CARPE DIEM WEST
Our water – Finding solutions together

The Forest Headwaters/Carbon Connection:
Is There A Productive Role for the Healthy Headwaters Alliance?
Briefing Paper, June 2013

California's Sierra Nevada forests are the headwaters for most of the water used by the State's 38 million people and an agricultural sector that feeds much of the nation. These forests are also some of the world's most productive carbon sequestering lands. The Sierra Nevada is remarkably resilient, having survived natural perturbations in temperature and precipitation for thousands of years. But this natural resiliency, as well as the potential to capture carbon, is threatened by dense forest conditions produced by decades of fire suppression and exclusion. The susceptibility of these forests to fire and other disturbances is exacerbated by global climate change.

Anticipated effects of climate change on Sierra Nevada forests include changing precipitation trends, snowpack loss, decreased soil moisture, increases in fire occurrences and severity, floods and droughts, and the spread of invasive pests such as bark beetles. It is estimated that increasing temperatures will result in a projected decline of 25-40 % of the Sierra snowpack by 2050. By the end of the century, losses could reach 30 - 70%. Indeed, the Sierra snowpack this year is only about 17% of normal.

These changes in climate and hydrology will weaken the natural ability of forests to sequester carbon, release oxygen, provide habitat, and deal with natural perturbations. They will also dramatically affect the Sierra's ability to capture, store, filter and release water. Increased risk of catastrophic fire, in particular, poses enormous additional threats to the ability of California's forests to provide reliable water supply.

In 2006, California enacted one of the most far-reaching greenhouse gas (GHG) emissions reduction bills nationwide, the California Global Warming Solutions Act, known as AB 32. This statute requires the state to reduce GHG emissions to 1990 levels by the year 2020, and establishes a cap and trade system of tradable permits, known as allowances. The State

initiated AB 32 auctions for the first set of allowances in late 2012; auctions will be conducted quarterly going forward.

At the federal level, Vermont Senator Bernie Sanders has introduced the Climate Protection Act of 2013 (SB 332), a bill that would theoretically raise $100 billion annually through a tax on carbon emissions. Unlike AB 32, SB 332 would return most of the funds collected to consumers. The goal of this bill is to cut GHG emissions by 80% below 2005 levels by 2020. It would set a $20 tax for each ton of CO2 equivalent a polluter would emit beyond a set limit, which would rise over time. A little less than 3000 of the nation's largest emitters are targeted, such as coal mines, oil refineries and natural gas processing points, as well as foreign companies that export fuels to the US and are not subject to carbon emission limitations in their home countries. While SB 332 has little chance of success, it provides an example of an alternative to the cap and trade approach that could also gain traction over time and create a funding source for forest restoration efforts with a strong climate/carbon connection.

AB 32 is expected to generate considerable revenue for the State as allowances are auctioned, from $220-$550 million, or even significantly more *(see, e.g., California at the Crossroads: Proposition 23, AB 32, and Climate Change,* UC Berkeley Sept. 2010*).* Thus, a critical question for those engaged in promoting watershed restoration projects is the extent to which aligning AB 32 spending priorities with healthy headwaters priorities would be productive. In particular, a primary link between AB 32's mandate to reduce GHG emissions is the ability of California's headwaters forests to reduce the risk of catastrophic wildlife and associated GHG emissions.

The statute calls for the State to prepare Investment Plans on a regular basis to set spending priorities for auction proceeds. AB 32 itself provides considerable guidance on this issue. The categories for eligible investments include (but are not limited to):

- Low carbon transportation and infrastructure
- Strategic planning for sustainable infrastructure
- Energy efficiency and clean energy
- Natural resources management and solid waste diversion

California has developed a complex public process for establishing funding criteria and determining where and how to invest the AB 32 auction proceeds. In addition to reducing GHG emissions, the State is also trying address complimentary social objectives including (but not limited to):

- Maximizing economic benefits and jobs
- Improving air quality
- Benefitting disadvantaged communities
- Lessening the impacts of climate change
- Maximizing public health and environmental benefits

A draft of the first of these Investment Plans, for FY 2013-2014 through 2015-2016 was issued in April, with proposed investment priorities strongly favoring "sustainable communities and clean transportation" programs, and "energy efficiency and clean energy" the next largest category. "Natural resources and waste diversion" is the smallest category, but the Draft Investment Plan notes:

> While this combined category represents less than 10% of GHG emissions, there is potential for achieving greater reductions and realizing significant co-benefits to human health and the environment. For example, fuels treatment to reduce catastrophic wildfire provides co-benefits for public health and safety, property protection and natural resources. Globally, this category represents a major source of GHG emissions. Innovative sequestration or emissions reduction projects in this sector provide a significant leadership opportunity for California.
> - *Draft Cap-and-Trade Auction Proceeds Investment Plan* at 28 (PDF, 4/16/13)

The current draft calls for some investment in forests and ecosystem management in this first round of AB 32 spending, particularly with regard to fuels reduction and fire protection. The draft also calls for "forest management, restoration, and forest conservation easements to sequester carbon."

At the Federal level, efforts to launch a national carbon policy have been challenging, however. Provisions of Section 2709 of the Food Conservation and Energy Act of 2008 (Farm Bill) direct the US Department of Agriculture to prepare technical guidelines and science-based methods to measure environmental benefits from conservation and land management activities, initially focused on carbon. A national team has produced a draft report outlining forest and agricultural practices and methodologies to determine carbon values. These methods and practices set the stage for adoption of conventions that might be part of a national carbon policy.

Please contact Cynthia Koehler, Director of Programs: cynthia@carpediemwest.org