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## Building a sustainable biomass industry in California without sacrificing our unique natural heritage

Renewable energy such as biofuels—specifically biomass that is sustainably harvested—can be a boon for our economy and our environment. But biofuels done wrong can actually destroy ecosystems and increase global warming pollution, so it is critically important that all biofuels production include necessary environmental safeguards. California is in a position to get biofuels right with the state’s Low Carbon Fuel Standard (LCFS), which would require oil companies to reduce the global warming pollution footprint of the vehicle fuels they sell. A groundbreaking new study commissioned by NRDC shows that California can ramp up biofuels production to meet the goals of the LCFS without sacrificing our most sensitive lands.

*“California needs only 12 percent of its available biomass to produce enough advanced, second-generation biofuels to meet the goals of its Low Carbon Fuel Standard”*

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### California Sets the Pace for Biofuels Solutions That Will Curb Global Warming

A national biofuels standard was set in 2007 when the Energy Independence and Security Act (EISA) established important land safeguards for harvesting biomass in a Renewable Fuel Standard (RFS). The law spells out lifecycle greenhouse gas performance standards for biofuels. Also included in the law are minimum land safeguards designed to protect our most sensitive wildlife habitats, federal forests, and our native prairies and natural forests for biofuels that wish to participate in the RFS program. These safeguards were a critical first step to securing sustainable biomass over the long term, particularly for policies that

incentivize further production of biomass-based fuels.

California took biofuels policy to the next level in 2007 when, in response to Governor Schwarzenegger’s Executive Order,<sup>1</sup> the state’s Air Resources Board approved establishing a Low Carbon Fuel Standard to reduce the carbon intensity of vehicle fuels, putting California in the lead on efforts to curb global warming. The LCFS is a technology-neutral, performance based approach to reducing the greenhouse gas emissions from transportation fuels. The LCFS requires oil companies to reduce the average carbon-intensity of fuels sold in California by 10 percent by 2020. Sustainably produced biofuels can help the state reach that target.



[www.nrdc.org/policy](http://www.nrdc.org/policy)

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### Sustainable Biomass Production in California Is a Viable Option

As the first Low Carbon Fuel Standard in the United States, it is critical that California adopt minimum land safeguards to protect our sensitive ecosystems, public land, and natural forests and native grasslands. Fortunately, biomass production in the state is not at odds with this goal.

NRDC commissioned a groundbreaking study in California to evaluate the feasibility of applying the minimum land safeguards contained within the federal RFS, and the affect they would have on the availability of woody biomass for energy production. Using the most current GIS data available, the Conservation Biology Institute generated realistic, geographically explicit estimates of the amount of biomass from forests and shrublands that could be developed without damaging important ecological values provided by these natural landscapes.

A 2005 study by the California Energy Commission (CEC) quantified the amount of woody biomass technically available, and identified areas unsuitable for commercial biomass harvesting: wild and scenic rivers, wilderness areas, coastal management zones and coastal sage scrub habitats, U.S. Fish and Wildlife Service special interest areas and research natural areas, private reserves, state parks, Bureau of Land Management reserves, national parks, and game reserves managed by the U.S. Fish and Wildlife Service and the California Department of Fish and Game. Stream buffers and steep slopes were also classified as inappropriate for biomass harvest.<sup>2</sup> This study concluded that 402 million bone dry tons (BDT) of nonmerchantable, technical (potentially available) forest biomass, and shrubland biomass, could be used for energy production in California. The analysis commissioned by NRDC went beyond the CEC study to identify and map several additional classes of lands that provide important environmental benefits—designated critical wildlife habitat; critically imperiled, imperiled, and rare species and ecological communities; national forests; and the state’s last remaining old-growth forests. Industrial biomass harvesting is

not consistent with these lands’ scenic, recreation, fish, and wildlife values and the essential ecological services they provide.

The study mapped a single composite screen at the state, eco-region, and county levels that provides on-the-ground guidance for directing biomass harvest to the most ecologically appropriate areas of the state. Using the CEC 2005 estimate as a baseline, the analysis concludes that even after taking these sensitive lands into account, *163 million bone dry tons* of forestland biomass and *27 million bone dry tons* of shrubland biomass are technically available for sourcing throughout the state, for a total of 190 million dry tons of woody biomass. Using conservative assumptions, California would need only 23 million bone dry tons (or 12 percent of the 190 million tons) to meet the entire needs of the LCFS under the most aggressive biofuel scenario.<sup>3</sup>

The result of this study clearly demonstrate that we do not need to sacrifice our most sensitive lands in California in order to produce biofuels and meet the goals of the LCFS. (To read the full report, visit [www.consbio.org](http://www.consbio.org)).

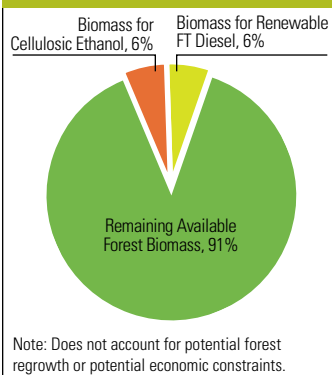
### California Can Produce Biofuels While Protecting Special Places

The analysis commissioned by NRDC shows that California can readily produce enough advanced, second-generation biofuels to meet the goals of the LCFS program while ensuring sensitive lands, important wildlife habitat and public resources are protected. We don’t have to sacrifice critical environmental values in order to generate biofuels.

Policy makers in California can promote biomass production by incorporating EISA’s renewable biomass definition into the state’s landmark Low Carbon Fuel Standard. These minimum land protections are a critical first step in moving the biomass industry towards sustainability. If California is to continue to maintain its leadership position on climate and present a model for other states pursuing bioenergy solutions, it needs to ensure that its natural forests and other critical habitat are adequately protected.



**Total California Forest Biomass Use Due to LCFS Program (2010-2020)**



<sup>1</sup> Executive Order S-01-07.

<sup>2</sup> (200 ft on either side of streams), (USFS lands slopes >35% and private and other public lands slopes >30%)

<sup>3</sup> This estimate on resource availability does not take into account the economic or technological challenges associated with the development of the supply chain, including but not limited to, harvesting, transportation and production costs. On the other hand, the estimate is also conservative as it assumes (1) zero re-growth of the biomass in thinned forests and shrublands, (2) assumes nearly twice as much biomass as the Air Resources Board by assuming a portion of the advanced renewable diesel pool might also require forest biomass, and (3) no technological efficiency improvements over time. Assumptions for the estimate are based on details provided in California Environmental Protection Agency, Air Resources Board. “Proposed Regulation to Implement the Low Carbon Fuel Standard”. pp. E-5, Table E-1a; pp VII-9, Table VII-6; and pp. VIII-11, Table VIII-3, and pp. F-31.