Governor's Council on Climate Change (GC3)
Adaptation and Resilience Subcommittee Meeting
MEETING MINUTES

Meeting Date: December 15, 2020
Meeting Time: 10:30 am – 12:00 pm
Meeting Location: Zoom
Meeting Recording

ATTENDANCE

Attendee	Title	Organization	Present
Claire Coleman	Undersecretary, Secretary's Designee	Office of Policy & Management	√
Matthew Fulda	Executive Director	Connecticut Metropolitan Council of Governments	√
Kevin Grigg	President and CEO	Fuss & O'Neill	√
Kayleigh Royston		DOAG	√
George Kral	Town Planner	Town of Guilford	√
James O'Donnell	Executive Director	UConn, Connecticut Institute for Resilience & Climate Adaptation	√
Frogard Ryan	Executive Director	The Nature Conservancy	√
Katie Dykes	Commissioner	Department of Energy & Environmental Protection	√
Rebecca French	Director of Office of Climate Planning	Connecticut Department of Energy and Environmental Protection	√
Bryan Garcia	Chief Executive Officer & President	Connecticut Green Bank	√
Andrew Mais	Commissioner	Department of Insurance	√
Phone Participant 1			√
Phone Participant 2			√
Phone Participant 3			√
Aicha Woods			√
Alanis Allen			√
Alec Shub			√
Allyson Cheynes			√
Amy Paterson			√
Andrew Droney			√
Anji Seth			√
Brenda Bergeron			√
Brian Thompson			√
Bryan Hurlburt			√
Carol Youell			√
Cary Lynch			√
Cheryl B Cappiali			√
Chris Donnelly			√
Connor Rockett			√
David Bingham			√
David Murphy			√
Denise Savageau			√
Diane Lauricella			√
Eric Hammerling			√
Frank Cervo			√
George Bradner			√
Goudarz Molaei			√
Hallie Metzger			√

Harry White			√
James Albis			√
James Finch			√
Jennifer Perry			√
Joanna Wozniak-Brown			√
John Barnowski			√
John Lyons			√
John Truscinski			√
Katie Lund			√
Kimberly Stoner			√
Laura Bozzi			√
Laura Cahn			√
Lisa Hayden			√
Louanne Cooley			√
Lynn Towill			√
lynne bonnett			√
Mary Mushinsky			√
Mary Pelletier			√
Mason Trumble			√
Nathan Frohling			√
nicole Lugli			√
Patricia Taylor			√
Ralph Jones			√
Rick Jacobson			√
Rick Newton			√
Robert Bell			√
Robert LaFrance			√
Rudy Sturk			√
Shelley Green			√
Susan Masino			√
T. Morrissey			√
Tyler Anderson			√
William Lucey			√

AGENDA & NOTES

Welcome and Announcements

Commissioner Katie Dykes welcomed the members of the Governor's Council on Climate Change (GC3) to the meeting. She explained that while reviewing the following recommendations, she would skip over the recommendations labeled "mitigation" because they have already been discussed during the previous meeting.

Working and Natural Lands Recommendations Review

3. **Explore option of Statewide "No-Net-Loss of Forest" Policy**

- Matthew Fulda: This is a little soft in terms of "explore option of statewide". Is there a reason this language is soft and less specific? I would be okay strengthening that language to "implement a no net loss forest policy".
- Katie Dykes: I think the view from feedback from GC3 members is that some of these details need to be worked out and addressed so putting this forward as a recommendation in the January report, which would be for items ready for near term. I think the action step for 2021 would be looking into how to design such a policy which would be a necessary step before moving into implementation.
- James O'Donnell: If it is a mitigation motivation for managing forests then it is not so much the area that matters, but rather the area and the demography that creates their size and their carbon sequestration potential. If it is an ecosystem motivation, then maybe the area is more important but if we are going to study something going forward for the purposes of climate change mitigation, the question is how do you do it in order to maximize the mitigation potential? The goal of the study should not be just about how do you economically and politically sustain the existing area, rather, how do you do that and manage the system so that the mitigation capacity is maximized. At the moment, I don't think there is a goal and policy that advances ecosystems, other than protecting the area. What we need to do is protect it in terms of its mitigation capacity and I think the language is in the science and technology draft in the top ten things.
- Bryan Garcia: Maybe after that first sentence we add "to maximize mitigation potential".

- Katie Dykes: This report covers recommendations for action to prioritize to begin in 2021 or early 2022. We recognize there are many recommendations made by the working groups that may not be in this list, but that will get further discussion and evaluation for potential advancement into the final report, and at the end of next calendar year, the recommendations that are listed here could occur in 2021 or beginning in 2021. I think that's where the distinction is between the implementation of the no net loss of forest policy, for example, which I think would require legislation, potentially, I'm in my understanding, versus the program design and evaluation.

2. **Evaluate approaches and best practices for Siting of Renewable Energy Infrastructure to Avoid Loss of Forests, Farmland and Other Sensitive Lands**

- Frogard Ryan: Siting should also include other energy sources and not just renewables.
- Robert Bell: I think it's good as it is. It's important to keep in mind that approaches to avoid loss of sensitive land in general is important, not just because of renewable energy.

7. **Protecting forests with a changing climate** and 8. **Funding, Programs, and Resources Needed for Implementation**

- Matthew Fulda: Very supportive of these recommendations.
- Roberta Bell: 7a, if a habitat is most at risk from climate change, it's not clear that acquisition of it is going to alter what that risk is or that risk from occurring. Maybe it's intended to be or maybe it could be more about acquisition and preservation of lands that could add to adaption and resilience benefits related to climate change.
- Frogard Ryan: A comment that fits here, but could fit in a couple of other categories as well. And that's our recommendation to establish and implement a science driven process and we offer the Nature Conservancy's resilience and connected networks data, which are ready and available to use now and could be helpful in identifying strongholds and ecological connections for maintaining diversity and functional integrity in the face of climate change. And it's a blueprint for land conservation and for guidance in terms of watershed management and prioritizing restoration.
- Katie Dykes: As we think through an equity and environmental justice lens in our approach to these recommendations, one thing is to also consider these grant programs and our broad support for open space. It's really important that we are doing this in a way that is aligned with supporting equitable access to housing as well and thinking about opportunities to make sure that these NGO's with twin aims are working in concert. In terms of making sure that we're considering from the standpoint of our forests in our open space that we're thinking about protecting those ecosystem values through a really comprehensive and equitable approach to development just generally, not just renewable energy projects, but also how we're supporting access to affordable housing and those types of values as well to prevent sprawl.
- Claire Coleman: One way we could consider this is by making sure those goals of promoting affordable housing and all of these environmental goals are aligned through the state POCD, which has both components in it.

9. **Protect and enhance the ecosystem services value of wetlands using sound science and adaptive management strategies**

- Robert Bell: 9b I think this should be about conserving ecosystem services that have climate resiliency benefits.

12. **Protect the future ecosystem services value of inland waters**

- Frogard Ryan: what I stated prior in terms of the resilience connected networks, that certainly applies to rivers here as well.

- Matthew Fulda: In the rivers section I would add: Where feasible and possible daylighting rivers, especially in urban and developed areas that have been covered. Potentially in 12c.
- James O'Donnell: Thinking about prioritization of actions for January, we should try to emphasize things that are critical to do right away that address climate change adaptation and resilience. We should do these, but some of these things are not priorities in my view.

17. **Further develop policies, education/outreach, research, and funding opportunities that encourage protections for inland waters**

Frogard Ryan: There is a recommendation that we don't see in here that we would be in favor of and it's to update the storm water quality manual and include post construction provisions in the storm water general permits for erosion and sediment control.

Public Comment

Joanna Wozniak-Brown: I wanted to add to the agriculture recommendation, I think it's number 23, incorporating protection of farm workers, particularly from intense storms and reduced air quality or extreme temperatures.

David Bingham: I've wanted to comment on the fact that so many of the things that are In your goals have to be matched on the municipal level and the importance of enabling municipalities to have more flexible funding. In a tax system where towns are stuck with very regressive property taxes means that they don't have flexibility. There is an importance of enabling legislation to allow a fee on development, which is destroying our natural areas. A convenience fee is used in many of other states now across the country. The importance can't be overestimated. This brings in and allows municipalities to get the matching grants that are needed, whether it's for farmland protection or for removal of invasive species for stewardship, for the urban forest, for wetlands mitigation, all of these different things often require local matches and if we don't enable municipalities to do that only the rich ones that can afford to do it on property tax will tend to be taking advantage of the state programs.

Mary Pelletier: You guys have done a great job but these meetings, one after the other, makes it hard to It really hard for us to just weigh in on this. There have been a lot of opportunities, but here it is the last minute and it all looks great but I have to say it's a quick scramble to try to come up with any last minute come any comments at this stage.

Rebecca French (response): There will be another public review period in January after we have reviewed the reports.

Robert LaFrance: Are these going to be made available on the website? To the extent that things can be posted after these meetings, I think that would be very beneficial to everyone involved.

Rebecca French (response): The meeting minutes are posted on the GC3 webpage and the draft documents are included there.

Denise Savageau: I made comments at yesterday's meeting regarding soils and those are applicable to this discussion. I think we need to look at both the Tidal Wetland Act and the Inland Wetland Act in terms of, is there any work that needs to be done to them in relationship to climate change. For example, when you're making a decision, is their language we need to change to make sure that the municipalities have the tools that they need to protect wetlands and particularly the ecosystem functions relating to climate change resiliency. There was a rivers group and there was a wetlands group and we needed something that was an inland water resources group and coastal water resources group so that we cover the whole gamut. There's a huge overlap between the work being done in a lot of the committees. For example, harmful algal blooms increase during periods of drought and with high temperatures in our streams. I wanted to emphasize the forest protection piece in terms of drinking water supply. We know that it's good for all watersheds, but it's really about consumptive use and because of that, protecting that water supply is really important as we're talking about these changes in precipitation and hydrology.

NOTE: *Slides and presentations are available on the GC3 web page: www.ct.gov/deep/gc3*

Meeting Chat

10:38:52 From Alanis Allen : Hello everyone! Discussion is for GC3 members only, however anyone can make a verbal comment during the formal public comment period. In order to do that, you can private message me (Alanis Allen), and I will add you the list.
10:42:51 From Allyson Cheynes : Nice try, Matthew. You ran up a against a deliberate obsfucation of the meaning of the policy.
10:44:36 From Shelley Green : There are emerging programs that provide incentives to landowners of smaller forested parcels (e.g., family forest program). They could be applied in CT.
10:44:52 From Harry White : No net loss of maximum sequestration ability of CT forests.
10:45:57 From Laura Cahn : New Haven is trying to turn a park into public housing and cut down more than 20 mature plane trees. Yale Golf Course has announced plans to cut down trees to return to its original 100-year-old design. I hope these pieces of urban forest won't be lost by the time any measures are taken to prevent such actions.
10:46:06 From Allyson Cheynes : Jim's point is CRITICAL.
10:47:12 From Denise Savageau : Forest #3 - this is not just about mitigation, it is about all ecosystems services. Disagree with Jim on this. It is not just about GHG but about entire suite of ecosystems services>
In terms of Matt's comments, I agree that the language should be stronger. So replace "explore option" with "Design and Adopt"
10:47:43 From Amy Paterson : Per Rebecca's response: Tax incentives for private landowners is captured in the Forest Sub-Group Funding and Financing Section.
10:47:54 From Allyson Cheynes : Maximizing mitigation potential is an umbrella that covers everything in the forest except killing trees.
10:48:57 From Shelley Green : I agree, Denise. It's both about long-term health of forest ecosystems (their ability to shift in response to climate change) and about their mitigation/carbon benefits. Among many other benefits.
10:49:37 From Eric Hammerling : Rebecca and the Commissioner are 100% correct that the intent was to keep "No Net Loss of Forest" policy at high level, with some of the ground level details to be worked through in 2021.
10:50:21 From Susan Masino : I agree with multiple values, and some of them can boil down to math (mitigation) and some require more detailed data collection and analysis. Connecticut is included as part of the Global Safety Net as a tier 1 climate stabilization region. This is a recent international analysis, and New England is the only region in the US that is part of the Global Safety Net. We need to be careful that we do not take wrong turns.
10:51:48 From Chris Donnelly : to make a global argument about sequestration would require a global analysis of how reducing productive about from forests, especially Connecticut's, would actually increase sequestration and decrease use of forest products. It is much more likely that it would just shift sourcing of wood from well managed to less well managed forests. If people are intent on making this point, they cannot make it in a narrow perspective.
10:52:00 From Lisa Hayden : Agree with Denise & Shelly - carbon sequestration & storage is a critical priority but not the only important value that forests provide to be considered in a no net loss forest policy as part of climate policy.
10:52:54 From Allyson Cheynes : Eric, why would we let an agency captured by science-deniers have control of the fine points? See C. Donnelly's fresh comment as a proof.
10:53:11 From Denise Savageau : #4 - include urban forests
10:53:48 From Patricia Taylor : Wouldn't it be Increase Mitigation of GhG THROUGH Connecticut's Forests?
10:54:20 From James O'Donnell : I think I said that goals should include maximizing mitigation. I understand and support that there are other goals of management. The question are

how do we include mitigation capacity in management plans and what science do we need to advance to know we are doing it effectively.
10:56:03 From Chris Donnelly : At least equal weight should be given to tree maintenance as is given to tree planting. In many circumstances, maintaining properly our larger trees is a better way to gain the full potential benefits of urban forests.
10:56:10 From Amy Paterson : Agree with Rebecca: Forest Sub-Group recommendations include other suggested mechanisms for funding urban forestry.
10:56:40 From Denise Savageau : Urban/Community forests also provide a host of ecosystem services beyond just heat island including air quality, water quality. etc.
10:57:00 From Susan Masino : Protecting and restoring riparian corridors in urban areas has many benefits and perhaps should be more explicit.
10:57:13 From Eric Hammerling : Agree that 6 a & b can be combined (with the addition of urban forest maintenance as Chris D suggested).
10:57:51 From Denise Savageau : 7 - the obvious missing here is protecting watersheds and drinking water supplies - very vulnerable to climate change
10:59:02 From Eric Hammerling : Good suggestion, Rob on 7a.
10:59:20 From Harry White : Agree w/Rob. Critical, actually.
11:00:56 From Allyson Cheynes : Landscape context is everything. Protecting alpha/point-sites is not enough.
11:02:09 From Denise Savageau : 7 - forested wetlands are particularly vulnerable to climate change and also critically important for carbon sequestration (organic soils) and water resources.
11:03:28 From Allyson Cheynes : Denise, DEEP is thinking about cutting forest wetlands to improve bat habitat. Because, you know, to DEEP and its forestry gang, bat decline is apparently not about white-nose disease and is about not enough habitat, so get out the chain saws to save nature.
11:06:07 From David Bingham : Section 8 Should include enabling municipalities the option of Raising funds for land protection and stewardship including urban forestry should be included in section 8, to provide funds to match federal and state grants
11:07:31 From Denise Savageau : 8d - is not just about mitigation. it is about all ecosystem services
11:08:15 From Denise Savageau : 8 - should include how we are setting ourselves up for federal funding from USDA - both Forest Service and NRCS
11:08:20 From Amy Paterson : Agree with David B. - that recommendation is in the Forest Sub-Group report as well as Financing Adaptation and Resilience Working Group..
11:08:30 From Denise Savageau : e.g. Match
11:09:55 From Eric Hammerling : Agree with Amy & David B. that if we're noting federal funds and state funds, we should also include enabling municipalities to be able to provide matching funds to achieve various climate-related green outcomes.
11:09:56 From Robert LaFrance : I also agree with David and Amy on that recommendation.
11:15:50 From Mary Mushinsky : We need to show by tax breaks that wetland buffers have value. Should be similar to P.A. 490 for farmland.
11:15:51 From Denise Savageau : Wetlands - we need to review both the Tidal wetland act and IWWA acts in terms of climate change.
11:17:41 From Denise Savageau : Moving forward into 2021 work WNL should be reorganized: instead of Rivers and Wetlands, should be Inland Water Resources (includes wetlands) and Coastal Water Resources (includes tidal wetalnds)
11:17:48 From Mary Mushinsky : We need to show value of river buffers by offering tax break to landowners, similar to P.A. 490, for buffer protection.
11:18:10 From Carol Youell : 12d should also include the quality of our public drinking water supplies.
11:18:40 From Denise Savageau : 12 - needs to specifically included source water protection

11:18:50 From Allyson Cheynes : Every major river should have a riverkeeper to have daily eyes on the rivers to get granularity into the mix.
11:19:08 From Susan Masino : Can we make a cross-group recommendation on strong protection of headwaters, riparian, and wetlands at least on public land? This is mitigation and multiple types of adaptation, and the state can lead by example based on the science. Not sure if this is explicitly on the list but this is a simple recommendation with multiple benefits.
11:19:17 From Mary Mushinsky : River buffers continue to disappear as landowners seek views.
11:20:30 From David Murphy : sorry folks about my video turning on. My bad
11:22:43 From Allyson Cheynes : Headwaters forests, riparian forests (to 300m from water, and Class I watershed lands should be protected from logging.
11:23:09 From Mary Mushinsky : We must protect vegetative buffers in order to keep rivers cool and oxygenated in summer. Climate change is putting more stress on rivers in summer.
11:23:33 From Harry White : We should be increasing coarse woody debris in all tributaries.
11:24:01 From David Bingham : We have state coastal zone management regulations. Riparian corridors should not be left to local commissions to protect on their own (zoning upland review areas or overlay zones) because there is so much local pressure for development. A riparian corridor zone statewide management baseline for protection should be established.
11:24:34 From Allyson Cheynes : Brilliant, David.
11:25:31 From Mary Mushinsky : We need enforcement of public access. In New Haven, Lowes continues to fail to keep public access open, even though it was included in their permit.
11:26:14 From Allyson Cheynes : Certificate programs for local highway crews for water protection, street tree management, invasive plant management
11:28:00 From Mary Mushinsky : "Public access" needs highly visible signs to aid in enforcement of public access.
11:28:04 From Patricia Taylor : A climate and health disparities map would provide data to support protections you recommend.
11:28:10 From Denise Savageau : Storm water manual is being updated by CT DEEP now
11:29:28 From Denise Savageau : 18 - need to put this in context of local food and food security
11:29:55 From Allyson Cheynes : 19. No biomass in on-farm energy. It is C positive.
11:31:02 From Bryan Hurlburt : agree - soil health covers it
11:31:12 From Kimberly Stoner : Would be good to explicitly include cover cropping in soil health practices
11:31:33 From Claire Coleman : apologies have to move to another call. thanks this is great set of recommendations.
11:31:44 From Denise Savageau : 24 - need to adopt soil health legislation as part of 22a-315
11:32:30 From Mary Pelletier : it's difficult that this meeting has been scheduled so suddenly at a time with there are other previously scheduled meeting
11:33:14 From David Bingham : On Long Island, many thousands of acres of farmland has been saved by municipalities purchasing development rights using a conveyance fee. Money has been plowed by farmers back into repurposing farms (organic farms, vineyards and hopyards that were once potato fields). CT should enable the
11:33:24 From Diane Lauricella : Stormwater Manual update must include stressing importance of Green Infrastructure. Right now it is rarely included...in planning. If this could be made as an "opt out" option to guarantee it was tried may expedite its use. Also, Stormwater Manual education for land use officials would be important.
11:33:44 From Susan Masino : Local food and food security is mitigation and adaptation and public health; local, distributed circular systems are critical in preventing disaster-related disruption and the associated costs (mitigation, public health, $$ etc).

11:35:00 From Allyson Cheynes : COVID illuminated the importance of local food production and distribution. We dodged a bullet this time.
11:35:00 From Chris Donnelly : will these be posted on-line for the public in advance?
11:36:38 From Mary Mushinsky : It is expensive to fix stormwater infiltration problems with engineering. It is more cost-effective to prevent infrastructure problems by protecting and valuing wetlands and streamside buffers.
11:38:46 From Denise Savageau : Soil health legislation http://www.ctcouncilonsoilandwater.org/wp-content/uploads/2020/12/Soil-Conservation-Title-update-2021.pdf
11:40:39 From Susan Masino : I agree with David Bingham's comment re: matching for municipalities. Please note that a lot of projects may be eligible now for matching money through SustainableCT and if anyone has projects they could consider that mechanism through an eligible municipality.
11:42:13 From Laura Cahn : Unless I missed it, there was no recommendation concerning limiting pesticides, especially herbicides. We must articulate this goal. Though Monsanto is now settling a billion dollar class action lawsuit concerning Roundup exposure, one CT Ag Station scientist's entire body of work involves uses of glyphosate, Roundup's main ingredient. I saw two documentaries last week about Monsanto's false data being put in published scientific papers over decades.
11:42:50 From Kimberly Stoner : Thank you for asking for posting - the hardest thing to do looking at these documents is to identify what is missing as they are being scrolled online. It is important to be able to review the documents to see what is missing.
11:43:44 From Laura Cahn : Monsanto is also settling a suit involving Dicamba. I documented more than 40 cases of pesticide application this past spring and summer, some of them in high wind conditions.
11:45:32 From Patricia Taylor : Denise's comments dovetail with James O'Donnell's comments in that they are asking for this report and thinking to correspond to systems and functions rather than form and geography.
11:46:06 From Eric Hammerling : Excellent comments, Denise. Thanks!
11:46:33 From Amy Paterson : An important point of emphasis regarding David Bingham's point on the municipal funding option: The proposed legislation is enabling - giving municipalities the authority to establish a funding program. It is not a mandate. Communities can debate whether to adopt it or not -- but they need enabling authority.
11:47:06 From Carol Youell : Thank you for emphasizing water supply protection and the role of our forests.
11:47:07 From Frogard Ryan : Thank you, Rebecca, and team for your leadership and shepherding this process through.
11:48:00 From Allyson Cheynes : Thanks, Rebecca. Nice work herding the kittens.
11:48:07 From Amy Paterson : Thank you, Rebecca, and all for this opportunity.
11:48:11 From Robert LaFrance : Thank you Rebecca!
11:48:14 From Anji Seth : Thank you, Rebecca,and all.

Working and Natural Lands Recommendations

For inclusion in the January 2021 GC3 Report
for actions that will begin to be implemented in 2021 or early 2022

1. **Evaluate usable models to reliably monitor and report on carbon sinks related to working and natural lands**, including models developed by federal, state, academic, and nonprofit partners as well as any efforts of the U.S. Climate Alliance as part of considering a negative emissions strategy alongside reported emissions for the building, energy, and transportation sectors (Mitigation) (cross-list S&T, MS)

2. **Evaluate approaches and best practices for Siting of Renewable Energy Infrastructure to Avoid Loss of Forests, Farmland and Other Sensitive Lands**. (Mitigation)(cross-list MS)

Forests Sub-Group

3. **Explore option of Statewide "No-Net-Loss of Forest" Policy.** Engage with stakeholders regarding the "no-net-loss of forest" policy to evaluate its feasibility, needed resources and associated programs. Consideration should be given to the following actions as part of the evaluation of this policy: avoid forest conversion; protect healthy, intact forests; offset all planned or permitted forest losses; provide incentives for stewardship, forest retention, and forest resiliency; and protect urban forests, build more parks, and plant more trees.

4. **Increase Adaptation and Resilience of Connecticut's Forests**
   a. Support keeping forests as forests and evaluate mechanisms to achieve this goal, such as encouraging private landowners to protect forestland through easements, ecosystem payment mechanisms, and strong markets for local forest products.
   b. Support statewide, regional, and local actions align to maintain un-fragmented forests within and across political boundaries with emphasis on connections to waterways and wetlands, core forests, and wildlife habitat linkages, including continuing work under the Coalition of New England Governors and Eastern Canadian Premiers on resolution 40-3, Resolution on Ecological Connectivity, Adaptation to Climate Change, and Biodiversity Conservation. (Adaptation)

5. **Increase Mitigation of greenhouse gases from Connecticut's Forests: Keep Forests as Forests**
   a. Evaluate feasibility of a goal of permanent protection of at least 50% of core forests greater than 250 acres by 2040 and identify resources that would be needed to achieve that goal (Mitigation)
   b. Consider actions to increase statewide forest cover from 59% to over 60% by 2040 (Mitigation)
   c. Pursue opportunities to refresh guidelines for vegetation management utilized by electric utilities and DOT and public works within available resources.
   d. Evaluate how to improve forestry practices in Connecticut's working forests by following scientific principles, including the emerging body of knowledge on how to manage forests for resilience and to store and sequester carbon. (Mitigation)

6. **Climate Change Threats to Vulnerable Populations**
   a. Invest in urban forestry to protect against extreme heat events created by climate change. . (Adaptation)

b. Support community interest in tree planting, parks, and/or community gardens in densely populated areas to support climate solutions that could meet multiple needs such as increasing health outcomes, employment, and entrepreneurial opportunities and the Social Determinants of Health. Consider the creation of a Youth Conservation Corps to help community-based groups with implementation. (Adaptation and Mitigation)

7. **Protection forests with a changing climate**
   a. Consider reevaluation of Connecticut's Green Plan and open space grant programs to prioritize acquisition of land and conservation easements for habitats most at risk from climate change (Adaptation)
   b. Support federal funding programs that support habitat stewardship and protection such as the Recovering America's Wildlife Act, and others (Adaptation)
   c. Evaluate research opportunities for adaptive management for ecosystems vulnerable to climate change (Adaptation)

8. **Funding, Programs, and Resources Needed for Implementation**
   a. Incorporate more specific climate-related criteria into selection of projects/level of funding. These include the Open Space and Watershed Land Acquisition Grant Program (OSWA), the Recreation and Natural Heritage Trust Program (RNHT), and the Recreational Trails Program (RTP).
   b. Preserve funding for Community Investment Act (CIA)
   c. Evaluate strengthening the Urban Green and Community Garden Program to include Urban Forest Improvement Projects. (Adaptation and Mitigation)
   d. Evaluate approaches for Siting of Renewable Energy Infrastructure to Avoid Loss of Forests, Farmland and Other Sensitive Lands. (Mitigation)

Wetlands Sub-Group

9. **Protect and enhance the ecosystem services value of wetlands using sound science and adaptive management strategies**
   a. Encourage land and ocean management behaviors that support ecosystem services by incorporating new and emerging science and technologies, such as sediment additions to marshes, low impact development, green infrastructure, living shorelines, conservation and other nature-based adaptations. (Adaptation)
   b. Identify and conserve ecosystem services vulnerable to climate change. Identifying and preserving future inland advancement zones would help create future protective storm buffers for coastal communities while providing the co-benefit of preserving an ecologically important habitat and protect Long Island Sound from pollutants. (Adaptation)
   c. Continue monitoring and assessment of impacts of climate change on wetlands and near coastal waters and update management tools and strategies.(Adaptation)
   d. Work with partners to develop a habitat suitability model for restoring inland and coastal wetlands, identifying areas which provide the greatest increase in ecosystem benefits when protected or restored. (Adaptation)

10. **Communicate the value of wetlands to Connecticut home and business owners through engagement on climate resilience efforts**
    a. Include nature-based solutions as part of the state Natural Hazard Mitigation Plan (NHMP) and encourage municipalities and Councils of Governments to include this approach in local NHMPs. (Adaptation)

b. Engage with partners to educate and assist private landowners and developers in the management of their lands to minimize impacts to wetlands and reduce risk from climate change. (Adaptation)
c. Prioritize nature-based adaptation strategies that will ameliorate the effects of water inundation, including natural habitat conservation, Low Impact Development (LID) Best Management Practices (BMPs), agriculture water BMPs and drinking water treatment standards. (Adaptation) (cross-listed S&T)

11. **Further develop policies that encourage protections for wetlands under a changing climate**
    a. Evaluate how to integrate the newest rainfall data modeling into stormwater models and management tools and ensure coastal floodplain planning is informed by the state's sea level rise scenarios. (Adaptation and Mitigation)
    b. Prioritize acquisition of land and conservation easements for ecosystem services most at risk from climate change, leveraging Connecticut's Green Plan and open space grant programs. (Adaptation and Mitigation)

Rivers Sub-Group

12. **Protect the future ecosystem services value of inland waters**
    a. Develop the scope for a science-driven process for identifying and prioritizing river networks that will likely maintain diversity and functional integrity, even under shifts due to climate change and protect the ecosystem services of inland waters. (Adaptation)
    b. Formalize continuation of land acquisition that will protect high-quality waters. (Adaptation)
    c. Promote urban forestry and expansion of urban green spaces, including protection and/or re-establishment of riparian corridors and creation and expansion of public open spaces that incorporate nature-based solutions, low impact development and green infrastructure. (Adaptation)
    d. Expand water quality focus of watershed-based planning to also consider related flooding and climate resilience issues and solutions. (Adaptation)

13. **Re-establish free-flowing character and connectivity of inland waters and hydrological connectivity**
    a. Explore programs that will eliminate physical barriers to stream connectivity. As part of a program the following should be considered: identifying resources to remove barriers; assessing impacts of road crossing designs; engaging partners to develop educational content on dam removal; and identifying, assessing and prioritizing known barriers in the state, the removal of which would lower flood risk and allow for stream and habitat connectivity and promote resilient ecosystems. (Adaptation)
    b. Encourage nature-based adaptive restoration approaches for rivers, floodplains, and estuaries and encourage the utilization of nature-based adaptation approaches over hard armoring techniques. Engage partners for education, outreach and technical training in these areas and establish priority projects for implementation through the development of project pipelines. (Adaptation)
    c. Incorporate high-priority culverts into hazard mitigation planning and leverage federal funding sources for project implementation. (Adaptation)

14. **Create safe, equitable opportunities for people of diverse backgrounds to access and enjoy water resources**

a. Strengthen Open Space and Watershed Land Acquisition grants, Recreation and Natural Heritage Trust Program, Section 319 nonpoint source grants access opportunities for vulnerable communities. (Adaptation)
b. Enhance programs that will help outdoor recreation, natural resource partners, and municipalities engage with diverse communities. Engage external stakeholders to evaluate program impact for underserved and vulnerable communities. (Adaptation)
c. Enhance accessibility of information and signage for all communities. Better utilize technology for improved communication beyond English language signage. (Adaptation)
d. Enhance level of comfort with freshwater resource activities (e.g., paddling and fishing instruction, etc.,) especially for underserved populations. (Adaptation)
e. Explore partnerships to identify opportunities for outdoor swimming lessons.
f. Enhance state agency staff training in promoting equity, inclusion, and diversity, including for access, recreation, and safety issues around inland waters. (Adaptation)
g. Increase recruitment of more diverse staff for positions within environmental conservation and environmental quality sectors and explore additional resources for environmental justice and public outreach in the area of environmental education to support both internal and external needs for guidance, information and programming. (Adaptation)

15. **Promote demand-side water conservation and water reuse**
    a. Review opportunities to reduce transmission losses by expanding leak detection and maintenance programs. (Adaptation)
    b. Work with partners to develop educational programming and outreach to educate the public as to where their drinking water comes from, the connection between a healthy environment and clean drinking water. (Adaptation)

16. **Explore water rights options that protect fish and wildlife**
    a. Support fish, wildlife and ecological needs when balancing economic and social needs in decision-making processes. (Adaptation)
    b. Share analysis that fishing and boating are Connecticut's top contributor to the outdoor recreation economy.
    c. Focus state land conservation plans and funding on conservation lands around cold water streams and resilient river systems. (Adaptation)

17. **Further develop policies, education/outreach, research, and funding opportunities that encourage protections for inland waters**
    a. Engage partners to develop training on green infrastructure and nature-based solutions for public works and other municipal staff. (Adaptation)
    b. Enhance education, outreach and research through goal-setting, incentivizing participation, and providing training and data management for monitoring and research projects that can detect climate change impacts on inland waters. (Adaptation)
    c. Provide opportunities for coordination and data sharing among individuals participating in citizen monitoring. (Adaptation)
    d. Develop educational campaigns for climate change adaptation awareness targeted at multiple sectors. (Adaptation)
    e. Explore opportunities to improve and expand citizen participation in monitoring, including schools, non-profits, & others. (Adaptation)
    f. Support opportunities to best utilize federal funding for wastewater infrastructure and wastewater solutions. (Adaptation)

g. Support continued funding for the Clean Water Fund. (Adaptation)
h. Maintain high standards for Combined Sewer Overflow (CSO) reduction in CSO communities. (Adaptation)

Agriculture and Soils Subgroup

18. **Reduce conversion of Prime and Important Farmland Soils, active agricultural land, forest land, and other soil landscapes** that provide critical ecosystem functions and values/ goods and services such as groundwater recharge/discharge, protection of headwaters of cold water streams, public water supply watersheds, floodplains and riparian areas, wetlands and wetland hydrology, support special habitats and migration corridors for species. From 2001-2016, 23,000 acres of farmland were developed or compromised, the 6th highest % in the nation. Baselines of kinds of farm acreage goals should be established, and goals for reduced conversion, and protection established. (Mitigation)
    a. Work towards accelerating and streamlining Farmland and Open Space and Watershed Land Acquisition Grant programs with a goal of closing in two years or less and doubling the number of easements closed within four years. Evaluate needs to achieve these goals.
    b. Maintain funding for the farmland preservation program through both the Community Investment Act (CIA) dollars and lump sum bonding and prioritize utilizing the federal “buy-protect-sell” and state “buy-protect-farm" programs and Community Farms Program to expedite farmland preservation process, create farmland access opportunities for the next generation of farmers, and protect smaller farms in more urban and suburban communities.
    c. Disincentivize location of solar projects on farmland. Incentivize multiple-use projects that allow for solar and agricultural production to co-exist on the same footprint when there are no other prudent and feasible alternatives, and as needed, as part of the farm business and/or succession plan. Maintaining soil health needs to be a critical component of the planning and installation of solar arrays.

19. **Increase the adoption of on-farm energy production and reduce on farm energy usage**
    a. Enhance energy efficiency programs available to farms. Explore renewable energy production opportunities. (Mitigation)
    b. Investigate successful models of funding and technical assistance to allow new and innovate farm energy technology. (Mitigation)
    c. Identify barriers, risk, and unexpected costs for farms seeking to implement on-farm energy projects. (Mitigation)
    d. Continue support for energize CT programs where farms can receive assistance in retrofitting their inefficient equipment with high energy measures. (Mitigation)
    e. Establish a process in which the State may direct the electric distribution companies to enter into long-term agreements to purchase power or renewable natural gas from anaerobic digestion facilities, including policies and incentives to enable on-farm anaerobic digesters.

20. **Strengthen Land Use Planning Tools for Agriculture**
    a. Take a more regional planning approach to supporting and planning for Connecticut agriculture. In Connecticut, land use planning is conducted at the local municipal level. 169 sets of land use regulations have a direct impact on the growth and sustainability of Connecticut farms. Consider adoption of Regional Agricultural Councils such as the Lower CT River Valley Regional Agriculture Council that can take a more regional approach to supporting and planning for Connecticut agriculture.

b. Reflecting the current industry trends, municipalities should consider eliminating minimum acreages for farms in municipal zoning regulations.
c. Municipalities should streamline their planning and zoning rules and regulations and techniques to prevent farmland loss, protect special soil landscapes and improve soil health and water management utilizing available technical assistance, including the 2020 Planning for Agriculture and Conservation Options for Connecticut Farmland guides.

21. **Improve Soil Health Practices on and off Farms**
    a. Work with partner universities in the state to provide technical assistance on tillage practices/equipment, soil health practices, grazing/forage management Increase training, technical assistance, and outreach on the programs, tools, techniques, and applied research needed to implement mitigation and adaptation practices. Virtual training should be an important component.
    b. Conduct outreach and education on the importance of soil health practices, and the value of agriculture's contributions to mitigation, adaptation, and resiliency.
    c. Raise awareness of the critical need for a strong soil science curriculum for agriculture and environmental science, particularly in the area of carbon sequestration and storage in soils.
    d. Leverage federal funding through the USDA Natural Resource Conservation Service Regional Conservation Partnership Program (NRCS RCPP) and Conservation Innovation Grants (CIG) to accelerate protection and management of parcels in public water supply areas, important habitats, flood prone areas, recharge and discharge areas.

22. **Build a Sustainable and Equitable Food System**
    a. Support planning for urban agriculture initiatives including urban agriculture master plans at the local level.
    b. Evaluate strengthening the Urban Greens and Community Gardens program to expand opportunities for urban agriculture projects.

23. **Prepare farms for climate change**
    a. Increased knowledge of federal and state programs including risk management and crop insurance tools
    b. Incorporate gender and racially diverse shared learning to better understand climate change impacts and develop solutions.

24. **Sustaining Environmental and Soil Health**
    a. Work with partners to improve research to develop prediction models for water use efficiency.

25. **Address coastal acidification with a focus on impacts to the shell-fishing industry.**
    a. Develop a monitoring system for water quality parameters critical to the shell-fishing industry in real-time to forecast potentially high-risk events. (cross-listed: PHS)
    b. Join the International Association to Combat Ocean Acidification (OA Alliance) and commit to furthering the five goals identified in the Alliance's Call to Action: 1) Advance Scientific Understanding; 2) Reduce Causes of OA; 3) Build Adaptation and Resiliency; 4) Expand Public Awareness; and 5) Build Sustained International Support. (cross-listed: S&T)

c. Evaluate approaches to research, monitor, and address coastal acidification impacts to natural resources including shellfish, crustaceans, and fish. (cross-listed: S&T)