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March 17, 2017

Russ Henley
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Submitted electronically

Re: Comments from The Nature Conservancy on January 2017 Draft Forest Carbon Plan

Dear Mr. Henley:

The Nature Conservancy appreciates the opportunity to comment on the January 2017 version of the Draft Forest Carbon Plan (Draft FCP), as well as the time and effort that was invested to develop it. The Conservancy believes that the state's forests and other natural and working lands are an essential component of California's long-term climate strategy and the state will not be able to meet its goals without their inclusion. We have submitted previous comments on earlier versions of the Draft FCP (see attached) and incorporate them by reference. We provide additional comments below as constructive feedback on the document.

The document should be framed by, and clearly define, "emissions reductions" from forests, which should include both carbon sequestration and avoided/reduced greenhouse gas emissions.

The Conservancy agrees with the Draft FCP that it is critical for California's forests to be managed for multiple values and benefits and not managed for carbon alone. At the same time, the Draft FCP should clearly recognize its goal to mitigate climate change. Certain parts of the document recognize this, but the executive summary and the initial framing of the document obscures this goal.

The initial framing of the Draft FCP focuses on forest health and wildfire emissions without defining emissions reductions (see pages 1 -2). Thus, it creates the initial impression that emission reductions from forests are limited to the reduction of wildfire emissions. Forests are both a source and sink of carbon dioxide emissions, and greenhouse gas reductions from forests entail both reducing or avoiding emissions, as well as sequestering more carbon.

Carbon sequestration opportunities are mentioned subsequently in the document, but a definition of "emissions reductions" is needed in the initial part of the Draft FCP with a recognition that emission reductions will entail a combination of activities that will both reduce emissions and sequester carbon

across the state – with an overall long-term goal of creating a larger net sink. Furthermore, we recommend that the Draft FCP at least describe the methods and assumptions that would underpin the recommended emission reduction measures in the Draft FCP (see also Attachment A). The forest protocols¹ adopted by the California Air Resources Board and the guidance from the World Resources Institute² provide a good foundation for defining emissions reductions and for outlining methods and assumptions that underpin reductions in the forest sector.

With each recommendation, identify the type and amount of anticipated greenhouse gas reductions that could be achieved by the proposed action

There are a few detailed recommendations in the document that could produce greenhouse gas reductions from forests. These specific recommendations should identify the intended type of GHG reduction (i.e., increased carbon sequestration, reduced biological emissions, reduced energy emissions, etc.) as well as the magnitude of reductions that could be achieved and over what time horizon. This kind of description would provide further clarity on the climate change mitigation value of certain actions and could also help inform or be “ground-truthed” by the parallel analysis being conducted by Lawrence Berkeley National Lab. These activities and potential climate benefits could then be further refined by an analysis that takes other desired co-benefits into account, such as water quality and supply, habitat, wood product production, etc.

Include the recognition that, in certain areas, forests may also be managed for greater sequestration of carbon

The Conservancy supports the recommendations to protect forestland (both wildland and working forests) from conversion to more intensive uses and to promote forest resilience and GHG reductions through a suite of management practices that reduce wildfire risk and restore forests. These actions, collectively, can help minimize biological emissions and increase carbon sequestration over time. We also recommend that the document acknowledge additional actions that can produce GHG reductions from forests, including improved forest management to sequester additional carbon and reforestation of previously forested areas that had been converted to other uses (e.g., riparian reforestation, oak woodland restoration, etc.). These types of activities would be appropriate in certain regions of the state.

Regional input and implementation could be helpful, but analysis of GHG reduction potential and accounting should be developed through a state level process to promote consistency

Regional input and implementation could be a beneficial approach to advance mitigation actions for natural and working lands. However, it is critical for the state to provide the statewide assessment of GHG reduction potential pursuant to a consistent approach that identifies spatially the GHG reduction

¹ See <https://www.arb.ca.gov/regact/2010/capandtrade10/copusforest.pdf>

² See <http://www.wri.org/publication/land-use-land-use-change-and-forestry-guidance-greenhouse-gas-project-accounting>

opportunities (see attachment A) – along with other environmental considerations and co-benefit opportunities. This kind of assessment should not only include forests, but natural and working lands more broadly, as many of the anthropogenic impacts to biological carbon and emissions have common causes and by extension, common solutions. The analysis could be done on a regional basis, with regional input, and then aggregated to provide the scope of overall opportunities. Implementation could then happen at different scales: federal, state, regional and local. The Lawrence Berkeley Lab analysis has the potential to provide this common assessment and should factor in these implementation opportunities.

The Conservancy supports the statewide goal to expand tree canopy cover and preserve existing established canopy and make green infrastructure common practice

Consistent with the March 16th comments submitted by California ReLeaf et al., the Conservancy commends the Draft FCP inclusion of an overall tree canopy cover goal alongside a goal to maintain existing canopy. Existing canopy is especially important to maintain given the timeframe needed for young trees to sequester more carbon and establish canopy cover. Continuing education and training for tree care professionals is important to the success of this goal and will promote urban forest health by minimizing harmful practices like tree topping, a practice that radically reduces a tree's lifespan and carbon sequestration potential.

The Conservancy is also pleased to see green infrastructure and urban forestry mentioned together in the management actions. We support the recommendation to advance green infrastructure solutions from being an exceptional occurrence closer to being standard practice by 2030. We urge even more specific recommendations for incentives to make this happen.

Again, The Conservancy appreciates the opportunity to provide input to the Draft FCP and we welcome the opportunity to provide additional input. If you have any questions, please contact Michelle Passero@MPassero@tnc.org.

Attachment A



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April 8, 2016

Russ Henley
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Re: Comments in response to the March 9, 2016 Draft California Forest Carbon Plan Concept Paper: *Managing our Forest Landscapes in a Changing Climate*

Dear Mr. Henley:

The Nature Conservancy appreciates the opportunity to submit comments on the March 9, 2016 draft California Forest Carbon Plan Concept Paper (hereafter "Concept Paper"). The Conservancy strongly supports the Governor's Executive Order B-30-15, establishing interim greenhouse gas reduction goals for 2030 so the State can meet its longer-term goals established for 2050. Moreover, we support the inclusion of forests and natural and working lands as one of the six pillars of the State's long-term climate strategy. The State will not be able to meet its long-term goals without the inclusion of these resources.

Overall, the ideas presented in the Concept Paper provide a good foundation for the kinds of actions that the state could undertake in the forest sector to reduce greenhouse gas emissions beyond the current 2020 goal. In the following pages, we offer specific comments on the Concept Paper. In addition to these specific comments, we also restate an overarching recommendation that we submitted in response to the Draft Healthy Landscapes 2030: Climate Vision and Goals for Natural and Working Lands (see attachment A). While the suggestion applies more broadly to natural and working lands, it also applies to forests as a subset of this climate change "sector."

Overarching Recommendations:

The state should establish greenhouse gas reduction goals for natural and working lands (including forests) that are informed and supported by a quantitative, standardized greenhouse gas accounting framework and a clear definition of a greenhouse gas reduction

To understand the scope of greenhouse gas reduction potential from California’s natural and working lands and monitor progress over time, the state should establish goals for this sector that are informed by a standardized and quantitative greenhouse gas (GHG) accounting framework, which also defines a greenhouse gas reduction. While a host of other considerations, such as climate resilience, habitat, water quality, biodiversity, and jobs, should be applied as additional filters to statewide GHG goals for natural and working lands, this fundamental building block should be established so the reduction potential is well understood by the state and the public and can be monitored and considered alongside the many other objectives for our natural resources.

Such a framework is also needed in California to advance a common understanding of what constitutes a GHG reduction in the natural and working lands sector, thereby reducing different and often conflicting assumptions about what constitutes a greenhouse gas reduction (vs. a carbon/GHG inventory or a carbon pool). It will also help minimize uncertainty about the sector to which to attribute a reduction (e.g., whether a reduction should be counted in the energy sector, transportation sector or natural and working lands sector). Furthermore, this type of framework can create better synergy and bridge accounting gaps across different landscape scales, from the activity (or project scale) to the regional and statewide scales. For precedent, the state should refer to “jurisdictional accounting” approaches being developed and implemented in tropical forest jurisdictions to meet international greenhouse gas reductions pledges.³

Attributes of statewide GHG reduction goals and supporting accounting framework should include the following:

1) A statewide carbon inventory:

A landscape carbon inventory is essential for establishing a GHG baseline (or reference scenario) for natural and working lands and monitoring emissions and reductions from land-based activities that either increase or decrease carbon over time. The California

³ “Guidelines for REDD+ Reference Levels: Principles and Recommendations” Prepared for the Government of Norway, by Arild Anglesen, Doug Boucher, Sandra Brown, Valerie Merckx, Charlotte Streck, and Daniel Zarin. Available at www.REDD-OAR.org. See also, http://scienceforconservation.org/downloads/climate_action_through_conservation

Air Resources Board's recent carbon inventory analysis and any recent updates could serve as the basis of this inventory.⁴

2) A statewide GHG baseline scenario:

Similar to the reference scenarios (or GHG baseline scenarios) that the state is developing for other sectors, GHG baseline scenario(s) should be developed for natural and working lands that also includes an agreed upon set of carbon pools (e.g., live pools like above ground vegetation and/or dead pools like wood products). Without a GHG baseline for the landscape, it will be very challenging for the state to estimate and monitor GHG reductions over time. Baseline scenarios are projections into the future of "business as usual" or what is likely to happen in the absence of human interventions to minimize emissions and sequester carbon. Other jurisdictions have developed GHG baselines for the landscape by using historical carbon inventory data over different points in time to establish trends for net changes in landscape carbon, which can inform how a GHG baseline can be forecasted into the future. Establishing a trend or reference scenario for the baseline (versus just one inventory year) is also important to be able to capture net sequestration over time (including baseline fire emissions) and the relative permanence of carbon sequestered in the landscape.

3) Develop statewide GHG reduction scenarios that are spatial:

Once a carbon inventory and GHG baseline are established for natural and working lands, it is possible to develop estimates of GHG reduction potential based on alternative scenarios (relative to the baseline) across regions in the state. This type of analysis should be spatial, where opportunities for interventions (or activities) to sequester more carbon or minimize emissions across regions of the state can be identified. Anticipated climate change impacts can also be included in the scenarios. This carbon data can be aggregated and compared to the GHG baseline to develop ranges of GHG reduction potential that can be achieved through a variety of activities and incentives. They could be used to inform the 2030 Scoping Plan target. This type of assessment should be considered alongside other statewide plans, such as the State Water Action Plan and Safeguarding California, to provide the opportunity to optimize multiple benefits and make strategic investments.

4) Develop a monitoring, reporting and verification system that bridges different landscape scales (i.e., landowner to region and state):

Building from the statewide baseline and scenarios mentioned above, a statewide monitoring, reporting and verification framework should also be established to track progress in the natural and working lands sector. The statewide carbon inventory, as it

⁴ See <http://www.arb.ca.gov/cc/inventory/pubs/battles%20final%20report%2030jan14.pdf>

is updated over time, can be used as the basis to track changes in carbon across the landscape and monitored against the GHG baseline and reduction scenarios mentioned earlier. A complementary monitoring and reporting framework can also be developed for the interventions or activities that are implemented at the smaller scale to reduce emissions/sequester carbon through programs or policies. This complementary framework can act as a bridge between monitoring at the project/activity scale and the monitoring at the statewide and regional scales.

Incorporate specific recommendations for climate resilience in all goals

We appreciate and strongly support the acknowledgment that resilience should be incorporated in the state's goals and strategies to reduce greenhouse gas emissions in the natural and working lands sector. As stated in EO B-30-15 and the Environmental Goals and Policy Report, the state's planning and investments should *prioritize* actions that "build climate preparedness and reduce greenhouse gas emissions" (EO B 30 15), "especially in the natural resource sector" (EGPR, page 26).

Within the goals identified in the Concept Paper, resilience is explicitly mentioned in the goal to enhance carbon and manage forests for resilience. The goal of resilience in this category is important, and it should also be explicitly included in the other goals related to forest protection and urban forests. Part of the limited application of resilience may be due to the interpretation of resilience for forest carbon alone. Healthy forests sequester carbon and are resilient to climate impacts. Resilience should have a broader interpretation and also be considered for habit, species and people. Such a lens will broaden the discussion in all of the goals and potentially highlight additional recommendations.

Recognize the importance of large trees for carbon sequestration and other co-benefits

We recommend that the "Vision for California's Forests" (Concept Paper, p. 12) include a specific acknowledgment of the importance of protecting and recruiting large trees across the landscape. Because of their commercial value, there are far fewer large trees on both private and public lands than existed prior to European settlement. Large, old trees sequester enormous amounts of carbon, are more resilient to wildfire, and provide habitat for sensitive species that require large standing trees, large snags, and large downed logs. We suggest that the description of "healthy forest attributes" in the Concept Paper explicitly recognizes the need to protect and recruit more large trees, large snags, and large downed logs across the forested landscape based on their value for carbon sequestration and other co-benefits.

Specific Recommendations:

Use consistent terminology to support more clearly the Governor's Executive Order to reduce emissions

The Forest Carbon Plan vision statement refers to a goal of setting “forest carbon targets,” which is potentially different from a “greenhouse gas reduction” target. The Governor’s executive order B-30-15 establishes goals to reduce emissions by 2030. For clarity and consistency, we recommend that the vision statement reflect the term “greenhouse gas reduction” (GHG) and the goal for the forest carbon plan to be the identification of GHG reduction potential with supporting strategies that can achieve this goal alongside many other important benefits. As mentioned earlier, the term greenhouse gas reduction and its supporting accounting method should be clearly articulated as well.

Keep the vision statement simple

While the bullet points supporting the vision statement are important goals to support a vision statement, the vision itself should be simple and support the central purpose of the plan and the Governor’s Executive Order to reduce emissions. The best and clearest vision statement appears on page 2 with respect to the forest climate action team’s task to “develop and implement plans to improve the health of California’s forests, increase their carbon storage and reduce their emissions of carbon to the atmosphere.” This is a concise and clear statement that can guide a host of actions and other desirable outcomes, and it also provides the ability to assess its progress over time. The other list of goals are also important and should be listed, but should be listed as other objectives that support the main vision.

Avoid conflation of carbon pools and GHG reductions

The absence of a clear definition and approach to estimating and monitoring GHG reductions creates ambiguity over what constitutes a greenhouse gas reduction. For example, on page 5 of the Concept Paper, in paragraph 2, there is discussion of carbon storage, sustainable harvest and storage of carbon in wood products. In reference to large private ownerships, it is suggested that the balance of harvest vs growth, plus carbon storage in wood products makes these ownerships “produce and store the greatest amounts of carbon.” Is the reference to carbon storage meant to imply that this is also a GHG reduction? The different terminology (carbon storage, carbon stocks, GHG reductions, carbon sequestration) and lack of definition for a GHG reduction and other similar references in the document create uncertainty about what constitutes a GHG reduction and the assumptions that underpin the concept.

In addition to discussion of different carbon inventory options, include discussion of approach to GHG reductions and associated assumptions

The Concept Paper provides a good overview of the variety of carbon/GHG inventory methods and technologies that are available. The Air Resources Board has been developing an updated GHG inventory for natural and working lands over the past several years, using LANDFIRE, which is based on a combination of remote sensing and FIA data plots. We urge the State to either use this inventory or identify as quickly as possible the inventory it will use to serve as the basis of establishing baseline trends and monitoring of GHG emissions and reductions over time.

Include discussion of carbon stocks and relationship to sequestration rates as part of a GHG reduction analysis

The Concept Paper provides a good discussion of carbon sequestration rates, which can influence how quickly GHG reductions (i.e., carbon sequestration) accrue over time. The total amount of carbon stocks accumulated is also a critical component of GHG reduction estimates as their total loss or gains are a measure of emissions or reductions. This section would benefit from additional elaboration on how both rates and carbon stocks factor into GHG reductions.

Clarify the intended greenhouse gas reduction benefit of each of the goals to protect, enhance, and innovate

The Conservancy supports the overall goal to increase protection of forestlands to reduce fragmentation and conversion to non-forest uses. Doing so would not only preserve future sequestration potential, but it would also avoid direct biological emissions that are associated with the land conversion itself. This greenhouse gas reduction benefit should be clearly recognized in the goal alongside the other potential benefits such as maintaining ongoing sequestration benefits.

The goal to enhance all forest carbon storage pools appears to be used as a proxy for achieving GHG reductions through increased carbon sequestration. The two characterizations may not be equivalent, so we therefore recommend that this recommendation be clarified to enhance carbon sequestration while also managing for resilience and reduced fire risk, which is an important goal. By clarifying this goal, the recommendations can (and should) also expand to include other activities, in addition to risk reduction, that will restore more carbon on the landscape, such as reforestation of formerly forested lands and riparian corridors.

The GHG reduction goal to innovate appears to focus on reducing GHG emissions through increased downstream use of wood products. There are potential GHG reductions that could be achieved through wood product substitution, some of which would be achieved in the energy or transportation sector. As written, the intended GHG reductions of the stated activities and how they would be estimated and monitored is unclear. This section should be clarified with a more robust discussion of how downstream activities would create reductions

(i.e. what is the accounting method and carbon pools included), and what sector the reductions would be counted in.

The Conservancy supports the inclusion of urban forestry in the Concept Paper and goals to protect existing greenspace and urban trees and increase canopy cover.

The Conservancy supports urban forestry as a strategy to reduce GHG emissions as urban forests and green space can provide a host of GHG reduction benefits, including carbon sequestration and other indirect GHG reductions in the energy sector. Similar to the other goals stated in the report, this section would benefit from a more detailed discussion of the GHG reductions that could be achieved (e.g., carbon sequestration, avoided emissions, which sector, etc.). It would also be helpful to discuss the synergy between this section and the urban greening/green infrastructure section in the Climate Vision and Goals for Natural and Working Lands.

We appreciate your consideration and are happy to provide input in this important process. Our forests are a critical part of the climate solution and California's leadership provides a strong platform to demonstrate how this can be implemented to provide multiple benefits. If you have any questions, please contact Michelle Passero at mpassero@tnc.org.