland? Maryland isn't exactly known as the timber state. I usually think of Maine, Mississippi and even Oregon. There still is enough money to be made in Maryland with only 41% of the State forested. Question is how much of that wood can we actually access. You have to keep the practitioners (the one's that do the heavy lifting and keep the forests healthy). In the process we keep our forests healthy so my kids have clean water, the lakes don't dry up, and when I need to dig a well to irrigate my corn - there is water there because somewhere else there is a forest that's making that water. It's only going to

happen if that forest is healthy which means the forest isn't over run with insects and it's been managed and kept at its maximum potential which only happens when people get involved. Right now we've got \$2.6 billion being generated every year (except this year which won't be so good). Back in 1996 it was \$2 billion and represented 14,000 jobs. We are 10% of all manufacturing in Maryland. This is directly from the Comptroller of Maryland: Lumber sales paying 10% of all tax receipts in Maryland. That's huge!

The threat to this industry is the increased parcelization. When you talk about sustainability, you're talking about ecology, social and economics. If we're going to have clean water, protect rare species, enhance recreation, we need to be strategic about what we protect and which work we protect and which work we create from scratch. Everything in wood is a commodity (secondary product) and the only way to compete in the commodity market is through volume. When I was a logger, it cost \$2,000 to move a logger to a location. To cover that cost you had to have volume on the tractor. Any given acre can only produce a certain amount of timber so the smaller the parcel the less likely you're going to get enough yield. In terms of what this group has been charged with, it's not only important how we lay out our landscape, another important factor is how can we slow down the trend of parcel sizes becoming smaller. What are the incentives for land owners to keep their land forested? The land owners keep their property in forest not because they expect to make a lot of money but usually for personal reasons such as it's the right thing to do. When you continue the trend of allowing smaller parcels, you lose the opportunity to maintain and promote forestry.

Most of the large forest parcels in Maryland are privately owned. These private property owners have to pay property taxes, maintain it, and usually have already decided what the money will be used for when the forest is harvested. If the property owner experiences financial problems and or the development pressure is too great, the forested land could be sold off for development. In Cecil County, though, there are many markets for the harvested timber. Even though there aren't any saw mills, there are thousands of saw mills to the north as well as some to the south, east and west. So we've got the economic opportunity. Right now there is a mad rush for firewood. A really smart guy did the math and figured out that at \$60 a barrel you could market wood as an alternative energy and currently we're at \$115 a barrel. Cecil County's red and white oak trees are in high demand and make a very high quality veneer. These are just two examples of how lumber has more value than just cutting it down and making lumber out of it.

The Maryland Commission sponsored a study from 15 leading forest economists to find out what is the critical mass for our forest industry? At what point in our wood availability do we see our forest industry implode? The report stated that Maryland has already dropped below the point of no return. However, while we'll never be a Maine we can still work more locally with mixed markets and do just as well. The forestry industry is like any other industry in that you will have peaks and valleys; people will go in and out of business. The answer is not in the saw mill. The answer is how much can you tie back to the ground. What are you doing with the natural resources? How much of that are you keeping in the local economy? What kind of secondary industries do you have? This is all sustainability. Green building is big right now and one of its tenets is to buy local. What are we doing with our policy to help support that? What are we doing with our tax policy to help these land owners with all these competing interests to overcome? What do our zoning regulations say about establishing a wood manufacturing plant? Does it treat it more like an oil refinery or like a grain elevator? Everybody wants to say forestry is a part of agriculture and then you read the fine print. Why do we need to have toilets on a logging job? What does your economic development office have to say about forestry? Do they even know it exists? Do they know that for every forestry job created, 3 more are spun off? Do

they know that for every \$30,000 lost in forestry equates to \$156,000 lost elsewhere in the economy. Does the economic development office recognize that the large businesses spun off from the forest industry (paper mill, cabinet shop, etc.) help support service businesses such as barbershops, convenience stores and laundry mats. If the barbershop goes out of business, it doesn't effect the saw mill but if the saw mill goes out of business, it could affect the barbershop. An industry cannot be valued just on employment, sales or value added. It's not just one number; there's a lot more to it.

Forest Products Industries in a "No Man's Land" of economic development. If there was one thing I could change it would be this. Garrett County has done a wonderful job of economic development. Their reward for their investment was employment, cash flow back to the owner and a greater diversity in the economy. When American Woodmark showed up what impressed them most was the county's desire to work with the forest industry. They recognized this community as one that understood, respected and appreciated their wood products business.

A state comparable to Cecil County's challenging parcel sizes is New Hampshire and Massachusetts. They almost lost their paper industry and they had to reinvent it with average tract sizes of 10 acres and they did. And Cecil County's timber is a whole lot better. New York decided to clean up their water shed by supporting businesses that promote the forest industry. They launched a buy local campaign and promoted wood products that were built locally and used local wood materials. Their easement program is progressive and they're basically saying we're drawing a line around the forests and hands off. Their easements don't say we want you to protect water quality so you're not going to do anything within 150 feet of this stream. Their easements say we want you to protect water quality and you're going to use the best available science at your disposal to do that and you're going to engage professionals and then they walk away. That gives the landowner no barrier to playing ball and the response shows.

Rupert Rossetti: Are the easements more restrictive in Maryland?

Dan Rider: Depends on who is writing the easements. Some easements in Maryland are wonderful because they are protective on the resources they intend to protect but they're not restrictive. They don't tell you how, only what their goals are. For example, this easement is set up to protect water. It doesn't tell you how and they leave it up to the professional at that time. Maryland is the most regulated timber state in the nation. The notion is we are destroying our resource when we cut down our timber and there is a lot of government oversight on every job. California is looking to Maryland on how to clamp down on their forest industry. However, the government shouldn't be treating the forest industry like they're indo China.

Rupert Rossetti: What is a meaningful tract size to keep loggers in Cecil County?

Dan Rider: For a workable forest I would say 10 acres but for loggers I would say about 20 acres.

Shawn Day: It depends. There are new things happening in forestry, especially where parcelization is concerned where adjacent landowners are teaming up together. For instance there are landowners with 10, 15 and 20 acres of land and they are putting it together collectively under a scientific management plan and harvest.

Dan Rider: Where I grew up it was very rural and now it's not but there are still many trees there. The problem is you can't access the woods because of the location of the development.

Whether you want to clear cut or not, it's irrelevant. What happens when they catch on fire? What happens when the emerald ash bore shows up and there is no point of access? The problem isn't in the building or development around the woods, but the lack of planning which resulted in no access to the woods. Should have planned to set some of the area aside because of the ecological benefits and make it accessible.

John Bennett: Rupert, another perspective on your question is at what acreage won't the State write a forest management plan? I hope this issue will be addressed in the near future and I hope the county will downsize the minimum 10 acres to a smaller parcel because we are seeing smaller parcels in the county.

Dan Rider: Yes, there could be incentives developed to consolidate the smaller parcels. The point is there is money trading hands out there and maybe there is a way to concentrate that money to consolidate blocks into meaningful forests. Providing alternative means to landowners to raise revenue from their land would be a good incentive rather than the land owner not having those additional alternatives and having to resort to selling his land for development.

Diana Broomell: Could one of the incentives be that the adjoining property owners go in together to apply for a Priority Preservation Area?

Dan Rider: I don't see any problems with that.

John Bennett: We're going to be discussing PPA's later. There are two components which have to be discussed. One being the county has to show some incentive to support PPA's such as through down zoning to show that they are actively managing that property.

Dr. Hairston-Strang: Another issue is providing an easement on your property for access.

Dan Rider: This may require that forestry is given equity with agriculture. This would be beneficial to a logger that was trying to diversify and bring value added to his enterprise. This would require being more sympathetic to zoning regulations and not treating his operation as manufacturing but more agricultural to alleviate the regulations. At the turn of the century the average wood lot in Maryland was good for about 2,000 board feet per acre. Today the same woodland with good management is pushing 10,000 to 12,000 board feet per acre.

John Bennett: In Elk Neck, the soils are so poor that what we are growing primarily are hard woods but they grow poorly in the poor soils. We looked at managing some of the State forest area with pines.

Shawn Day: Elk Neck State Forest has about 900 acres of it on the main tract that is a Lob 6 hybrid. The Loblolly Pine and the Pitch Pine was engineered and planted in the research plot. That's actually some of our most merchantable timber. We're dealing with a very large defoliation acreage which we are going out on the ground tomorrow to assess an acreage determination. Preliminary over flights show it is 900 acres of a 3,000 acre tract that was defoliated. A lot of it has been defoliated twice and it's not coming back so there is going to be some pretty aggressive timber harvesting.

Rupert Rossetti: Defoliated by what?

Shawn Day: The Gypsy Moth. They continued even after being treated and still defoliated. The

aerial spraying program doesn't prohibit the bugs from defoliating, it just prohibits from reproducing. We're looking at doing some conversions and it's going to take a grass roots effort because traditionally it converts from all hard wood forests to pine. With our site index below 50 on Elk Neck, on average, we really don't have a lot of options. When we have trees that were planted in the late 70s, the Wild Pitch that are upwards to 30 inches in diameter, that's a win/win situation because it's a mature tree. Conversely, there are Oak and Hickory that are 12 to 14 inches in diameter. They are typically 75 to 80 years old and are 2nd or 3rd growth trees. While it's a healthy ecosystem, as a forest it needs aggressive management to improve the health. Our restriction is our man power so we have to do jobs in blocks and work toward the larger goal.

John Bennett: I have Virginia Pines on my property that are 30 inches in diameter but they aren't worth anything.

Dan Rider: You always have to make sure it can pay it's freight. There is a reason why some land is growing beans and corn and not trees. It's the highest economic return for that particular acreage. Jump over to the forest plan - there's a reason why we grow the Pitch Lob opposed to struggling with the native Oak.

Shawn Day: When we are looking at our high quality of soils and higher yielding forests, the site index is usually in the mid 70 range. There are pockets of nice stands of timber in this county but unless you are right on the water, east side of the North East River, or on the west side of the Elk River you're really not going to see those higher quality yielding timbers especially if you're on the peninsula. Maryland is at the point to consider the Ash species as a viable timber species because we don't know how the Ash Bore is going to affect the State.

Dan Rider: The low hanging fruit in marketing the timber industry would be alternative energy. Within that field probably be thermal. Instead of heating your school, hospital, or library with heating oil and gas, heat it with wood. It's cheap, the price is stable, clean and renewable. You would spend roughly half of what you would spend for oil. It's local and sustainable.

Robert Hodge: Is anyone doing this?

Dan Rider: Upstate Pennsylvania had a hospital with over a million square feet they were heating. They're conversion to wood heat was slightly less than a million dollars. They figured it would pay for itself in 2 ½ years. In 3 months time they were saving so much money they purchased an electrical permit so they could generate their own electricity as well. The lady which started the whole effort was in charge of marketing for the hospital and she experienced it at her son's school. She figured if it would work for the school, why wouldn't it work for the hospital. Now the hospital association has her checking out other hospitals for wood conversion possibilities.

Dan Derr: Doesn't this contradict the Governor's No Net Loss Goal?

Dr. Hairston-Lang: Not at all. It promotes the timber industry and actually would encourage more trees to be planted.

John Bennett: The Forestry Board talked with Perry Willis about a year ago regarding using thermal energy for a new elementary that was coming online. Perry said that basically because the state association of school boards did not support that as a viable option at the time. However, it could be something that might be explored in the future if there is enough interest on

this committee to do so because to me a relatively small elementary school would be the perfect opportunity to test it. We have the infrastructure in place, the wood chip people are here, the interested land owners are here, we just need to move it on to the development concept.

Dr. Conn: There's a group that is working at the State Agency level that have developed this concept called "smart site" which support the initiatives of the O'Malley Administration. The Schools for fuels (bio-fuels) projects should support this and I presented this idea already to someone on the Maryland State School Board. While he was interested in the idea, he had a lot of liability concerns. One of the issues he was stuck on was what if the fuel wasn't there and the kids were cold in the winter. So I think there are barriers that the Forestry Board could help get over and we could make a policy change at the State level.

John Bennett: It would have to come from the State because we don't have the forward thinking community here in Cecil County.

Dan Rider: These are the barriers we encounter everyday. A lot of the apprehension is coming from the engineering community. By their trade they are very cautious because they're the ones blamed if it doesn't work. When we took the trip up to Pennsylvania to tour the hospital, it was full of engineers, finance people, public administrators and school board people. They were able to ask their peers questions and they came back excited. I'm the first one to agree that wood pellet is not the answer all the time. But when it works, it works exceptionally well. Where it works best is new construction or retro fit. If you have a 5 year old oil system, it makes no sense to rip it out and replace with a wood pulp system.

Believe it or not, the grand plan at one time was to make Maryland the wood pellet capital of the world because at the time, we had the wood and we had the markets. Maryland is the largest single market of wood pellet in the world and our market has tripled over the last eight years. Portland is leading the way. American Woodmark in Garrett County had all this sawdust and they were going to build a pellet mill. After doing a feasibility study they found that it wouldn't work because the way the commodity market works (high volume), they would need a minimum of 50,000 tons of dry sawdust per year. It had to be oak, bark free and dirt free. It was more wood than even American Woodmark could provide. American Woodmark wasn't interested which meant the pellet mill would have to buy their sawdust on the open market. They found out real quick that the existing pellet mills had a very predatory marketing practices and they could easily squeeze them out of business. The lesson learned is that if you don't have an adequate supply of your own saw dust, you're a sitting duck. The bright side of this, though, there are people in Southern Maryland who heard what I had to say and they said I didn't know what I was talking about. They built a pellet mill anyway all the way down in Calvert County. They're also using soft hard wood and they're making it because they're marketing it out as "Support your local forest industry." They've got three year's worth of orders. So it could happen here.

John Bennett: When I checked last year to have my low grade timber harvested, it was \$2.00 per ton.

Dan Rider: Fuel wood will be \$0.57 to \$1.00 per ton. But it's more than what you would have got.

John Bennett: It would be nice to have a local market.

Dan Rider: The woods that would go towards a wood boiler for heat is the same that goes for pulp wood. It's better utilization of your wood than what you get now. It's \$2.00 for the pulp wood, you get your \$1.00 for the fuel wood. Now you're up to \$3.00 per ton. You're pulling up to 20 - 25 tons off an acre so it's about \$60.00 per acre which pays your taxes.

Rupert: What kind of furnace is used for the schools? What kind of woods? Do you selectively harvest or clear cut?

Rider: Clear cut is a viable tool. What kind of wood are we talking about? Tops and limbs. Furnace is a big boiler, modern ones which would use the principles of gasification. Costs more than a typical system but you gain in the operating and the fuel. The MD Energy Administration has a grants program that will underwrite this. I've talked to the director of MEA as well as others and they're all in agreement that if you have a public facilities that would like to use wood, they can access a grants program. The way that works, it's a revolving loan program (2%) and uses fuel savings to pay the note. Therefore, you don't have to add anything to your budget. The savings doesn't come from the equipment, it comes from the fuel.

Dr. Hairston-Strang: Another reason Dan supports wood for fuel, unlike ethanol wood is a resource that can be a more manageable resource to accommodate the demand.

Guest Speaker:

Dr. Christine Conn, Ph.D

Director, Strategic Land Planning, DNR

Dr. Conn: I work at the DNR Office for a Sustainable Future. My job is to primarily look at integrating GI into strategic land planning. One of the main reasons that I am here is because of the review that came from a subcontracted report in response to the Conservation Fund's GI Study. I was extremely alarmed to read these comments and I thought they were very biased, unfounded in fact, and misrepresenting the intent of this study. So I wrote a letter to Dr. Diane Lane and copied the County Commissioners and discussed this in great length with our Secretary, Don Griffin. We talked about what our response needed to be and we both feel that what you got from the Conservation Fund was a state of the art assessment. It is far better than what you could currently get from Maryland. We're doing an update but what you got is a refined study that used your local data, information from your streams, data from your GIS shop, biological assessment just from this county so everything that you got is far better than what you could hope to achieve with the State assessment. The message that the Conservation Fund used to demonstrate where these important lands were, if we did the study, we would have done the same thing. So they are very consistent with what the State said. Our greatest hope is that you look at this. It is a resource inventory so it does show where the biggest and best lands are.

You've heard from Anne (Hairston-Strang) and Dan (Rider) that all natural resources have important benefits, but there is something really special about bigger chunks of forest land that you just can't get from scattered pieces of forest that sprawl will give you and you can never get back. Across the State it's starting to look at how the State agencies can start aligning their programs to promote smart growth and smart land conservation. We're really interested in the rural landscape and how you develop. We're not advocating "no development", we're just saying do it in the right place. You can go ahead and do what you want to do but you have this assessment and it's scientifically valid and justifiable. You can't really argue with the facts here. You can use these facts and make the decisions you need to make. Your county has some really tough decisions on where to grow and where not to grow and how to do it. Just getting this

information out there and getting it out in a public way and having that faith that it's good, I think, will be really important to make that case.

In terms of where I see the State heading, looking at local zoning, land use - it's considering an extremely important element of where we're going to invest our public funds. I really think that's where we're going over the next couple of years. You've seen it with the Priority Preservation Areas. You will be eligible for State conservation funding through MALPF if you designate a PPA that meets their criteria. Program Open Space (POS) has identified hot spots of the most ecologically valuable land in the State and Elk Neck is one of those areas. In that area your eligibility is higher for POS funding but we're looking very carefully at the zoning because from our perspective it doesn't make sense for the State to invest big chunks of money in a landscape that will be fragmented. Then we have to ask from the State perspective, "What have we bought?" If our goal was landscape preservation, ecological values, working landscape, we're not going to be served if we're investing in an area that's going to become fragmented.

I'm more than willing to come back and talk to any of the other subcommittees. Let me know if you need more information from DNR - if you need a letter from Secretary Griffin to kind of drive home that point. If you need help delineating a PPA you can definitely call on us or our colleagues at MDP. We work real close with Joe Tassone and Dan Rosen and we can help sight an area that meets all of that criteria. While I can't guarantee a funding amount, you will have a better chance.

Robert Hodge: If the green infrastructure plan is implemented by zoning, what is the point in the State paying for it?

Dr. Conn: The point is that we will know it's a stable land base. We also know that your zoning can change but if you put in good zoning, that gives us a much longer time frame to get other tools, such as conservation easements, that will last forever. It doesn't make sense for us to spend money to protect hubs where the zoning is poor. We see it as complimentary where local zoning stabilizes the land base and then we can come in with our targeted investments while you've got an open window. While the State doesn't have local land use controls, we can provide incentives for State investments so we can work together.

Dr. Hairston-Strang: The goal is to try and identify lands that will have the highest public function. The conservation easements have to also have the rural landscape concepts around it to protect encroachment.

Dr. Conn: A 1 to 20 rural landscape is considered statewide pretty good. Some other things to consider are cluster developments and incentives such as being used in Baltimore County (RC2 Zone) which deals with protecting forest patches by developing parcels in a cluster away from the forest patch in which you can keep the density.

Diana Broomell: On the growth corridor I know that Stewart's Associates was concerned with their area that somehow they weren't going to be able to develop it. However, with the right kind of zoning and development tools, wouldn't it would be proper?

Dr. Conn: That is absolutely something to consider. What you have here is an inventory and it is important to figure out where the most important pieces are. What you have to deal with is where are you going to put the development, and then what are you going to do with the zoning to make it complimentary.

Dr. Hairston-Strang: One of the criticisms of the GI Plan was that it doesn't take into account all of our social and economic considerations into account. But it's that one end of the spectrum that has good information about the values associated with a particular place. It's the county's responsibility to provide a balance between the social and the economic decisions.

John Bennett: One of the technical problems we're running up against with the PPA element is that it's a MALPF State structure. MALPF calls for Type 1 or Type 2 soils and Elk Neck does not have Type 1 or 2 soils. Is that going to be a major impediment?

Dr. Conn: I think we need to talk with Dan Rosen or Joe Tassone about that.

Robert Hodge: On the Rt. 40 corridor those soils are even worse - gravel and clay.

Dr. Conn: MALPF isn't the only land protection program that we have.

John Bennett: But I had heard that if we didn't qualify for MALPH that it would be a major impediment for designating a PPA.

Dr. Conn: Maybe you have two sites for PPA's in your county because you believe that certain portions are supposed to be for MALPF and you have agriculture and woodlands that need a different program. I think a lot of this discussion needs to be with MDP and they are willing to help so that your PPA application will be accepted.

John Bennett: Can you repeat your statement about POS targeting the Elk Neck area?

Dr. Conn: I gave Rupert a map and we can get you some cover maps. What we did was look at the GI assessment, the water quality protection targets, aquatic hotspots which your watershed should support high aquatic biodiversity, and we looked at rare species habitat. We pulled out the best of the best. This map here is an analysis of what we designated as the best of the best in the State. So these are ecological targets or our Priority Conservation Areas. For Program Open Space when properties come into the department, if they fall within these high value areas they get extra points. So the areas that fall within these areas score out really high and those are the ones we will push ahead and into the Board of Public Works. The top of Elk Neck is one of those Priority Preservation Areas.

Shawn Day: One of the areas is along Principio Creek and the other is on Belvidere Road where the Wild Life Management Area is located.

Dr. Conn: It might already be protected. This map does not take out the unprotected areas. We first start with everything in the State and if it's protected through this process it's ranked higher because it has ecological value being a protected land base.

John Bennett: Are the maps available for the other counties?

Dr. Conn: We don't have the maps available at this time on a county by county basis but since you are in the middle of doing your comp planning, ideally we would want to look at how the comp plan overlays with these maps.

John Bennett: And that would be helpful for us specifically as we draw up our PPAs.

Dr. Conn: Exactly, and if you have a PPA that's also a Priority Conservation Area, on the ag portion you can pull a MALPF on the ecological forested part. If it's not MALPF eligible, your eligible for other funding such as a POS, Forest Legacy, etc.

John Bennett: You still have funding for Forest Legacy?

Dr. Conn: It's out there but we only get about one a year. There's some interesting ideas for conservation financing that's floating out there. The Trust for Public Land is pushing the New Jersey model where they are authorizing local bonds, fees or the voluntary donations for very local campaigns for protecting portions of a county.

Dr. Hairston-Strang: You also have a good opportunity during this comp plan revision to rethink your PDR Program. The biggest challenge to do that is allowing increased density and meeting that demand.

Rupert Rossetti: I was on a panel with somebody from the Brandywine Conservancy who advises on PDRs (Purchase of Development Rights). He said the key to getting a good PDR program is to downzone the receiving area the same time you downzone the sending area.

Dr. Hairston-Strang: Right. Otherwise there's no incentive to use them. That's what's happened to the PDR Programs along the Eastern Shore - nobody's using them.

Dan Derr: The problem is you need the water and sewer to build at the density that we're allowed in the original zoning. Otherwise you have to build at a lower density. If the water and sewer did come into that area then it would work because you would have to buy TDRs to get the higher density.

Dr. Conn: If that's something you're interested in exploring, there are resources such as the Trust for Public Land (TPL) and the Center for Agroecology. They could provide direction and technical assistance. There was another contact we had which Sally Claggett (The Chesapeake Bay Program) had brought in and he had said we could contact him at any time. We'll try and get that contact for you as well.

Dr. Hairston-Strang: Our contact for TPL was someone by the name of Gilbert. One of the initiatives they're interested in promoting are local bonds to preserve local areas. They are also trying to get matching State funding just like they're doing in New Jersey. Local jurisdictions in New Jersey get the funding from their State if they raise their own money as well. Program Open Space is also a program that might be used in getting answers for a viable TDR Program.

John Bennett: Is there anything coming up in the Legislature that would affect our process that will be ongoing for another 6 to 9 months?

Dr. Conn: The Bay Foundation pushes through a lot of initiatives and they're looking to work with smart growth groups such as 1,000 Friends of Maryland to hit the growth issues pretty hard. What I've been hearing is that they're really interested in the comp plan process and how the zoning is actually enacted on the basis of the comp plan process. So I think there will be a closer look at that process. The Statewide TDR Program is something that people are starting to take a look at. I don't think it will help you in your time frame because it will address reaching beyond that. They will also be looking at what a PFA is and why the majority of development which has

occurred in the last 5 and 10 years isn't happening in PFAs.

Robert Hodge: How much money have we gotten from the State of Maryland to improve our PFAs and infrastructure?

Dr. Conn: I don't know the answer to that.

Robert Hodge: I can tell you. Almost nothing. The State has not come up to the plate and provided the resources. If they truly feel that PFAs is where we ought to be, why aren't they helping us financially?

Dr. Conn: Good question and certainly one worth asking.

Diana Broomell: What areas have PFAs that have worked and why?

Dr. Conn: Someone from MDP would probably be better to answer this question but Baltimore County is a great example of how PFAs have worked because they have urban/rural demarcation line. They've held their zoning, PFA boundaries and they've enacted it from the bottom up.

Diana Broomell: That's what our county has not followed through on.

Owen Thorne: We don't have a demarkation line anywhere.

Phyllis Kilby: There was money spent on the Elkton and Perryville Plant from the Bay Restoration Fund but I can't recall any other funds which the county plants received.

Robert Hodge: But that was for Bay Restoration and not for smart growth.

Phyllis Kilby: But that was a way to reduce the effluent being discharged. There also may have been small amounts of PFA funding going into the towns but I don't know if we (county) asked for anything. That's the problem is that the towns were the only ones doing the asking.

John Bennett: The way we've handled infrastructure is that we took one direction and backed away and then tried another direction and backed away, there's been no consistent plan.

Rupert Rossetti: The same thing was happening on the 2010 Trust Fund: \$25 million was raised and now they're down to about \$18 million. They had 32 projects submitted to the Bay cabinet and there was none from Cecil County. So I don't think we're looking and I don't think we're offering.

Dr. Conn: When you're looking for State funding, you have to think about State goals and where the right places are.

Dr. Hairston-Strang: If you look at where Cecil County is right now, it's a really significant window. You can go in a lot of different directions. You still have a lot you can save and not a lot of counties in the State can say that.

John Bennett: Apparently we're going to get two new scenarios from our consulting firm. If we send them to you, would you care to comment on them?

Dr. Hairston-Strang: We could probably do an assessment of high water quality value in the forested area of your development district. Those are the kind of statistics we could provide; we can't tell you where you need to grow.

Rupert Rossetti: Let me talk to Diane and Michael because they are providing a list of the factors that are going to be considered.

Dr. Hairston-Strang: And we can do the same with the GI.

John Bennett: There is some perspective in some quarters that the GI plan was done by the Conservation Fund in part because they have their agenda. They're agenda weighted towards preservation without considering economic and human development costs. It would be better if you could approach it from your office as opposed to referencing the Conservation Fund because I'm afraid the Conservation Fund has some baggage attached to it.

Dr. Hairston-Strang: Keep in mind the Conservation Fund has no financial connections to the State of Maryland. What I can provide is water quality value as well as a lot more smaller stuff such as the benefit of increasing buffers.

Dr. Conn: Any kind of response that we give to you on the scenarios will also be relayed on State goals and assessments, state data, state models and state resource information. We can pull in a host of other folks for a couple hour work session and get their feedback.

Dr. Hairston-Strang: For POS you don't have the data layer of a stronghold watershed.

Rupert Rossetti: I don't think we have any designated stronghold watersheds in Cecil County. We've got some Tier 2 reaches.

Dr. Hairston-Strang: Stronghold watersheds are based on nontidal data so we're still developing new infrastructure data to get into the tidal reaches. So to the extent you have a tidal shoreline you probably have tidal rivers. The stronghold watersheds are only looking at the nontidal streams. So it's not that you don't have significant watersheds, it's that there is a sentinel watershed for streams and typically they're overlapping. It was interesting looking at the statewide data on the difference between MDEs tier 2 non degradation water designations and where MBSS (MD Biological Stream Survey) put the stronghold watersheds because they're not in all the same places. The difference in the criteria is that the tier 2 watershed looks only at biodiversity and the stronghold watersheds look at both biodiversity and rare species as semblances so it's concentrated more on places where you didn't necessarily have the most diverse community but you had the rarest. The flat out biodiversity could be a little higher where you had a little more diversity in the landscape where you started to get more of the mixed residence - ag and forest for example - where you have critters that were open and forest dwellers. It's still good water quality but it's not the same places.

Dr. Conn: They also had to score a 4 on the IBI (Index of Biotic Integrity) for a tier 2 designation to consider the fish and the benefits.

Meeting Adjourned at 10:05 p.m.