



June 19, 2012

*Via electronic submittal*

Derik Broekhoff  
Climate Action Reserve  
523 W. Sixth Street, Suite 428  
Los Angeles, CA 90014

**RE: TWS Comments on the “Forest Offsets Projects on Federal Lands” White Paper dated March 8, 2012**

Dear Mr. Broekhoff:

On behalf of its over 500,000 members and supporters, The Wilderness Society (TWS) is writing to provide comments on the March 8, 2012 public review draft of the Climate Action Reserve’s “Forest Offset Projects on Federal Lands” white paper (White Paper). TWS commends the Climate Action Reserve (CAR) for its continued efforts at furthering dialogue around forest carbon accounting and forest management. Climate change poses extreme threats to our nation’s public lands, natural resources and communities. Public lands also offer carbon storage and sequestration services and may play a role in addressing climate change. Investments to protect or enhance the carbon storage and sequestration services offered by public lands might take the form of offsets or might take the form of direct funding, non-offset mechanisms. Voluntary and compliance carbon markets offer potential new sources of revenue for public agencies facing funding limitations for managing natural resources. However, as the White Paper illustrates, there are many potential issues with offset projects on federal lands, which suggests that direct funding mechanisms for protecting carbon storage and sequestration on public lands may be preferable. We offer the following comments and suggestions on the White Paper and offer our assistance to work with CAR on the recommendations.

**1) TWS seeks further clarification on what analysis, if any, CAR has done with respect to existing voluntary offset and carbon sequestration programs on federal lands.**

Section 3, page 15 of the White Paper references forest offsets in the San Juan National Forest. These offsets are associated with a project of the National Forest Foundation’s (NFF) Carbon Capital Fund initiative.<sup>1</sup> NFF offers both registered and unregistered offsets that are not tradable and only for voluntary programs. It would be helpful to have further information on any CAR analysis and conclusions regarding lessons learned from

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<sup>1</sup>[http://www.fs.fed.us/ecosystemservices/Carbon\\_Capital\\_Fund/index.shtml](http://www.fs.fed.us/ecosystemservices/Carbon_Capital_Fund/index.shtml)



the NFF initiative. Although not mentioned by the White Paper, the U.S. Fish and Wildlife Service (USFWS) also has a carbon sequestration program with private partners that has involved both the restoration of degraded lands owned by USFWS and restoration projects initiated on private lands that are subsequently transferred to the USFWS.<sup>2</sup> As Section 2.2 of the White Paper notes, Version 3.2 of the CAR Forest Project Protocol contemplates both types of projects on federal lands (those initiated on federal lands and those initiated on private lands that are transferred to federal ownership). It would be useful to have information regarding any CAR analysis of the USFWS program and to have further insight on lessons learned from that program.

**2) The introduction of Section 2.5 of the White Paper lists possible options for increasing carbon sequestration and/or decreasing carbon loss on federal lands. One of the options is a switch from logging to protected forest as an example of improved forest management on public lands. However, unlike the other listed options, this switch from logging to protected forest option is not further developed in Section 2.5; logging on federal lands is only discussed in Section 4.2 of the White Paper with respect to baseline modeling for improved forest management projects. TWS seeks further clarification with respect to CAR's analysis of carbon benefits associated with switching from logging to protected forests on federal lands.**

TWS seeks further clarification with respect to CAR's analysis of any carbon benefits associated with switching from logging to protected forests on federal lands that might be incentivized by a voluntary offsets program. Prior studies have attempted to quantify the carbon storage implications of elimination of timber harvest on U.S. public lands.<sup>3</sup>

**3) The first paragraph of Section 2.5 of the White Paper notes that CAR is not aware of any significant opportunities on federal lands to decrease methane or nitrous oxide emissions. TWS would like to note that there are two very substantial sources of methane and nitrous oxide emissions originating from federal lands: 1) emissions from the combustion of fossil fuels extracted from public lands by private sector firms (where the federal government owns subsurface rights, but energy resources are extracted and developed by private sector leaseholders), and 2) indirect emissions (including fugitive and vented emissions among others) associated with exploration, production, refinement and transportation of fossil fuels extracted from public lands by private sector leaseholders. TWS is not suggesting that offsets**

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<sup>2</sup> <http://www.fws.gov/home/climatechange/pdf/CarbonFactSheet.pdf>

<sup>3</sup> Depro, B., B. Murray, R. Alig, and A. Shanks. (2008) Public Land, Timber Harvests, and Climate Mitigation: Quantifying the Carbon Sequestration Potential on U.S. Public Timberland. *Forest Ecology and Management*. 255: 1122-1134. See also, Hudiberg, T., B. Law, D. Turner, J. Campbell, D. Donato, and M. Duane (2009) Carbon dynamics of Oregon and Northern California forests and potential land-based carbon storage. *Ecological Applications* 19(1), pp. 163-180.



**are the appropriate mechanism for addressing such emissions, but notes the importance of both recognizing and addressing such emissions.**

In the first Greenhouse Gas Emissions Inventory for the Federal Government: 2010 Data (2010 Inventory), the Council on Environmental Quality (CEQ) did not capture emissions associated with fossil fuel extraction conducted on federal lands by private entities. The Wilderness Society, Defenders of Wildlife, Sierra Club, the Southern Environmental Law Center and several other partners submitted comments on the CEQ guidance document relating to the collection of data for the 2010 Inventory and noted this omission.<sup>4</sup> CEQ indicated at the time that it would address the issue through a supplemental Working Group process. On March 12, 2012 CEQ issued a revised draft guidance for public comment, but continued to make the reporting of emissions from oil, gas and coal acquired by federal lease a voluntary, not mandatory, reporting requirement.<sup>5</sup> Stratus Consulting was commissioned to quantify the magnitude of the omission and released a final report indicating that omitting GHG emissions attributable to leases for fossil fuel extraction on federal lands effectively omits about 95 percent of actual emissions from federal land management practices.<sup>6</sup> In 2010 alone, fossil fuels extracted from federal lands by private leaseholders were responsible for methane emissions of 105,287 metric tons and nitrous oxide emissions of 31,497 metric tons. Furthermore, there are additional indirect carbon, methane and nitrous oxide emissions associated with exploration, production, refinement and transportation supporting fossil fuel extraction by private leaseholders on federal lands. For instance, according to the U.S. Department of Energy, 13% of natural gas in the United States is lost to fugitive emission, venting, flaring or other combustion before reaching its end use. There are substantial opportunities to reduce methane and nitrous oxide emissions resulting from actions on federal lands.

**4) Without necessarily agreeing that offsets are an appropriate mechanism for encouraging such action, TWS agrees that there may be opportunities to increase carbon sequestration and storage associated with federal lands through reforestation and other natural resource restoration activities. The White Paper would benefit from further clarification with respect to which lands are appropriate for consideration for reforestation and other natural resource restoration activities to increase carbon sequestration and storage on federal lands. TWS rejects the assertion that some opportunities for offset crediting may exist for reforestation after logging on federal lands.**

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<sup>4</sup> [http://wilderness.org/files/9-1-](http://wilderness.org/files/9-1-10%20TWS%20et%20al%20final%20draft%20CEQ%20GHG%20Rpting%20comments.pdf)

[10%20TWS%20et%20al%20final%20draft%20CEQ%20GHG%20Rpting%20comments.pdf](http://wilderness.org/files/9-1-10%20TWS%20et%20al%20final%20draft%20CEQ%20GHG%20Rpting%20comments.pdf)

<sup>5</sup>[http://www.whitehouse.gov/sites/default/files/microsites/ceq/draft\\_revised\\_federal\\_greenhouse\\_gas\\_accounting\\_and\\_reporting\\_guidance\\_031212.pdf](http://www.whitehouse.gov/sites/default/files/microsites/ceq/draft_revised_federal_greenhouse_gas_accounting_and_reporting_guidance_031212.pdf)

<sup>6</sup> <http://wilderness.org/files/FINAL%20STRATUS%20REPORT.pdf>



While the White Paper does note that “[r]angelands that historically have not supported forest because of aridity would not support forest in the future and are not candidates for afforestation,” the White Paper should be more explicit in noting that natural non-forest habitats should not be converted to forests in an attempt to increase carbon sequestration or storage - any such conversions would result in perverse ecological outcomes. While TWS supports reforestation activities, it does not support afforestation activities in natural non-forest habitats. On the other hand, TWS submits for CAR’s consideration the carbon benefits potentially associated with revegetating unneeded USFS roads. The USFS estimates that between 30-40% of its 375,000 miles of official roads are unneeded. To return these roads to a natural state would be the equivalent of revegetating an area larger than Rhode Island, and TWS has estimated that decommissioning and revegetating unneeded National Forest System roads could conservatively sequester 39.5-48.5 million metric tons.<sup>7</sup>

TWS further notes that other natural resource restoration activities on federal lands besides forest restoration, such as certain types of wetlands restoration, may also offer potential carbon and other environmental and human health benefits.<sup>8</sup>

However, TWS rejects the assertion in Section 4.1 of the White Paper that there may be any opportunities (minimal or otherwise) for offset crediting related to reforestation after logging on federal lands. As the White Paper notes, logged lands must be regenerated by law.

**4) Section 2.5.4 of the White Paper cites the work of Luysaert et al. reporting that old-growth forests can continue to accumulate carbon for centuries, contrary to the prior, long-standing view that such forests reached a maximum productivity at an intermediate age, becoming neutral, or even negative, in terms of carbon sequestration. TWS would like further clarification regarding support for the CAR White Paper assertion that declining rates of sequestration and increased probability of disturbances over time result in an effective carbon stock maximum.**

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<sup>7</sup> Kerkvliet, J. and J. Hicks (2010) Carbon Sequestered when Unneeded National Forest System Roads are Revegetated, The Wilderness Society.

<sup>8</sup>There are a variety of different wetland types including, for example, freshwater wetlands, forested upland peats, and coastal wetlands. Different wetland types store and release greenhouse gases in different ways. Some wetland types may have methane emissions that negate or overwhelm carbon benefits. However, some wetlands restoration projects can offer positive climate benefits and there are a myriad of other benefits associated with wetlands restoration including, among others, enhanced water quality, habitat, and flood protection. *See* Land Use, Land Use Change & Forestry (2000), IPCC, Section 4.4.6 Wetlands Management and On AOFLU, ‘wetlands management’ and the road to land-based accounting: Q&A (2010), Wetlands International.



The findings of Luysaert et al. cited in the White Paper have been further supported by prior and subsequent studies.<sup>9</sup> The findings of Luysaert et al. show that old-growth forests may act as net carbon sinks for centuries, and underscore the importance of continued protection of old-growth forests as particularly important to combating climate change.

**5) Section 2.5.5 of the White Paper discusses use of fertilization as a possible offset type for federal lands. TWS strongly objects to this suggestion for the reasons presented below.**

Fertilizer use presents climate pollution and other water and soil pollution risks. As the White Paper points out, there may be GHG emissions associated with the manufacturing of fertilizer, but there may also be nitrous oxide emissions from nitrogen-based fertilizers applied to the land.<sup>10</sup> Furthermore, runoff from fertilizer application is responsible for nitrogen pollution in rivers, lakes and oceans which creates blooms of algae that deplete oxygen and create “dead zones”; oceanic dead zones are also associated with the release of nitrous oxide into the atmosphere.<sup>11</sup> The magnitude of pollution risks associated with fertilizer use are dependent on a number of factors including, among others, application mode and rate, type of soils in the area of application, distance to surface water or groundwater, and the persistence and mobility of pollutants in chosen fertilizers. For instance, runoff issues might be particularly serious with respect to broadcast fertilization on steep burned over areas being reforested on federal lands. TWS commends CAR on prohibiting broadcast fertilization in its forest offset projects and urges it to continue this practice.

**6) TWS commends CAR on noting in Section 2.5.3 of the White Paper that the carbon implications of forest thinning are mixed. TWS further notes that the efficacy of fuel reductions programs varies significantly by region, forest type and past management history. Without agreeing that offsets or carbon considerations are appropriate drivers for encouraging any efficacious fuel reduction programs,**

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<sup>9</sup> See Zhou, L., Dai, L., Wang, S., Huang, X., Wang, X., Qi, L., Wang, Q., Li, G., Wei, Y. and Shao, G. 2011. Changes in carbon density for three old-growth forests on Changbai Mountain, Northeast China: 1981-2010. *Annals of Forest Science* 68: 953-958. See also, U, K.T.P., M. Falk, T. Suchanek, S. Ustin, J. Chen, Y. Park, W. Winner, S. Thomas, T. Hsiao, R. Shaw, and T. King, R. D. Pyles, M. Schroeder, and A. Matista. (2004) Carbon Dioxide Exchange Between an Old-growth Forest and the Atmosphere. *Ecosystems* 7: 513-524.

<sup>10</sup> Park, S., P. Croteau, K. A. Boering, D. M. Etheridge, D. Ferretti, P. J. Fraser, K-R. Kim, P. B. Krummel, R. L. Langenfelds, T. D. van Ommen, L. P. Steele & C. M. Trudinger 2012. Trends and seasonal cycles in the isotopic composition of nitrous oxide since 1940. *Nature Geoscience* 5, 261–265.

<sup>11</sup> Codispoti, L. 2010. Interesting Times for Marine N<sub>2</sub>O. *Science*, Vol. 327 no. 5971 pp. 1339-1340.



**TWS does note that some fuel reduction programs on some federal lands may help reduce the extent and severity of wildfires, may promote forest resilience, and may have positive long-term carbon impacts. TWS seeks clarification regarding statements in Section 4.2 of the White Paper that suggest the possibility of crediting thinning with increases in carbon stocks not related to reductions in fire related emissions.**

In dry coniferous forests in the Western United States that once burned frequently, wildfire fuel reduction treatments, such as prescribed burning, mechanical thinning or a combination of mechanical thinning and prescribed burning, may reduce total stored carbon in the short term, but increase fire resistance and carbon sequestration in the long term.<sup>12</sup> Rigorous accounting of the carbon impacts of fuel reduction treatments will not only vary by region and forest type, but must also include consideration of numerous other factors including, but not limited to, emissions from associated transportation and the removal and uses of any forest biomass. There may be ecological and other considerations that may drive decisions regarding the appropriateness of wildfire fuel reduction treatments aside from carbon sequestration considerations.

Sections 2.5.3 and 4.2 of the White Paper seem to suggest that mechanical thinning might increase carbon stocks beyond any carbon benefits associated with improved fire resistance (perhaps by killing enough small trees to significantly increase average live-tree diameter). TWS seeks to clarify if that is in fact the position of the White Paper, and if so, what support CAR has for such a position.

**7) TWS commends CAR on noting the difficulties of baseline modeling incorporating the complexities of federal planning processes and future federal policy changes, especially when federal natural resource management practices and policies around climate change are rapidly evolving. TWS also concurs with the White Paper finding that there is a lack of clarity regarding the legality of encumbering public lands with the various types of obligations required to support offset projects.**

As the White Paper points out, there are various options for promoting carbon sequestration services on public lands, including options other than offset project development. Federal land mandates do change substantially over time, and carbon sequestration could well become a future priority, which would call into question the additionality of offset projects established on those lands. Carbon sequestration

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<sup>12</sup> Stephens, S., R. Boerner, J. Moghaddas, E. Moghaddas, B. Collins, C. Dow, C. Edminster, C. Fiedler, D. Fry, B. Hartsough, J. Keeley, E. Knapp, J. McIver, C. Skinner, and A. Youngblood 2012, Fuel treatment impacts on estimated wildfire carbon loss from forests in Montana, Oregon, California and Arizona, Ecosphere, Volume 3(5), Article 38, p.13.



ecosystem services are only one potential value, among others, supported by our public lands. Public lands are held in trust for the American people and are managed for multiple uses including long-term ecological health and sustainability. In the absence of greater clarity with respect to baseline modeling, legality, federal intent with respect to managing carbon values on public lands, and other issues, TWS cannot support the development of offset projects on federal lands.<sup>13</sup>

Once again, TWS appreciates CAR's continued efforts at furthering understanding around forest carbon accounting and forest management. Public lands are both at risk from the effects of climate change and offer significant carbon sequestration and storage services. We offer our assistance in working on the recommendations in this letter. If you have any questions, please contact Ann Chan at [ann\\_chan@twso.org](mailto:ann_chan@twso.org).

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<sup>13</sup> Please see the following attached policy statements by TWS and its partners regarding offsets on federal lands: 1) Testimony of David Moulton, former TWS Director of Climate Change and Conservation Funding and current TWS Senior Director of Legislative Affairs, before the United States Senate Committee on Energy and Natural Resources, November 18, 2009, and 2) Letter from TWS, Defenders of Wildlife, Earthjustice, National Center for Conservation Science & Policy, Natural Resources Defense Council, and the Sierra Club to Secretary Vilsack and Secretary Salazar, January 6, 2010.