

WHAT LANDOWNERS AND FOREST MANAGERS NEED TO KNOW ABOUT FOREST CARBON: A BACKGROUND FROM GLOBAL TO LOCAL

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Carbon sequestration is becoming an important land management objective because growing trees and vegetation can reduce the amount of carbon dioxide in the atmosphere. Many scientists believe that increasing the concentration of greenhouse gases such as carbon dioxide in the atmosphere will affect the climate. Concern over human-induced climate change prompted many nations, including the United States, to sign and later ratify the United Nations Framework Convention on Climate Change in the 1990s. The agreement to work to stabilize greenhouse gas concentrations has spawned an increasing number of discussions and activities about actions that can reduce atmospheric greenhouse gases. More recently, and at a more local level, states are increasingly working for clean air, including the possibility of regulating the amount of carbon dioxide release.

Human activities such as burning fossil fuels for transportation or electricity generation and altering land and vegetation for food or shelter release gases into the atmosphere. Eighty percent of the total greenhouse gas emissions of the U.S. is related specifically to carbon dioxide exchange. Depending on the land management activity, the unseen greenhouse gases are released or stored. Carbon can be taken from the atmosphere as carbon dioxide and stored—called sequestration—by growing trees and vegetation. Carbon continues to be stored in wood products after harvest, or in landfills after wood or paper products are thrown away. Thus, landowner management decisions affect how much carbon is being sequestered or emitted from their forests and farms. For the U.S. as a whole in 2003, it is estimated that forests store at least 10 percent of the total emissions from all other sectors. Land management activities are viewed as a relatively cost-efficient way of reducing net emissions.

Basic methods are presented for forest managers and landowners to learn how to estimate carbon sequestration for their forests. The more a landowner knows about their specific forests and management activities, the more precise the estimates. The existing 1605(b) voluntary reporting program for greenhouse gas activities in the U.S., and the updated methods currently under review, are discussed.

The unknown of greatest interest to most managers of forest land in the U.S. is: will there be payments for carbon credits, and if so, when? Although the answer is not known to this question, it is clear that markets for carbon credits from managing lands have edged closer to reality over the last decade. Since the Kyoto Protocol has been ratified and entered into force, carbon credits will be actively traded in at least some parts of the world. The more interest in a carbon market, the more likely the market will occur.