The Nature Conservancy
Protecting nature. Preserving life.™

Sacramento Office
830 S Street
Sacramento, California 95811

tel [916] 449-2850
fax [916] 442-2377

nature.org
nature.org/california

June 23, 2020

Shelby Livingston
California Air Resources Board
1001 I Street
Sacramento, CA 95814

RE: Comments on the 2022 Draft Scoping Plan

Dear Shelby and CARB Staff,

California's AB 32 Scoping Plan is a cornerstone in California's climate policies, and a first step in creating a climate-future where Californians can survive and thrive. The Nature Conservancy (TNC) has helped to craft science-based, solutions-oriented approaches to California policy for decades, and we are grateful to continue collaborating with the California Air Resources Board (CARB) on this important effort.

The 2022 Draft Scoping Plan Update ("Plan") includes, for the first time ever, extensive modeling and scenario development for the natural and working lands (NWL) sector. We are extremely pleased to see the NWL sector receiving more consideration than past Scoping Plan updates have included and commend CARB staff for undertaking this effort. There are many complexities that come with modeling in this sector, and while – as our comments below will suggest – we see a need for refinement and continued improvement, this is an important first step toward harnessing the full potential of this sector.

California's natural and working lands are essential in climate action, and not just because they can sequester carbon. Our lands provide us with needed food and fiber, provide vital habitat for California's rich biodiversity, and house the iconic sites that define our beautiful state. These lands also help to protect us against disasters and the climate impacts we can't avoid; for example, they absorb flood waters, recharge our groundwater, reduce urban heat-islands, and filter our air and water. The conservation and protection of our lands is vital in meeting the climate goals that California has set out for its transportation and energy sectors. At the same time, these lands are at risk. If we act now, we can preserve and restore our lands and the many benefits they provide while also directly mitigating climate change.

With this in mind, we offer the following comments in response to the Plan:

1. ***The Plan should clearly articulate how the NWL sector contributes to emissions reductions and how CARB's proposed target compares to a projected business-as-usual (reference) scenario.***

We are happy to see CARB undertake the detailed NWL modeling efforts that went into this draft, and acknowledge the scope and scale of this effort, noting the significance that this is the

first and only time any government within the US has sought to include the NWL sector in its climate planning to this degree.

The Proposed NWL Scenario outlined in the plan describes some ambitious land management and restoration actions, particularly with respect to forests and wetlands (with approximately 10x and 3x increases over current acreage treatments, respectively). At the same time, the Proposed Scenario misses the potential that could be achieved through other management interventions (such as riparian restoration or post-fire reforestation). Additionally, while avoided land conversion and land conservation were considered in the contexts of sparsely developed lands and croplands, respectively, these were not discussed in other important contexts – including developed lands.

We are glad to see that the Plan establishes a target for the NWL sector and understand that there is complexity involved in doing so. Targets are important: they drive action, including the development of policy, and help provide a metric by which progress can be measured. At the same time, effective target-setting requires careful consideration of what data are available to help track progress. The NWL sector has an important role to play in helping California reach carbon neutrality, and it is critical that the Plan describe anticipated emissions reductions and a target for this sector in a way that conveys its full potential and clarifies tradeoffs between near-term action and longer-term outcomes for land carbon stocks.

In particular, on pg. 72 the Plan states that, "The Proposed Scenario is estimated to result in additional NWL emissions of 8 MMTCO2e annually from 2025–2045. The Reference Scenario is estimated to result in annual emissions of 9 MMTCO2e over the same time period, and so the Proposed Scenario slows the rate of emissions and provides an approximate 1 MMTCO2e in additional annual sequestration relative to the Reference Scenario." As written, this statement could easily be misinterpreted; the Proposed Scenario involves forest management interventions that reduce carbon stocks in the near term (out to 2045) but are needed to produce carbon benefits over longer time scales (second half of century). While annual emissions are meaningful for climate targets, cumulative emissions are more appropriate as a measure of the impact of activities on climate change. We encourage to report the difference from the reference scenario in cumulative emissions over relevant time periods.

The Plan should explicitly describe the accounting behind the numbers in this section to clarify this nuance – noting that in the absence of the forest and wildland urban interface (WUI) interventions, the Proposed Scenario would actually achieve approximately 60 MMTCO2e of emissions *reductions* cumulatively from 2025- 2045 (or about 3 MMTCO2e/year) – and should include modeling results out to the year 2100 to help illustrate the Plan's note that, "it is best to focus on carbon stock changes over longer periods rather than focusing on sequestration or emissions on shorter time frames." It would also be helpful to report the fire burned area, emissions, and fire severity breakdowns if possible. Also, separating emissions of land management changes from fire emissions would aid interpretation.

Additionally, while we are pleased to see that CARB has established a target for the NWL sector (pg. 201, Table 4-1), additional discussion is needed within the Plan to describe the significance of this target and what it means. As presented, the target numbers in Table 4-1 articulate percent changes in total carbon stock change from 2014 to 2035 and 2045, respectively. While this representation – percent change in carbon stock – is important for adding and subtracting carbon

sources and sinks to determine their net contribution toward carbon neutrality, it does not clearly illustrate the contribution that the NWL sector makes when compared to a business-as-usual scenario (CARB's Reference Scenario). The latter is important in communicating the significance of the NWL sector and the need for action to impact California carbon stocks now. Importantly, such a comparison also helps to disentangle climate change impacts from land management interventions. As the Plan is currently written, it is not possible to separate these. We recommend including this comparison to strengthen the narrative around our state's NWL and the substantial climate benefits they can provide.

2. ***Provide a more detailed explanation of the reference scenario, or "business as usual," to 2045 to inform interventions and create a bridge to the Climate Smart Land Strategy and other State policy documents***

On page 200 of the Plan, there is some explanation of the NWL reference scenario. There is a detailed explanation of the impacts of climate change (non-anthropogenic emissions), but there is less explanation of the anthropogenic contributions to the reference scenario aside from one sentence that says some historic land management practices contribute to it. It is critical to provide a more detailed explanation of the human caused activities that contribute to the reference scenario so it can strategically inform and set up a discussion for the kinds of actions that could support emissions reductions and carbon sequestration (anthropogenic and non-anthropogenic) in this sector into the future. A more detailed explanation like this could help create stronger and more direct bridges to documents like the NWL Climate Smart Strategy and the 30x30 strategy. It is also unclear how climate change models were used in the Rhessys modeling, individual GCMs were mentioned in one place but then only a figure for ensemble means was shown.

3. ***The Board should update the NWL modeling for the Plan and convene a Scientific Advisory Group to review these updates.***

As previously noted, we applaud CARB's efforts in undertaking such significant modeling and scenario-development efforts for the NWL sector. At the same time, this kind of first-time undertaking also means there is room for continued refinement and tweaking. The summation and interpretation of the modeling results for NWL was minimal and would greatly aid in the interpretation for stakeholders. For example, the net (of reference scenario) emissions in forests for the proposed scenario was ⅓ (32.7 MMTco2e) of the amount for scenario 2 (101.23 MMTco2e) even though the proposed scenario treated 2.5x the area.

We recommend that CARB update the NWL modeling in the Plan, prior to its adoption at the end of the year, to address some of the limitations described above – and that CARB additionally convene a group of scientific experts to review these updates and identify pathways for implementation..

Due to the time-sensitive nature of climate action in California, we propose that CARB convene this Scientific Advisory Group within the next year and report back to the Board to ensure that appropriately ambitious progress is being made. This recommendation has been echoed in a letter signed by more than 40 other NWL stakeholders.

4. ***Scale of ambition for wetland restoration actions described in Plan's Proposed Scenario is appropriate, but should include California's adopted plans for coastal wetlands.***

The Proposed Scenario in the Plan includes restoration and treatment of 60,000 acres of deltaic wetland, an increase of approximately 3x over existing state commitments and plans. Given the vast potential of wetlands to sequester carbon – while providing other multiple benefits for people and wildlife – this is a good level of ambition for California.

In Appendix I, CARB additionally points to the significance of blue carbon landscapes in helping California meet its long-term climate goals and commits CARB staff to utilizing information from a new coastal wetlands, beaches, and watersheds inventory being developed by the California Ocean Protection Council (OPC) and San Francisco Estuary Institute. We support this effort and suggest that CARB staff additionally consult with the Scientific Advisory Group recommended in Item 2 above.

However, wetlands in California – and the corresponding potential for carbon sequestration – extend significantly beyond the Delta. Conservation and restoration of coastal wetlands are important contributions to the state's climate goals, and California's adopted goals should be included in the Plan. The California Natural Resources Agency and the OPC adopted the following goals for coastal wetland protection, creation, and restoration:

- 10,000 additional acres by 2025;
- A 20% increase in acreage by 2030 (approximately 35,000 acres, based on prior inventories[1]);
- A 50% increase by 2040 (approximately 86,000 acres).

These goals should be included in the section on "Strategies for Achieving Success" (pg. 210-211) and if possible, CARB should model the GHG reductions associated with these goals.

The Wetland section on pg. 210-211 of the Plan should also point out that climate change will impact wetlands and their ability to store carbon. For example, with 5 feet of sea level rise, 54 percent of the over 170,000 acres of coastal wetlands in California are vulnerable to loss. Creating new wetlands by protecting potential future habitat and/or habitat migration areas will be an important strategy to mitigate the potential loss of wetlands so that they continue to be significant carbon sinks even in the face of rising seas.

Finally, wetland creation and conservation should be integrated into the Plan. These can be directly added to the actions described in the section "Strategies for Achieving Success" on pg. 211:

- Add wetland "creation" to second bullet – "Deploy additional wetland protection, *creation,* restoration…"
- Add "conservation" to 4th bullet "leverage other funding…to support wetland *conservation and* restoration projects…"

1 *Heady et al. 2018. Conserving California's Coastal Habitats: A Legacy and a Future with Sea Level Rise.* ***https://coastalres.wpengine.com/project/conservation-assessment/***

5. ***Strategies outlined in the Plan should reflect the connections between development patterns, land use and conservation, and transportation.***

We were glad to see that in the "Developed Lands" portion of the "Key Sectors: Natural and Working Lands" section (pg. 211-13), the Plan explicitly notes that climate smart strategies for developed lands – including the protection and expansion of urban forests, landscaping, and green spaces – will provide important and substantial benefits to disadvantaged communities who typically live in areas with limited access to green spaces – and subsequently, to the ancillary health benefits that these spaces provide.

At the same time, increasing urban green spaces is *not enough*. The primary mandates of CARB are to 1) reduce pollution and improve air quality and 2) reduce greenhouse gas emissions. In California's developed lands, which include urban, suburban, and rural landscapes, traffic-related emissions are a primary source of air pollution and greenhouse gas emissions. To meet its mandates, CARB must also address land-use planning and design, considering the ways in which the siting and expansion of roadways, vehicles and travel patterns, and urban development relate to greenhouse gas emissions.

The Plan does consider the intersection of development and transportation in the "Key Sectors: Transportation" section of the Plan (pg. 154-56), and importantly, does focus in this section on equity.[2] However, a consequence of the Plan's siloed analyses for the NWL and transportation sectors is a lack of connection between California's continued growth patterns (including urban sprawl and growth in the wildland urban interface) and the strategies that the Plan outlines.

To strengthen this connection, we recommend that the Plan explicitly disincentivize land conversion in the strategies it recommends, to avoid converting the lands that currently sequester carbon while simultaneously constraining VMT. This could include modifying the "Strategies for Achieving Success" in both the Transportation and NWL sections as follows:

➢ In the "Strategies for Achieving Success" on pg. 156:

■ Add a bullet to incentivize conservation strategies (such as greenbelts, protecting NWL in the WUI) to encourage and enable development patterns focused on developed communities, rather than into new spaces, to avoid increasing VMT and encourage climate resilient communities.

■ The third bullet could be strengthened by directly discouraging roadway projects that increase VMT. This could be accomplished by editing it to read, "*Create strong disincentives for new roadway projects that increase VMT to encourage and enable transportation projects and strategies that meet community needs while reducing VMT, including existing and new models of public transit, bicycling, and other sustainable transportation choices.*"

■ Strengthen the sixth bullet, "Ensure alignment of land use, housing, transportation, and conservation planning in adopted regional plans…" by creating disincentives where the myriad plans are not aligned and result in urban expansions into habitat and prime farmland and VMT growth. For example, this could involve reducing state funding for housing or transportation projects where such alignment does not occur.

2 *The intersection of development and transportation is also briefly mentioned on pg. 6 of Appendix E, but it is not clear whether or how avoided land conversion is quantified.*

■ The last bullet could be strengthened by adding, "*Increase funding for and* accelerate infill development and housing production at all affordability levels in transportation *and location*-efficient places, with a focus on housing *that includes urban green spaces* for lower income residents." This bullet should also encourage and/or incentivize policies that discourage and/or prevent gentrification and displacement of low-income and disadvantaged communities, where that is occurring or projected to occur.

➢ In the "Strategies for Achieving Success" on pg. 203, add to the bullet on land conversion so that it points back to transportation and VMT: "…Pair land conservation projects with management plans that increase carbon sequestration *and reduce sprawl and/or VMT*, where feasible."

As an additional resource to help characterize the important connection between conservation and the reduction (or avoidance) of VMT, we point to a pilot project that The Nature Conservancy completed in Merced County.[3,4] This project used an integrated planning approach to achieve greenhouse gas reductions at scale and realize multiple co-benefits through land management and conservation – and illustrates how such an approach can be used to organize urban growth.

6. ***The Plan should encourage the use of diverse urban green spaces and, within these spaces, prioritize the use of vegetation that appropriately reflects climate conditions while also providing multiple benefits for people and nature.***

In the "Severity of Climate Change Impacts" section (pg. 3-6), the Plan points to California's current drought conditions, noting that, "… impacts of severe drought include water shortages and restrictions. Some projections estimate that the severity of widespread summer drought will nearly triple in California by 2050."

Water – and water scarcity – are discussed again in the "Developed Lands" portion of the "Key Sectors: Natural and Working Lands" section, where on pg. 211 the Plan states, "[w]ater availability and irrigation efficiency is also an important consideration for increasing urban forest cover. As water becomes scarcer, the prioritization of irrigating trees over laws or gardens may be required to achieve increases in urban forest carbon."

The Plan should take a stronger approach that incentivizes the use of native, drought-resistant vegetation – which, when appropriately used, can decrease water stress and simultaneously provide additional benefits. For example, large parks and multiple small green spaces with native vegetation can provide soil carbon benefits, foster biodiversity, and increase water filtration while also enhancing local air quality and promoting wellbeing, particularly in disadvantaged and underserved communities.

In addition, urban green spaces should not be limited to trees, lawns, and gardens. These spaces should include – for instance – urban creeks, streams, riparian areas, green roofs, green alleyways, parks and other open spaces. Diversifying urban green spaces is important in meeting California's climate goals in an equitable way. For example, there is some evidence that in highly-developed areas with narrow streets or high rises, trees can actually trap and worsen

3 *Resilient Merced – An Integrated Planning Approach for Greenhouse Gas Reduction.* https://tnc.app.box.com/s/yl4djawjrrqk4xldi4yny3k5qfe13ve6

4 *Natural + Working Lands: The Foundation of Sound Community Design.* https://tnc.app.box.com/s/0bdmse00ujor810czd7lhesgyvkjl1xu

levels of pollutants.[5,6] In those areas, it may be more beneficial to consider the use of hedges and living walls. Coupled with distributed open space, these diversified approaches to urban green space can help contribute to equity outcomes involving park access and recreation.

We recommend modifying the second bullet in the "Strategies for Achieving Success" on pg. 213 to better approach the issue of water on developed lands:

➢ Increase public awareness of urban forests benefits and, where appropriate, prioritize the use of suitable vegetation that relieves water stress, reduces pollution, and provides multiple additional benefits, including improved equity outcomes and increased biodiversity.

7. ***Plan should go beyond defensible space and discourage continued development into the WUI.***

We understand the need to integrate wildfire into this Plan and consider its impacts to Californians. This topic is briefly alluded to in the "Developed Lands" portion of the "Key Sectors: Natural and Working Lands" section (pg. 211-13), where the Plan states, "[w]ithin wildland-urban interface (WUI) areas, defensible space can protect urban and rural communities from wildfire. Analysis results show that 48 percent of parcels are currently fully compliant with defensible space requirements. This highlights how much work needs to be done to protect communities and homes. Defensible space results in a decrease in carbon stocks, as expected when reducing fuels for wildfire."

We support the use of defensible space and recognize its use as a tool to help protect communities from wildfire. At the same time, this discussion completely leaves out another critical approach that not only protects people, but also leaves land carbon stocks intact: preventing further urban growth into the WUI.

Development into the WUI degrades and fragments habitat, increases pollution and VMT, increases wildfire risk for communities, and creates land disturbances that release carbon into the atmosphere. Conversely, limiting urban growth provides connectivity for wildlife and protects vital habitat, and leaves carbon stocks intact. It can also decrease urban ignition risks due to fire; a case study on Paradise, CA undertaken by the The Nature Conservancy and partners showed that the use of parks and open space as buffers around the community, coupled with home hardening and defensible space, could reduce the risks of urban ignition and result in up to 40 percent less property loss for a wildfire event.[7] This case study illustrates the connection between limiting WUI development, community resilience, and conservation benefits.

Beyond the protective benefits associated with limiting sprawl into the WUI, this approach also protects existing WUI carbon stocks. We recommend that CARB add to this section to discourage and/or disincentivize continued development into the WUI.

8. ***California's NWL must be considered in tandem with electrical grid decarbonization.***

---

5 *Vos PE, Maiheu B, Vankerkom J, Janssen S. Improving local air quality in cities: to tree or not to tree? Environ Pollut. 2013 Dec;183:113-22. doi: 10.1016/j.envpol.2012.10.021. Epub 2012 Nov 27. PMID: 23194646.*

6 *Sara Janhäll, Review on urban vegetation and particle air pollution – Deposition and dispersion. Atmospheric Environment, Volume 105, 2015.*

7 Quantifying Insurance Benefits of a Nature-based Approach to Reducing Risk: Wildfire Risk Reduction Buffers. https://www.nature.org/content/dam/tnc/nature/en/documents/TNC_ResilienceReport_ParadiseCA_Final.pdf

Decarbonizing the electricity sector is an important step toward achieving carbon neutrality in California. In the "Clean Electricity Grid" section (pg. 156-64), the Plan describes a what is needed to achieve California's SB 100 goals and notes that "[t]he estimated resource build needed to meet this level of demand amounts to approximately 90 GW of solar and 40 GW of battery storage by 2045. To reach the 2045 target, the state will need to more than triple its current level of in-state renewable and zero carbon power capacity. Annual build rates for the Proposed Scenario will need to increase over 150 percent and over 500 percent for solar and battery storage…"

Meeting these significant and growing energy goals will require careful consideration of where to site and or/ source renewable energy projects, including potential impacts to communities and ecosystems, as well as land carbon stocks. This will require, among other things, strategic and continued interagency coordination that extends beyond California's energy agencies. To reflect this need – and the interplay between land use and energy – we recommend that the third bullet under this section's "Strategies for Success" (pg. 163) be modified to appropriately broaden the interagency collaboration that is required to meet demand response:

➢ Continue coordination between energy agencies and energy proceedings to maximize opportunities for demand response**,** and increase interagency coordination between energy agencies, CARB, and the California Natural Resources Agency to ensure that clean energy needs are aligned with the state's goals for its NWL, including its 30x30 goal.

Additionally, we strongly support CARB in pursuing the actions described in bullet 4 (pg. 163), "Continue to explore the benefits of regional markets to enhance decarbonization, reliability, and affordability" and will reach out to CARB staff to follow up with information from our forthcoming "Power of Place West" study, which has explored this topic in detail.

9. ***Strengthen the Advanced Clean Cars II regulation by increasing interim ZEV sales and including stronger equity provisions.***

We are pleased to see that the Plan includes, as a "Strategy for Success" in the "Transportation Sustainability" section, the goal of reaching 100 percent of new ZEV sales by 2035. Developing strong clean car regulations is vital if California is to meet its climate goals and improve air quality in pollution-burdened communities. Additionally, California's approach sets an important precedent that other states are likely to follow.

This Plan provides a significant opportunity to strengthen California's proposed Advanced Clean Cars II (ACII) regulation and demonstrate the state's leadership on climate action. As it is written, the ACII proposal fails to meet levels of pollution reduction that are needed[8] for reaching the state's air quality and climate goals. To address this, we recommend that CARB increase its ambition for ZEV sales, increasing interim sales targets for ZEVs to at least 75% of new sales by the year 2030. These sales requirements should meet the emission targets that CARB has established in its mobile source strategy.

[8] As identified by CARB's mobile source strategy

Additionally, ACII regulations must center equity. Disadvantaged and underserved communities are disproportionately impacted by the adverse impacts of fossil fuel use, including tailpipe emissions. California's proposed ACII regulation includes equity provisions that are voluntary – and consequently, are likely to be underutilized by ZEV manufacturers. We recommend that CARB explore solutions for this problem, including considering making equity provisions mandatory or conditioning the use of other credits on ZEV manufacturers' participation in state equity programs.

10. ***Enhance synergies and GHG outcomes across CEQA and SB 375.***

We appreciate the discussion of CEQA opportunities in the Draft Plan and recommend including some discussion on opportunities to use CEQA GHG mitigation in ways that can support both SB 375 and nature-based climate solutions. For instance, CARB staff could work with the California Natural Resources Agency, air districts, and counties to develop guidance whereby a CEQA GHG mitigation hierarchy is developed to to conserve land and sequester carbon locally in a manner that supports reduced vehicle miles traveled and associated transportation emissions. For specific examples, please see our Nature-based Climate Solutions Report.

We appreciate the opportunity to provide feedback on this Draft and would be happy to provide follow up information to inform the next iteration of it. The Scoping Plan plays a vital role in driving California climate policy, and we look forward to continuing to work with CARB to ensure that nature is appropriately recognized and elevated for its role in addressing climate change in the state. If you have any questions, please contact Sydney Chamberlin at s.j.chamberlin@tnc.org.

Sincerely,
Sydney Chamberlin
Project Manager, Climate & Nature-based Solutions
s.j.chamberlin@tnc.org