APPENDIX D

Natural and Working Lands Climate Smart Strategy
Response to Section Six, Opportunities to Scale Action:

Shown below are selected items from the NWLCSS draft report that are within our scope of concern or support.

Item	Top Priority	Missing and/or Comments	We Can Help Advance	State Can Most Usefully Advance
#1: Explore opportunities to partner with California Native American tribes to accelerate nature-based climate solutions through, for example, nature-based workforce development, capacity building, co-management and co-ownership agreements, and land returns.		We support the effort the state is showing on diversity, equity, access and indigenous issues (see Pg. 1 of our NWLCSS public comment letter).		X
#8: Convene Nature Based Solutions Leadership Circles to support successful and urgent implementation in communities, regions, and sectors across California.		We would be interested in participating.		X
#26: Lands and coastal waters should be evaluated for current and historical carbon storage, the potential for future carbon sequestration with restoration or management, and the stability of the stored carbon and risk of carbon loss due to climate change or land use change.	X	We can help ensure expert voices for desert lands are included (see Concern #1 from our NWLCSS public comment letter).	X	X

#27: Identify statewide foundational natural and working lands data sets and the staffing and infrastructure needs to support their analysis, use, and appropriate updates. These include high resolution topographic, vegetation, land cover, land use and supporting scientific sampling and should be made openly available to all users when possible.	X	We support further funding for the analysis of natural and working lands especially as it pertains to the deserts (See Concern #2 of our NWLCSS public comment letter).	X	X
#30: Support tribal elders and cultural practitioners to research Traditional Knowledge and develop baselines of historical conditions.		We are supportive. Overlaps with #1 above.		X
#31: Expand ongoing utilization of airborne and satellite remote sensing data to assess the efficacy of nature-based solutions and other management measures in providing multi-benefits in the face of a changing climate.		Satellite remote sensing [i.e. Landsat] needs to be used in conjunction with on-the-ground field data collection and with models that capture below-ground carbon sequestration (see Concern #3 of our NWLCSS public comment letter). http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.556.6144&rep=rep1&type=pdf	X	X

#35: Convene California experts to estimate the funding gap to implement nature- based climate solutions needed to deliver ambitious climate action on our natural and working lands.	X	The funding gap should include scientific research on desert carbon sequestration, particularly inorganic carbon in underground soil which has been proven to be significant in international research work but largely ignored by US funding entities. California experts should be drawn from universities near ecosystem sites to collect local, regional knowledge (see Concern #1 of our NWLCSS public comment letter).	X	X
#36: Conduct economic analysis of climate smart practices to increase understanding of short and long term economic feasibility and economic benefits of implementing climate smart land management practices.		Funding needs to be expanded beyond scientific corridors to include economic benefits of conservation stemming from job creation, public attendance, local commerce revenue, and state/municipal tax revenue.		X
#37: Use public health, climate change vulnerability, job quality, natural cultural resource, and cultural landscape protection indicators to inform climate smart land management decisions.		Land management decisions are a piece of a broader constellation of our society and local communities.		X

#38: Research the impacts of human activity and disturbances on deserts. Use this information to determine the degree to which protecting the soil and vegetation will limit/minimize the impacts from ongoing disturbance or habitat loss and contribute to carbon neutrality and climate resilience.	X	Conservation goals must be measured as positive advancement minus disturbance for accurate assessment of progress made. Ideally, the disturbance would be kept to the absolute minimum in order to reach climate change goals. See Concern #1, #2 and #3 of our NWLCSS public comment letter.	X	X
#40: Collaborate with tribal partners to incorporate tribal expertise and Traditional Ecological Knowledge [TEK] in data collection and research.		There needs to be a deliberate effort carried out by staff experienced in working with tribes to accommodate cultural differences and sensitivities. This point overlaps with #1 above. See our comments there as well.		X
#41: Identify research opportunities to accelerate healthy soil management practices.	X	For the desert region, soil is rarely managed in the traditional sense as it has not been a harvest/commercial resource (though agricultural communities do exist across the CA desert region). For most of the desert region, healthy soil management is equated with not disturbing the land. Additionally, there are research projects that with appropriate funding, could help the state understand the carbon sequestration process in a way that fits their current modeling.	X	X

#43: Improve climate and carbon sequestration science related to healthy soils: *Improve documentation on sequestration to support funding and resources, increase understanding about the results of specific practices, the longevity of benefits, and where implementation is most efficient. *Increase soil sampling density and frequency throughout natural and working lands; compile a soil sample database and maps to help set and assess progress toward carbon targets that incorporate soils. *Partner with California Native American tribes to incorporate Traditional Knowledge and tribal expertise into healthy soils practices.	X	We strongly support. This point overlaps with #41 above and Concern #2 and #3 of our NWLCSS comment letter.		
#45: Support studies that analyze impacts of climate change on natural resource availability, especially groundwater.	X	The CA Desert Region has been profoundly influenced by drought and increased temperature changes. Much of the desert vegetation relies on groundwater resources, which are impacted by both climate change-induced drought as well as anthropological changes including expansive illegal marijuana grows.		X

#53: Consider using the Canada National Forest Carbon Monitoring, Accounting, and Reporting System in California.		This forest model system cannot be applied in desert landscapes. Canada does not have ecosystems with deep roots, on the order of California's desert. Conifers in Southern California would not survive the dry summers without access to deep water, from root and mycorrhizal fungal production (Kitajima et al. 2013). The US Forest Service Carbon measures only go down to 1m. See: Kitajima, K., M.F. Allen and M.L. Goulden. 2013. Contribution of Hydraulically Lifted Deep Moisture to the Water Budget in a Southern California Mixed Forest. Journal of Geophysical Research- Biogeosciences 118: 1561-1572 A forestry carbon model frequently includes historical data from managed forests that emphasize aboveground biomass whereas desert C storage functions primarily underground. There is little crossover between a Canadian forest model and an unmanaged desert ecosystem.		
#54: Improve data collection and dissemination on all natural and working lands to track current management practices as well as the goals of those actions. This effort		Data collection is not a problem. Staff is not reading the literature and not using the data that is available.	X	X

will help determine how actions and their intended outcome affect carbon stocks through time.		Desert lands are rarely managed in the same sense as forests and rangelands. Avoiding disturbance is a top priority for desert lands.		
#56: Streamline climate quantification tools required by state programs and provide common metrics and guidance to estimate and track climate benefits associated with climate smart land management actions. This will increase use of these tools, allowing for more consistent and comparable data across programs and accelerated climate action in the natural and working lands sector.		We need to link datasets and collect the data needed. While there may be benefits in streamlining quantification tools in terms of ease of comparability and consistency, there is simultaneously risk of poor or inaccurate measurement by taking a "one size fits all" approach. Quantification tools for a desert region will likely differ from those of a forest because they tend to be unmanaged, and store much of their Carbon belowground.		X
#60: Launch a Nature-Based Solutions Technical Assistance Initiative to support and increase the capacity of California landowners, Native American tribes, land managers, communities, and others to accelerate climate smart land management in California. Specifc technical assistance may include: Facilitating meaningful community engagement.... Supporting networks for sharing resources and best practices on climate smart land management.		Though most NGO's in the desert region have not engaged in Technical Assistance programs to date, there is room for such programs to take place to address climate change threats such as wildfire, and biological threats such as invasives.		X

#65: Develop a menu of options for new planning strategies, policies, and incentives to help direct growth away from natural and working lands, to protect and conserve open space, and critical natural infrastructure at the urban edge.	X	Directing growth away from natural and working lands keeps landscapes open and intact. One of the best ways to ensure growth does not disturb large tracts of working lands is by careful and well-thought-out planning policies. This is a preventative measure.		X
#76: Support regular and sustained access to nature for California's youth through schools, community-based organizations, recreational opportunities, and more.	X	Conservation leaders for tomorrow are cultivated in youth today.	X	
#80: Support pathways for California Native Americans to effectively share traditional practices with the next generations.		As noted previously, engaging our Native Tribes requires experience and sensitivity not only to their traditional ecological practices, but also respect for their cultural differences where engagement is concerned.	X	
#90: Support park projects in disadvantaged communities, including in rural and unincorporated communities, including for operations and maintenance.		We support this as an access to public lands principle.		
#134: Include more experts in Traditional Ecological Knowledge and nature-based climate solutions in decision-making bodies.	X	TEK has much to offer conservation work and should be adequately represented and heard as true decision-makers.	X	X

#156: Prohibit or strongly disincentivize large-scale clearing of native habitats.	X	For successful nature-based solutions to take hold, economic incentives need to reward projects that protect fragile lands such as the CA desert region and economically disincentivize projects that disturb desert lands. See Concern #3 and #4 of our NWLCSS public comment letter.	X	X