CALIFORNIA FOREST STEWARDSHIP PROGRAM

Forestland Steward

FALL 2014/WINTER 2015

Forests: part of the CLIMATE SOLUTION

Inside

Photo courtesy John Brennan

Forestland Steward

Forestland Steward is a joint project of the CA Dept of Forestry and Fire Protection (CAL FIRE), Placer County Resource Conservation District, UC Cooperative Extension, and USDA Forest Service to provide information on the stewardship of private forestlands in California.

CA Forest Stewardship Program
P.O. Box 944246
Sacramento, CA 94244
Fax (916) 653-8957
ceres.ca.gov/foreststeward

Forestland Steward was produced under a grant from USDA Forest Service. In accordance with federal law and U.S. Department of Agriculture policy, this institution is prohibited from discriminating on the basis of race, color, national origin, sex, age or disability.

To file a complaint of discrimination: write USDA, Director, Office of Civil Rights, Room 326-W, Whitten Building, 1400 Independence Ave SW, Washington, DC 20250-9410 or call (202) 720-5964 (voice and TDD). USDA is an equal opportunity provider and employer.

State offers funding for projects to increase forest carbon

Good news! CAL FIRE has received new funds for a wide variety of activities, including fuel reduction, pest control, and reforestation. The ultimate goal is to help reduce greenhouse gases (GHGs) in the atmosphere by increasing carbon sequestration (storage) or decreasing carbon emissions (*see discussion page 3*).

The $42 million in Greenhouse Gas Reduction Fund money comes from the California Air Resources Board's (ARB) Cap and Trade Auction. There is additional money from State Responsibility Area (SRA) fees. Together, these funds have been allocated to 10 programs (*see page 6 for details*).

Part of the climate solution

The new grant funds acknowledge that healthy forests play an important role in addressing climate change. Trees have the unique ability to actually pull carbon in the form of CO_2 (a major greenhouse gas) out of the atmosphere and sequester it in their tissues. About half of a tree's dry weight is carbon. Forests store carbon in roots, soil, standing dead wood, fallen logs, etc. Altogether, forests can accumulate immense amounts of carbon.

Our forests in California are beautiful, diverse, and cover almost a third of the state. These forestlands have an enormous capacity to help offset greenhouse gas emissions. The search for effective ways to increase forest carbon sequestration and reduce forest carbon loss is creating exciting new opportunities for forest landowners.

Learning to grow forest carbon

The connection between forests and carbon is a relatively new and rapidly growing area of study. Management recommendations for increasing carbon in the forest currently focus on improving forest health to increase sequestration and decreasing risks to avoid carbon loss. Some basic management techniques that can maintain or enhance forest carbon storage include:

- Retain forests (avoid deforestation/conversion)
- Actively regenerate forests after fire
- Reforest areas that were historically forested
- Protect and enhance soil productivity
- Reduce wildfire risk (thinning, removing fuel ladders, pruning, etc.)
- Manage forests for a variety of ecosystem services
- Substitute forest biomass for fossil fuels
- Substitute long-lived forest products for carbon-intensive materials like concrete and steel.

Resilience

Resilience is the ability to survive and bounce back from disturbance. A resilient forest is more likely to continue to sequester carbon after stress such as a drought, wildfire, or pest infestation.

What makes a forest more resilient? One important factor is diversity. A diverse forest can continue its ecological functions even if some species are lost or impaired. Diversity isn't just measured in the number of species, but also includes diversity in age class, structure, and genetic makeup.

Appropriate forest management for carbon and resilience are critical areas of study. We will be exploring these new ideas in this and future issues.

Forests, carbon, and climate

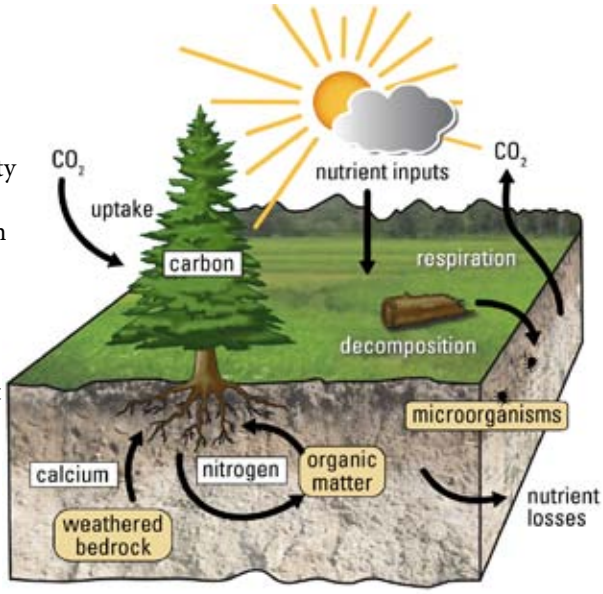
How are forests and climate related? Let's follow the carbon.

The Carbon Cycle

In the forest, plants have an exceptional ability to pull carbon out of the atmosphere through photosynthesis. They take up carbon in the form of carbon dioxide (CO_2) and release oxygen (O_2) to create energy. This energy is stored in the plants' tissues as carbohydrates (carbon is a major constituent). Some of the carbon finds its way into the roots or leaches into the soil. Forest trees and soil are major repositories of carbon, also known as sinks.

When plant material decomposes, it releases its carbon back to the atmosphere. This can occur slowly through biological decomposition or very rapidly through wildfire or other catastrophe. When forestland is converted into other uses—housing developments, vineyards, agricultural land, etc.—the carbon in the forest is released. Pest infestations, drought, soil disturbance, invasive species, and other disruptions to the forest ecosystem can all cause carbon loss.

Forests can be either a net carbon sink (sequestration exceeds emissions) or a net carbon source (emissions exceed sequestration). At this time, California forests are a net carbon sink but this could change if there is widespread forest ecosystem loss.



Some of the major pathways of carbon through a forest. Carbon flows from the atmosphere into trees and plants, into the roots and soil, and is eventually released back to the atmosphere.
Illustration courtesy Steven Perakis, US Geological Survey

Understanding climate change

In any discussion of climate change, it is important to understand the difference between weather and climate. Weather is the short-term, day-to-day conditions of temperature, precipitation, humidity, etc. Climate, on the other hand, is the long-term average—often 30 years—of weather conditions. While weather is extremely variable, climate tends to be relatively stable. Climate change is affecting this stability.

Currently, the climate is changing rapidly due to increases in carbon dioxide (CO_2) and other greenhouse gases in the atmosphere. These gases act as a blanket, or greenhouse, trapping heat and affecting weather patterns around the globe. This is causing long-term changes in Earth's climate.

The increase in carbon dioxide is caused in large part by the burning of "fossil fuels," carbon stores that have been buried in the earth for millennia. When fossil fuels—oil, gas, coal—are extracted and burned for energy, they add to the carbon already in the carbon cycle. This additional carbon is the driving force in our changing climate.

In California we are experiencing increased temperatures and decreased precipitation. The threats to forests from climate change include an increase in wildfires (due to higher temperatures and drier conditions), decreased water availability in the summer (with higher temperatures, less water is held in the snowpack), more insect pests (due to drought and tree stress and higher temperatures), and other risks to forest health.

What does climate change mean to forests?

Changing climate patterns have a special significance to forests. Climate helps shape the forest. Each tree species has its own tolerances for drought, precipitation, temperature, etc., and these tolerances largely define which species can live where. When the climate changes faster than species can adapt, there may be profound changes in the species composition of a forest.

At the same time, forests have a unique ability

(*continued next page*)

Mitigation or adaptation?

You often hear the terms ***mitigation*** and ***adaptation***. What is the difference?

Mitigation is defined as actions taken to reduce the sources or enhance the sinks of greenhouse gases. Mitigating greenhouse gases could slow climate change and avoid the worst climate scenarios for the future.

Adaptation refers to those steps taken to adjust to climate changes, moderate the damages, and cope with the consequences. Since climate change is already happening, adaptation strategies may be necessary.

Forests have major roles in both the mitigation and adaptation of climate change. Forests can be carbon sinks as plants sequester carbon from the atmosphere (mitigation). At the same time, forests can be managed to be more resilient so they can adapt to the new climate and continue to produce their many co-benefits for society (adaptation).

Weather vs. climate

Weather is the day-to-day state of the atmosphere (temperature, precipitation, humidity, etc.). ***Climate*** is the long-term average of weather conditions. While weather is extremely variable, climate tends to be more stable. Climate change is affecting this stability.

to affect the climate when they take carbon out of the atmosphere through the process of photosynthesis. This carbon is stored in their tissues and other areas of the forest—living and dead trees, roots, soil—in some cases for hundreds of years. When the carbon is removed from the atmosphere, it can no longer affect the climate.

This ability of forests to sequester and retain carbon is the basis for the new grant funding—if we can pull more carbon out of the atmosphere it may help reduce the greenhouse gas effect and climate change impacts.

The threat to forests

Forests today face major challenges both in the short and long term. Some of these are due to climate change itself. The climate is becoming increasingly warm, dry, and unpredictable. Water availability is changing as warmer temperatures result in less water stored in snowpacks.

Drought can stress trees, making them more susceptible to forest pests. Pests species are sensitive to weather, especially higher temperatures, which can cause them to extend their active period and/or their range. Drier conditions can result in more frequent and catastrophic wildfires. The changing climate also affects some forest species' ability to regenerate. Trees that have adapted to one climate may not be as well suited to the new climate regime. These and other threats to forests need to be identified and addressed.

Growing forest carbon

Management to protect forest carbon stores and maximize sequestration is a new area of research that still has more questions than answers. We're on a steep learning curve.

Carbon-focused forest management includes basic options to maintain and enhance forest health while we wait for more definitive answers.

Protecting and maintaining our existing forests helps grow carbon. As forests mature they add carbon to the soil and other carbon pools. Mature forests contain larger carbon stores than younger forests.

Reforestation also grows carbon. Planting seedlings adds to the population of trees that pull carbon from the air. Young trees sequester carbon faster than older trees.

Another part of the solution is to find ways to avoid carbon loss, which occurs when trees,

Forests have the unique ability to affect the climate by taking carbon out of the atmosphere.

plants, soil, and other carbon stores lose their carbon to the atmosphere. Decreasing pest damage, avoiding wildfires, protecting soil, etc. can help keep the carbon in the forest.

Forest products that go into long-term assets, such as timber in houses, are another form of sequestered carbon. When these products replace the use of materials like concrete or steel, which take a lot of energy to manufacture, they are doing double duty.

Utilizing biomass for energy is another way to keep excess carbon out of the atmosphere, assuming the biomass replaces fossil fuel use. In addition, removing excess biomass from the forest may help avoid carbon loss by decreasing the risk of wildfire. Unlike fossil fuels, biomass is already part of the carbon cycle so it doesn't add to the carbon in the atmosphere and its use is considered carbon neutral. However, transporting and processing biomass has a carbon cost. It is necessary to look at the net carbon gain or loss to determine the total benefit.

Co-benefits

Finally, it's important to remember that carbon storage is only one of many products and ecosystem services that forests provide. In addition to carbon, well-functioning forests also enhance water quality and quantity; improve air quality; protect against risks like flood and erosion; provide habitat and corridors for fish, wildlife, and plant communities; offer recreational opportunities and tourism revenue; support bioenergy development; provide a wide variety of forest products; help reduce energy demand in cities through shading; and support job creation in rural communities. When planning forest management activities, consider the effects on these multiple benefits.

Greenhouse Gas Reduction Fund Programs

Summary of main programs for forest landowners

Program	Project Type	Purpose	Grant Type	Award Amt	Eligibility
Fuel Reduction (CFIP)	CA Forest Improvement Program (CFIP) cost share agreements for selective removal of vegetation to reduce wildfire hazards. Projects include thinning, pruning, brush removal, and slash disposal.	Reduce potential greenhouse gas emission from wildfires, stabilize forest carbon stocks through improved forest health and forest resilience, and reduce damage to carbon stocks.	CFIP cost share agreements issued by CAL FIRE	State pays up to 75% to 90% of the total fuel reduction costs to a maximum of $50,000.	Non-federal forestland owners with 20–5,000 acres.
Fuel Reduction (Grants)	Grants for selective removal and utilization of vegetation to reduce wildfire hazards (i.e., fuel reduction). Projects include thinning, pruning, brush removal, and biomass utilization.	Reduce potential greenhouse gas emission from wildfires, stabilize forest carbon stocks through improved forest health and forest resilience, and reduce damage to carbon stocks.	Competitive grants	No maximum award.	Native American Tribes, public agencies, or 501(c)(3) nonprofit organizations.
Reforestation Program (CFIP)	CFIP cost-share agreements for small forest landowners for site preparation, seedlings, planting forest trees, and release.	Tree growth results in removing carbon dioxide and stores the carbon in trees.	Agreements may be administered by NGOs (non-governmental organizations)	State pays up to 75% to 90% of the total reforestation costs to a maximum of $100,000.	Nonfederal forestland landowners must own between 20 and 5,000 acres.
Forest Pest Control	Grants for timber stand improvement/forest health, removal of dead trees, restoration of damaged forests, and utilization of biomass.	Preventing unnatural levels of tree mortality will help forests continue to sequester atmospheric CO2, avoid emissions from decomposing trees, and prevent further spread of insect or disease to healthy trees.	Competitive grants.	No maximum award; minimum award $50,000.	Landowners, Native American Tribes, public agencies, universities, nonprofit organizations.
Watershed Reforestation and Restoration	Grants for large-scale reforestation and watershed restoration resulting from catastrophic wildfire or other catastrophic events. Projects include site preparation, seedlings production, planting forest trees, maintaining seedlings (release), thinning for wildfire fuel reduction, and utilization of biomass.	Tree growth results in removing carbon dioxide and storing the carbon in trees. Will also reduce potential greenhouse gas emissions from wildfires, stabilize forest carbon stocks through improved forest health and forest resilience, and reduce damage to carbon stocks.	Competitive grants	No maximum award.	Landowners, Native American Tribes, public agencies, nonprofit organizations.

Ready to do a project?

The next round of funding is expected to be in early summer so this is a good time to start preparing.

The new Greenhouse Gas Reduction Fund (GGRF) grants and cost-share programs, and State Responsibility Area (SRA) Fire Prevention Grants make this a great time to plan your next forest project. What do you want to do?

Since the first step in any project is to make a plan, you should have a Forest Management Plan before you begin work. The good news is that you can apply to develop a management plan at the same time you apply for CFIP (California Forest Improvement Program) grant funds.

The new programs can be confusing. With 10 programs (7 GGRF and 3 SRA) to choose from, you will need to find the best fit for your personal goals and objectives. Each program has its own set of requirements and eligibilities. Some are grants, others cost-share. Some are designed for large acreages and others for smaller forests. Your local CAL FIRE Forestry Assistance Specialist (FAS), Resource Conservation District (RCD), UC Cooperative Extension Advisor, or Registered Professional Forester (RPF) can help you sort through the choices.

SRA grants

State Responsibility Area Fire Prevention Fund grants are aimed at reducing wildfire threat to habitable structures in State Responsibility Areas. Projects must be related to fuel hazard reduction, fire prevention education, and fire prevention training. These projects are designed to reduce the risk of fire ignition, reduce the potential for fire-related damage, and educate owners of habitable structures in the SRA. *http://calfire.ca.gov/fire_prevention/fire_prevention_fund_grants.php*

GGRF grants

There are all kinds of projects that fall under the GGRF grant categories; there is also room for creativity and innovation in this process. As long as you can demonstrate that your project will store carbon or decrease emissions, your project will be considered for funding.

Have you thought about removing invasive plants for forest health? Biochar for sequestering carbon and enhancing forest productivity? Increasing the diversity of your planting stock to consider the changing climate? Thoughtful attempts to address climate uncertainties may be acceptable projects.

Highly competitive

Although $42 million is a lot of money, the grants are extremely competitive. In the first round of funding for forest management grants, for example, there were $110 million in requests for $20 million in funds. In this highly competitive process it is necessary to have a strong proposal and to show that the work will provide the carbon benefits they were designed to accomplish.

CFIP

Grants that go through CFIP are a little easier to get. These will be treated like the usual CFIP cost-share grants, except for a couple of extra steps. You will need to provide a Concept Proposal to explain your project and its carbon benefits, and you will need to work with an RPF to calculate the carbon sequestered or emissions avoided by your

The grants:

Greenhouse Gas Reduction Fund Grant (GGRF) Programs

There are seven forest management programs with $38 million available for projects. All projects must contribute to increased carbon sequestration or reduced greenhouse gas emisisons.

- Forest Legacy—conservation easements ($4.2 million)
- Fuels Reduction—remove vegetation for wildfire hazard reduction ($8.3 million)
- Forest Pest Control—improve forest health by thinning forests and controlling pests ($1.5 million)
- Reforestation—plant forest trees after a wildfire or other catastrophe ($4.8 million)
- PTEIRs—develop Programmatic Timberland Environmental Impact Reports for improved timber mangement ($1.2 million)
- Research—study greenhouse gas reduction and carbon sequestration projects ($2.3 million)
- Urban Forestry—expand and improve urban forests in disadvantaged communities ($15.7 million)

State Responsibility Area (SRA) Fire Prevention Grant Programs

These are grants for fire prevention projects that reduce the impacts of wildfires to habitable structures in SRAs. There is $9.5 million available.

Projects may include, but are not limited to:

- Vegetation clearance, tree thinning, and other types of fuel hazard reduction projects
- Fire prevention education
- Fire prevention planning—creation of strategic wildfire planning documents, such as a Community Wildfire Protection Plan (CWPP)

project. The California Association of Resource Conservation Districts (CARCD) may be assisting CAL FIRE in processing CFIP reforestation grants.

How to apply

CAL FIRE may get additional funding in June 2015, depending on the State budget, so the next round of funding could be in the summer. Don't wait…this is a good time to start preparing. You need to decide on the project you want to submit and talk to an RPF. You can apply on your own or be part of a watershed-scale project in your area. Check with your local RCD, watershed group, and/or Fire Safe Council to see if they have a larger project you can be part of.

In order to submit an application, you must start with a pre-application Concept Proposal that includes the following:

- GGRF program you are requesting a grant from
- Project location and approximate acreage
- Estimated project cost
- Project description
- Project objectives (which must include a reduction in greenhouse gas emissions and/or an increase in carbon sequestration)

The Concept Proposal will be submitted to the CAL FIRE Grants Unit in Sacramento, which will consult with your local FAS to verify that the project is appropriate for your area. They will then evaluate these proposals.

If your Concept Proposal is approved, you will be invited to prepare a Project Application. Landowners applying for CFIP funding will submit a CFIP contract package. Contracts will be awarded after this step. For more information on Concept Proposals and grants go to *http://calfire.ca.gov/resource_mgt/GGRF.php*.

Note:

- A Registered Professional Forester (RPF) must design and supervise the project and provide carbon calculations.
- CFIP-funded projects must have a forest management plan completed before starting work on the project.
- CEQA compliance, including an archeological survey and records check, must be completed before starting ground-disturbing work, such as tree planting or fuels reduction work with a masticator.
- Work on your project must not start prior to approval of the CFIP contract or grant.
- Work must start within one year of contract approval and be completed prior to the contract's expiration date.
- **Important!** Applicants MUST demonstrate reduction of greenhouse gases as a result of implementing their project.

Photo: Gary Kramer, NRCS

Debris from fire break/fuel reduction project to be used at a nearby bioenergy plant.

Grants & cost-share for landowners & others

Fuels Reduction

The Fuels Reduction Program is designed to reduce greenhouse gas emissions from wildfires and stabilize forest carbon stocks through improved forest health and forest resilience.

Currently, wildfires release large amounts of greenhouse gases into the atmosphere each year. By reducing the available fuel in ways that reduce the number and intensity of wildfires, there may be a decrease in wildfire-caused emissions.

All projects should be designed to meet greenhouse gas emission reduction objectives, including stabilizing or increasing carbon sequestration in trees retained on site, reducing wildfire hazards to decrease wildfire emissions, and utilizing biomass and solid wood products to offset fossil fuel emissions from vegetation removal.

There are two types of programs for fuels reduction: Fuel Reduction Project Grants and CFIP cost-share agreements. Under CFIP, landowners will sign a cost-share agreement for approved work. Priority will go to projects that utilize biomass and wood products, those included in a local fire plan or Community Wildfire Protection Plan, and those with a documented assessment of need for providing wildfire protection to human infrastructure and watershed values and other co-benefits (reduced forest pest

(*continued next page*)

Local contacts for GGRF/SRA grants:

http://calfire.ca.gov/grants/downloads/Grants_ContactList.pdf

For more info:

Pest Management
http://calfire.ca.gov/resource_mgt/resource_mgt_pestmanagement_grants.php

Fuel Reduction
http://calfire.ca.gov/resource_mgt/resource_mgt_fuelreduction_grants.php

CFIP Forestry Assistance
http://calfire.ca.gov/resource_mgt/resource_mgt_forestryassistance_cfip.php

Watershed Restoration
http://calfire.ca.gov/resource_mgt/resource_mgt_GGRF_Watershed-Reforestation.php

State Forest
http://calfire.ca.gov/resource_mgt/resource_mgt_stateforests_GGRF.php

Reforestation helps sequester carbon.
Photo: USFS Region 5

damage, airshed improvements in nonattainment air basins, invasive weed control, improvement to wildlife habitat, etc.). All projects must calculate and quantify the greenhouse gas emission reductions resulting from the project.

Fore more information, contact Stephen Smith, CAL FIRE Forestry Assistance Program Manager, Stephen.Smith@fire.ca.gov.

For more information on all the Greenhouse Gas Reduction Fund forestry programs, visit the CAL FIRE website at http://calfire.ca.gov/resource_mgt/GGRF.php

Reforestation

Two programs for reforesting and restoring forestland are designed to help ensure that California's forests continue to be a significant carbon sink:

The CFIP Reforestation Program is a cost-share program for nonindustrial forest landowners with smaller acreages.

The Watershed Reforestation and Restoration Grant Program is designed for large, multiple-owner projects to address watershed-scale reforestation, restoration, and other forest improvement activities such as post-fire fuel hazard reduction and biomass utilization.

Applicants must submit a Concept Proposal for both the CFIP Reforestation Program and the Watershed Reforestation and Restoration Grant programs. All projects must meet greenhouse gas (GHG) emission reduction objectives, and include a scientific methodology to calculate and quantify GHG emission reductions.

For more information, contact Stephen Smith, Stephen.Smith@fire.ca.gov.

Forest Pest Control

Tree mortality and decay due to epidemic levels of natural pests or introduction of nonnative invasive forest pests reduces the carbon sequestration capability of trees, results in greenhouse gas emissions from decomposition of dead trees, and increases wildfire risk. Preventing extra-ordinary levels of tree mortality will help forests continue to sequester atmospheric CO_2, avoid emissions from decomposing trees, and prevent further spread of insect or disease to healthy trees.

Grants and technical assistance are available for pest control and forest health improvement projects. Financial assistance is for 1) removing trees infected by pests such as Sudden Oak Death, pine bark beetles, and Gold Spotted Oak Borer; 2) selectively removing trees that are highly susceptible to attack by pests to prevent further spread of disease to healthy forests; 3) restoring impacted landscapes through reforestation; 4) utilizing the removed trees for stable carbon storage in solid wood products and biomass energy; 5) education and training on the proper utilization, transportation, and handling of infected materials to avoid further pest spread; and 6) analytical scientific monitoring to document the effectiveness of pest control projects and measure GHG reduction.

For more information, contact Dr. Tom Smith, CAL FIRE Forestry Pest Specialist, Sacramento Headquarters. Tom.Smith@fire.ca.gov.

Coast live oak killed by sudden oak death.
Photo: Bruce Hagen

Where does the money come from and other FAQs (frequently asked questions)

Where does the GGRF money come from?

The Greenhouse Gas Reduction Fund (GGRF) was established by law in 2012 to receive State Cap and Trade Auction proceeds. A portion of the funds ($42 out of $832 million; *see table below*) were assigned in the Governor's Budget Act of 2014 to CAL FIRE to implement forestry projects that lead to increased carbon sequestration and greenhouse gas emissions reductions. Projects must contribute to the goals of AB 32 and strategies contained in the Air Resources Board (ARB) Updated Scoping Plan.

What is AB 32?

Assembly Bill 32 (AB 32), the California Global Warming Solutions Act of 2006, is a comprehensive bill designed to address climate change. There are numerous programs under AB 32.

One such program is the GGRF, which funds a variety of projects to provide long-term reductions in greenhouse gas emissions. Funding for the GGRF comes from auction proceeds that are part of ARB's Cap-and-Trade Program.

AB 32 requires California to return to 1990 levels of greenhouse gas emissions by the year 2020. All programs developed under AB 32 contribute to this goal, which will deliver an overall 15% reduction in GHG emissions compared to the business-as-usual scenario.

How is the GGRF Money Allocated?

Cap and Trade Expenditure Plan
(Dollars in Millions)

Low Carbon Transit Operations Program	$25
Transit and Intercity Rail Capital Program	$25
Affordable Housing and Sustainable Communities Program	$130
Low Carbon Transportation	$200
Energy Efficiency Upgrades/Weatherization	$75
Energy Efficiency for Public Buildings	$20
Agricultural Energy and Operational Efficiency	$15
Wetlands and Watershed Restoration	$25
Fire Prevention and Urban Forestry Projects	**$42**
Waste Diversion	$25
TOTAL	**$832**

—from California State Budget 2014–15 Cap and Trade Expenditure Plan

What is Cap and Trade?

The Cap and Trade Program is a key element of California's climate plan. It sets a statewide limit on sources responsible for 85 percent of California's greenhouse gas emissions, and establishes a price signal needed to drive long-term investment in cleaner fuels and more efficient use of energy. The program is designed to provide covered entities the flexibility to seek out and implement the lowest-cost options to reduce emissions. *http://www.arb.ca.gov/cc/capandtrade/capandtrade.htm*

How are these grants different from the carbon offset market?

The GGRF grants are an entirely different program from the carbon offset market. The grants are funded by the Air Resources Board to encourage good forest stewardship by providing money for a range of forestry activities that have a carbon benefit.

Requirements for the forest carbon credit market are much more rigorous. A forest must first register with an approved Carbon Registry and follow approved Forest Protocols to quantify the net climate benefits of all the activities that sequester carbon on the forest. Only when all the requirements are met can a forest qualify to sell carbon offsets.

What are the Forest Protocols?

The Compliance Offset Protocol, U.S. Forest Projects, provides requirements and methodology for quantifying the net climate benefits of activities that sequester carbon on forestland. For more information visit *http://www.arb.ca.gov/regact/2010/capandtrade10/copusforest.pdf*

We've moved!

The Forest Stewardship Program has a new website address. Find us at ***http://calfire.ca.gov/foreststeward/index.html.***

Terms you should know

AB32—Assembly Bill 32, also known as the California Global Warming Solutions Act.

ARB—California Air Resources Board (sometimes called CARB).

Carbon Sink—a carbon reservoir that absorbs more carbon than it emits; healthy forests are carbon sinks.

Carbon Source—a carbon reservoir that emits more carbon than it sequesters.

Greenhouse Gas (GHG)—one of several gases, including carbon dioxide, methane, and nitrous oxide, that trap heat in the atmosphere and contribute to the greenhouse effect.

Resilience—the capacity of a forest to recover quickly from a perturbation or disturbance.

Sequestration—the process of taking carbon out of the atmosphere and storing it.

State Responsibility Areas (SRAs)—The 32 million acres of private land in California where CAL FIRE has legal and financial responsibility for wildfires.

Resources Delve into grants, GHGs, and climate

Tax Time Coming!

Tax time is just around the corner. Here is info you may need.

National Timber Tax Website
www.timbertax.org/

Tax Tips for Forest Landowners for the 2014 Tax Year
www.timbertax.org/developments/TaxTips2014.pdf

Forest Landowners Guide to the Federal Income Tax
www.timbertax.org/taxpolicy/FS_Landowners_Tax_Guide.pdf

CAL FIRE's Greenhouse Gas Reduction Fund (GGRF)

Information on the GGRF grant programs with links to related information.
http://calfire.ca.gov/resource_mgt/GGRF.php

AB 32 overview

You've heard a lot about AB 32, the Global Warming Solutions Act of 2006. Here is some background and more information.
http://www.arb.ca.gov/cc/ab32/ab32.htm

ARB's Cap and Trade Program

General info: *http://www.arb.ca.gov/cc/capandtrade/capandtrade.htm*
Cap-and-Trade Auction Proceeds Investment Plan *http://www.arb.ca.gov/cc/capandtrade/auctionproceeds/final_investment_plan.pdf*

UC Cooperative Extension Forestry

UC Extension Forestry has a number of articles on climate change, carbon sequestration, a carbon sequestration tool for Timber Harvest Plans (THPs), and more. *http://ucanr.edu/sites/forestry/*

UC Extension also offers an e-learning site to help you develop your forest management plan.
http://ucanr.edu/sites/forest_learning/

US Forest Service Climate Change Resource Center

A treasure trove of information about all things climate change, including articles, videos, fact sheets, and much much more.
http://www.fs.usda.gov/ccrc/

Carbon Estimation Tools: A Primer
http://www.fs.usda.gov/ccrc/tools/carbon-primer

Forests and Carbon Storage
U.S. forests currently serve as a carbon sink, offsetting approximately 10 to 20 percent of U.S. emissions each year. Climate change may affect the ability of U.S. forests to continue to store and sequester carbon. Go to the synthesis tab, which discusses the role of forests in carbon sequestration, and management options for helping forests maintain or increase their capacity to store carbon, even under future conditions.
http://www.fs.usda.gov/ccrc/topics/forest-carbon

Technical Assistance

Many agencies are available to provide technical assistance, referrals, information, education, land management plan assistance, and advice.

California Stewardship Helpline
1-800-738-TREE; ncsaf@mcn.org

California Dept of Forestry & Fire Protection
Stewardship Forester
Stephen Smith; stephen.smith@fire.ca.gov

Forestry Assistance Specialists
Guy Anderson (Mariposa/Madera/Merced) 209-966-3622 x218
vacant (Santa Rosa) 707-576-2935
Brook Darley, (Redding) 530-224-1420
Damon Denman (Siskiyou) 530-842-3516
Adam Frese (Tuolumne/E. Stanislaus) 209-532-7429 x109
Ivan Houser (Lassen) 530-257-4171
vacant (S. Lake Tahoe) 530-541-1989
Ken Kendrick (Butte) 530-872-6334
Al Klem (Plumas) 530-283-1792
Patrick McDaniel (El Dorado) 530-647-5288
Jonathan Pangburn (San Benito/Monterey) 831-333-2600
Alan Peters (San Luis Obispo) 805-543-4244
vacant (Placer/Yuba/Nevada) 530-265-4589 x101
Jason Butcher (Humboldt/Del Norte) 707-726-1258
Edwin Simpson (Fresno/King) 559-493-4307
Tom Tinsley and/or Patrick McDaniel (Amador) 530-647-5200

California Association of RCDs
916 457-7904; staff@carcd.org

Natural Resources Conservation Service (NRCS)
State Forester; 530-792-5655

UC Cooperative Extension Forest Advisors
Mike De Lasaux (Plumas, Sierra) 530-283-6125; mjdelasaux@ucdavis.edu
Ryan DeSantis (Shasta, Siskiyou, Trinity) Counties; 530-224-4900; rdesantis@ucanr.org
Greg Giusti (Mendocino, Lake) 707-463-4495; gagiusti@ucdavis.edu
Susie Kocher (El Dorado, Amador, Calaveras, Tuolumne) 530-542-2571; sdkocher@ucdavis.edu
Rick Standiford, Specialist 510-643-5428; standifo@berkeley.edu
Bill Stewart, Specialist 510-643-3130, billstewart@berkeley.edu
Yana Valachovic (Humboldt, Del Norte) 707-445-7351; yvala@ucdavis.edu

USDA Forest Service
Dan McKeague, Forest Landowner Asst Programs 707-562-8875; dmckeague@fs.fed.us

Calendar

February 25
Wildland Urban Interface (WUI) Webinar Series
Landscaping and home design for fire defense
Registration: http://www.cafiresci.org/wui-webinar-series
Notes: Yana Valachovic will discuss the types, placement, and maintenance of landscape plants to reduce risk of home ignition, and elements of home design that mitigate home loss during a wildfire.

March 4
Board of Forestry Meeting
Location: Sacramento, CA
Website: http://bofdata.fire.ca.gov/

March 11–14
Salmonid Restoration Conference
Fisheries Restoration: Planning for Resilience
Location: Santa Rosa, CA
Contact: 707-923-7501
Website: http://www.calsalmon.org/salmonid-restoration-conference/33rd-annual-salmonid-restoration-conference

March 24 – 26
Wildland Urban Interface (WUI) Conference
Location: Reno, NV
Sponsor: International Associationo of Fire Chiefs
Contact: 703-273-9654; conferences@iafc.org
Website: http://www.iafc.org/micrositeWUI/homeWUI.cfm?ItemNumber=7987

June and July
Forestry Institute for Teachers (FIT)
2015 Sessions:
- June 14–20 in Plumas County
- June 21–27 in Tuolumne County
- July 5–11 in Shasta County
- July12–18 in Humboldt County

Description: Multi-day residence workshop for K-12 teachers. Provides knowledge and skills to teach forest ecology and management.
Contact: info@forestryinstitute.org
Website: http://www.forestryinstitute.org/
Note: Application due March 16

We've moved in with CAL FIRE!

The Forest Stewardship website has a new home at ***http://calfire.ca.gov/foreststeward/index.html***. Go there for newsletters (all issues since 1996!), tree notes, and other information of value to forest landowners.

Sign up to receive Forestland Steward!

Learn tips and tricks to become a confident and proficient forest steward and keep current on the latest information, funding, and events.

Request the electronic version (with links), the hard copy (real paper!), or **BOTH**. Don't miss an issue.

It's FREE!!

How can Forestland Steward newsletter serve you?

Comments / Suggestions: _____

_____

_____

❑ Add me to the mailing list / ❑ Change my address:

Name _____

Organization _____

Address _____

City, Zip _____ Phone _____

email _____

❑ To save on printing costs and paper, we encourage you to get the e-version of Forestland Steward. Check here for an email copy instead of a hard copy.

Fill out this box and send it to CAL FIRE, Forestry Assistance, P.O. Box 944246, Sacramento, CA 94244-2460. Fax: (916) 653-8957; email: stephen.smith@fire.ca.gov. For address changes, please send this box or contact Stephen Smith via email, standard mail, or fax…be sure to reference Forestland Steward newsletter.

NOTE: For address updates or to make comments or suggestions about this newsletter, please contact stephen.smith@fire.ca.gov. A limited number of extra printed copies may be available. Please send your shipping information and the number of copies you would like to stephen.smith@fire.ca.gov or mail your request directly.

CAL FIRE & Placer County RCD
Forest Stewardship Program
c/o P.O. Box 162644
Sacramento, CA 95816

ADDRESS SERVICE REQUESTED

Order seedlings for restoration and reforestation

The El Dorado County Resource Conservation District (RCD) has entered into a contract with the Forest Service Placerville Nursery to grow seedlings for reforestation on nonindustrial private forestlands. The emphasis of the RCD's interest is on the reforestation and restoration of areas affected by wildfire.

Under the terms of the program, landowners and/or their consulting foresters will order seedlings from the RCD. The RCD will then aggregate the orders and place them with the Nursery. Seedlings will be grown according to Forest Service specifications as 1- or 2-year container stock or bare root. Orders will be placed in the fall for winter sowing (e.g., fall of 2015) and delivery in the spring two years hence (e.g., spring of 2017) for one year stock.

For further information on the program and to receive seedling order forms, contact Mark Egbert at (530) 295-5633 or mark.egbert@ca.usda.gov.

Photos: USFS Region 5